
4.6 JURISDICTIONAL WATERS AND STREAMS

This section has been revised in response to comments received on the Draft EIS/EIR (April 2009), and based on additional independent review by the lead agencies (U.S. Army Corps of Engineers and California Department of Fish and Game). The revised or additional text is shown in double-underline; deleted text is shown in ~~strikeout~~. Revised or new figures or tables (if applicable) are indicated by the addition of the following text to the figure or table title: **(Revised)** or **(New)**.

4.6.1 INTRODUCTION

This section describes the existing State of California jurisdictional streams and the waters of the United States within the Project area, and identifies the impacts to those streams and waters that would result from implementation of the RMDP and SCP components of the proposed Project. The RMDP component is a conservation, mitigation, and permitting strategy for sensitive biological and other natural resources that would be relied upon in implementing various infrastructure improvements required by the approved Specific Plan, consistent with the federal and state permits and agreements requested from the Corps and CDFG. The SCP component is a conservation, mitigation, and permitting strategy for the spineflower that encompasses the entire Project area.

This section includes an assessment of whether the proposed Project and alternatives would: (1) have a substantial adverse effect on federally protected wetlands or a substantial change to state-protected streambeds through direct removal, filling, hydrologic interruption, loss of functions or services,¹ or other means; (2) result in a permanent net loss of CDFG jurisdictional streams or waters of the United States; (3) result in a permanent net loss of stream/wetland functions or services; or (4) result in substantial adverse construction impacts within Corps or CDFG jurisdictional areas through temporary removal, filling, hydrologic interruption, loss of functions or services, or other means.

This section and revised Section 2.0, Project Description, also includes information regarding how the proposed Project and alternatives would substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, the Santa Clara River and several tributary drainages.

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

This section (revised Section 4.6) represents a stand-alone assessment of the significant impacts on jurisdictional waters and streams associated with the proposed Project and the alternatives; however, the previously certified Newhall Ranch environmental documentation also provides important information and analysis for the RMDP and SCP components of the proposed Project and alternatives. The proposed Project components would require federal and state permitting, consultation, and agreements that are needed to facilitate development of the approved land uses within the Specific Plan site and that would establish spineflower preserves within the Project area, also facilitating development in the Specific Plan,

¹ The Corps has adopted the term "Services" in place of the previously used term "Values." CDFG continues to use the term "Values," so the terms, for purposes of this EIS/EIR, are synonymous.

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VCC, and a portion of the Entrada planning area. Due to this relationship, the Newhall Ranch environmental documentation, findings, and mitigation, as they relate to jurisdictional streams/wetlands, are summarized below to provide context for the proposed Project and alternatives.

Impacts to jurisdictional waters and streams were addressed in the Newhall Ranch Specific Plan Program EIR. Specifically, Section 4.2 of the Newhall Ranch Revised Draft EIR (March 1999) and Section 2.3 of the Newhall Ranch Revised Additional Analysis (May 2003) identified and analyzed impacts to jurisdictional streams/wetlands as they related to flood and flood control infrastructure, and Section 4.6 of the Newhall Ranch Revised Draft EIR (March 1999) analyzed impacts to jurisdictional streams/wetlands as they related to biological resources. In addition, Section 5.0 of the Revised Draft EIR (March 1999) identified and analyzed the potential impacts to jurisdictional streams/wetlands in conjunction with the evaluation of biological resources and flood-related impacts, and identified mitigation measures associated with construction and operation of the approved WRP, which would treat the wastewater generated by the Specific Plan.

The Newhall Ranch Specific Plan Program EIR recommended the implementation of Mitigation Measures SP-4.2-2 through SP-4.2-3, SP-4.6-1 through SP-4.6-16, SP-4.6-26a, SP-4.6-28, SP-4.6-47a, SP-4.6-55, and SP-4.6-63 in order to lessen impacts to jurisdictional streams and wetlands.² In addition, to lessen the jurisdictional streams/wetlands impacts resulting from construction and operation of the approved WRP, the Newhall Ranch Specific Plan Program EIR recommended the implementation of Mitigation Measures SP-5.0-18, SP-5.0-30, and SP-5.0-32. The Board of Supervisors found that adoption of the recommended mitigation measures, including future state and federal review, analysis and any additional measures necessary to obtain the needed permits and agreements, would reduce the identified potentially significant impacts to less-than-significant levels. The Newhall Ranch mitigation program was adopted by Los Angeles County in findings and in the revised Mitigation Monitoring Plans for the Specific Plan and WRP.

Table 4.6-1 summarizes the County's findings regarding the Specific Plan's and the WRP's impacts to jurisdictional streams and wetlands, the applicable mitigation measures, and the significance findings after the mitigation is implemented.

² Reference to mitigation measures included in the Newhall Ranch Specific Plan Program EIR are preceded by "SP" in this EIS/EIR to distinguish them from other mitigation measures discussed herein.

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Table 4.6-1
Jurisdictional Streams/Wetlands Impacts Caused By Implementation of
the Specific Plan and WRP

Impact Description	Mitigation Measures	Finding After Mitigation
<p>Specific Plan Jurisdictional Streams/Wetlands Impacts - During construction, the Newhall Ranch Specific Plan would have the potential for discharging sediment downstream during storm events. Upon reaching build-out, downstream sedimentation would be reduced. Nonetheless, this impact is significant.</p>	<ul style="list-style-type: none"> • SP-4.2-2 (requires necessary permits/letters of exemption from the Corps, USFWS, and CDFG prior to the construction of drainage improvements); • SP-4.2-3 (requires necessary streambed agreements with the CDFG wherever grading activities alter the flow of streams under the CDFG's jurisdiction); 	Not significant.
<p>In addition, development of the Newhall Ranch Specific Plan would occur in sensitive upland and riparian habitats. Further, about eight percent of the jurisdictional wetlands along the Santa Clara River would be disturbed. However, the severity of this impact would be offset <i>via</i> the replacement of wetland vegetation in association with the Corps' and/or CDFG's permit process. Further, the recommended mitigation measures (see column to the right) would ensure impacts remain less than significant.</p>	<ul style="list-style-type: none"> • SP-4.6-1 (guides selection of restoration mitigation areas); • SP-4.6-2 (requires a qualified biologist to prepare or review revegetation plans); • SP-4.6-3 (allows revegetation plans to be prepared as part of a Streambed Alteration Agreement and/or <u>Clean Water Act (CWA)</u> section 404 permit); • SP-4.6-4 (requires revegetation efforts to analyze site conditions); • SP-4.6-5 (requires use of native plant species); • SP-4.6-6 (final revegetation plan must outline the methods and procedures for installing plant materials); • SP-4.6-7 (requires the revegetation plan to include maintenance guidelines); • SP-4.6-8 (requires monitoring of restoration areas); • SP-4.6-9 (requires monitoring reports to be reviewed by the permitting federal and/or state agency); • SP-4.6-10 (requires contingency plans and appropriate remedial measures); • SP-4.6-11 (defines habitat enhancement); • SP-4.6-12 (requires removing of grazing); • SP-4.6-13 (requires revegetation plan to consider supplemental plantings); • SP-4.6-14 (revegetation plan may allow "natural" re-establishment); • SP-4.6-15 (guides removal of non-native species); 	

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Table 4.6-1
Jurisdictional Streams/Wetlands Impacts Caused By Implementation of
the Specific Plan and WRP

Impact Description	Mitigation Measures	Finding After Mitigation
	<ul style="list-style-type: none"> • SP-4.6-16 (mitigation banking activities are subject to state and federal regulations and permits); • SP-4.6-26a (specifies the two types of habitat restoration that may occur in the High Country SMA); • SP-4.6-28 (requires mitigation banking activities for riparian habitats to be subject to state and federal regulations and permits); • SP-4.6-47a (requires mitigation banking within the River Corridor SMA, High Country SMA, and Open Areas to be subject to state and federal regulations); • SP-4.6-55 (requires permits from pertinent federal and state agencies prior to development within wetlands or other sensitive habitats); • SP-4.6-63 (requires one to one acre replacement ratio for lost riparian resources). 	
WRP Jurisdictional Streams/Wetlands Impacts - During construction of the WRP, uncovered soils could be blown or washed by rainwater into the Santa Clara River, with significant erosion and sedimentation impacts. In addition, grading/site preparation would directly impact 9.8 acres along the edge of the River, which contains sensitive habitat, including cottonwood willow riparian forest (6.43 acres) and mule fat scrub (3.39 acres).	<ul style="list-style-type: none"> • SP-5.0-18 (requires that all necessary permits or letters of exemption from the Corps, USFWS, CDFG, and Regional Water Quality Control Board be obtained prior to WRP-related development); • SP-5.0-30 (requires compliance with permit requirements established by the CDFG, Corps, and/or the USFWS, relative to removal and replacement of riparian habitat); • SP-5.0-32 (require compliance with permit requirements of federal, state, and regional agencies with jurisdiction over reclaimed water to the Santa Clara River relative to potential impacts to the River's biological values) 	Not significant.

Source: Newhall Ranch Revised Draft EIR (March 1999); Newhall Ranch Revised Additional Analysis (May 2003).

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4.6.1.2 Relationship of Proposed Project to VCC and Entrada Planning Areas

4.6.1.2.1 VCC Planning Area

The SCP component of the proposed Project, if approved, would facilitate development in the VCC planning area. The VCC is reliant on the SCP and associated take authorizations, and would not be developed without the take authorizations due to grading constraints. The VCC planning area is the remaining undeveloped portion of the VCC commercial/ industrial complex currently under development by the applicant. The VCC was the subject of an EIR certified by Los Angeles County in April 1990 (SCH No. 1987-123005). The applicant has recently submitted to Los Angeles County the last tentative parcel map (TPM No. 18108) needed to complete build-out of the remaining undeveloped portion of the VCC planning area. The County will require preparation of an EIR in conjunction with the parcel map and related project approvals; however, the County has not yet issued a Notice of Preparation (NOP) of the EIR or released the EIR. **Table 4.6-2** summarizes the VCC's impacts on jurisdictional streams/ wetlands, the applicable mitigation measures, and the significance findings after mitigation from the previously certified VCC EIR (April 1990). The applicant currently holds a CWA section 404 permit for the Castaic Creek and Hasley Creek drainages within the VCC planning area (Permit 89-00419-AOA), which includes mitigation measures for the restoration and enhancement of waters of the United States to compensate for permanent impacts to jurisdictional areas. The CWA section 404 permit has been extended, but the authorized activities associated with Permit No. 89-00419-AOA have not changed.

Table 4.6-2
Impacts to Jurisdictional Streams/Wetlands Caused By VCC Implementation

VCC Impact Description	VCC Mitigation Measures	Finding After Mitigation
Project Impacts to Jurisdictional Streams/ Wetlands - As a result of build-out of the VCC project, the Castaic Creek would be channelized, temporarily removing riparian habitat.	<ul style="list-style-type: none">• Mitigation measures call for the implementation of measures required by a <u>CWA</u> section 404 permit issued by the Corps on December 11, 1990.• In addition to requiring that the Castaic Creek channel follow the existing bank contours of the Creek and minimize encroachment into the riparian vegetation community, mitigation measures require the Castaic Creek channel to be designed so that the pre- and post-project flows will be approximately the same in volume and velocity.• Mitigation measures also require that soft bottom channels be incorporated into the project design and a vegetation restoration plan be used to revegetate areas temporarily disturbed by construction in the Castaic Creek.	Not significant.

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Table 4.6-2
Impacts to Jurisdictional Streams/Wetlands Caused By VCC Implementation

VCC Impact Description	VCC Mitigation Measures	Finding After Mitigation
Cumulative Impacts to Jurisdictional Streams/Wetlands - Although the project applicant owns two adjacent parcels, there are no filed development plans and it is not possible to assess cumulative impacts.	<ul style="list-style-type: none">No further mitigation recommended.	Not significant.

Source: VCC EIR (April 1990).

4.6.1.2.2 Entrada Planning Area

The applicant is currently seeking approval from Los Angeles County for planned residential and nonresidential development within the Entrada planning area. The SCP component of the proposed Project would designate an area within Entrada as a spineflower preserve. If approved, the SCP component would include take authorization of spineflower populations in Entrada that are located outside of the designated spineflower preserve area. Thus, the planned residential and nonresidential development within portions of the Entrada planning area is reliant on the SCP and associated take authorizations, and those portions would not be developed without the take authorizations. Portions of tributary streams located in Entrada are subject to jurisdictional approvals under the proposed Project for the Magic Mountain Parkway extension component of the RMDP (see **Subsection 4.6.3.1**, Delineation of Jurisdictional Waters and Streams within the Project Area). The applicant has submitted to Los Angeles County Entrada development applications, which cover the portion of the Entrada planning area facilitated by the SCP component of the proposed Project. However, as of this writing, the Los Angeles County has not yet issued a NOP of an EIR or released an EIR for Entrada. As a result, there is no underlying local environmental documentation for the Entrada planning area at this time.

4.6.2 REGULATORY SETTING

The filling or modification of streams, wetlands, and waterways is regulated under several federal and state statutes. For the proposed Project and alternatives, discretionary approvals related to these issues are required pursuant to section 404 of the federal ~~Clean Water Act (CWA)~~ and section 1600 *et seq.*, of the California Fish & Game Code, both of which are discussed below.

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4.6.2.1 Federal

Overview of Corps Clean Water Act Section 404 Jurisdiction

Section 404 of the CWA authorizes the Secretary of the Army, acting through the Corps, to issue permits regulating the discharge of dredged or fill materials into the "navigable waters at specified disposal sites." Section 502 of the CWA further defines "navigable waters" as "waters of the United States, including territorial seas." "Waters of the United States" are broadly defined in Code of Federal Regulations (C.F.R.), title 33, section 328.3, subdivision (a),³ to include navigable waters, perennial and intermittent streams, lakes, rivers, ponds, as well as wetlands, marshes, and wet meadows. Section 328.3, subdivision (a) specifically defines "waters of the United States," as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
 - i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
 - ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - iii. Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters identified in paragraphs (a)(1)-(4) of this section;

³ This regulation, 33 C.F.R. § 328.3, and the definitions contained therein, have been the subject of recent litigation. In addition, the United States Supreme Court has recently ~~limited~~ addressed the scope and extent of the Corps' jurisdiction over "navigable waters" and "waters of the United States" under the CWA. (See, e.g., *Solid Waste Agency of Northern Cook Cty. v. United States Army Corps of Engineers* (2001)–531 United States 159 (2001) (SWANCC); *Rapanos v. United States* (2006)–126 S.Ct. 2208 (2006). Despite the impacts of these recent decisions, the definitions continue to provide guidance to the extent that they establish an outer limit on the Corps' jurisdiction over "waters of the United States," and, therefore, are referenced here for that purpose.

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6. The territorial seas;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1)-(6) of this section.
8. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the U.S. Environmental Protection Agency (USEPA).

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

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

The CWA section 404, ~~subdivision~~ (b)(1) Guidelines govern the issuance of permits authorizing the placement/discharge of fill material into waters of the United States, and state that:

. . . no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. (40 C.F.R. § 230.10, subd. (a).)

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

The section 404, ~~subdivision~~ (b)(1) Guidelines also extend additional protection to certain rare and/or sensitive aquatic habitats. These are termed "special aquatic sites," and include six categories: sanctuaries and refuges, wetlands, mudflats, vegetated shallows, coral reefs, and riffle/pool complexes. (40 C.F.R. §§ 230.40-230.45.) For proposed activities involving discharges into special aquatic sites, the ~~section 404(b)(1)~~ ~~section 404(b)(1)~~ Guidelines require consideration of whether the activity is dependent on access or proximity to, or siting within, a special aquatic site in order to fulfill its basic project purpose. If

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an activity is determined not to be water dependent, the section 404(b)(1) Guidelines establish the following two presumptions (40 C.F.R. § 230.10, subd. (a)(3)), which the applicant is required to rebut in addition to satisfying the alternatives analysis requirements:

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

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

Of the six categories of special aquatic sites, only wetlands are at issue with respect to this proposed Project. ~~The CWA~~ Corps regulations defines wetlands as:

[T]hose areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 C.F.R. § 328.3, subd. (b).)

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

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

The Corps' (1987) wetlands delineation manual describes an approach to identify field indicators of the above characteristics. In general, all three characteristics must be evident by field indicators, and their presence must be determined independent of the other characteristics. Positive identification of wetlands based on the presence of fewer than three characteristics can only occur when one or more parameters is absent due to normal seasonal variation in environmental conditions ("Problem Areas"), or due to recent human activities ("Atypical Situations"). Delineation of wetlands using the Corps' 1987 manual requires a systematic field investigation of soils, plants, and hydrology using formal data forms. In September 2008, the Corps published a Regional Supplement to the ~~Corps of Engineers~~ Wetland Delineation Manual for use in the arid west region of the United States, which provides technical guidance and procedures for identifying and delineating wetlands under CWA section 404 ~~of the Clean Water Act~~.

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

In *Solid Waste Agency of Northern Cook Cty. v. Army Corps of Engineers* (~~2001~~) 531 U.S. 159, 168 (2001), the United States Supreme Court stated that the Corps' CWA jurisdiction does not extend to ponds that "are not adjacent to open water." In reaching its decision, the Court concluded that the "Migratory Bird Rule," which served as the basis for the Corps' asserted jurisdiction, was not supported by the CWA. The Migratory Bird Rule extended the CWA to intrastate waters "which are or would be used as habitat by birds protected by Migratory Bird Treaties or which are or would be used as habitat by other migratory birds which cross state lines . . ." (*Id.* at p. 164.) The Court was concerned that application of the Migratory Bird Rule resulted in "reading the term 'navigable waters' out of the statute." (*Id.* at p. 172.) Highlighting the language of the CWA to determine the statute's jurisdictional reach, the Court stated, "the term 'navigable' has at least the import of showing us what Congress had in mind as its authority for enacting the CWA: its traditional jurisdiction over waters that were or had been navigable in fact or which could reasonably be so made." (*Ibid.*) This decision stands for the proposition that non-navigable, isolated, intrastate waters lacking interstate commerce connections other than potential to be used by migratory waterfowl are not waters of the United States and thus are not jurisdictional under the CWA (*Id.* at p. 171; see also *Rapanos v. United States*, 126 S. Ct. 2208, 2217 (2006).)

In 2006 the United States Supreme Court decided *Rapanos v. United States* and *Carabell v. United States*, 126 S.Ct. 2208 (2006) ("*Rapanos*"), which were consolidated cases determining the extent of the Corps' jurisdiction over waters of the United States under the CWA. The court issued no majority opinion in *Rapanos*. Instead, the justices authored five separate opinions including the "plurality" opinion, authored by Justice Scalia (joined by three other justices), and a concurring opinion by Justice Kennedy. To guide implementation of the decision, the Corps issued a memorandum stating that "regulatory jurisdiction under the CWA exists over a water body if either the plurality's or Justice Kennedy's standard is satisfied." (Corps, CWA Jurisdiction Following the United States Supreme Court's Decision in *Rapanos v. United States* & *Carabell v. United States*, December 2, 2008, ("*Rapanos* Guidance Memorandum") p. 3, fn. 16).

According to the plurality opinion in *Rapanos*, "the waters of the United States' include only relatively permanent, standing or flowing bodies of water" and do not include "ordinarily dry channels through which water occasionally or intermittently flows." (*Rapanos*, 126 S. Ct. 2208, 2221; see also *Rapanos* Guidance Memorandum p. 2.) In addition, while all wetlands that meet the Corps' definition are considered adjacent wetlands, only those adjacent wetlands that have a continuous surface connection because they directly abut the tributary (*e.g.*, they are not separated by uplands, a berm, dike, or similar feature) are considered jurisdictional under the plurality standard (*Rapanos* Guidance Memorandum, p. 7, fn. 29).

Under the Kennedy approach, "the Corps' jurisdiction over wetlands depends upon the existence of a significant nexus between the wetlands in question and navigable waters in the traditional sense." (*Rapanos*, 126 S.Ct. 2208, 2248.) "Wetlands possess the requisite nexus, and thus come within the statutory phrase 'navigable waters,' if the wetlands, either alone or in combination with similarly situated

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lands in the region, significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as 'navigable.' When, in contrast, wetlands' effects on water quality are speculative or insubstantial, they fall outside the zone fairly encompassed by the statutory term 'navigable waters.'" (*Ibid.*, see also Rapanos Guidance Memorandum pp. 3, 9.) Justice Kennedy identified "pollutant trapping, flood control, and runoff storage" as some of the critical functions wetlands can perform relative to other waters. (*Rapanos*, 126 S.Ct. 2208, 2248.) He concluded that, given wetlands' ecological role, "mere adjacency" to a non-navigable tributary was insufficient to establish CWA jurisdiction, and that "a more specific inquiry, based on the significant nexus standard, is therefore necessary." (*Id.* at pp. 2249-2252.)

Interpreting these decisions, and according to the Rapanos Guidance Memorandum, the Corps and the U.S. Environmental Protection Agency (USEPA) will assert jurisdiction over the following waters:

- Traditional navigable waters;
- Wetlands adjacent to traditional navigable waters;
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (*e.g.*, typically three months); and,
- Wetlands that directly abut such tributaries.

The Corps and USEPA will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:

- Non-navigable tributaries that are not relatively permanent;
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent; and,
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.

Where a significant nexus analysis is required, the Corps and USEPA will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters; and,
- Significant nexus includes consideration of hydrologic and ecologic factors.

The Corps and USEPA generally will not assert jurisdiction over the following features:

- Swales or erosional features (*e.g.*, gullies, small washes characterized by low volume, infrequent, or short duration flow); and,

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- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

A jurisdictional delineation of waters of the United States was performed within the RMDP site and the Entrada Planning area. (See **Appendix 4.6** of ~~this—the Draft~~ EIS/EIR.) The Corps delineation was completed before the *Rapanos* decision; and, therefore, it is possible that application of the *Rapanos* decision to the RMDP area could result in a determination that some areas previously considered to be within the Corps' jurisdiction may no longer be jurisdictional under the *Rapanos* Guidance Memorandum. Pursuant to Corps Regulatory Guidance Letter 08-02 (June 2008), the ~~applicant—Corps~~ is utilizing the above delineations as the preliminary jurisdictional delineation for the Project area. (Regulatory Guidance Letter (RGL) 08-02, pp. 3-4, para. 4(c), (d), and (g).) The preliminary delineation provides planning level boundaries and acreages, which would be confirmed and refined during project level submittals (construction notification to the Corps) over the 20-year construction period. All project level submittals (construction notifications) would be required to implement current guidance and procedures for delineating wetlands, including application of the Arid West Supplement to the Wetland Delineation Manual.

The Corps' assessment of the proposed Project and alternatives also emphasizes avoidance and minimization of impacts to waters of the United States, including all special aquatic sites in the ~~p~~Project area such as the alkali marsh areas in Potrero Canyon. The above assessment method for evaluating temporary and permanent impacts to the physical and biological attributes of the aquatic environment ~~will~~ was also be utilized by the Corps in for the required preparing the draft section 404(b)(1) alternatives analysis in accordance with (40 C.F.R. Part 230). The Corps' draft 404(b)(1) alternatives analysis is included in **Appendix F1.0** to the Final EIS/EIR. (A final 404(b)(1) alternatives analysis will be provided with the Corps' Record of Decision.)

The evaluation of impacts and the development of appropriate mitigation measures in this section will also be used to demonstrate compliance with requirements for the applicant to provide compensatory mitigation for impacts to waters of the United States. On April 28, 2008, effective June 10, 2008, the Corps issued new requirements for mitigation (the "Mitigation Rule"). (73 Fed.Reg. 19594-19705 [April 10, 2008].) As stated in the preamble to the rule, "[t]his final rule will apply to permit applications received after the effective date of this rule, unless the district engineer has made a written determination that applying these new rules to a particular project would result in a substantial hardship to a permit applicant. . . . Permit applications received prior to the effective date will be processed in accordance with the previous compensatory mitigation guidance." (73 Fed. Reg. 19608 [April 10, 2008].). Since the applicant filed its section 404 application in 2003, the Mitigation Rule does not apply. While the Mitigation Rule does not apply to this application, the Corps will require mitigation under prior guidance that will assure that the proposed Project will not cause a net loss of functions and services in accordance with prior rules and RGL 02-02, the Mitigation Rule (33 C.F.R. Parts 325 and 332). As discussed in the Mitigation Rule,

In accordance with RGL 02-02, the Corps will consider a variety of methods to ensure that any required compensatory mitigation for impacts to jurisdictional waters of the United States provides adequate compensation for the loss of physical and biological functions and services in the project area. As

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described in the Conceptual Mitigation Plan For Mitigation of Impacts to Army Corps Jurisdiction (Dudek 2010) (Conceptual Mitigation Plan). To address temporal impacts and to increase the level of certainty associated with any required compensatory mitigation, for each construction notification area, the applicant proposes to install the Corps would require up-front compensatory mitigation that is designed to achieve at least a at a minimum 1:1 ratio of functional units lost prior to any permanent impacts to waters of the United States in the area covered by the construction notification. If the applicant cannot achieve this standard for any construction notification area, the Corps would require increased compensatory mitigation to account for temporal loss in accordance with revised Mitigation Measure BIO-2, which addresses mitigation for impacts to Corps jurisdiction (a subset of CDFG's jurisdictional areas). In addition, mitigation would be implemented as well as concurrently for temporary impacts related to throughout construction activities in jurisdictional areas. Overall, the applicant proposes to create or expand Corps jurisdictional wetlands on site, so that the acreage of wetlands on site would, at a minimum, exceed the acreage that existed prior to proposed Project implementation.

In addition, under revised Mitigation Measure BIO-2, the applicant would be required to meet the mitigation requirements for impacts to CDFG jurisdiction. Because the area of Corps jurisdiction is a subset of the area of CDFG jurisdiction, revised Mitigation Measure BIO-2 would also result in additional mitigation for impacts to Corps jurisdiction, including restoration of adjacent riparian areas and requirements for upland buffer areas from CDFG jurisdiction. To the extent the requirements of revised Mitigation Measure BIO-2 exceed the requirements of the proposed CWA authorization in terms of acres of Corps jurisdiction, implementation of the revised Mitigation Measure BIO-2 would meet or exceed the Corps' mitigation requirements.

4.6.2.2 State

4.6.2.2.1 Overview of CDFG's Jurisdiction Pursuant to Section 1600 et seq., of the Fish and Game Code

Section 1602, subdivision (a), of the California Fish and Game Code states that it is unlawful for an entity to "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake" without first notifying CDFG of that activity. Thereafter, if CDFG determines and informs the entity that the activity will not substantially adversely affect any existing fish or wildlife resource, the entity may commence the activity without a Lake or Streambed Alteration Agreement. (Fish & Game Code, § 1602, subd. (a)(4)(A).) If, however, CDFG determines that the activity may substantially adversely affect an existing fish or wildlife resource, the entity will need to obtain a Lake or Streambed Alteration Agreement from the CDFG before it may commence the activity. In that case, CDFG will include in the Lake or Streambed Alteration Agreement measures necessary to protect the affected resources. (*Id.*, subd. (a)(4)(B).) The term of the agreement is normally 5 years or less (*id.*, § 1605, subd. (a) (1)), however, CDFG may issue an agreement with a term of longer than 5 years. (*Id.*, subd. (g).) Such an agreement is referred to as a long-term agreement. One type of long-term agreement is a Master Lake or Streambed Alteration Agreement (MSAA). MSAA's are typically issued for very large projects, affecting multiple streams or larger jurisdictional areas, which will be developed over many years. The MSAA facilitates regional watershed planning. A MSAA will usually specify the types of or actual projects the MSAA covers (usually referred to as a "Covered Project" or "Covered Activity" in the MSAA). A MSAA will also usually require the applicant to notify CDFG

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before beginning one or more of the projects the MSAA covers and such notification is sometimes referred to as a "sub-notification. CDFG usually requires the sub-notification to contain all the information required in a notification for a regular Lake or Streambed Alteration Agreement. However, even when a sub-notification process is required, the overall time it takes to obtain authorization for the project from CDFG after it receives the sub-notification is considerably less because all or most of the conditions that will apply to the project already have been identified in the MSAA

Lake or Streambed Alteration Agreements are typically required for activities such as excavation or placement of fill within a stream channel, vegetation clearing, installation (and sometimes operation) of structures that divert the flow of water, installation of culverts and bridge supports, cofferdams for construction dewatering, and bank reinforcement.

"Stream" is not defined in the Fish and Game Code and CDFG has not promulgated any regulation that defines "stream." However, the Fish and Game Commission has defined "stream" in section 1.72 in Title 14 of the California Code of Regulations as follows:

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

Although this definition does not apply to "stream" as that term is used in Fish and Game Code section 1600 *et seq.* because it was not promulgated by CDFG and the Fish and Game Commission did not promulgate it for that purpose, it at least provides some guidance.

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

It should be noted that the Corps' CWA section 404 jurisdiction is a subset of CDFG's section 1600 jurisdiction. Although the two may be coterminous, as is the case in many smaller, ephemeral streams lacking riparian plant communities, the CDFG jurisdictional area will never be smaller than that defined using the Corps' OHWM criterion.

Fish and Game Code section 1600, *et seq.* does not specifically contain provisions regulating activities that would impact wetlands, isolated areas containing riparian vegetation, or wetland hydrology. The Fish and Game Code has no analogue to the "special aquatic site" concept found in the CWA.

The California Fish and Game Commission policy regarding wetlands resources, updated in August, 2005, states that "it is the policy of the Fish and Game Commission to seek to provide for the protection, preservation, restoration, enhancement and expansion of wetland habitat in California" and to "strongly discourage development in or conversion of wetlands." As a result, although the Commission has no independent statutory permitting authority related to wetlands, the policy underscores that the

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Commission does not support wetland development proposals unless "project mitigation assures there will be 'no net loss' of either wetland habitat values or acreage" and "prefers mitigation which would achieve expansion of wetland acreage and enhancement of wetland habitat values."

In conjunction with the development of this Commission policy, and recognizing again that the Commission and CDFG do not possess wetlands-specific regulatory permitting authority, CDFG recommended in its trustee capacity for fish and wildlife resources, and the Commission adopted, a policy on the retention of wetland acreage and habitat values. To mitigate for lost wetland acreage, the Commission adopted a policy that no less than one acre of wetland should be created from non-wetland habitat for each acre of wetlands lost to development. To mitigate for lost wetland habitat values, the policy recommends four approaches to mitigation in order of preference: (1) in-kind, on-site, (2) in-kind, off-site, (3) out-of-kind, on-site, and (4) out-of-kind, off-site. In-kind compensation would properly consider existing habitat values at the project site and utilize a habitat evaluation procedure to assure that representative species or species groups would not be negatively affected, *i.e.*, that no reduction in habitat value for those species would occur. If out-of-kind compensation is determined to be superior from a regional perspective, the policy indicates there is no need to show equivalency between lost habitat values at the project site compared to those that would be created at the mitigation site. Against this backdrop, on-site, in-kind mitigation has been CDFG's long-standing preference to offset impacts to riparian resources, including wetlands.

CDFG normally requires the establishment of replacement mitigation ratios that address, among other things, temporal loss of riparian functions and values/services, resulting in a post project net increase of jurisdictional bed, bank and channel and riparian vegetation (see revised Mitigation Measure BIO-2).

4.6.2.2 **Overview of State Water Resources Control Board (SWRCB) Resolution to Develop Wetland Regulations**

Following the United States Supreme Court's decision in SWANCC (2001), the State Water Resources Control Board provided a report to the California legislature entitled, "Regulatory Steps Needed to Protect and Conserve Wetlands Not Subject to the Clean Water Act" (2003). As a follow-up to that report, in 2004, SWRCB staff prepared a document entitled: "Workplan: Filling the Gaps in Wetland Protection," which identified the need for a statewide wetland definition and a statewide wetland protection policy. To that end, in 2008, SWRCB staff recommended a resolution for adoption by the SWRCB that would direct SWRCB staff to develop this statewide definition and policy. (Draft Resolution, Development of a Policy to Protect Wetlands and Riparian Areas in Order to Restore and Maintain the Water Quality and Beneficial Uses of the Waters of the State; March 14, 2008.) This resolution was approved at the April 15, 2008 SWRCB meeting, and directs a team of SWRCB staff to propose a wetland definition and regulatory mechanism based on the Corps' delineation methods.

4.6.3 EXISTING CONDITIONS

This section describes the extent of Corps and CDFG jurisdictional areas in the Project area, including the results of the Hybrid Assessment of Riparian Condition (HARC; see URS 2008a in **Appendix 4.6 of the Draft EIS/EIR**) that was conducted in the RMDP site. Delineations of Corps and CDFG jurisdictional areas are discussed in **Subsections 4.6.3.1** and **4.6.3.2**, respectively, and the HARC is discussed in

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Subsection 4.6.3.2. The above studies were conducted around the time the Notice of Intent and NOP for this EIS/EIR were published, and reflect the environmental conditions that existed in the RMDP site at that time. However, each component of the RMDP project will require verification and approval from CDFG during the Sub-Notification Agreement process and the Corps during the construction notification process (hereinafter collectively referred to as "Notification"), and federal and state jurisdictional delineations will be required at that time to identify the nature and extent of existing jurisdictional resources that will be affected by the proposed Project activity that is the subject of the specific Notification. Impact and mitigation calculations will be refined and verified during the Notification process.

4.6.3.1 Delineation of Jurisdictional Waters and Streams Within the Project Area

In the winter of 2003, URS staff conducted a delineation of waters of the United States and CDFG jurisdictional streams present within the RMDP site. (See Draft EIS/EIR, Appendix 4.6 for correspondence and documentation relating to the jurisdictional delineation for the RMDP site that was exchanged between The Newhall Land and Farming Company and the Corps in 2004.) The Santa Clara River, Salt Creek, and portions of the Potrero Canyon drainage were found to be the only perennial streams on-site; many jurisdictional intermittent and ephemeral streams also were present. All jurisdictional areas within the Project area ultimately convey flows to the Santa Clara River, and the tributaries on site have confluences on the northern and southern river banks. In general, the tributaries on the north side of the river have relatively large watersheds that are located mostly outside (to the north, upstream) of the RMDP site, while the tributaries to the south side of the river have smaller watersheds that are largely contained within the RMDP site. The 2003 delineation was conducted using sub-meter accurate GPS units and the data were transferred into a GIS database. Since 2003, subsequent mapping refinements have resulted in minor changes to the jurisdictional boundaries.

~~In the fall of 2007, URS staff delineated Corps jurisdictional wetlands within the RMDP site in 2007,~~ which had not been delineated previously (wetlands differ from non-wetland waters of the ~~U.S.-United States~~, see **Subsection 4.6.2.1**, above). The extent of wetlands within the site was determined through a combination of fieldwork and analysis of high-resolution (6" pixels) aerial photography. Wetlands were identified within the Santa Clara River corridor and in the Potrero Canyon and Salt Creek drainages, as well as in a spring complex near the mouth of Middle Canyon. ~~Appendix 4.6 for URS' 2009 composite wetlands delineation for the RMDP site and Entrada planning area).~~ Where fieldwork was conducted, the wetland delineation was performed in accordance with the Corps' Wetland Delineation Manual (Environmental Laboratory, 1987) and the Arid West Regional Supplement (Corps, 2006).

~~A study by~~ In 2008, Glenn Lukos Associates conducted a field delineation of ~~delineated~~ the limits of waters of the United States, Corps jurisdictional wetlands, and CDFG jurisdictional streams within the Entrada planning area. (See Draft EIS/EIR, Appendix 4.6 for the Entrada planning area jurisdictional delineation prepared by Glenn Lukos Associates and last revised on September 15, 2008.) This study identified four jurisdictional drainage systems (within the Entrada planning area, one of which was the Magic Mountain Canyon drainage previously delineated by URS during studies within the RMDP site. (The drainage generally follows the boundary between the RMDP site and the Entrada planning area, and portions of the drainage are within each area. However, for simplicity of analysis, the Magic Mountain

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Canyon drainage is considered to be within the RMDP site.) In addition to the Entrada planning area, the Glenn Lukos Associates study also delineated jurisdictional drainages within the portion of the RMDP site related to the extension of Magic Mountain Parkway, since these drainages are within the Entrada planning area both upstream and downstream of the proposed crossings.

Within the VCC planning area, a field visit by URS staff in March 2008 identified two jurisdictional drainages, Castaic Creek and Hasley Creek. (See the Draft EIS/EIR, Appendix 4.6 for URS' 2008 delineation of CDFG jurisdictional streambeds within the VCC planning area.) The CDFG jurisdictional limits of these streams were mapped using sub-meter accurate GPS units and the GPS data were then imported into the GIS database for analysis. The extent of waters of the United States within the VCC planning area was taken from the delineation associated with the applicant's existing CWA section 404 permit for that site, and because the authorized action has not changed, waters of the United States within VCC were not re-delineated for purposes of this EIS/EIR.

In 2009, URS prepared a preliminary composite wetlands delineation report for the RMDP site and Entrada planning area. This report combined the results of previous studies conducted in 2003 2006, 2007, and 2008 to produce a comprehensive, planning-level delineation. (sSee the Draft EIS/EIR, Appendix 4.6 for URS' 2009 preliminary composite wetlands delineation for the RMDP site and Entrada planning area.)-

4.6.3.1.1 Waters of the United States Within the Project Area

The URS jurisdictional delineation of the RMDP study area (see the Draft EIS/EIR, Appendix 4.6 for correspondence and documentation relating to the jurisdictional delineation for the RMDP site that was exchanged between The Newhall Land and Farming Company and the Corps in 2004) identified 492.2 acres of waters of the United States within the RMDP site. This delineation mapped areas within the ~~ordinary high water mark~~OHWM, but did not include adjacent wetlands. Subsequent modifications, including more refined, higher accuracy mapping of the ~~Ordinary High Water Mark~~OHWM along the Santa Clara River in spring 2004 and a delineation of wetlands in 2007 (see Draft EIS/EIR, Appendix 4.6 for URS' 2009 preliminary composite wetlands delineation), yielded an adjusted total of 636 acres of waters of the ~~U.S.~~United States, including 251 acres of wetlands.

Subsequent to release of the Draft EIS/EIR in April 2009, the Corps and CDFG received comments from the public regarding the boundary of a riparian area along the Santa Clara River mainstem near the proposed site for the Potrero Canyon Bridge. In the 2009 preliminary composite wetlands delineation (see Appendix 4.6 to the Draft EIS/EIR), this area had been previously surveyed for wetlands by interpreting aerial photographs. To address these comments, additional wetland delineation field work has been performed in this location. In addition, the boundaries of waters of the United States and wetlands at some other locations have been refined to reflect the most recent data available (generally, 2006 data replacing 2004 data). These revisions to the 2009 preliminary composite wetlands delineation are described and quantified below.

- **Santa Clara River Mainstem near the Proposed Potrero Canyon Road Bridge:** Subsequent to release of the Draft EIS/EIR in April 2009, the Corps and CDFG received comments from the public regarding the boundary of a riparian area along the Santa Clara River mainstem to the north of the

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proposed bridge site at Potrero Canyon Road. The area in question had been identified in the 2004 delineation as a part of the CDFG's jurisdictional river bank due to the presence of riparian vegetation, but was not included within the delineated waters of the United States as the area is well beyond the OHWM in a relic channel that is only inundated by storm events with approximately a 20-year return interval. In addition, the area in question is also adjacent to existing roads and agricultural facilities that augment the natural hydrology in the channel. The 2009 preliminary composite wetlands delineation did not include this area within the mapped wetlands boundary, but had based this determination on interpretation of aerial photography rather than on field mapping techniques that would account for modified hydrologic regime. Because the area in question would sustain some level of impact under all alternatives considered, including substantial impacts under Alternative 2, the Corps requested that additional field work be conducted to ascertain the wetland boundary. Staff from URS undertook this effort in December 2009, and produced a revised, field-mapped wetlands boundary. A total of 32 data points were evaluated for wetland characteristics, and the field investigations identified an additional 15.5 acres of wetland waters of the United States adjacent to the Santa Clara River mainstem.

- **Margins of the Santa Clara River, Potrero Canyon, and Salt Creek:** Upon more detailed inspection of the jurisdictional boundaries and data sources used in the 2009 preliminary composite wetlands delineation, it was observed that the results of a field mapping exercise conducted by Dudek and Associates in 2006 had not been incorporated into the results, and that older boundaries, mapped by URS Corporation in 2004, had been used instead. Although the difference between these data sources was not great, the 2004 boundaries have been replaced with 2006 boundaries where applicable, to ensure that this Final EIS/EIR contains the most current information available. Incorporating this change yielded an increase of 21.9 acres of waters of the United States, including 10.4 acres of wetlands (in addition to the 15.5 acres of Santa Clara River wetlands identified above).
- **GIS database adjustments:** In addition to the mapping changes identified above, the GIS database has been modified to include some elements that were properly included among the mapped waters of the United States on site (see the 2009 preliminary composite wetlands delineation, included in **Appendix 4.6** to the Draft EIS/EIR), but had been omitted from the database used for the calculations in the Draft EIS/EIR. These areas included confluence areas where tributary drainages join the river mainstem, as well as some slivers along the peripheries of the river mainstem and the Potrero Canyon tributary. Inclusion of these areas in the calculation resulted in an additional 1.8 acres of jurisdictional waters being added to the database,

Incorporation of the revisions described above yielded an updated total of approximately 660.1 acres of waters of the United States within the RMDP Project area, of which 276.9 acres are jurisdictional wetlands. Updated acreages of jurisdictional waters, including wetlands, are presented in (Revised) **Table 4.6-3**, and are presented in the revised 2010 Preliminary Jurisdictional Determination included in **Appendix F4.6** of the Final EIS/EIR. As indicated in the footnotes to (Revised) **Table 4.6-3**, acreage numbers have been rounded; both totals and individual table entries are approximate, but provide sufficient accuracy for description of existing conditions and impact analysis. In addition, acreage calculations for the revised acreage numbers in the Final EIS/EIR resolve minor discrepancies due to

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rounding and other approximations in the Draft EIS/EIR. The effects of these changes on the extent of CDFG jurisdiction within the Project area are discussed in **Subsection 4.6.3.2.1**, below.

In total, the modifications described above yielded an additional 25.9 acres of wetlands (1.8 acres of which were previously identified as Corps non-wetland waters of the United States), resulting in a revised site-wide total of 747.1 acres of waters of the United States, of which 277.5 acres are wetlands and 469.6 acres are non-wetland waters of the United States. The revised jurisdictional acreages are shown on (Revised) **Table 4.6-3**, along with the acreage distribution for the largest drainages. The impact acreages in **Section 4.6** of the Draft EIS/EIR have been updated to reflect this change, and are presented in this section.

Of the total Corps jurisdictional waters within the RMDP site, ~~452~~ 471.2 acres (71 percent) comprise the Santa Clara River corridor and the remaining portion represents tributaries to the Santa Clara River. Corps jurisdictional acreages within the RMDP site are shown in (Revised) **Table 4.6-3**. The smallest, ephemeral drainages on-site have been combined into a single heading (Other Drainages within RMDP site), and have jurisdictional area totaling ~~34.5~~ 34.4 acres (~~5.4~~ five percent of total Corps jurisdiction on the RMDP site). ~~These delineations have been compiled and submitted to the Corps in a preliminary jurisdictional determination for the Project area. (See Appendix 4.6 for URS' 2009 preliminary jurisdictional determination for the RMDP site and Entrada planning area.)~~

(Revised) Table 4.6-3
Area of Waters of the United States, Including Wetlands, and CDFG
Jurisdictional Streams 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)	CDFG Jurisdictional Streams (acres)
Santa Clara River	212.4 ¹	258.8	471.2	760.3
Salt Creek	79.7	8.7	88.5	94.1
Potrero Canyon	31.4	7.3	38.7	42.9
San Martinez Grande Canyon	2.6	0.0	2.6	2.6
Chiquito Canyon	12.2	0.0	12.2	18.3
Long Canyon	5.7	0.0	5.7	5.7
Lion Canyon	6.9	0.0	6.9	6.9
Other Drainages Within RMDP site	32.3	2.1	34.4	35.0
Subtotal RMDP Site	383.2	276.9	660.1	965.7
Entrada Unnamed Drainages	2.4	0.6	3.0	7.1
Subtotal Entrada Planning Area	2.4	0.6	3.0	7.1
Castaic Creek	79.0	0.0	79.0	91.6
Hasley Creek	5.0	0.0	5.0	17.4
Subtotal VCC Planning Area	84.0	0.0	84.0	109.0
Project Area Total	469.6	277.5	747.1	1,081.8

¹ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

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 this Final EIS/EIR).

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The extent of wetlands within the RMDP site was determined through a combination of fieldwork and analysis of high-resolution (six inch pixels) aerial photography. On portions of the RMDP site not associated with the Santa Clara River mainstem, field delineation techniques consistent with the Corps' Wetland Delineation Manual (Corps, 1987) were used. Within the river mainstem, 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 mainstem, delineation was performed based on aerial photography. Where aerial photography was used, a conservative approach was taken 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 HARC as reach MI-6). In total, 251–276.9 acres of wetlands were mapped within the RMDP site. Of this total, the vast majority 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.

Within the Entrada planning area, a study by Glenn Lukos Associates (Draft EIS/EIR, Appendix 4.6, Glenn Lukos Associates, as revised September 15, 2008) delineated the limits of waters of the United States, including jurisdictional wetlands. This study identified three jurisdictional drainage systems within the Entrada planning area, encompassing a total of 3.02–95 acres of waters of the United States (not including the Magic Mountain Canyon drainage). As shown in (Revised) **Table 4.6-3**, above, the study identified 0.655 acres of Corps jurisdictional wetlands associated with an intermittent reach in this drainage, included in the above total. The wetland system is hydrologically supported by nuisance runoff from surrounding land uses.

The applicant currently holds a CWA section 404 permit for the Castaic Creek and Hasley Creek drainages within the VCC planning area (Permit 89-00419-AOA). According to the delineation for the permit, the acreage of waters of the United States within the VCC planning area totals 84 acres. The delineation does not identify any wetlands within the VCC planning area ((Revised) **Table 4.6-3**).

4.6.3.1.2 CDFG Section 1600 Jurisdictional Streams within the RMDP site

The URS (2004) jurisdiction delineation identified 945.4 acres of CDFG jurisdictional riparian areas within the RMDP site. Subsequent modifications resulting from refined mapping of the Santa Clara River corridor, the Potrero Canyon drainage, and the spring complex (a seep wetland) near the mouth of Middle Canyon (HARC reach MI-6) yielded a revised total of 960 acres. As discussed in Subsection 4.6.3.1.1, above, a review of the Corps' jurisdictional waters of the United States undertaken in response to public comment on the Draft EIS/EIR, determined that certain areas defined as waters of the United States had not been included in the Corps jurisdictional boundaries. With the revision of the jurisdictional

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boundaries to include these areas within the Corps' jurisdiction, minor revisions to CDFG jurisdiction were also made. The revised total CDFG jurisdiction for the RMDP area-wide site went from 960 acres to 965.7 acres, a 5.7-acre increase. Of this total, 760.3758 acres (79 percent) comprise the Santa Clara River mainstem and the remaining 205.4202 acres (21 percent) represent the tributary drainages within the RMDP site. Minor ephemeral drainages on the RMDP site contain a total of 35.03564 acres of CDFG jurisdiction, or four percent of total CDFG jurisdiction (17 percent of tributary jurisdiction) within the RMDP site. CDFG jurisdictional acreages for major drainages within the RMDP site are shown in (Revised) Table 4.6-3.

Within the Entrada planning area, a study by Glenn Lukos Associates delineated the limits of CDFG jurisdictional streams. This study identified three jurisdictional drainage systems within the Entrada planning area, encompassing a total of 7.107 acres of CDFG jurisdictional streams (not including the Magic Mountain Canyon drainage). (See the Draft EIS/EIR, Appendix 4.6 for Glenn Lukos Associates' jurisdictional delineation for the Entrada planning area, as revised September 15, 2008.)

Within the VCC planning area, the acreage of CDFG jurisdictional streams was delineated in the field by URS staff in 2007. Two jurisdictional watercourses (Castaic Creek and Hasley Creek) were identified, and the total acreage of CDFG jurisdictional areas within the VCC planning area totaled 109 acres. (See the Draft EIS/EIR, Appendix 4.6 for URS' 2008 delineation of CDFG jurisdictional streambeds within the VCC planning area.)

4.6.3.1.3 Descriptions of Jurisdictional Streams Within the Project Area

The Project area contains 24 jurisdictional watercourses. There are 21 jurisdictional drainages within the RMDP site alone, including a five-mile reach of the Santa Clara River and many perennial, intermittent, and ephemeral tributaries to the River. All of the tributaries within the RMDP site have confluences with the River. The Entrada planning area contains three ephemeral drainage systems, which flow northward through the planning area. Although these tributaries ultimately flow to the Santa Clara River, their confluences with the river are located upstream of the RMDP site, and are not within the Project area. The VCC planning area contains two jurisdictional drainages, one of which flows into the other within the planning area. The names and locations of jurisdictional watercourses within the Project area are shown on **Figure 2.0-38**, Modified, Converted, and Preserved Tributary Drainages, and this section presents a brief overview of the physical and biological characteristics of these jurisdictional streams. As the vast majority of the jurisdictional area on the Project site is encompassed within the Santa Clara River and the Long, Lion, Potrero, San Martinez Grande, Chiquito, and Salt Creek tributaries, these streams are discussed at greater length.

The RMDP site contains a diverse array of jurisdictional drainages, which vary in size from small, first and second order headwater streams to a reach of the much larger Santa Clara River. The small tributaries, large tributaries, and river mainstem, as described below and in the revised preliminary jurisdictional determination (URS, 2009b)see Final EIS/EIR [Appendix F4.6], differ substantially in their physical and biological characteristics, but all three of these drainage types provide important physical and biological functions.

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Small Tributaries. Generally, minor tributaries are lower-order ephemeral drainages which support surface flows for only a short duration following rain events, with the exception of Ayers Canyon, which supports year round spring fed flow. The minor drainages on site have their watersheds mostly contained within the Project area. The ephemeral streams on site lack riparian vegetation, and are covered instead with a combination of upland vegetation types and river wash (unvegetated channel). The canyon mouths of these drainages can provide limited refuge habitat for aquatic species during periods of high river flow, although the lack of relatively permanent flow in ephemeral streams generally precludes their use by aquatic species. Because the canyon mouths are generally accessible from the river, ephemeral streams may also be used as upland foraging areas by semi-aquatic species during a portion of their life cycles. In addition, many of the ephemeral streams on site are associated with upland vegetation types such as oak woodlands, coastal sage scrub, and chaparral. These communities provide suitable breeding and foraging habitat for a number of native wildlife species in the pProject area. In addition, the large number and varied location of these tributaries (of the 22 tributary drainages on site, 15 are ephemeral) provides opportunities for wildlife to use the ephemeral tributary drainages as movement corridors between the Santa Clara River and upland portions of the pProject site.

Major Tributaries. In addition to the minor streams identified above, the Project area also contains eight major tributaries (Chiquito, San Martinez Grande, Salt, Potrero, Long, Lion, Castaic, and Hasley) that support surface flows at least intermittently in some reaches. Major tributaries are generally higher-order streams with peak discharges exceeding 2,000 cfs under Capital Flood conditions. Two of these eight (Potrero Canyon and Salt Creek) have reaches within the Project area that support perennial flows during most years. The major streams on site are substantially longer than the ephemeral tributaries, and originate in the Santa Susana Mountains (south side of the river) and the lower reaches of the San Gabriel Mountains (north side of the river), outside the pProject boundary. (The only exception to this is Salt Creek, which is entirely within the pProject area by definition because the Salt Creek watershed boundary forms the southern boundary of the site.) The site's intermittent tributaries support riparian vegetation in many reaches; this vegetation consists primarily of southern willow scrub and mule-fat scrub. These riparian vegetation types can provide suitable nesting and foraging habitat for a variety of native wildlife species, including riparian birds. Some of the large tributaries contain mesic micro-habitats and all of them support transitional ecotones between riparian and other upland vegetation communities, which support many of the special status reptiles, amphibians and upland bird species within the pProject site. Due to their length these tributaries also provide longer movement corridors compared to the site's ephemeral streams, connecting the Santa Clara River to portions of the Santa Susana and lower Tehachapi mountains. The site's major tributaries are associated with a broad array of vegetation types, including oak woodlands and other upland communities in the headwaters, riparian scrub communities in middle reaches, and mature riparian forests where these streams meet the river mainstem.

Santa Clara River Mainstem. The river main stem is the receiving water for all of the tributary drainages within the pProject area, as well as 644 square miles of mainstem and tributary watersheds upstream of the pProject reach. The mainstem has a much lower gradient compared to the tributaries, and supports a much broader floodplain with an extensive mosaic of braids, bars and terraces. Within the pProject site, the river mainstem exhibits year round surface flows (supported in part by effluent discharges from upstream treatment works). These flows are adequate to support resident populations of many fishes and aquatic reptiles and amphibians. The river mainstem supports an extensive riparian

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community comprised of mature cottonwood forests beyond the ~~ordinary high water mark~~ OHWM, successional riparian communities on bars and terraces, and emergent wetlands near the active channel. These vegetation types provide suitable breeding and foraging habitat for many wildlife species. The river mainstem also serves as an east-west wildlife corridor through the ~~p~~Project area.

More detailed descriptions of the river mainstem and the tributary drainages on site are presented below.

Santa Clara River Description and Characteristics. The description provided below of the hydrologic characteristics of the Santa Clara River is derived from the Draft Additional Analysis to the Newhall Ranch Specific Plan Final EIR (SCH No. 95011015), Vol. 1, Section 2.3-4 (County of Los Angeles, 2002). The conditions described are the same as those currently existing on site.

The Santa Clara River is the largest watercourse within the RMDP site, and all other drainages within the site are tributary to this river (Revised) **Figure 4.6-1**). The reach of the Santa Clara River within the RMDP site has year-round flows created by tertiary-treated effluent discharges from two upstream water reclamation plants operated by the County Sanitation Districts of Los Angeles County, rising groundwater, and stormwater runoff. Storm flows occur during winter months due to stormwater runoff, and these flows fluctuate significantly from year to year based on local precipitation. During the summer months, short-term releases from Castaic Lake reach the River *via* Castaic Creek, which joins the River in the upstream portion of the RMDP site. Detailed hydraulic modeling of the Santa Clara River was performed; see revised **Section 4.1**, Surface Water Hydrology and Flood Control, of this EIS/EIR.

The average width of the low-flow channel of the River during summer months is approximately 50 to 100 feet, with an average depth of about one foot. The low-flow channel through the RMDP site has a low-to-moderate sinuosity. Approximately one half of this reach is contained within a single channel, while the remainder consists of braided channels and broad, shallow flows.

The difference in elevation between the channel bottom and the lateral margins of the CDFG-jurisdictional river corridor varies greatly within the RMDP site. This difference ranges from nine to 20 feet, and is dependent upon the width of the river channel. For example, in wider portions of the river channel where flows spread out with low velocities, there is only a small elevation difference between the channel bottom and the upland edge of CDFG jurisdiction. In contrast, the channel is often deep where it is narrower, creating a larger elevation difference between the channel bottom and the CDFG jurisdictional boundary.

The substrate of the river channel (*i.e.*, top layer of the river bottom) is primarily sand, which is actively eroded and deposited in flood events. Previous studies by the Los Angeles County Flood Control District have demonstrated that sediment deposition and scouring along the upper Santa Clara River are generally in equilibrium, and that there are no major trends of channel degradation or aggradation. However, some localized areas may experience either greater scouring or sand deposition.

The Santa Clara River corridor contains a variety of vegetative habitat types. The active channel is mostly sparsely vegetated due to annual scouring, which removes vegetation. On the adjacent terraces, vegetation types vary based on elevation relative to the active channel bottom and the frequency of storm events. The following series of vegetation types occur along a vertical gradient from the channel bottom to the highest

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river terrace: emergent herbaceous, woody shrubs, and trees. The area supports three general categories of habitat:

- Aquatic habitats, consisting of flowing or ponded water;
- Wetland habitats, consisting of emergent herbs rooted in water or saturated soils along the margins of the flowing water; and
- Riparian habitat, consisting of woody vegetation along the margins of the active channel and on adjacent terraces.

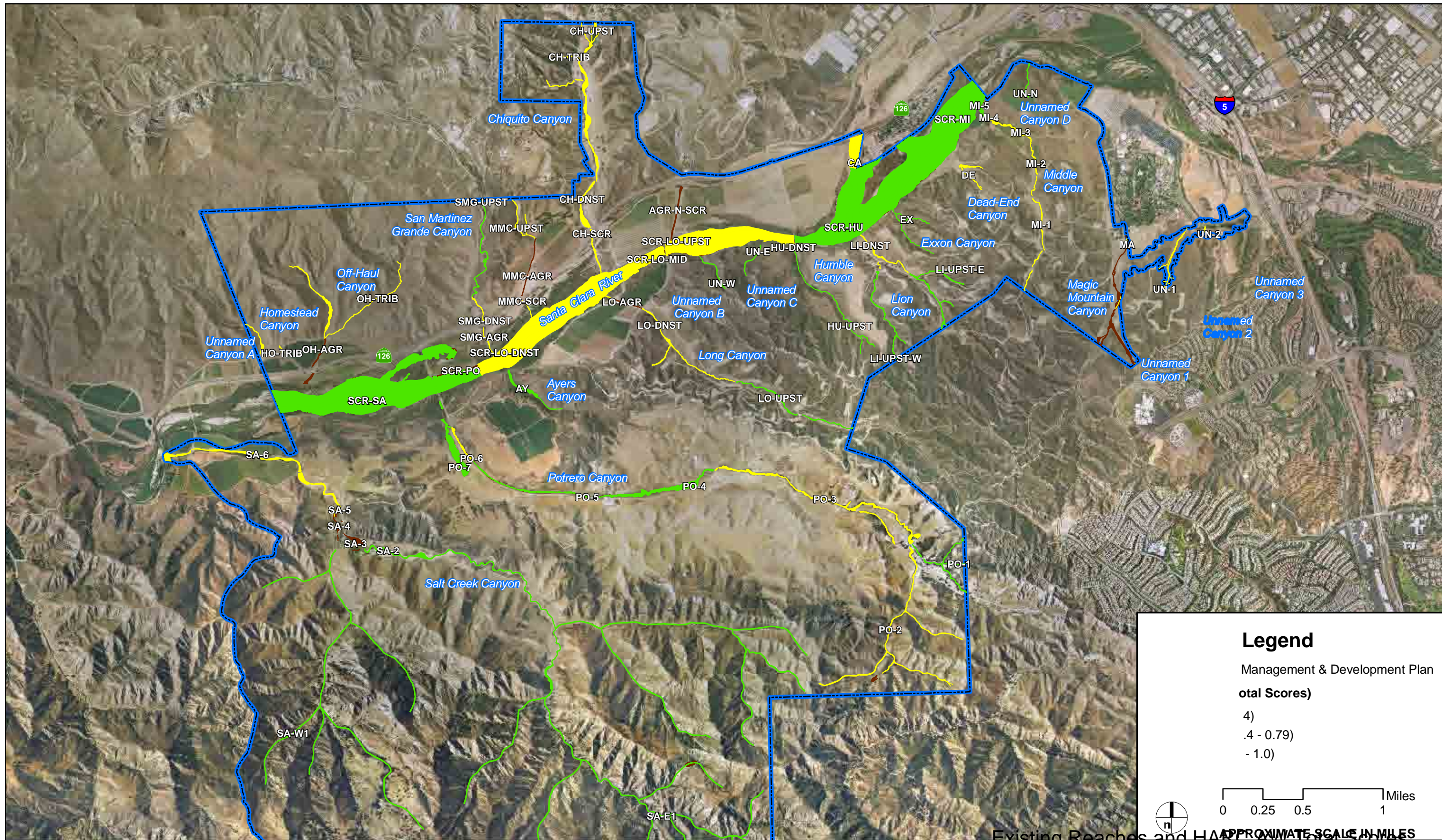
For a description of the defining characteristics of the dominant aquatic, wetland, and riparian habitats in the Santa Clara River corridor within the RMDP site, please see revised Section 4.5, Biological Resources, of this EIS/EIR.

The density, biomass, and location of the vegetation in relation to the channel bottom are directly dependent upon the frequency of disturbance by flood flows. Successional mule fat scrub occupies the active channel and is disturbed annually by flows. This habitat also includes all aquatic features, such as pools and flowing water, as well as most of the emergent wetlands in the river because of the presence of water. In contrast, willow woodland and cottonwood-willow woodland are located above the active river channel and are only flooded during infrequent storm events, which allows recruitment of new individuals.

The Santa Clara River provides year-round and seasonal aquatic habitats, which are subject to periodic disturbances from winter flood flows. These flows inundate areas that are dry most of the year. They also carry and deposit sediments, seeds, and organic debris (*e.g.*, stems, downed trees).

Stands of vegetation are sometimes eroded by high flows, and new areas are created where vegetation becomes established by seeds or buried stems. New sandbars are formed and old ones are washed away. Flows can change the alignment of the low-flow channel, the number and location of pools, and the depth of pools. In years with low winter flows, there may be very little change in the aquatic habitats of the River. In such 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. The aquatic habitats of the River are in a constant state of creation, development, disturbance, and destruction. The diversity of habitat conditions in the River at any one time supports a variety of aquatic invertebrates, aquatic plants, and fish.

The abundance and variety of riparian and wetland habitats in the river corridor that support sensitive habitats and species are due largely to the natural dynamic riverine processes that occur unimpeded in the Project area. The continual creation and destruction of habitats due to flooding and drought periods provides a mosaic of different types and ages of habitats. This mosaic is a key element in sustaining the habitat of sensitive species.



SOURCE: PACE/URS - December 2008

Existing Reaches and HARC-AW Total Scores

(REVISED)

FIGURE 4.6-1

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Chiquito Canyon Description and Characteristics. The approximate 4.85 square mile (3,106 acres) Chiquito Canyon watershed is a major, 2nd order tributary to the northern bank of the Santa Clara River. (PACE, 2006.) Approximately 433 acres of the Chiquito Canyon watershed, or about 13.9 percent of the watershed area, is located within the RMDP boundary ((Revised) **Figure 4.6-1**). The drainage is aligned generally in a north to south direction. The length of the Chiquito Canyon watershed within the RMDP boundary is approximately 7,605 feet, with an average slope of 2.39 percent (PACE, 2006).

The overall watershed drainage pattern creates a dogleg, in which the headwaters flow in a general west to east direction, while the remaining lower portion of the creek flows in a north to south direction, joining the Santa Clara River Valley. The overall watershed boundary is configured such that the larger portion of the drainage area is in the upper watershed, with the width of the watershed narrowing downstream. The width of the watershed, as measured between the watershed ridgelines, ranges from approximately 7,000 feet in the upper watershed to between 4,000 to 2,000 feet in the lower portion of the watershed, and the distance from the upper headwaters to the canyon mouth is approximately 24,000 feet with an average overall slope of 5.4 percent.

The watershed topography varies from a maximum elevation of 2,215 feet above mean sea level in the headwaters to a low elevation of 920 feet near the mouth of the canyon in the Santa Clara River Valley.

The portion of the Chiquito Canyon drainage within the RMDP site is generally located in the canyon floor and follows a mildly sinuous pattern with long linear meanders reflecting the influence of the physiographic features. The active creek is more deeply incised in the lower 2,500 feet of channel 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 are also influenced by three different existing roadway crossing locations that include SR-126, a local access roadway arch crossing, and the Chiquito Canyon Road crossing. Detailed hydraulic modeling of the existing drainage was performed; please refer to revised **Section 4.1**, Surface Water Hydrology and Flood Control, of theis Draft EIS/EIR, for a more complete discussion of Chiquito Canyon hydrology.

The area surrounding Chiquito Canyon drainage within the RMDP site is primarily comprised of agricultural land. The soils within the watershed area are predominantly classified in hydrologic soil group C (higher runoff potential). The upstream portion of the watershed, which lies outside the RMDP site, is dominated by several habitats including California sagebrush scrub, with patches of chamise chaparral, mixed chaparral, and southern willow scrub. For descriptions of these habitat types, please refer to revised **Section 4.5**, Biological Resources, of this EIS/EIR. The upper portion of the drainage at the northern Project boundary contains dense vegetation, indicating very low velocity flow during storm events. The associated vegetative cover within the watershed varies, but primarily consists of California sagebrush scrub and agriculture.

Lion Canyon Description and Characteristics. The approximate 0.84 square mile (539 acres) Lion Canyon watershed is a major, 3rd order tributary to the southern bank of the Santa Clara River. (PACE, 2006.) Approximately 280 acres of the Lion Canyon watershed, or about 52 percent of the watershed area, is located within the RMDP boundary ((Revised) **Figure 4.6-1**). The watershed is aligned generally in an east to west direction, and joins the Santa Clara River valley. The length of the Lion Canyon watershed within the RMDP boundary is approximately 4,761 feet, with an average slope of 4.6 percent (PACE, 2006).

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The Lion Canyon drainage is approximately 1.3 miles long, although approximately one third of this length is upstream and outside of the RMDP site, and drops from an elevation of 1,329 feet in the headwaters to 982 feet at the confluence with the Santa Clara River. The Lion Canyon drainage has a mean slope of approximately 5.3 percent.

The soils within the watershed area are predominantly classified in hydrologic soil group B/C (moderate/higher runoff potential). The upper reaches of the Lion Canyon watershed, with several branches, contain mostly chaparral and California sagebrush scrub. Along the channel, alluvial scrub, live oak woodland, California grassland, and chamise chaparral are present. The two easternmost branches of this drainage also contain big sagebrush scrub, which is absent from the watershed of the western branch.

Long Canyon Description and Characteristics. The 1.99 square mile (1,271 acres) Long Canyon watershed is a major, 2nd order tributary to the southern bank of the Santa Clara River within the Project area. (PACE, 2006.) Approximately 821 acres of Long Canyon, or about 64.5 percent of the watershed area, is located within the RMDP boundary ((Revised) **Figure 4.6-1**). The watershed is aligned generally in an east to west direction. The length of the Long Canyon watershed within the RMDP boundary is approximately 9,829 feet, with an average slope of three percent (PACE, 2006).

The overall watershed boundary, as defined by the topography and ridgelines, is very straight and narrow in shape, which influences the watershed response to rainfall. A linear watershed, such as Long Canyon, will distribute runoff fairly uniformly over time, resulting in a flattening or spreading of the runoff hydrograph. The width of the watershed boundary is fairly uniform, varying from 2,000 to 3,500 feet with a mean width of approximately 3,000 feet. The distance from the upper headwaters to the canyon mouth at the Santa Clara River is approximately 18,000 feet, with an average overall slope of 5.5 percent. Approximately 8,600 feet of this length is within the RMDP site boundary. Detailed hydraulic modeling of the Long Canyon drainage was performed; please refer to revised **Section 4.1**, Surface Water Hydrology and Flood Control, of this EIS/EIR, for a more complete discussion of Long Canyon hydrology.

The topography for the watershed varies from a maximum elevation of 1,918 feet in the headwaters to a low elevation of 934 feet at the Santa Clara River Valley. For a more complete discussion of Long Canyon hydrology, please refer to revised **Section 4.1**, Surface Water Hydrology and Flood Control, of this EIS/EIR.

The soils in the drainage area are characterized as Castaic and Saugus soils, and are predominantly classified in the hydrologic soil group C (higher runoff potential). Both sides of this watershed contain habitat types comprised primarily of California sagebrush scrub, with small pockets of chamise chaparral and California grassland present. Within the stream channel, there is a mixture of California grassland, elderberry scrub, live oak woodland, alluvial scrub, big sagebrush scrub, and mixed chaparral. For descriptions of these habitat types, please refer to revised **Section 4.5**, Biological Resources, of this EIS/EIR.

Potrero Canyon Description and Characteristics. The 4.73 square mile (3,025 acres) Potrero Canyon watershed is a major, 3rd order tributary to the southern bank of the Santa Clara River. (PACE, 2006.) Approximately 2,626 acres of Potrero Canyon, or about 87 percent of the watershed area, is located

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within the RMDP boundary ((Revised) **Figure 4.6-1**). The watershed is aligned generally in an east to west direction. The length of the Potrero Canyon watershed within the RMDP boundary is approximately 25,381 feet, with an average slope of 3.1 percent (PACE, 2006).

The watershed is long compared to the width of the watershed; the average length-to-width ratio is approximately 3.8. The width of the watershed varies from 4,500 feet to 8,300 feet, defined by the topographic ridgelines between the adjacent canyons. The upper portion of the watershed is wider than the rest, and contains most of the watershed area. The shape of the watershed is important because it influences when runoff reaches the outlet. This particular watershed configuration delays the runoff from storm events, reducing peak discharge rates. However, this delay leads to increased discharge rates towards the end of the storm. The distance from the upper headwaters to the canyon mouth is approximately 23,000 feet with an average overall slope of 4.6 percent. The existing mainstem drainage course within the watershed has an average slope of approximately two percent. Detailed hydraulic modeling of the Potrero Canyon drainage was performed; see revised **Section 4.1**, Surface Water Hydrology and Flood Control, of this EIS/EIR, for a more complete discussion of Potrero Canyon hydrology.

The lower 50 percent of Potrero Canyon has been impacted by human activities that have relocated the existing active creek into an engineered earthen channel along the northern side of the canyon within the RMDP area. The remaining upper portion of the drainage does not reflect as much of this influence because there appear to have been fewer historic farming operations impacting this portion of the natural creek channel. However, the active channel has limited hydraulic capacity, particularly in the lower portion of the canyon, which results in overtopping (water depth exceeding the depth of the active channel) and creation of a secondary sheet flow (a broad, shallow flow across a flat substrate) on the southern side of the canyon, consistent with the large cismontane alkali marsh area (HARC reach PO-7) at the downstream end of the canyon. This reach, as well as the additional cismontane alkali marsh farther upstream (HARC reach PO-4), contains hydrophytic vegetation, hydric soils, and wetland hydrology, and is therefore a Corps jurisdictional wetland. The engineered portions of the active channel follow a very linear alignment, and the channel is generally located adjacent to the roadway along the canyon floor. The canyon floor is characterized by a very large and flat width in the valley as 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 average streambed slope indicated by the topographic data is relatively constant along the majority of the streambed at approximately two percent, while the downstream 3,000 feet through the canyon mouth increases to a slope of 3.8 percent. This relatively constant slope is also reflected in the reduced drainage width near the canyon mouth, and in higher velocities.

The soils in the watershed area are characterized as Castaic-Balcom silty clays, and are predominantly classified in the hydrologic soil group C (higher runoff potential). Vegetation communities in the Potrero Canyon drainage are comprised primarily of California grassland and California sagebrush scrub, although a wide variety of habitat is represented. Coast live oak woodland, mule fat scrub, big sagebrush scrub, cismontane alkali marsh, elderberry scrub, and valley oak woodland are all present within the Potrero watershed, along with agricultural land. Disking, seeding of annual forage crops, and intensive livestock grazing have also compromised habitat values in the Potrero Valley and affected the structure

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and function of riparian and wetland habitats. For descriptions of these habitat types, see revised Section 4.5, Biological Resources, of this EIS/EIR.

San Martinez Grande Canyon Description and Characteristics. The 3.63 square mile (2,322 acres) San Martinez Grande Canyon watershed is a major, 2nd order tributary to the northern bank of the Santa Clara River. (PACE, 2006.) Approximately 382 acres of San Martinez Grande Canyon, or about 16.5 percent of the watershed area, is located within the RMDP boundary ((Revised) **Figure 4.6-1**). The watershed is aligned generally in a north to south direction. The length of the San Martinez Grande Canyon watershed within the RMDP boundary is approximately 5,170 feet, with an average slope of 1.9 percent (PACE, 2006).

The overall watershed boundary, based upon the topography and ridgelines, develops a shape such that a large portion of the watershed area is tributary to the mid-portion of the drainage. The width of the watershed narrows in both the upstream and downstream tails of the watershed while the central portion of the watershed widens to approximately 6,800 feet in width. The shape of the watershed is important because it influences when runoff reaches the outlet. (For a detailed analysis of runoff-related impacts, refer to revised Section 4.1, Surface Water Hydrology and Flood Control, of this EIS/EIR.) Although the watershed is relatively long, the large width in the central portion will result in delivering more runoff in a shorter amount of time, and with less influence from the upper watershed. The distance from the upper headwaters to the canyon mouth is approximately 20,000 feet, with an average overall slope of 5.9 percent.

Elevation in the watershed varies from a maximum elevation of 2,062 feet in the headwaters to a low elevation of 890 feet near the mouth of the canyon at the Santa Clara River.

The soils in the watershed area are characterized as Castaic-Balcom silty clay loams, and are predominantly classified in the hydrologic soil group C (higher runoff potential). The San Martinez Grande watershed contains a diverse variety of habitats including big sagebrush scrub, mule fat scrub, California sagebrush scrub, and some California grassland. Two small patches of elderberry scrub exist near the northern boundary of the Project footprint, and the area just upstream of the Santa Clara River confluence is dominated by arrow weed scrub. For descriptions of habitats occurring in the San Martinez Grande watershed, see revised Section 4.5, Biological Resources, of this EIS/EIR.

Agricultural Ditch Description and Characteristics. The Chiquita Landfill site is located north of the RMDP site, just north of SR-126, and it drains to an agricultural ditch (a 1st order, minor tributary) through the RMDP area as shown on (Revised) **Figure 4.6-1**. (PACE, August 2006.) The watershed for the landfill area is 0.54 square mile (349 acres) and flows generally in a north to south direction. The majority of the landfill watershed is disturbed by landfill operations with steep to moderate topography, with soils generally characterized as Castaic and Saugus soils with Hanford Sandy Loam. The soils are predominantly classified in the hydrologic soil group B/C (lower to higher runoff potential). (PACE, September 2005.) Within the RMDP boundary, the ditch is approximately 1,810 feet in length, and associated vegetative cover in and surrounding the ditch is agriculture.

Ayers Canyon Description and Characteristics. The 0.23 square mile (147 acres) Ayers Canyon watershed is a 1st order, minor tributary to the southern bank of the Santa Clara River within the Project

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area. (PACE, 2007.) The entire Ayers Canyon watershed (approximately 147) is contained within the RMDP site boundary ((Revised) **Figure 4.6-1**). The watershed is aligned generally in a west to east direction and joins with the Santa Clara River Valley. The length of the Ayers Canyon watershed is approximately 3,696 feet, of which the valley floor is approximately 2,464 feet with an average slope of 4.4 percent.

The soils in the watershed are characterized as Castaic and Saugus soils, and are predominantly classified in hydrologic soil group B/C (lower to higher runoff potential). The associated vegetative cover within the watershed varies, but primarily consists of California sagebrush scrub (black sage) some cottonwood/willow riparian habitat, and agriculture.

Dead-End Canyon Description and Characteristics. The 0.19 square mile (124 acres) Dead-End Canyon watershed is a minor, 1st order tributary to the southern bank of the Santa Clara River. (PACE, 2007.) Approximately 124 acres of the watershed (the entire watershed area) is located within the RMDP site boundary ((Revised) **Figure 4.6-1**). The watershed is aligned generally in an east to west direction and joins with the Santa Clara River Valley. The length of the Dead-End Canyon watershed is approximately 2,640 feet, of which the valley floor is approximately 1,076 feet with an average slope of 6.1 percent.

The soils in the watershed are characterized as Castaic-Balcom silty clay loams, and are predominantly classified in hydrologic soil group C (higher runoff potential). The associated vegetative cover within the drainage varies, but primarily consists of California sagebrush scrub and disturbed land.

Exxon Canyon Description and Characteristics. The 0.03 square mile (16 acres) Exxon Canyon watershed is a minor, 2nd order tributary to the southern bank of the Santa Clara River. (PACE, 2007.) The watershed is approximately 16 acres in size, and is wholly contained within the RMDP site ((Revised) **Figure 4.6-1**). The watershed is aligned generally in a south to north direction and joins with the Santa Clara River Valley. The length of the Exxon Canyon watershed is approximately 2,640 feet, of which the valley floor is approximately 2,193 feet, with an average slope of 9.2 percent.

The soils in the watershed are characterized as Saugus loam, and are predominantly classified in hydrologic soil group B (lower runoff potential). The associated vegetative cover within the drainage varies, but primarily consists of California sagebrush scrub and disturbed land.

Homestead Canyon Description and Characteristics. The 0.12 square mile (75 acres) Homestead Canyon watershed is a small, 1st order tributary to the northern bank of the Santa Clara River. (PACE, 2007.) Approximately 75 acres of the watershed (the entire watershed area) is located within the RMDP site boundary ((Revised) **Figure 4.6-1**). The watershed is aligned generally in a north to south direction and joins with the Santa Clara River Valley. The length of the Homestead Canyon watershed is approximately 3,700 feet, of which the valley floor is approximately 3,606 feet, with an average slope of 5.4 percent. The stream itself is an ephemeral drainage 1.5 miles in length, and drops from an elevation of 1,424 feet in the headwaters to 847 feet at the confluence with the Santa Clara River.

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The soils in the watershed are characterized as Castaic-Balcom silty clay loams, and are predominantly classified in hydrologic soil group C (higher runoff potential). The associated vegetative cover within the watershed varies, but primarily consists of California annual grassland and agriculture.

Humble Canyon Description and Characteristics. The 0.41 square mile (261 acres) Humble Canyon watershed is a minor, 2nd order tributary to the southern bank of the Santa Clara River. (PACE, 2007.) Approximately 253 acres of the watershed, or about 97 percent of the watershed area, is located within the RMDP boundary ((Revised) **Figure 4.6-1**). The watershed is aligned generally in a south to north direction and joins with the Santa Clara River Valley. The length of the Humble Canyon watershed within the RMDP boundary is approximately 4,863 feet, with an average slope of 7.0 percent, and drops from an elevation of 1,580 feet in the headwaters to 940 feet at the confluence with the south bank of the Santa Clara River, within the RMDP site.

The soils in the watershed are characterized as Castaic and Saugus soils, and are predominantly classified in hydrologic soil group C (higher runoff potential). The associated vegetative cover within the watershed varies, but primarily consists of agriculture and chaparral.

Occupied habitat of San Fernando Valley spineflower occurs immediately adjacent to this drainage on its east side. Some spineflower were observed growing on the eroded stream bank and abutting terraces (Mary Meyer, pers. comm., May 2002).

Middle Canyon Description and Characteristics. The 0.53 square mile (340 acres) Middle Canyon watershed is a minor, 1st order tributary to the southern bank of the Santa Clara River. (PACE, 2007.) Approximately 272 acres of the watershed, or about 80 percent of the watershed area, is located within the RMDP boundary ((Revised) **Figure 4.6-1**). The watershed is aligned generally in a south to north direction and joins with the Santa Clara River Valley. The length of the Middle Canyon watershed within the RMDP boundary is approximately 7,967 feet, with an average slope of 3.7 percent, and drops from an elevation of 1,427 feet in the headwaters to 995 feet at the confluence with the south bank of the Santa Clara River, within the RMDP site.

The soils in the watershed are characterized as Castaic-Balcom silty clay loams, and are predominantly classified in hydrologic soil group C (higher runoff potential). This watershed is dominated by California sagebrush scrub, with small pockets of mixed chaparral, cottonwood/willow riparian, and California grassland. The stream channel flows through California grassland, agricultural areas, alluvial scrub, and live oak woodland. A cismontane alkali marsh area (HARC reach MI-6) is present near the Santa Clara River confluence.

Mid-Martinez Canyon Description and Characteristics. The 0.16 square mile (105 acres) Mid-Martinez Canyon watershed is a minor, 2nd order tributary to the northern bank of the Santa Clara River. (PACE 2007.) Approximately 67 acres of the watershed, or about 64 percent of the watershed area, is located within the RMDP boundary ((Revised) **Figure 4.6-1**). The watershed is aligned generally in a north to south direction and joins with the Santa Clara River Valley. The length of the Mid-Martinez Canyon watershed within the RMDP boundary is approximately 3,729 feet, with an average slope of 6.5 percent.

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The soils in the watershed are characterized as Zamora Loam, and are predominantly classified in hydrologic soil group B (lower runoff potential). The associated vegetative cover within the watershed varies, but primarily consists of California sagebrush scrub and agriculture.

Off-Haul Canyon Description and Characteristics. The 0.92 square mile (587 acres) Off-Haul Canyon watershed is a minor, 2nd order tributary to the northern bank of the Santa Clara River. (PACE, 2007.) Approximately 470 acres of the watershed, or about 80 percent of the watershed area, are located within the RMDP boundary ((Revised) **Figure 4.6-1**). The watershed is aligned generally in a north to south direction and joins with the Santa Clara River Valley. The length of the Off-Haul Canyon watershed within the RMDP boundary is approximately 5,300 feet, of which the valley floor is approximately 4,223 feet, with an average slope of 7.1 percent, and drops from an elevation of 1,241 feet at the headwaters to 837 feet at the confluence with the south bank of the Santa Clara River, within the RMDP site.

The soils in the watershed are characterized as Castaic-Balcom silty clay loams, and are predominantly classified in hydrologic soil group C (higher runoff potential). The associated vegetative cover within the watershed varies, but primarily consists of California annual grassland and agriculture.

Salt Creek Canyon Description and Characteristics. The 9.2 square mile (5,859 acres) Salt Creek Canyon watershed is a major, 3rd order tributary to the southern bank of the Santa Clara River. (PACE, 2007.) Approximately 3,808 acres of the watershed, or about 65 percent of the watershed area, is located within the RMDP boundary ((Revised) **Figure 4.6-1**). The watershed is aligned generally in a east to west direction and joins with the Santa Clara River Valley. The length of the Salt Creek Canyon watershed within the RMDP boundary is approximately 25,830 feet, with an average slope of 3.4 percent.

A steep ridgeline between Potrero Canyon and Salt Creek Canyon/Graves Canyon form the eastern limit of the Salt Creek watershed in Los Angeles County. The ridgeline of the Santa Susana Mountains (3,100 feet elevation) forms the southern limits of the Salt Creek watershed in both Los Angeles and Ventura Counties. The western limit of the Salt Creek watershed is in Ventura County, and is formed by a ridgeline that separates Tapo Canyon and Salt Creek Canyon. The Salt Creek watershed terminates to the north where Salt Creek Canyon merges with the Santa Clara River Valley in Ventura County (825 feet elevation).

While the Salt Creek drainage is one of the largest found within the boundary of the RMDP site, it was not subjected to detailed hydrologic/hydraulic modeling because it is contained within the High Country Special Management Area (SMA), where no development will occur. Any potential impacts would be temporary results of restoration activities or would be limited in nature and related to access and recreational use of the High Country, such as footbridges for hiking trail crossings and maintenance of existing farm/fire roads. Otherwise, this area will be maintained in its present state in perpetuity. A more complete description of the High Country SMA is found in the Newhall Ranch Specific Plan (SCH No. 95011015, adopted May 2003) and is incorporated herein by reference.

The soils in the watershed are characterized as Gaviota rocky sandy loam, and are predominantly classified in hydrologic soil group C/D (higher to highest runoff potential). The vast majority of the Salt Creek watershed is covered by burned California sagebrush scrub and burned chaparral. Agricultural land, big sagebrush scrub, and California grassland habitat types comprise most of the remaining area,

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although valley oak woodland, mule fat scrub, alluvial scrub, and live oak woodland are present in small patches. For complete descriptions of these habitat types, see revised Section 4.5, Biological Resources, of this EIS/EIR. As the Salt Creek watershed has been designated as permanent open space, no impacts to this drainage area are anticipated from the proposed Project.

Magic Mountain Canyon Description and Characteristics. The 1.32 square mile (847 acres) Magic Mountain Canyon watershed is a minor, 1st order tributary to the southern bank of the Santa Clara River. (PACE 2007.) Approximately 178 acres of the watershed, or about 27 percent of the watershed area, is located within the RMDP boundary (Revised Figure 4.6-1). The watershed is aligned generally in a south to north direction and joins with the Santa Clara River Valley. The length of the Magic Mountain Canyon watershed within the RMDP boundary is approximately 4,813 feet, with an average slope of 3.4 percent, and drops in elevation from 1,683 feet in the headwaters to 1,081 feet at the Santa Clara River confluence outside the Project area.

This drainage flows along the boundary between the RMDP site and the Entrada planning area, and although the majority of the stream is within the RMDP site, a small portion is located within the Entrada planning area. (For ease of analysis, this drainage is considered to be within the RMDP site.)

The soils in the watershed are characterized as Castaic and Saugus soils and Castaic-Balcom silty clay loams, and are predominantly classified in hydrologic soil group C (higher runoff potential). The associated vegetative cover within the watershed varies, but primarily consists of California sagebrush scrub and disturbed land.

Unnamed Canyon 1 Description and Characteristics. The 0.16 square mile (103 acres) Unnamed Canyon 1 watershed is a minor, 2nd order tributary to the southern bank of the Santa Clara River, although the confluence occurs outside the Project area. (PACE, 2007.) Approximately 25 acres of the watershed, or about 25 percent of the watershed area, is located within the Project boundary (Revised Figure 4.6-1). The watershed is aligned generally in a south to north direction and joins with the Santa Clara River Valley. The length of the Unnamed Canyon 1 watershed within the RMDP boundary is approximately 2,020 feet, with an average slope of 2.7 percent.

The soils in the watershed are characterized as Castaic-Balcom silty clay loams, and are predominantly classified in hydrologic soil group B (lower runoff potential). The associated vegetative cover within the watershed varies, but primarily consists of California sagebrush scrub.

Unnamed Canyon 2 Description and Characteristics. The 0.6 square mile (401 acres) Unnamed Canyon 2 watershed is a minor, 2nd order tributary to the southern bank of the Santa Clara River, although the confluence occurs outside the Project area. (PACE, 2007.) Approximately 10 acres of the watershed, or about 2.5 percent of the watershed area, is located within the Project boundary (Revised Figure 4.6-1). The watershed is aligned generally in a south to north direction and joins with the Santa Clara River Valley. The length of the Unnamed Canyon 2 watershed within the RMDP boundary is approximately 500 feet, with an average slope of 3.1 percent.

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The soils in the watershed are characterized as Saugus loam, and are predominantly classified in hydrologic soil group B (lower runoff potential). The associated vegetative cover within the watershed varies, but primarily consists of developed and disturbed land.

Unnamed Canyon A Description and Characteristics. The 0.7 square mile (445 acres) Unnamed Canyon A watershed is a minor, 1st order tributary to the northern bank of the Santa Clara River. (PACE, 2007.) Approximately 133 acres of the watershed, or about 29 percent of the watershed area, is located within the RMDP boundary ((Revised) **Figure 4.6-1**). The watershed is aligned generally in a north to south direction and joins with the Santa Clara River Valley. The length of the Unnamed Canyon A watershed within the RMDP boundary is approximately 1,293 feet, with an average slope of 3.4 percent.

The soils in the watershed are characterized as Castaic-Balcom complex and silty clay loams, and are predominantly classified in hydrologic soil group C (higher runoff potential). The associated vegetative cover within the watershed varies, but primarily consists of California annual grassland and agriculture.

Unnamed Canyon B Description and Characteristics. The 0.05 square mile (29 acres) Unnamed Canyon B watershed is a minor, 1st order tributary to the southern bank of the Santa Clara River. (PACE, 2007.) The entire watershed area (approximately 29 acres) is located within the RMDP site boundary ((Revised) **Figure 4.6-1**). The watershed is aligned generally in a north to south direction and joins with the Santa Clara River Valley. The length of the Unnamed Canyon B watershed is approximately 1,574 feet, with an average slope of 15.2 percent.

The soils in the watershed are characterized as Castaic and Saugus soils, and are predominantly classified in hydrologic soil group C (higher runoff potential). The associated vegetative cover within the watershed varies, but primarily consists of California annual grassland and chaparral.

Unnamed Canyon C Description and Characteristics. The 0.07 square mile (43 acres) Unnamed Canyon C watershed is a minor, 1st order tributary to the southern bank of the Santa Clara River. (PACE, 2007.) The entire watershed area (approximately 43 acres) is located within the RMDP site boundary ((Revised) **Figure 4.6-1**). The watershed is aligned generally in a south to north direction and joins with the Santa Clara River Valley. The length of the Unnamed Canyon C watershed is approximately 2,100 feet, of which the valley floor is approximately 1,272 feet, with an average slope of 7.3 percent.

The soils in the watershed are characterized as Castaic and Saugus soils, and are predominantly classified in hydrologic soil group C (higher runoff potential). The associated vegetative cover within the watershed varies, but primarily consists of California sagebrush scrub and agriculture.

Unnamed Canyon D Description and Characteristics. The 0.04 square mile (28 acres) Unnamed Canyon D watershed is a minor, 2nd order tributary to the southern bank of the Santa Clara River. (PACE, 2007.) The entire watershed is contained within the RMDP site boundary (see (Revised) **Figure 4.6-1**). The watershed is aligned generally in a south to north direction and joins with the Santa Clara River Valley. The length of the Unnamed Canyon D watershed is approximately 1,740 feet, with an average slope of 11.6 percent.

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The soils in the watershed are characterized as Zamora Loam, and are predominantly classified in hydrologic soil group B (lower runoff potential). The associated vegetative cover within the watershed varies, but primarily consists of California sagebrush scrub and agriculture.

Unnamed Drainage 3 Description and Characteristics. This minor, 2nd order ephemeral drainage (mapped as Drainage D in the Glenn Lukos Associates technical report, as revised September 15, 2008) is located entirely within the Entrada planning area. The drainage is ephemeral, and extends approximately 2,907 feet from the southern boundary of the Entrada planning area to the eastern boundary, where it exits the Project area. Nuisance flows from surrounding land uses support a small wetland area at the downstream end of this drainage.

Castaic Creek Description and Characteristics. This major, 5th order stream is impounded at Castaic Lake, approximately 4.7 miles upstream of the northeastern Project area boundary. Downstream of the lake, the intermittent stream supports surface flows during the rainy season and when water is released from Castaic Dam. Two reaches of Castaic Creek are within the Project area. The upstream reach is within the VCC planning area, and includes approximately 7,000 linear feet of stream channel from the northern boundary to the southwest corner of the planning area. The downstream reach of Castaic Creek in the Project area is within the RMDP site, and extends from the site boundary at SR-126 to the Santa Clara River confluence. This reach is approximately 1,700 feet in length, and consists of riverwash vegetation with the exception of a cottonwood/willow riparian forest at the confluence. In between the two reaches of Castaic Creek within the Project area lies a 4,200-foot reach that is outside the Project area boundary (upstream of the RMDP site, but downstream of the VCC planning area.).

Hasley Canyon Description and Characteristics. The Hasley Canyon drainage is a major, 3rd order intermittent tributary to Castaic Creek, and flows southward through the VCC planning area. The confluence with Castaic Creek is located downstream of the planning area boundary and off site, between the VCC planning area and the RMDP site. Within the Project area, the Hasley Canyon drainage has a length of approximately 3,400 feet and an average slope of approximately 1.9 percent. This drainage does not support riparian vegetation, and the channel is mainly comprised of riverwash.

4.6.3.1.4 Biological Importance of River and Tributary Habitats

Differences between the river mainstem and the on-site tributary drainages are important because these areas are suitable for a variety of native wildlife species with differing habitat requirements. For example, the hydrologic regime within the river mainstem provides habitat for a variety of aquatic species, including special status fish species, which cannot occupy the tributaries due to the lack of perennial flows. The larger tributaries on site contain mesic micro-habitats and transitional ecotones between riparian and other upland vegetation communities, which support many of the special status reptiles, amphibians and upland bird species within the Project site. The river provides an important wildlife corridor and connects natural open spaces along its length. The tributaries provide important north-south corridors for wildlife movement between the river and the higher elevations of the Santa Susana and San Gabriel Mountain ranges.

4.6.3.2 Hybrid Assessment of Riparian Condition (HARC)

4.6.3.2.1 Overview of HARC

The Corps required the preparation of a HARC that would supplement the impact analysis for the proposed Project and alternatives. The purpose of this assessment is to evaluate the relative functional quality of the jurisdictional areas within the RMDP site, so that direct and indirect impacts of the proposed Project and alternatives on the functional capacity of these waters can be determined and compared. Although this assessment was requested by the Corps, the RMDP HARC included all Corps and CDFG jurisdictional areas within the RMDP site. The limits of CDFG jurisdiction were used as the boundaries for the area assessed by the HARC because these areas support riparian vegetation, and are a reasonable approximation of the flood-prone area surrounding the drainages on the RMDP site. Functional assessments are often required to supplement CWA section 404 permit applications when any of the following apply:

- A project site is large;
- The aquatic resources present on site are perceived to be of high value; or
- The Corps believes it is necessary to supplement the traditional alternatives analysis with a function-based assessment.

The Corps generally uses a functional assessment protocol known as the hydrogeomorphic (HGM) approach to evaluate the quality of wetlands on a project site. This method, although quantitative and scientifically rigorous, contains some elements that make it unsuitable for use on the RMDP site. The hydrogeomorphic requires the use of mathematical models, which are specific to geographic regions, to calculate functional values. There is no model developed for the Santa Clara River watershed; the closest watersheds for which a hydrogeomorphic method handbook has been prepared are the Santa Margarita River in San Diego County and the coastal streams of Santa Barbara County. Although the Santa Margarita model is theoretically usable in the Santa Clara River watershed, it would have to be adapted to fit this system. This method has not been tested and, therefore, the validity of using the Santa Margarita River model in the Santa Clara River system is unknown. In addition, the hydrogeomorphic method requires the identification of a set of top-quality, intermediate, and poor-quality sites to be used as a standard (known in the hydrogeomorphic method as the reference domain) against which the evaluated sites are compared. These reference sites need to be as geographically close as possible to the sites being assessed, in order to account for natural geographic variation. While it would be possible to conduct a study of all streams and wetlands in the Santa Clara River watershed (and possibly other nearby watersheds) to identify a usable reference domain, the process would be extremely laborious and would require considerable time and resources.

Other established functional assessment methods, such as the California Rapid Assessment Method (CRAM, 2006) and Landscape-Level Functional Assessment (LLFA, a method developed for use in Special Area Management Plans that are ongoing in Orange, Riverside Counties, and San Diego Counties.) could be used on the RMDP site, but are not sufficiently scientifically rigorous or field-intensive enough to provide results that would meet the Corps' decision-making needs for this project.

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The CRAM methodology is currently intended for use in coastal estuaries and its application to riverine and interior wetlands has not yet been developed or evaluated.

Because no established functional assessment method exists that fits the Corps' needs in evaluating the aquatic resources on the RMDP site, a hybrid method was developed to suit the needs of the RMDP site. Development of the HARC method included combining and adapting components of three established methods (the Santa Margarita River HGM, the CRAM method, and the LLFA method) to derive a Project-specific method in coordination with the Corps. For a detailed description of the way these three established methods were blended to create the HARC method, please refer to the HARC document located in **Appendix 4.6 of the Draft EIS/EIR**. The Regulatory Division of the Corps (Los Angeles District) requested that the HARC take into account the following criteria:

- The method must be able to account for differences between the Santa Clara River mainstem and the tributaries;
- The method must be able to assess mitigation and avoidance sites, as well as potential impact areas, and the method must result in scores that rate assessment areas both pre- and post-Project; and
- The method must be based on hydrogeomorphic method principles and other established methods.

4.6.3.2.2 **Metrics and Attributes Assessed in the HARC**

Like the hydrogeomorphic method, the HARC method evaluates the extent to which wetland or riparian reaches perform various physical, chemical, and biological attributes. The HGM method assesses functions based on mathematically complex models derived through substantial testing. Developing such complex models for the current project would have been beyond the scope of analysis required by NEPA or CEQA, but the HARC assessed a total of five hydrological, ten biogeochemical, and seven habitat metrics. Attributes assessed in the HARC included general hydrology, biogeochemical, and habitat quality evaluators, as well as an overall total score that incorporates all three of these elements.

A total of 15 field parameters, termed "metrics," were evaluated within each assessment reach and were scored on a scale from zero (completely degraded condition) to one (pristine condition, unaffected by human activities). A total of five hydrological, 10 biogeochemical, and seven habitat metrics were used, although some metrics fall into more than one of these categories. All metrics were assessed at all study sites, but only a relevant subset of the metrics was used for the scoring of each attribute. For example, only metrics related to the hydrologic condition of the reach were included in the hydrology attribute score. However, some metrics were relevant to the calculation of more than one attribute. For example, because the source of water entering an aquatic system can affect both flow dynamics and water chemistry, the source metric was used in the calculation of the hydrology and biogeochemical attributes. For a detailed discussion of the criteria used to score each metric, along with the scores assigned to each assessment reach within the Project area, please refer to the HARC, which is located in **Appendix 4.6 of the Draft EIS/EIR**.

This section summarizes the four attributes and 15 metrics used in the HARC.

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Hydrology. The hydrology attribute is by far the most important attribute for wetland and riparian habitats, as the other attributes depend on, and form in response to, the flow of water, nutrients, and pollutants that occur in the water. The five hydrological metrics used in the hydrology attribute describe the water source, the duration and magnitude of flows, whether or not flows reach the floodplain, the presence of flow restrictions, the duration of water flows or ponding within the creek or on the floodplain, and the width of the floodplain. High quality streams and wetlands have "natural flow regimes" (Poff *et al.*, 1997), with an undisturbed source of water, such as precipitation, groundwater, or snowmelt, a seasonal fluctuation in water levels as a result of winter and spring flood events, and well-developed floodplains that have the ability to retain moisture and allow for groundwater recharge. The hydrology attribute is composed of five metrics that relate directly to water source, hydroperiod, and floodplain availability and condition. For each assessment reach, the HARC scores for the hydrology attribute were calculated by taking the arithmetic mean of these five metric scores. The five metrics included in the hydrology attribute are as follows:

- **Source.** Source of water describes the primary origin of water input to the stream or wetland, and the degree to which water input has been affected or is controlled by man-made activities or land use changes. Presence of septic tanks, culverts, riprap, *etc.*, would cause a reach to score lower than a similar reach in an undisturbed area.
- **Hydroperiod.** Hydroperiod is the seasonal, and in some wetlands, daily pattern of water level fluctuation. Hydroperiod defines regular changes in the duration, frequency, timing, and extent or depth of inundation or saturation in a wetland. A reach subject to a natural flow regime would score higher than one in which flow is artificially augmented or diverted.
- **Floodplain Connection.** Floodplain connection describes the relationship between riverine wetlands and the adjacent floodplain, which influences the ability of water to flow into or out of the wetland or to inundate adjacent uplands during high-water periods. Presence of bank stabilization and channel incision inhibit floodplain connection.
- **Surface Water Persistence.** Surface water persistence refers to the duration of flow/ponding or surface saturation in a stream or wetland, and affects groundwater recharge. Perennial streams and wetlands that store ponded water for more than one day would score higher than ephemeral/intermittent streams and wetlands with no features allowing ponding/storage to occur.
- **Flood Prone Area.** This metric assesses the extent to which flood flows are impeded. Presence of bank stabilization, channel incision, or other obstacles constraining flood flows would cause a reach to score lower than a similar reach with an unrestricted floodplain.

Biogeochemical. This attribute describes the relative ability of wetland and riparian habitats to perform specific functions, such as maintenance of water quality, cycling of nutrients, retention of particulates, and export of organic carbon. High quality streams and wetlands have intact, vegetated buffers, which attenuate effects of pollutants entering into these habitats, and allow for a balanced process of nutrient cycling. Properly functioning reaches also have a normal flooding regime that allows for the transportation of water to all active parts of the channel, floodplain, and terrace. Substrate type is an

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important feature, because soils that are compacted or do not have any organic material may not allow biogeochemical attributes to effectively occur. Thus, high quality buffers, an active floodplain, and permeable, organic rich substrates allow streams and wetlands to properly perform this function. The biogeochemical attribute is composed of 10 metrics incorporating hydrology (five), buffer (three), and substrate (two), described below. For each assessment reach, the HARC score for the biogeochemical attribute was calculated by taking the arithmetic mean of these 10 metric scores.

Hydrology metrics included in the biogeochemical attribute (five total) are as follows:

- **Source, Hydroperiod, Floodplain Connection, Surface Water Persistence, and Flood Prone Area.** See descriptions above under Hydrology attribute.

Buffer metrics included in the biogeochemical attribute (three total) are described as follows:

- **Average Buffer Width.** This refers to the width, perpendicular to the channel to which the buffer extends. A value approaching 100 meters is considered optimal; scores decrease as buffer width is reduced below 100 meters. The buffer is the upland area extending horizontally from the immediate edge of the stream or wetland that is in a natural or semi-natural state and currently not substantially modified by human activities. The buffer can include adjacent wetlands of the same or different class, stream channels, open water, or other aquatic habitats. Intensive land uses such as plowed agricultural fields, paved areas, some dirt roads, unfenced pastures, landscaped parks, *etc.*, do not constitute buffers. Mowed areas are considered buffers, but deep-ripped agricultural fields are not.
- **Buffer Condition.** Buffer condition is assessed based on vegetative cover, substrate condition, and indicators of disturbance, and is assessed only for the portion of the wetland border that already has been identified or defined as buffer. Stressors, such as invasive plant species, presence of trash, and disturbed, compacted soils decrease buffer condition.
- **Land Use/Land Cover.** This metric assesses the percent of the drainage basin of a reach containing land use/land cover types with the potential to increase the nutrient, pesticide, hydrocarbon, or sediment loading in downstream surface waters. Minimal presence of these land use/land cover types within a drainage basin would result in a high score for this metric.

Abiotic structure metrics included in the biogeochemical attribute (two total) are described as follows:

- **Topographic Complexity.** Topographic complexity refers to the presence of a variety of elevation or depth zones within a stream or wetland. These zones provide niches for fauna, surfaces for growth of a variety of plant species, areas that modify flow/hydrology, and zones that promote biogeochemical processes. Highly complex reaches containing diverse physical features would score higher than uniform, homogeneous reaches.
- **Substrate Condition.** Substrate condition describes the extent to which soil is intact (unaltered), is subject to regular saturation or inundation, and exhibits an accumulation of organic matter or coarse litter. Coarse litter consists of the fallen stems, leaves, and other small parts of plants that accumulate

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on the wetland surface. These features increase habitat complexity and indicate optimal substrate condition.

Habitat. Numerous plant and animal species depend on the unique ecosystems developed within wetland and riparian habitats, either for foraging, breeding, or dispersal. High quality streams and wetlands usually contain high species diversity, a dominance of native plant species, complex biological structure, and evidence of vegetation recruitment (*i.e.*, the presence of seedlings and/or saplings). The habitat attribute is composed of seven metrics incorporating the biological structure and condition of wetland and riparian habitat, including abiotic (two) and biotic (five) structure metrics. For each assessment reach, the HARC score for the Habitat attribute was calculated by taking the arithmetic mean of these seven metric scores.

Abiotic structure metrics included in the habitat attribute (two total) are described as follows:

- **Topographic Complexity, Substrate Condition.** See descriptions above under the Biogeochemical attribute.

Biotic structure metrics included in the habitat attribute (five total):

- **Vertical Biotic Structure.** The vertical component of biotic structure consists of the distribution of vegetation among categories of height above the wetland substrate or with depth below the water surface. Presence of well-developed herb, shrub, and tree layers across an entire reach would represent an optimal condition.
- **Interspersion and Zonation.** Horizontal biotic structure is commonly recognized as plant zonation and its interspersion. Interspersion measures the complexity of the edges between zones, the more curves and meanders in the zone boundary, the greater the interspersion. Reaches having at least two distinct plant zones and fairly high degrees of interspersion received optimal scores for this metric.
- **Nativeness.** This metric assesses the extent to which native species dominate the plant community within a reach. The reference condition was defined as containing at least 75 percent native plant species, and no stratum (herb, shrub, or tree) dominated by an exotic species.
- **Riparian Vegetation Condition.** This metric evaluates whether the riparian area adjacent to a reach is in a natural state free from chronic disturbance and anthropogenic modifications, or whether impairments to the riparian corridor exist. Degradations of the riparian vegetation caused by natural forces, such as fires or flooding, did not result in lower scores for affected reaches because of the temporary nature of these disturbances.
- **Riparian Corridor Continuity.** This indicator was measured at the riparian reach scale as the percent of flood-prone area along the mainstem channel of the riparian reach occupied by native and non-native vegetation communities with adequate height and structure to allow faunal movement. For example, annual grassland with no shrub or tree component was considered to represent a corridor gap. The optimal condition was defined as having less than five percent of the riparian area adjacent to the reach unsuitable for faunal movement.

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HARC Total Score. In addition to the three functions discussed above, the HARC also included a total score attribute designed to generate a general, all-encompassing numerical score for each assessment reach. The HARC total score was calculated by computing the arithmetic mean of the 15 metric scores for each reach.

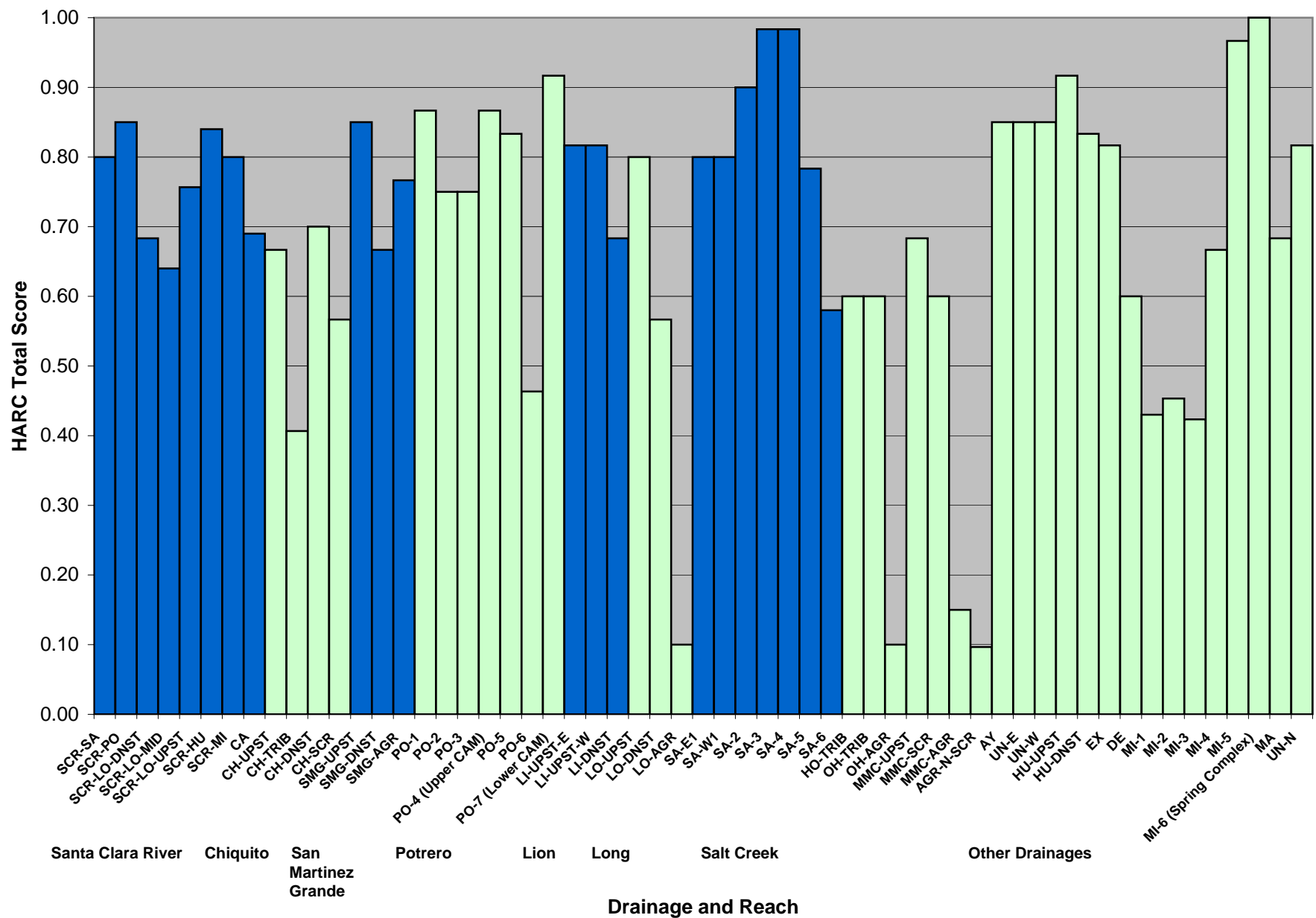
The results of the HARC may provide guidance to future restoration work, with the goal of improving wetland attributes by increasing the scores for impaired metrics. For example, repairing the cause (change in hydroperiod) and symptoms (isolation of floodplain) of channel incision would elevate the floodplain connection metric (increase hydrology function), as well as provide additional wetland/riparian habitat. Or, in some locations, diverting an artificial source of hydrology (*e.g.*, agricultural runoff) would improve hydrologic attribute of the reach. Removing cattle grazing from various reaches would reduce soil compaction (increase biogeochemical function) and allow the herbaceous plant layer to recover (increase habitat attribute). Removing invasive plant species and providing buffers would maintain and/or increase habitat attribute scores.

4.6.3.2.3 Existing Conditions: Results of HARC

HARC for the RMDP site was finalized in December 2007, and evaluated the condition of wetland and riparian habitats within all jurisdictional areas on the RMDP site. The RMDP site was divided into a total of 57 reaches: seven along the Santa Clara River, 15 within the tributaries on the north side of the River, and 35 within the southern tributaries. For a detailed discussion of the assessment reaches and methods, please refer to the HARC document located in **Appendix 4.6 of the Draft EIS/EIR**. The distribution of reaches across the RMDP site is shown on **Figure 4.6-2**. A few of the minor reaches were not accessible in the field (*e.g.*, Ayers Canyon); these ephemeral stream reaches were delineated and assessed by analyzing aerial photographs of the RMDP area and available data. (URS, 2004.)

Each reach was classified according to jurisdictional status and wetland and riparian habitat categories developed for the HARC. Seven classes of wetlands/riparian areas were observed on the RMDP site. Each assessment reach was identified by type, and was further described based on the dominant vegetation community present within the reach. The vegetation communities identified are described in detail in revised Section 4.5, Biological Resources, of this EIS/EIR. The reach classification types observed within the RMDP included:

- **Perennial River.** This wetland classification included the seven reaches of the Santa Clara River. Vegetation was varied, and included cottonwood/willow riparian forest, southern willow scrub, mule fat scrub, and giant reed grassland, among other types.
- **Perennial Tributary.** This class included the reaches within the Potrero Canyon and Salt Creek watersheds that support year-round flows. All of the perennial tributary reaches within the RMDP site support riparian vegetation communities. Mule fat scrub vegetation was commonly associated with these drainages.



Total HARC Score = sum of (HARC Total Score for reach x assessment area of reach) for each tributary.

SOURCE: URS – December 2007

FIGURE 4.6-2

HARC Total Scores for all Reaches by Drainage

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- **Intermittent Tributary.** This class included tributaries within the RMDP site that support surface flows for a period greater than 24 hours following a rain event, but that do not support year-round flows. These drainages supported a mixture of upland and riparian vegetation, and also included unvegetated river wash.
- **Ephemeral Tributary.** This class included the smallest tributaries within the RMDP site. These streams support surface flows for a period less than 24 hours following a rain event, and most do not support hydrophytic vegetation. These drainages were dominated by upland vegetation and unvegetated river wash.
- **Riverine Persistent Emergent Alkali Marsh.** This wetland classification included marshes in a riverine context, and was characterized by cismontane alkali marsh (URS, 2003) and willow scrub habitats. These wetlands were located in reaches with perennial groundwater inputs to the creek beds, and were found within Salt Creek, Potrero Canyon, and Middle Canyon. Vegetation types included herbaceous wetlands and cismontane alkali marsh, among others.
- **Seep Palustrine Alkali Marsh.** This wetland classification included only one site within the RMDP area, the cismontane alkali marsh area within the lower Potrero Canyon sub-watershed (HARC reach PO-7). This non-riverine wetland was classified as a seep because groundwater inputs keep the soils saturated but little or no evidence of surface flows is present. (Ferren *et al.*, 1996; Corps, 2004b) Vegetation consisted of an herb- dominated wetland supporting a mix of salt grass, Mexican rush, yerba mansa, and remnant Blue wild rye, and the area has been historically subjected to heavy livestock grazing.
- **Slope Palustrine Alkali Marsh.** This wetland classification included only one site within the RMDP site, located within the lower Middle Canyon sub-watershed (HARC reach MI-6). This wetland was classified as a slope because groundwater inputs (springs) were observed to flow on the surface and down the slope. (Ferren *et al.*, 1996; Corps, 2004b.) Vegetation included wetland species in the tree, shrub, and herb layers.

Data for the HARC were collected in the field from October through December 2003. During this time, a wildfire burned portions of the RMDP site, including some tributary drainages assessed in the HARC. (see CDF, 2003.) Reaches that were burned in the fire were treated as "atypical situations" due to a natural disturbance (per Environmental Laboratory, 1987). Because of the long-term nature of the proposed Project, and the likelihood that burned areas would recover prior to the completion of Project build-out, the baseline HARC scores were not penalized for the burned conditions. The most extensive burn areas were within the Salt Creek sub-watershed and some of the ephemeral tributaries on the northern side of the Santa Clara River.

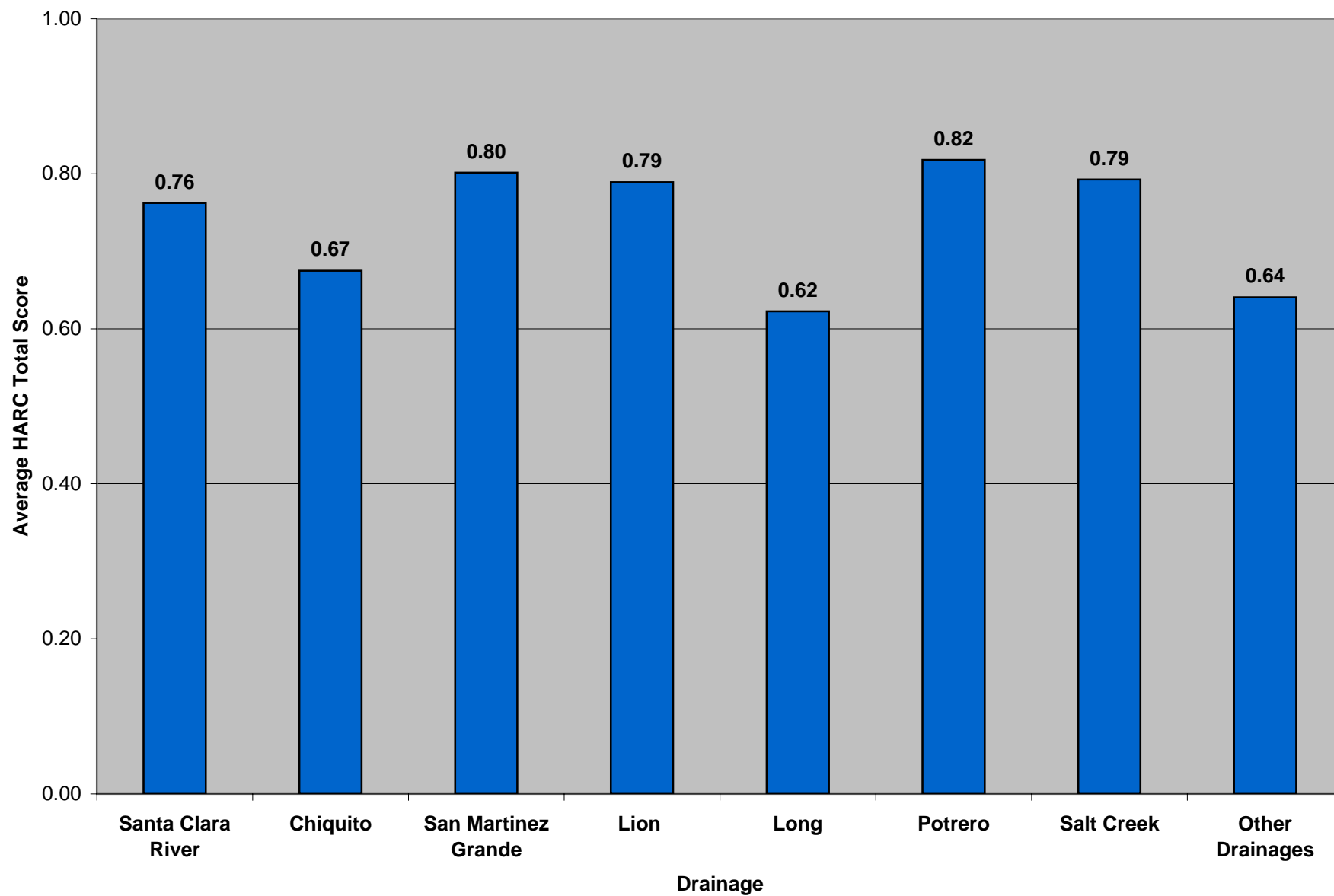
Each riparian reach or wetland was assessed according to the methods developed for the HARC. Each reach was assigned hydrology, biogeochemical, and habitat HARC scores, as well as an HARC total score incorporating all metrics used in the assessment. For a complete discussion of HARC results, please refer to the HARC for the RMDP site, included in **Appendix 4.6** of ~~this~~ the Draft EIS/EIR. Points of interest and general trends are summarized below.

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HARC Total Score. HARC total scores for all reaches are shown geographically on the map in (Revised) Figure 4.6-1, and on the bar chart in **Figure 4.6-2**. All attribute and metric scores were evaluated on a scale of zero to 1.0, and HARC total scores ranged from 0.10 (HARC reaches LO-AGR, OH-AGR, and AGR-N-SCR) in an agricultural drainage ditch on the north side of the River to 1.00 (HARC reach MI-6) (in the Middle Canyon spring complex). Results showed that of the 57 reaches, 27 reaches scored above 0.8, 26 reaches scored in the mid-range, between 0.4 and 0.79, and four reaches scored below 0.4. The distribution of HARC Total Scores for the 57 reaches on site showed natural divisions between the reaches at approximately 0.4 and 0.8, which suggested the use of these values for differentiating "high," "medium," and "low" scoring reaches. The presence of very high and low scores suggests that the HARC, in fact, captured the range of riparian conditions present in the RMDP site and was sensitive enough to detect variability among reaches. In addition, it is important to note that the four lowest scoring reaches, which scored less than one half as high as the fifth-lowest scoring reach, were all man-made agricultural drainage ditches.

Average HARC scores for the major drainages within the RMDP site are shown in **Figure 4.6-3**. These scores were based on the HARC total scores for all reaches in each tributary system, and were area-weighted to account for differing reach areas. In general, Humble, Salt, Potrero, and Lion Canyon were higher scoring tributary systems than San Martinez Grande, Middle, Chiquito, and Long Canyon. **Figure 4.6-4** shows the number of HARC AW-score units present in each tributary, calculated by multiplying reach area by HARC total score for each reach present and adding the products. The number of HARC AW-score units present is influenced by size as well as quality; as Salt and Potrero are two of the largest tributary systems, the number of HARC AW-score unit present are high. Due to its large size and relatively high quality, the vast majority of the attribute value within the RMDP site is located in the Santa Clara River reaches (**Figure 4.6-5**).

Hydrology, Biogeochemical, and Habitat Attribute Scores. For the hydrology, biogeochemical, and habitat attributes, the southern tributaries generally outscored the northern drainages. In general, the scores for these three attributes showed similar geographic trends, and high quality sites were rated as such within each functional category. This correlation between the hydrology, biogeochemical, and habitat attributes is partially because many of the HARC metrics were used in the calculation of more than one attribute score. In addition, the metrics used were detailed enough that impacts to an assessment reach rarely affected only one metric. For example, a reach that has been constrained by the presence of a road along one bank, such as reach PO-6 ((Revised) Figure 4.6-1), received reduced scores for the buffer condition, buffer width, floodplain connection, flood prone area, riparian vegetation condition, and riparian corridor continuity metrics. As these metrics are used in the calculations for the HARC hydrology, biogeochemical, and habitat scores, an impact such as this would affect all attribute scores. For a more detailed discussion of the existing hydrology, biogeochemical, and habitat attribute scores, please see the HARC for the RMDP site, included in **Appendix 4.6** of ~~this~~ the Draft EIS/EIR.

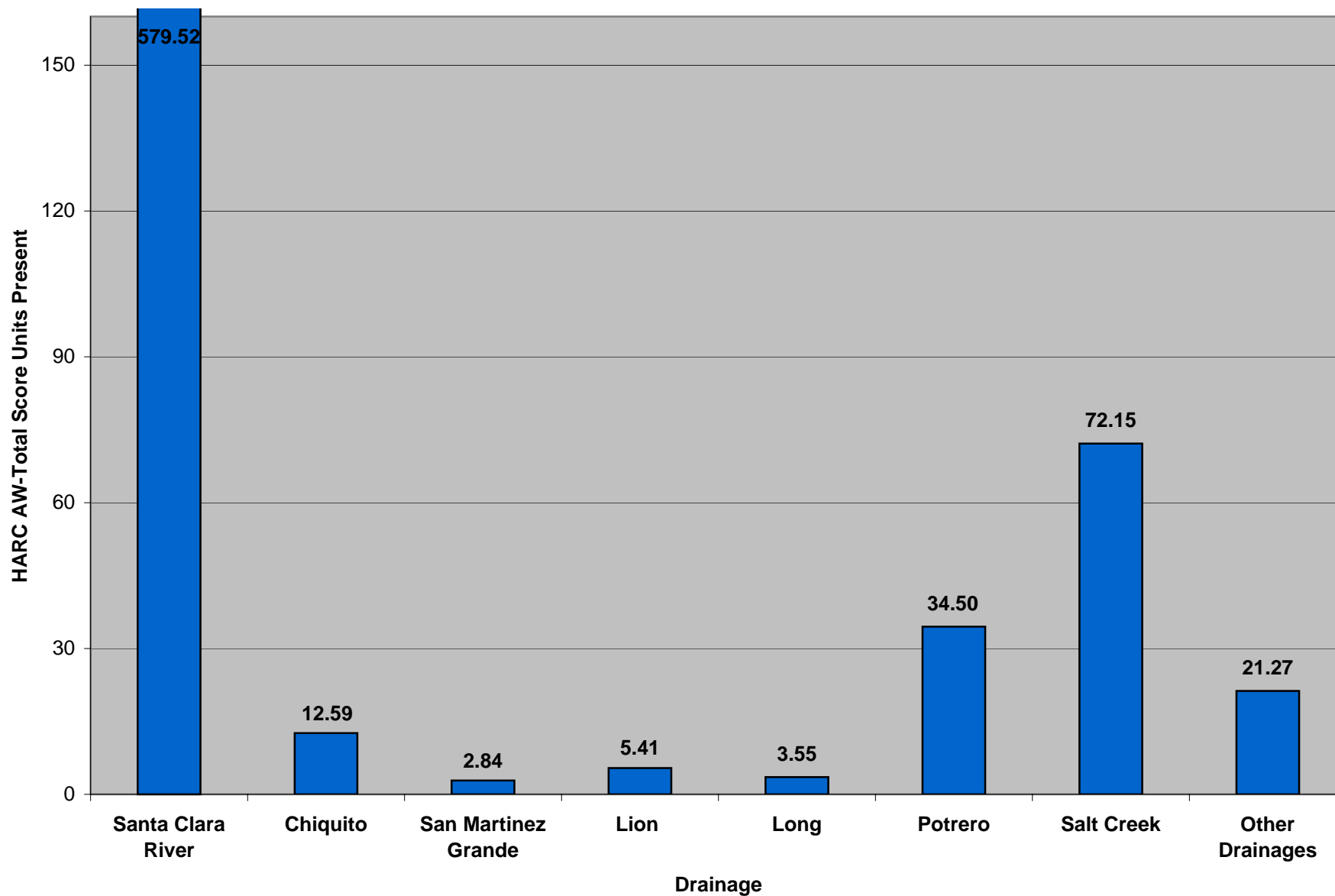


Average HARC Total Score = sum of (HARC Total Score for reach x assessment area of reach) for all reaches in tributary/sum of assessment areas for all reaches in tributary.

SOURCE: URS – February 2009

FIGURE 4.6-3

HARC Average Total Scores for Major Drainages

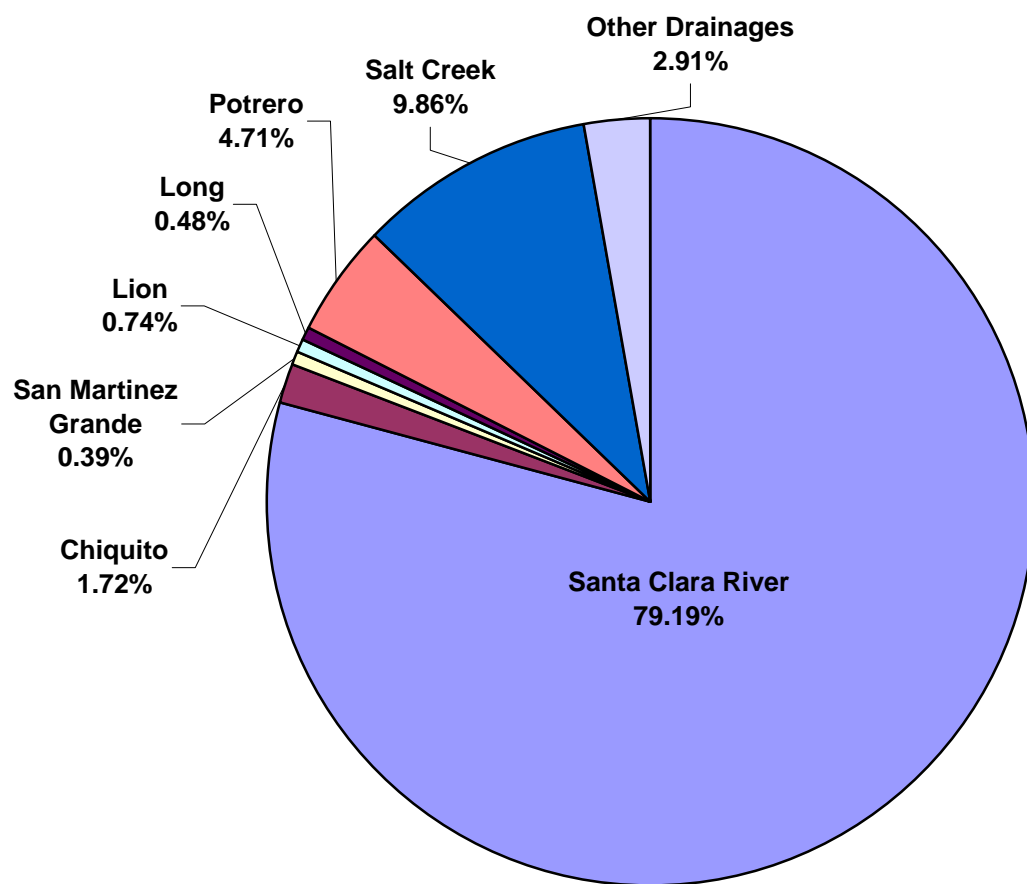


Number of Functional Units present = sum of (HARC Total Score for reach) x (assessment area of reach in acres) for all reaches within a tributary.

SOURCE: URS – February 2009

FIGURE 4.6-4

HARC AW-Score Units Present in Major Drainages



SOURCE: URS – February 2009

FIGURE **4.6-5**

Distribution of HARC AW-Score Units On-Site

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Wetland Reaches. The HARC identified three distinct wetland types within the Project area: riverine, seep, and slope wetlands. These wetland types are regionally rare, and the latter two types are supported by groundwater discharge. (Corps, 2003.) This hydrological situation results in the formation of hydric soils supporting wetland plant communities adapted to alkaline conditions, which often display a high proportion of native plant species. These wetland communities would be difficult to re-create or mitigate elsewhere if impacted by development activities. The six reaches within which these wetlands occur were among the highest scoring reaches across the RMDP site, and included SA-3, SA-4, PO-4, PO-7, MI-5, and MI-6 ((Revised) **Figure 4.6-1**). These wetlands also are sensitive to indirect impacts, such as changes in upstream hydrology that may cause a "type conversion" of vegetation (*e.g.*, a *Typha* sp. invasion into an alkali marsh after freshwater flow augmentation), a reduction in flow from expansion of impermeable surfaces, and increased runoff in their respective watersheds.

4.6.4 IMPACT SIGNIFICANCE CRITERIA

For purposes of identifying impacts to jurisdictional streams and wetlands, the Corps and CDFG have determined that the proposed Project (including all components of the project, which would be constructed incrementally over time) and its alternatives would have a significant impact if any of the following would occur:

- **Significance Criterion 1:** The Project would result in a substantial adverse effect on federally protected wetlands or a substantial change to state-protected streambeds through direct removal, filling, hydrologic interruption, loss of functions or services, or other means;
- **Significance Criterion 2:** The Project would result in a permanent net loss of CDFG jurisdictional streams or waters of the United States;
- **Significance Criterion 3:** The Project would result in a permanent net loss of stream/wetland functions or services; or
- **Significance Criterion 4:** The Project would result in substantial adverse construction impacts within Corps or CDFG jurisdictional areas through temporary removal, filling, hydrologic interruption, loss of functions or services, or other means.

4.6.5 IMPACTS OF THE PROPOSED PROJECT AND ALTERNATIVES

Analysis Methodology

Permanent impacts to jurisdictional areas would occur in areas where permanent facilities, such as bridges and bank stabilization, are proposed for installation, or where grading or filling occurs within jurisdiction. Temporary impacts would occur generally adjacent to permanent impact areas, in areas that would be subject to construction disturbance, but would be restored and revegetated following completion of construction in the area. In some cases, the RMDP proposes to replace existing drainages with buried storm drain systems. In others, permanent impacts would occur in channels that would be modified from their existing alignments, either by minor re-contouring activities or through the mass grading and site preparation process associated with urban development. These would result in permanent impacts. In

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different areas, drainages would be subject to temporary impacts due to restoration activities, but would not sustain any permanent impacts. These varying impact scenarios are described briefly below.

- **Drainage Converted to Buried Storm Drain:** Under the proposed Project and alternatives, certain tributary drainages or portions of drainages would be eliminated and flows would be conveyed through underground storm drain systems instead. In these situations, the entire acreage of the affected drainage segment would be counted as a permanent impact. The net impact of the proposed Project or alternatives upon the affected drainage segment would be a reduction in jurisdictional acreage from the existing acreage to zero. No replacement channels would be constructed where existing channels are converted to buried storm drains. This results in a permanent loss of riparian habitat functions and services.
- **Drainage to be Regraded:** Under the proposed Project and certain alternatives, stabilization would be constructed along the banks and within the channel of several large tributaries to protect development. The existing drainage would not be eliminated, but impacts to the bed and along the banks would occur. This process would require the straightening of one or both banks, and would convert some existing jurisdictional areas into development pads. In some cases bridges or grade control structures would cross the channel, resulting in additional permanent and temporary impacts. For example, permanent impacts would include permanent soil fill in to jurisdictional areas and hard armored portions of grade control structures. Temporary impacts would occur, for example, where the natural soil channel bottom is disturbed during construction for excavation and installation of bank protection but returned to original grade or where a structure is buried beneath the channel and is not likely to be exposed by erosion or expected channel geomorphological changes. In some areas, realignment of the channel would result in the creation of new jurisdictional areas in locations that are currently uplands. The net impact of the proposed Project upon the affected drainage segments would be a reduction in jurisdictional acreage equal to the acreage of existing jurisdiction permanently impacted, and a gain in jurisdictional acreage equal to the new jurisdictional areas created. This could result in a permanent loss or an increase in jurisdictional acreage and function, depending on the alternative in question. Unless mitigation for the impacts were established in advance of these impacts, such impacts could result in a temporal loss of riparian habitat functions and values/services.
- **Drainage to be Relocated:** Under the proposed Project and certain alternatives, the Potrero Canyon and Long Canyon drainages would be modified to the extent that the valleys containing these drainages are filled to accommodate urban development. This placement-discharge of fill would eliminate the upper reaches of the existing Potrero and Long Canyon drainages. In order to maintain habitat values and convey flows in the post-project environment, the proposed Project and certain alternatives, propose that new stream channels be constructed in Long and Potrero canyons atop the proposed fills. The net impact on these drainages would be permanent loss of the entire existing drainage and a subsequent new jurisdictional area equal to the acreage of the new stream channels proposed. In some cases proposed bridges and grade control structures would cross the new stream channels; acreage occupied by these structures would not be calculated as jurisdictional streambed created. The interim period between the permanent loss of existing drainages and the re-creation of new channels (which should provide similar functions and services to those being lost), could result

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in a temporal loss of functions and values/services, unless mitigation for the impacts were established in advance of these impacts, such as within a different drainage.

- **Drainage to be Restored:** In order to improve stream habitat functions and services and offset some of the adverse impacts of the proposed Project and alternatives on jurisdictional waters and streams, some stream areas are proposed for restoration. Restoration activities proposed include revegetation, removal of exotic plant species, and correction of existing incised banks and channels.

Impacts of the proposed Project and alternatives on jurisdictional waters and streams were determined by using a GIS database representing existing conditions and overlaying proposed Project or alternative features, including both permanent and temporary impact zones and construction work areas, onto GIS layers of the jurisdictional waters, as mapped in the jurisdiction delineation reports and 2009 preliminary composite wetlands delineation for the Project site (see Draft EIS/EIR, Appendix 4.6).

As described in Subsection 4.6.3.1.1, the revised 2010 Preliminary Jurisdictional Determination has been prepared and is included in Appendix F4.6 of the Final EIS/EIR. As discussed above, the revised data for Corps and CDFG jurisdiction were assimilated into a GIS database to describe the existing conditions and conduct impacts analysis. The updated impacts analysis has been incorporated into revised Section 4.6 of this Final EIS/EIR.

In addition to permanent and temporary impacts, this section also discusses impacts to riparian condition of on-site jurisdictional areas. A description of the methods used to evaluate impacts to riparian condition can be found in the HARC, included in **Appendix 4.6** of ~~this the Draft EIS/EIR~~. Essentially, this analysis focused on: (1) identifying the changes in attribute scores that would occur within each assessment reach following implementation of the proposed Project and alternatives; (2) identifying the change in jurisdictional acreage that would occur in each assessment reach as a result of the proposed Project and alternatives; (3) combining the post-Project attribute scores with the post-Project acreages to obtain post-Project AW-Score Units; and (4) comparing post-Project AW-Score Units with baseline conditions to determine impacts.

The Corps' assessment of the proposed Project and alternatives also emphasizes avoidance and minimization of impacts to waters of the United States, including all special aquatic sites in the ~~p~~Project area such as the alkali marsh areas in Potrero Canyon. The above assessment method for evaluating temporary and permanent impacts to the physical and biological attributes of the aquatic environment ~~will also be~~ was utilized in preparing for the Corps' required 404(b)(1)-draft 404(b)(1) alternatives analysis in accordance with (40 C.F.R. Part 230.). The Corps' draft 404(b)(1) alternatives analysis is included in Appendix F1.0 to the Final EIS/EIR. (A final 404(b)(1) alternatives analysis will be provided with the Corps' Record of Decision.)

In accordance with RGL 02-02, the Corps will consider a variety of methods to ensure that any required compensatory mitigation for impacts to jurisdictional waters of the United States provides adequate compensation for the loss of physical and biological functions and services in the Project area. As described in the Conceptual Mitigation Plan, to address temporal impacts and to increase the level of certainty associated with any required compensatory mitigation, for each construction notification area, the applicant proposes to install up-front compensatory mitigation that is designed to achieve at least a 1:1

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ratio of functional units lost prior to any permanent impacts to waters of the United States in the area covered by the construction notification. If the applicant cannot achieve this standard for any construction notification area, the Corps would require increased compensatory mitigation to account for temporal loss in accordance with revised Mitigation Measure BIO-2. In addition, consistent with Mitigation Measure SW-4, mitigation would be implemented for temporary impacts related to construction activities in jurisdictional areas. Overall, the applicant would create or expand Corps jurisdictional wetlands on site, so that the acreage of wetlands on site would, at a minimum, exceed the acreage that existed prior to proposed Project implementation.

In addition, under revised Mitigation Measure BIO-2, the applicant would be required to meet the mitigation requirements for impacts to CDFG jurisdiction. Because the area of Corps jurisdiction is a subset of the area of CDFG jurisdiction, revised Mitigation Measure BIO-2 would also result in additional mitigation for impacts to Corps jurisdiction, including restoration of adjacent riparian areas and requirements for upland buffer areas surrounding areas subject to CDFG jurisdiction. To the extent the requirements of revised Mitigation Measure BIO-2 exceed the requirements of the proposed CWA authorization in terms of acres of Corps jurisdiction, implementation of the revised Mitigation Measure BIO-2 would meet or exceed the Corps' mitigation requirements.. The evaluation of impacts and the development of appropriate mitigation measures in this section will also be used to demonstrate compliance with the Mitigation Rule (33 C.F.R. Parts 325 and 332). As discussed in the Mitigation Rule, the Corps will consider a variety of methods to ensure that any required compensatory mitigation for impacts to jurisdictional waters of the United States provides adequate compensation for the loss of physical and biological functions and services in the project area. To address temporal impacts and to increase the level of certainty associated with any required compensatory mitigation, the Corps would require up-front compensatory mitigation at a minimum 1:1 ratio of functional units lost prior to any permanent impacts to waters of the United States as well as concurrent mitigation throughout construction activities in jurisdictional areas associated with the Project and alternatives.

As described in **Subsection 4.6.3.1.4**, above, in CDFG's review of the impacts of the proposed Project and alternatives, in-kind mitigation is interpreted such that there is a distinction between the riparian habitat functions of the main stem of the river and the many tributaries which feed into the river. Both serve important, but different biological functions.

Mitigation ratios have been established by CDFG which consider not only the type of vegetation community and habitat impacted, but also the time lag which may occur between the loss of riparian habitats functions and values (through grading, filling and construction activities), and the reconstruction, restoration, re-vegetation and establishment of functioning riparian habitats for mitigation. These ratios have further been refined to reflect the HARC score, by reach, of tributary or river area impacted, and jurisdictional areas that are relatively undisturbed and of high functional value require higher ratios to mitigate impacts (see revised Mitigation Measure BIO-2). Under alternatives 2 through 7, application of these mitigation ratios will always result in an increase in CDFG jurisdictional stream acreage, post Project. Depending on the extent of permanent and temporary impacts to the various types of vegetation communities, each alternative is evaluated based on comparison of calculated mitigation requirements due to the impacts (application of revised Mitigation Measure BIO-2) and the alternative's ability to satisfy these requirements through increases in jurisdictional area (creation, restoration, or enhancement

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of jurisdiction) possessing functions and services commensurate to those impacted. For example, an alternative which permanently impacts riparian forest within or along the Santa Clara River would require more mitigation on an acre for acre basis than an impact to a similarly located dry scrub habitat, although both could be mitigated within created riverbed areas. In a similar fashion, an impact to riparian cottonwood forest in a relatively undisturbed tributary would require more mitigation on an acre for acre basis than the same impacts to a highly degraded ephemeral channel bottom, although both types of mitigation could be incorporated into a regraded large tributary drainage, as may be appropriate.

So, for the proposed Project and each alternative, it is possible to determine the quantity of mitigation required by revised Mitigation Measure BIO-2 and compare that to the quantity of mitigation acreage available under that alternative. This has further been separated in the analysis between the area provided within the tributaries and the river.

To determine the amount of acreage required to mitigate permanent and temporary impacts, the analyses below assumed that all mitigation sites would be established within two years.

For permanent and temporary impacts to CDFG jurisdiction, the mitigation ratios used in the impacts and mitigation analysis below are presented in revised Mitigation Measure BIO-2, and assume that would require a mitigation ratio of 1:1 (acres) if mitigation sites would be initiated within two years after impacts occur meet success criteria prior to disturbance. If success criteria for mitigation sites are not met in advance of impacts, mitigation ratios would be required as provided in (Revised) Table 4.5-68 in revised Mitigation Measure BIO-2. In the event that revegetation of mitigation sites for permanent impacts is are not established initiated within this two-years period, revised Mitigation Measure BIO-2 specifies that all mitigation ratios would increase by 0.5:1 if mitigation is initiated established within two to five years after impacts, and by 1:1 if mitigation is initiated more than five years after the permanent impacts. Similarly, mitigation ratios for temporary impacts would increase by 0.5:1 if the duration of impacts is greater than two years but less than five years, and by 1:1 if the duration of or temporary impacts occur exceeds five years. The measure exempts Temporary impacts to Southern Cottonwood and Oak Woodlands from this requirement, and do not vary with the duration of disturbance, but revised Mitigation Measure BIO-2 assigns higher mitigation ratios for these impacts instead regardless of duration, due to the longer time period required for these communities to become established and reach maturity.

In addition to allowing the construction of infrastructure facilities, the proposed Project also would indirectly facilitate build-out of the Specific Plan, VCC, and Entrada developments. The urban developments in the Specific Plan area and Entrada would be constructed under ~~a~~ Alternatives 2 through 7, and VCC under ~~a~~ Alternatives 2 and 3, but would be curtailed in certain areas to allow for greater resource preservation activities, such as setbacks from jurisdictional areas and larger spineflower preserves. Under Alternatives 4, 5, 6, and 7, build-out of the remaining portion of the VCC planning area would not occur, because the establishment of a spineflower preserve on the VCC site would preclude the remedial grading necessary for site preparation and development, resulting in a reduction of the impacts to jurisdictional waters. In instances where build-out of the Specific Plan or Entrada developments would occur but would be limited by resource preservation activities as described above, the term "partial build-out" is used to describe the development facilitated.

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4.6.5.1 Impacts of Alternative 1 (No Action/No Project)

4.6.5.1.1 Direct Impacts

RMDP Direct Impacts

Implementation of Alternative 1 would not involve issuance of a long-term CWA section 404 permit or Master Streambed Alteration Agreement (the RMDP-related approvals requested from the Corps and CDFG authorizing improvements to be constructed within waters of the United States or jurisdictional streams). Consequently, no filling or modification of federal or state jurisdictional waters would be authorized, and the aquatic resources on the RMDP site would remain in their present state. Alternative 1 would not result in significant impacts to jurisdictional streams and wetlands.

SCP Direct Impacts

The proposed SCP would not be implemented under this alternative, and no direct impacts would result.

4.6.5.1.2 Indirect Impacts

RMDP Indirect Impacts

Because this alternative would not involve the issuance of a long-term CWA section 404 permit or Master Streambed Alteration Agreement, no urban development would be facilitated by implementation of Alternative 1. Land uses within the RMDP site would remain in their present state, and no indirect impacts to jurisdictional waters or streambeds would result.

SCP Indirect Impacts

The proposed SCP would not be implemented under this alternative, and no indirect impacts would result.

4.6.5.1.3 Secondary Impacts (Impacts to Riparian Condition)

In this EIS/EIR, the term "secondary impacts" is used to denote those impacts that would be reasonably certain to occur as a result of the Specific Plan, VCC, and Entrada developments, but that would either occur later in time or be removed in distance from the Project site. As the proposed RMDP would not be implemented under this alternative, the riparian condition of the aquatic resources within the RMDP site would not be affected by adoption of the No Action/No Project alternative. Although no fill of jurisdictional waters would occur under this alternative, agricultural and grazing uses of the RMDP site would continue and the River Corridor SMA/SEA 23 would not be dedicated to a land management entity for preservation in perpetuity. This alternative would result in less impact to the riparian condition of aquatic resources within the RMDP site than the proposed Project.

4.6.5.2 Impacts of Alternative 2 (Proposed Project)

If the proposed RMDP and SCP were implemented, a long-term CWA section 404 permit and Master Streambed Alteration Agreement would be issued authorizing the construction of bank stabilization.

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~~bridges and road crossings, grade control structures, utility crossings, and the WRP outfall; allowing the grading of certain drainages to accommodate building pads and other activities drainage and flood control facilities, as described in Subsection 3.4.2.1.1 of this EIS/EIR; and facilitating a system of spineflower preserve areas as described in Subsection 3.4.2.1.2 of this EIS/EIR. These authorizations would facilitate the construction of bank stabilization, bridges, grade control structures, utility crossings, and the WRP outfall, allow the grading of certain drainages to accommodate building pads, and authorize take of spineflower not located in proposed preserves.~~

4.6.5.2.1 Direct Impacts

RMDP Direct Impacts

Approval of the proposed RMDP would authorize the placement of bank stabilization along the Chiquito, Lion, Long, Potrero, and San Martinez Grande drainages. All five of these tributaries would be modified and, in some cases, filled and relocated into newly created lined channels. Many of the small ephemeral tributaries and some portions of larger tributaries would be permanently converted to buried storm drains. On all large existing or re-created tributaries, grade control structures would be installed to prevent excessive current velocities, which could otherwise cause scour and channel incision. Buried bank stabilization would be used where possible to allow vegetated riparian buffers to become established, recreating a more nearly natural system. Conversion to buried storm drains, filling and relocating the channel would result in permanent impacts to 41–44 percent of Corps jurisdiction and 43 percent of CDFG jurisdiction in the proposed Project tributaries. Bank stabilization is also proposed along portions of the Santa Clara River, and implementation of the proposed RMDP would permanently impact approximately three one percent of Corps jurisdiction and five percent of CDFG jurisdiction along the River (see **Figure 3.0-3**). No grade control structures would be required in the River, and buried soil cement bank stabilization is proposed along approximately one half of the riverbank in the RMDP area. In addition, some areas currently under agricultural use would be excavated to create additional riverine habitats.

Implementation of the proposed RMDP would involve various grading and construction activities within jurisdictional areas, as described above, and these activities would remove, divert, and substantially alter many of the drainages within the Project area. Many of the small, ephemeral drainages would be completely eliminated, and flows would be conveyed instead by buried storm drain systems incorporated into the Specific Plan development. The Chiquito Canyon and San Martinez Grande Canyon drainages would be realigned to flow parallel to Chiquito Canyon Road and San Martinez Grande Canyon Road, respectively, and these modifications would reduce the sinuosity of the channels. In Long Canyon, the valley containing the existing drainage would be filled and a new soft-bottom channel incorporating grade stabilization measures would be constructed following the approximate alignment of the existing channel, but elevated due to the fill material. The Potrero valley would also be filled under the proposed RMDP, and the existing channel would be eliminated and replaced with a soft-bottom channel incorporating grade stabilization measures. On average, the proposed channel would be approximately the same width as the existing channel. The existing alkali marsh wetland at the downstream end of Potrero Canyon would not be filled, but would be permanently hydrologically disrupted by a lined channel that would prevent stream flows from accessing the wetland.

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On the Santa Clara River mainstem, extensive bank stabilization on the north bank, partial bank stabilization on the south bank, and three bridges would affect flows and resource values within the channel. However, hydrologic impacts would be minor and would occur only under infrequent storm events (refer to revised **Section 4.1**, Surface Water Hydrology and Flood Control for more information). Existing agricultural areas adjacent to the river corridor would be excavated to facilitate development and create some additional riverbed, a process that would widen the river corridor in those areas.

Impacts to Waters of the United States

The acreages of permanently and temporarily adversely impacted Corps jurisdiction resulting from the implementation of the proposed RMDP were determined using a GIS database, and are presented in (Revised) Table 4.6-4, below. Within the Santa Clara River mainstem, the proposed RMDP would increase the Corps jurisdictional acreage compared to existing conditions. In total, the proposed RMDP would result in permanent adverse impacts to ~~82.9~~93.3 acres of waters of the United States (including wetland and non-wetland waters), and would create ~~88.7~~80.66 acres of new jurisdictional area. ~~river habitat through the r~~ Restoration and enhancement activities described in the RMDP would be conducted in the newly created jurisdictional areas. This would result in a permanent net loss of ~~5.3~~1.65 acres of waters of the United States, which would be a significant impact (Significance Criterion 2) absent mitigation. This change in jurisdictional acreage would also be one of the factors impacting stream/wetland functions and services within the Project area; these impacts (Significance Criterion 3) are discussed in **Subsection 4.6.5.2.3**, below. Permanent impacts would be mitigated to a less-than-significant level through incorporation of revised Mitigation Measure SW-3, which would require creation of Corps jurisdictional wetlands and waters of the United States. The substantial acreage of waters of the United States to be preserved in perpetuity within the River Corridor SMA, the High Country SMA, and the Salt Creek area further contribute to the determination that the impact of the proposed RMDP would be less than significant after mitigation. In addition, the ~~31.96~~ 33.3 acres of temporary impacts proposed under this alternative would represent a significant adverse impact on waters of the United States, absent mitigation (Significance Criterion 4). Temporary impacts to waters of the United States would be mitigated to a less-than-significant level through the incorporation of Mitigation Measure SW-4, which would require restoration and revegetation of temporary impact zones.

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(Revised) Table 4.6-4

Fill of Corps Jurisdictional Waters (Including Wetlands) Resulting From Alternative 2 (Proposed Project) (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	4.1 ⁵	0.3	0.1	0.3	0.0	0.4	0.0	0.2	1.2	5.3
	Temporary	7.1	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.4	7.5
Bank Stabilization	Permanent	10.8	1.3	0.2	0.0	0.0	0.5	0.0	0.0	2.0	12.8
	Temporary	10.1	3.6	0.8	0.0	0.0	1.7	0.0	0.3	6.3	16.5
Converted Drainage to Buried Storm Drain	Permanent	0.1	0.9	0.0	0.7	7.2	3.4	0.0	24.6	36.7	36.8
Drainage to be Regraded	Permanent	0.0	0.0	0.0	4.8	26.0	0.0	0.0	0.0	30.8	30.8
Drainage Displaced by Development and Manufactured Open Space	Permanent	0.1	5.5	1.3	0.0	0.0	0.0	0.0	0.0	6.8	6.9
Existing Drainage to be Restored	Temporary	0.0	0.0	0.0	0.0	0.0	0.0	7.2	0.0	7.2	7.3
Other Facilities ¹	Permanent	0.0	0.1	0.1	0.0	0.0	0.4	0.2	0.0	0.7	0.7
	Temporary	1.5	0.1	0.1	0.0	0.0	0.4	0.0	0.0	0.6	2.1
Total Acreage Filled	Permanent	15.1	8.0	1.7	5.7	33.1	4.8	0.2	24.8	78.3	93.3
	Temporary	18.7	4.0	0.9	0.0	0.0	2.1	7.3	0.3	14.6	33.3
New Jurisdictional Acres Created ²		29.6	8.4	4.9	7.7	21.6	1.2	17.7	-2.4	59.1	88.7
Net Permanent Change		+14.5	+0.3	+3.2	+2.0	-11.6	-3.5	+17.5	-27.2	-19.2	-5.3
Total Mitigation Required ³		33.8	12.0	2.5	5.7	33.1	6.9	7.5	25.1	92.8	126.6
Potential Mitigation Acreage Available ⁴		135.1	16.1	5.8	10.7	44.2	3.7	29.2	0.4	110.0	245.1
Excess/Deficit		+101.3	+4.0	+3.3	+5.0	+11.1	-3.1	+21.7	-24.8	+17.2	+118.5

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 this EIS/EIR for a description of these facilities.

² New river and tributary Corps jurisdictional areas from the creation and enhancement activities described in the RMDP.

³ Minimum mitigation acreage required to ensure no net loss of waters of the United States. Greater mitigation acreage may be required based on further analysis required under section 404(b)(1) Guidelines.

⁴ Figures indicate potential compensatory mitigation area available for Corps jurisdiction (including temporary impact areas), adjacent wetlands beyond the OHWM, and adjacent upland buffer habitat.

⁵ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

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~~In addition to the permanent impacts described above, approximately 27.24 acres of temporary adverse impacts to waters of the United States are proposed under this alternative, which would be a significant impact absent mitigation (Significance Criterion 4). Temporary impacts would be mitigated to a less than significant level through incorporation of Mitigation Measure SW-4, which would require restoration and revegetation of temporary impact zones.~~

Impacts to CDFG Jurisdictional Streams

The acreages of permanently and temporarily adversely impacted CDFG jurisdictional streams resulting from implementation of the proposed RMDP were determined using a GIS database, and are presented in (Revised) Table 4.6-5, below. The proposed Project would result in permanent adverse impacts to CDFG jurisdictional areas including ~~87.1~~ 87.3 acres of tributary drainages and ~~36.9~~ 35.0 acres of the Santa Clara River mainstem. The proposed Project would also create new riparian habitat through the restoration and enhancement activities described in the RMDP. ~~These activities would result in the restoration and enhancement of, totaling 73.2 up to 110.0 acres in the tributaries and 80.2-135.1 acres in the river mainstem.~~ The proposed Project would, therefore, result in a net ~~permanent loss~~ gain of ~~13.9~~ 6.4 acres of CDFG jurisdictional streambeds in the tributaries, and a net gain of ~~43.3~~ 41.2 acres of jurisdictional streambed in the river mainstem. In total, the proposed Project would result in a net gain of ~~30~~ 47.7 acres of CDFG jurisdictional areas site wide, ~~but the net loss of~~ therefore, such impacts ~~jurisdictional acreage in the tributaries would be less than significant absent mitigation~~ under Significance Criterion 2. ~~However, to minimize impacts, This impact would be mitigated through the creation of additional tributary jurisdictional areas would occur in accordance with revised Mitigation Measure SW-3, and such mitigation would occur in the Potrero Canyon and Salt Creek drainages on site. After incorporation of this measure, impacts relative to Significance Criterion 2 would be further reduced less than significant.~~ This change in jurisdictional acreage would also be one of the factors impacting stream/wetland functions and values within the Project area; these impacts (Significance Criterion 3) are discussed in **Subsection 4.6.5.2.3**, below.

If impacts occur prior to establishment of mitigation sites, a substantial temporal loss of riparian functions and values would occur between the time existing habitats are impacted and the time subsequently established mitigation sites reach maturity. This temporal loss of stream function would constitute a substantial adverse effect on jurisdictional streams, and would be significant under Significance Criterion 1 absent mitigation. Because the creation of jurisdictional areas proposed in the RMDP does not account for temporal loss, the use of mitigation ratios greater than 1:1 is necessary to mitigate this impact. Revised Mitigation Measure BIO-2 presents mitigation ratios, based on the vegetation type and HARC score of the habitat impacted as well as the time elapsed between removal of existing habitat and establishment of replacement habitat. As shown on (Revised) Table 4.6-5, the capacity for mitigation creation under Alternative 2 provides for 110.0~~88.9~~ acres in the tributaries and ~~139.0~~ 135.1 acres in the mainstem of the river.

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(Revised) Table 4.6-5

Fill of CDFG Jurisdictional Streams Resulting from Implementation of Alternative 2 (Proposed Project) (Acres)

Project Component	Impact Type	Santa Clara River Mainstem	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	7.9 ²	0.6	0.1	0.3	0.1	0.4	0.0	0.2	1.5	9.4
	Temporary	14.0	0.4	0.1	0.0	0.0	0.0	0.0	0.1	0.5	14.5
Bank Stabilization	Permanent	15.3	1.9	0.2	0.0	0.0	0.5	0.0	0.0	2.7	17.9
	Temporary	39.3	5.2	0.8	0.0	0.0	1.7	0.0	0.1	7.8	47.0
Converted Drainage to Buried Storm Drain	Permanent	0.1	1.0	0.0	0.7	7.6	3.4	0.0	25.2	37.9	38.0
Drainage to be Regraded	Permanent	0.00	0.0	0.0	4.8	29.7	0.0	0.0	0.0	34.5	34.5
Drainage Displaced by Development and Manufactured Open Space	Permanent	9.5	8.6	1.3	0.0	0.0	0.0	0.0	0.0	10.0	19.5
Existing Drainage to be Restored	Temporary	1.4	0.0	0.0	0.0	0.0	0.0	7.2	0.2	7.4	8.8
Other Facilities ¹	Permanent	2.2	0.2	0.1	0.0	0.0	0.4	0.2	0.0	0.8	3.0
	Temporary	4.2	0.2	0.1	0.0	0.0	0.4	0.0	0.0	0.6	4.9
Total Acreage Impacted	Permanent	35.0	12.3	1.65	5.7	37.3	4.8	0.2	25.4	87.3	122.3
	Temporary	58.9	5.7	0.87	0.0	0.0	2.1	7.3	0.3	16.3	75.2
Mitigation Required by <u>revised</u> Measure BIO-2		189.8	25.8	3.7	8.1	74.9	8.6	7.5	39.2	167.8	357.6
Mitigation Capacity		135.1	16.1	5.8	10.7	44.2	3.7	29.2	0.4	110.0	245.1
Excess/Deficit (+/-)		-54.6	-9.8	+2.1	+2.5	-30.7	-4.9	+21.7	-38.8	-57.8	-112.4

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 this EIS/EIR for a description of these facilities.

² Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

4.6 JURISDICTIONAL WATERS AND STREAMS

To mitigate the impacts identified above, applying the mitigation ratios specified in revised Mitigation Measure BIO-2, ~~169.3~~167.8 acres of mitigation for tributary impacts and 189.8 acres of mitigation for river mainstem impacts would be required. Because these acreages exceed the available mitigation acreage on site, the balance of the required mitigation (~~80.4~~57.8 acres of tributary acreage and ~~50.8~~54.6 acres of river mainstem acreage) would be mitigated through creation, preservation, or enhancement of jurisdictional areas at an off-site location as required by revised Mitigation Measure SW-6 (tributary drainages) and revised Mitigation Measure SW-7 (Santa Clara River mainstem). Incorporation of the mitigation ratios established in revised Mitigation Measure BIO-2 at on-site and off-site areas as allowed by revised Mitigation Measures SW-6 and SW-7 would reduce this impact to a less-than-significant level. The mitigation acreages stated above assume that mitigation would be ~~initiated~~established within a two-year period after impacts occur. ~~If a longer period elapses before mitigation is initiated, Otherwise,~~ higher mitigation ratios would apply as specified in revised Mitigation Measure BIO-2. ~~If The mitigation ratios specified in revised Mitigation Measure BIO-2 avoid, reduce, or compensate for impacts associated with is initiated two years prior to impacts, no temporal loss of functions and values. would occur, and With mitigation,~~ impacts would be ~~mitigated at a 1:1 ratio~~less than significant under Significance Criterion 1.

The substantial acreage of jurisdictional streambeds to be preserved in perpetuity within the River Corridor SMA, the High Country SMA, and the Salt Creek area ~~further also~~ contribute to the determination that the impact of the proposed RMDP under Criteria 1, 2, and 3 would be less than significant after mitigation.

In addition to permanent impacts, the proposed Project would also result in an additional 75.2 acres of temporary adverse impacts to CDFG jurisdictional areas (~~59.6~~58.9 acres in the river mainstem and ~~15.7~~16.3 acres in the tributaries). Absent mitigation, this impact would be considered significant under Significance Criterion 4. This impact would be reduced to a less-than-significant level through incorporation of Mitigation Measure SW-4, which requires revegetation and restoration of all temporary impact zones. The ratios and timeframes specified in revised Mitigation Measure BIO-2 would apply, and ratios greater than 1:1 would be required if mitigation is not initiated within a two-year period after temporary impacts occur.

Impacts to Federally-Protected Wetlands

The acreages of permanent and temporary impacts to federally protected wetlands resulting from implementation of the proposed RMDP were determined using a GIS database, and are presented in (Revised) **Table 4.6-6**, below. These acreages are a subset of the impacted waters of the United States shown in (Revised) **Table 4.6-4**, above. The proposed Project would result in permanent impacts to ~~8.69~~20.5 acres of wetlands and would temporarily impact an additional ~~6.56~~11.2 acres. These impacts would occur in the riverine alkali marsh in Potrero Canyon (HARC Reach PO-4), the area of the Santa Clara River near the Mayo Crossing previously identified as CDFG jurisdiction, but which has been reclassified as Corps wetlands, the cismontane alkali marsh in lower Potrero Canyon (HARC Reach PO-7), the area of the Santa Clara River near the Mayo Crossing previously identified as CDFG ~~jurisdiction~~, but which has been reclassified as Corps wetlands, and at various locations along the fringes of the Santa Clara River that support riparian vegetation. No construction or fill would occur at the spring complex (a slope wetland) near Middle Canyon (HARC Reach MI-6), although this reach is close to the Middle Canyon

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drainage, which would be eliminated under the proposed Project. In addition, the proposed pProject would include impacts to 4.42 acres of a special aquatic site in Potrero Canyon (including the wetland in HARC reach PO-7) some of which could practicably be avoided. Absent mitigation, these impacts would constitute a substantial adverse effect on federally-protected wetlands, and, therefore, would be considered significant under Significance Criterion 1. However, the additional avoidance of wetlands in Potrero Canyon and additional creation and enhancement of wetlands in the Salt Creek watershed required by revised Mitigation Measures SW-1 and SW-2 would reduce this impact to a less-than-significant level.

(Revised) Table 4.6-6
Fill of Federally Protected Wetlands Resulting from Implementation of
Alternative 2 (Proposed Project) (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)	Slope Wetland Near Middle Canyon (MI-6)	Total
Bridges	Permanent	3.1 ¹	0.0	0.0	0.0	3.1
	Temporary	4.2	0.0	0.0	0.0	4.2
Bank Stabilization	Permanent	10.4	0.0	2.5	0.0	12.8
	Temporary	5.4	0.0	0.0	0.0	5.4
Drainage Graded	Permanent	0.0	0.0	4.4	0.0	4.5
	Temporary	0.0	0.0	0.0	0.0	0.0
Other Facilities ⁽¹⁾	Permanent	0.1	0.0	0.0	0.0	0.1
	Temporary	0.5	0.0	0.0	0.0	0.5
Restoration	Permanent	0.0	0.0	0.0	0.0	0.0
	Temporary	0.0	1.2	0.0	0.0	1.2
Total Impacts	Permanent	13.6	0.0	6.9	0.0	20.5
	Temporary	10.0	1.2	0.0	0.0	11.2

¹ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

Source: URS (2010)

SCP Direct Impacts

The proposed SCP is a conservation and permitting plan for an upland plant species, and would not authorize any activities requiring a section 404 permit or Master Streambed Alteration Agreement. Therefore, the SCP would not result in any direct impacts on Corps or CDFG jurisdictional waters or streambeds.

4.6.5.2.2 Indirect Impacts

RMDP Indirect Impacts

Because all activities that would result in permanent or temporary impacts to waters of the United States or CDFG jurisdictional streams have been included and analyzed as direct impacts of the RMDP, there are no additional, indirect effects of the RMDP on these resources under Significance Criteria 1, 2, and 4. For an analysis of impacts that would occur later in time, such as long-term changes in riparian condition (Significance Criterion 3) that would result from implementation of the proposed RMDP and build out of the Specific Plan development, please refer to **Subsection 4.6.5.2.3**, below. For an analysis of the proposed Project's indirect effects on hydrology, groundwater, water quality, or biological resources, please refer to revised Section 4.1, Surface Water Hydrology and Flood Control; revised Section 4.3, Water Resources; revised Section 4.4, Water Quality; and revised Section 4.5, Biological Resources, respectively, of this EIS/EIR.

SCP Indirect Impacts

Implementation of the proposed SCP would facilitate build-out of the Specific Plan, VCC, and Entrada developments. Impacts to jurisdictional streams and waters associated with build-out of the Newhall Ranch Specific Plan development are included among the direct impacts of the RMDP Project component, and are discussed in the preceding subsections. Build-out of the VCC development would require the construction of bank stabilization along the Castaic Creek and Hasley Canyon drainages, as well as placement of 14 grade control structures within the Hasley Canyon drainage. Build-out of the VCC development would result in permanent impacts to approximately nine acres of waters of the United States (10.7 percent of VCC total) and 24.1 acres of CDFG jurisdictional streams (22 percent of VCC total) within the VCC planning area. These activities have been previously authorized by the Corps (Permit No. 89-00419-AOA), but authorization from CDFG pursuant to Fish and Game Code section 1600 *et seq.* has not yet been granted. These impacts would be significant absent mitigation under Criteria 1, 2, 3, and 4. Within the Entrada planning area, implementation of the proposed SCP would help to facilitate an urban development, which would result in 2.6 acres of permanent adverse impacts to waters of the United States and 5.7 acres of permanent adverse impacts to CDFG jurisdictional streams. These impacts would be significant absent mitigation under Criteria 1, 2, 3, and 4.

Mitigation to reduce the impacts associated with the build-out of VCC and Entrada to less than significant would be similar to that proposed for the RMDP. However, the applicant is not seeking the permitting authorization from the Corps (Entrada only) and CDFG at this time that would be necessary under the Clean Water Act and California Fish and Game Code to alter these jurisdictional waters/streams. Any future request for such authorization would require a site specific application to the Corps and CDFG, at a minimum, and related review pursuant to the Clean Water Act, the California Fish and Game Code, and NEPA/CEQA, as appropriate.

4.6.5.2.3 Secondary Impacts (Impacts to Riparian Condition)

Implementation of the proposed RMDP and subsequent build-out of the Specific Plan development would affect the flood prone area and therefore riparian condition of the aquatic resources on site. As previously

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stated, the term "secondary impacts" is used to denote those impacts that would be reasonably certain to occur as a result of the Specific Plan, VCC, and Entrada developments, but that would either occur later in time or be removed in distance from the Project site. Because many of the proposed Project's effects on riparian condition would be related to long-term impacts from the future residents and management practices associated with these developments (which would occur later in time), impacts to riparian condition are considered to be secondary impacts of the proposed Project. Changes in acreage of flood prone area would stem from two sources: changes in the acreage of jurisdictional areas on site and changes in the overall quality (measured by the HARC Total Score) of on-site riparian areas. As discussed and quantified in **Subsection 4.6.5.2.1**, above, implementation of the proposed RMDP would involve a change in the jurisdictional area within the river and tributaries on site. As riparian condition is a result of reach quality and area, this change in jurisdictional area would result in altered riparian condition. Reaches that increase in size due to proposed creation of additional riparian areas would show increased riparian condition, while reaches decreasing in size would show reduced riparian condition, all other things being equal. In addition to the jurisdictional area, the quality of many reaches in the RMDP area would also be impacted. Some reaches would be affected by installation of proposed Project components within the jurisdictional boundaries, while others would simply undergo changes in watershed characteristics, such as urban development within the watershed, but beyond the flood prone area. In reaches where buried bank stabilization is proposed, the temporary impact zone would be revegetated with native riparian plants. Changes such as these would alter the metric scores (beneficially and adversely) for the affected reaches and would affect riparian condition correspondingly. The methods used to determine changes in post-Project metric scores are discussed in the HARC, included in **Appendix 4.6** of ~~this~~ the Draft EIS/EIR.

If the proposed Project were implemented, nearly all riparian reaches within the RMDP site would sustain impacts from grading or installation of proposed Project components within the reach, as quantified in (Revised) Table 4.6-7. The seven reaches in the Salt Creek drainage are exceptions in this regard; the entire portion of the Salt Creek watershed within the applicant's ownership would be dedicated as permanent open space and no fill of the drainage would be permitted. The spring complex (a slope wetland) near the mouth of Middle Canyon, which was the highest quality reach within the RMDP site, also would be preserved under this alternative. Riparian condition, as measured by the HARC within the Santa Clara River also would increase due to conversion of existing agricultural areas to riparian habitat.

In addition to physical impacts due to filling and grading of jurisdictional areas, implementation of the proposed RMDP would affect assessment reaches by facilitating substantial changes in the land uses in surrounding uplands. The extensive residential, commercial, business park, and mixed use areas that would be constructed if the RMDP is implemented would convert a portion of the Specific Plan site to urban land uses. Urban runoff from these areas could potentially affect water quality and hydrology in assessment reaches, adversely affecting riparian conditions. However, the removal of agricultural and grazing uses from the watershed would have an opposite effect, as agricultural runoff degrades water quality as well. (Revised) Table 4.6-7 compares the existing riparian capacity of streams within the RMDP site to the post-Project scenario that would result from implementation of the proposed RMDP. Potential changes in the quality of off-site riparian areas downstream of the Project area were not assessed using the HARC method, but were evaluated in the hydrologic and hydraulic modeling conducted for the proposed Project. The results of these analyses are presented in revised Section 4.1, Surface Water

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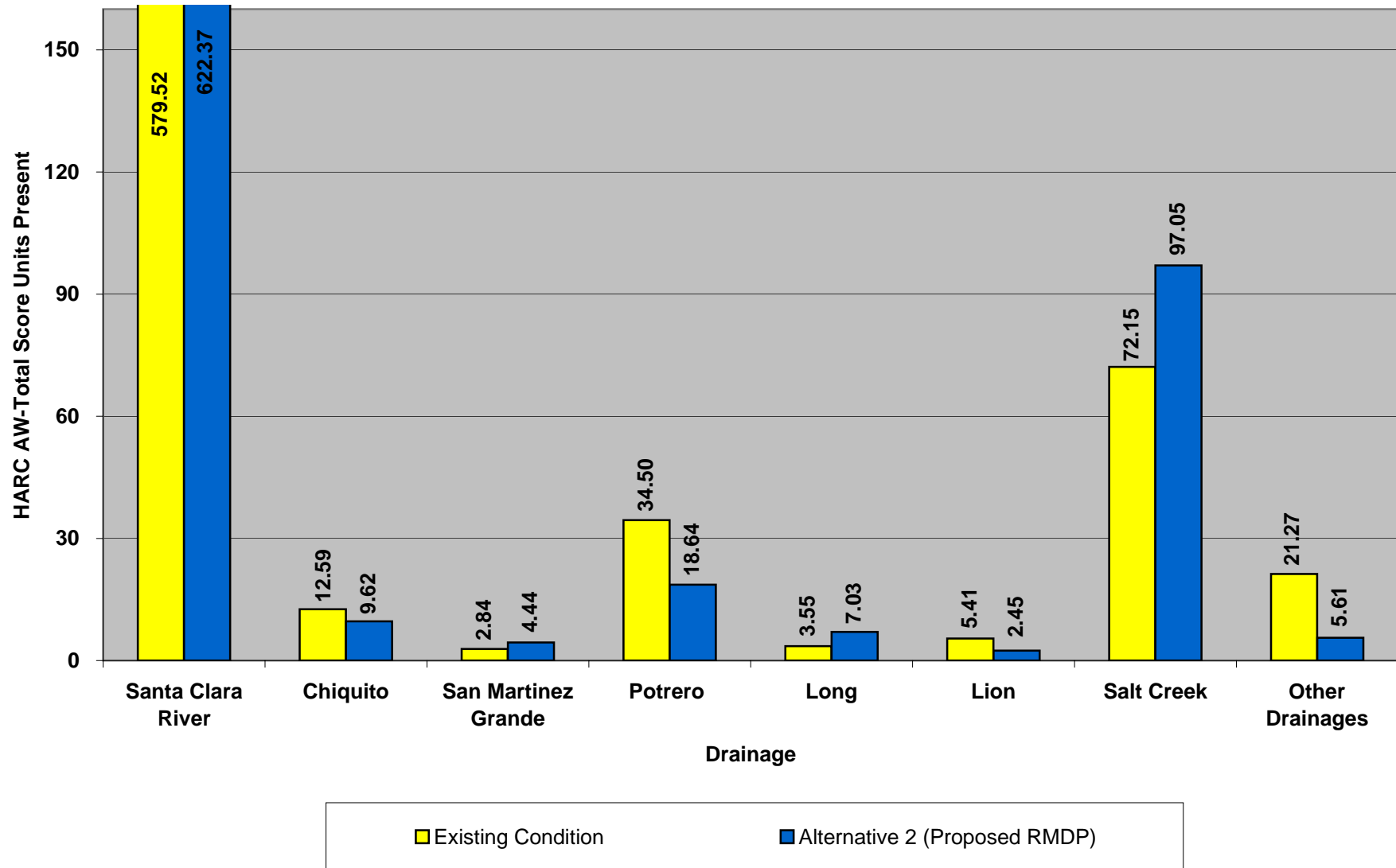
Hydrology and Flood Control, and revised **Section 4.2**, Geomorphology and Riparian Resources of this EIS/EIR.

As shown in (Revised) **Table 4.6-7** and **Figure 4.6-6**, implementation of the proposed RMDP would result in a net gain of 27.235.68 HARC AW-score units, an increase of four~~4.9~~ percent compared to the existing condition within the RMDP site. The majority of this gain would occur within the Santa Clara River and Salt Creek drainages, where extensive restoration activities are proposed that would greatly expand the Corps and CDFG jurisdictional acreage at those locations. This impact would be less than significant (Significance Criterion 3).

<u>(Revised)</u> Table 4.6-7									
Impacts to Riparian Condition Resulting from Implementation of Alternative 2 (Proposed Project)									
(HARC AW-Score Units)									
	Santa Clara River	Chiquito	San Martinez Grande	Lion	Long	Potrero	Salt	Other Drainages	Totals
Existing Condition	584.0	12.4	2.1	5.4	3.6	35.2	75.2	22.2	740.0
Proposed Project	622.4	9.6	4.4	2.5	7.0	18.6	97.1	5.6	767.2
Change	+38.5	-2.8	+2.3	-2.9	+3.4	-16.6	+22.0	-16.6	+27.2
Percentage of Change	+7%	-22%	+112%	-54%	+94%	-47%	+29%	-75%	+4%

¹ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

Source: (URS 2010)



SOURCE: URS – February 2009

FIGURE 4.6-6

Impacts to Riparian Condition Resulting from Implementation of Alternative 2 (Proposed RMDP)

4.6 JURISDICTIONAL WATERS AND STREAMS

4.6.5.3 Impacts of Alternative 3 (Elimination of Planned Potrero Bridge and Additional Spineflower Preserves)

If Alternative 3 were implemented, a long-term CWA section 404 permit and Master Streambed Alteration Agreement would be issued authorizing the improvements identified in **Subsection ~~3.4.3.2.3~~**, of ~~this the~~ Final EIS/EIR. These authorizations would ~~facilitate~~ allow the construction of bank stabilization, bridges, grade control structures, utility crossings, and the WRP outfall, and would allow the grading of certain drainages to accommodate building pads. However, Alternative 3 would authorize 10,800 fewer linear feet of buried bank stabilization (10 percent reduction), 165 more linear feet of drainages converted into underground storm drains (less than 1 percent increase), 1 less grade control structure (less than one percent reduction), and one less river bridge (33 percent decrease), when compared with the proposed RMDP Project (see **Figures 3.0-7, 3.0-9, 3.0-12, 3.0-13, 3.0-14, 3.0-15, and 3.0-16** in **Section 3.0**, Description of Alternatives of this EIS/EIR). This alternative would not require as much fill of major jurisdictional drainages as the proposed RMDP Project, particularly in Potrero Canyon ((Revised) Tables 4.6-8 and 4.6-9).

4.6.5.3.1 Direct Impacts

RMDP Direct Impacts

In the Santa Clara River, Long Canyon, and minor on-site drainages, Alternative 3 would involve the same drainage control structures as the proposed RMDP, and would have approximately similar impacts. In San Martinez Grande Canyon, bank stabilization would be constructed outside of jurisdictional waters, so that only temporary construction impacts would occur. The upper portion of Chiquito Canyon would be stabilized similarly. In lower Potrero Canyon, bank stabilization would be constructed outside of jurisdictional waters and would be discontinued immediately upstream of the cismontane alkali marsh (HARC Reach PO-7). Construction of grade control structures in these drainages would be necessary to prevent excessive current velocities. Some areas along the banks of the Santa Clara River that are currently under agricultural use would be excavated to create additional riverbed area. The extent of jurisdictional areas impacted by this alternative are quantified and compared to those of the proposed RMDP in (Revised) Tables 4.6-8 and 4.6-9.

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(Revised) Table 4.6-8
Fill of Corps Jurisdictional Waters (Including Wetlands) Resulting From
Implementation of Alternative 3 (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	3.2 ⁵	0.3	0.1	0.3	0.3	0.4	0.0	0.1	1.5	4.7
	Temporary	5.7	0.2	0.1	0.0	0.1	0.0	0.0	0.1	0.5	6.2
Bank Stabilization	Permanent	2.2	0.8	0.0	0.0	0.0	0.5	0.0	0.0	1.4	3.6
	Temporary	10.5	5.9	2.1	0.0	0.0	1.7	0.0	0.1	9.8	20.3
Converted Drainage to Buried Storm Drain	Permanent	0.1	1.0	0.0	0.6	7.3	3.4	0.0	24.6	37.0	37.0
Drainage to be Regraded	Permanent	0.0	0.0	0.0	4.8	15.2	0.0	0.0	0.0	20.0	20.0
Drainage Displaced by Development and Manufactured Open Space	Permanent	0.2	3.1	0.0	0.0	0.0	0.0	0.0	0.0	3.1	3.3
Existing Drainage to be Restored	Temporary	0.0	0.0	0.0	0.0	0.0	0.0	7.2	0.2	7.4	7.4
Other Facilities ¹	Permanent	0.0	0.3	0.1	0.0	0.3	0.4	0.2	0.0	1.3	1.3
	Temporary	1.5	0.4	0.1	0.0	1.4	0.4	0.0	0.0	2.3	3.8
Total Acreage Filled	Permanent	5.7	5.6	0.2	5.7	23.2	4.8	0.2	24.8	64.3	70.0
	Temporary	17.7	6.5	2.3	0.0	1.5	2.1	7.3	0.3	19.9	37.6
New Jurisdictional Acres Created ²		40.9	9.0	6.3	7.1	54.6	1.2	18.2	0.0	96.5	137.4
Net Permanent Change		+35.2	+3.4	+6.1	+1.4	+31.5	-3.5	+18.0	-24.8	+32.2	+67.4
Total Mitigation Required ³		23.4	12.0	2.4	5.7	24.7	6.9	7.5	25.1	84.2	107.6
Potential Mitigation Acreage Available ⁴		94.0	15.1	13.2	10.7	87.7	2.0	22.5	0.0	151.2	245.2
Excess/Deficit		+70.6	+3.0	+10.8	+5.0	+63.0	-4.9	+15.0	-25.0	+67.0	+137.6

Notes:

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 this EIS/EIR for a description of these facilities.

² New river and tributary Corps jurisdictional areas from the creation and enhancement activities described in the RMDP.

³ Minimum mitigation acreage required to ensure no net loss of waters of the United States. Greater mitigation acreage may be required based on further analysis required under section 404(b)(1) Guidelines.

⁴ Figures indicate potential compensatory mitigation area available for Corps jurisdiction (including temporary impact areas), adjacent wetlands beyond the OHWM, and adjacent upland buffer habitat.

⁵ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

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(Revised) Table 4.6-9
Fill of CDFG Jurisdictional Streams Resulting from Implementation of Alternative 3 (Acres)

Project Component	Impact Type	Santa Clara River Mainstem	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	4.9	0.6	0.1	0.3	0.6	0.4	0.0	0.1	2.0	6.9
	Temporary	8.4	0.4	0.1	0.0	0.1	0.0	0.0	0.1	0.6	9.0
Bank Stabilization	Permanent	6.1	1.5	0.0	0.0	0.0	0.5	0.0	0.0	2.0	8.1
	Temporary	37.5	7.4	2.1	0.0	1.0	1.7	0.0	0.1	12.3	49.9
Converted Drainage to Buried Storm Drain	Permanent	0.1	1.1	0.0	0.6	7.7	3.4	0.0	25.2	38.1	38.2
Drainage to be Regraded	Permanent	0.0	0.0	0.0	4.8	18.8	0.0	0.0	0.0	23.6	23.6
Drainage Displaced by Development and Manufactured Open Space	Permanent	6.7	6.2	0.0	0.0	0.0	0.0	0.0	0.0	6.2	12.9
Existing Drainage to be Restored	Temporary	1.5	0.0	0.0	0.0	0.0	0.0	7.2	0.2	7.4	8.9
Other Facilities ¹	Permanent	2.3	0.4	0.1	0.0	0.3	0.4	0.2	0.0	1.4	3.6
	Temporary	4.3	0.4	0.1	0.0	0.4	0.4	0.0	0.0	1.3	5.6
Total Acreage Filled	Permanent	20.0	9.8	0.2	5.7	27.4	4.8	0.2	25.3	73.3	93.3
	Temporary	51.7	8.2	2.3	0.0	1.5	2.1	7.3	0.3	21.7	73.4
Mitigation Required		131.5	24.7	2.7	8.1	52.8	8.6	7.5	39.1	143.4	274.9
Mitigation Capacity		94.0	15.1	13.2	10.7	87.7	2.0	22.5	0.0	151.2	245.2
Excess/Deficit (+/-)		-37.5	-9.6	+10.5	+2.6	+34.9	-6.6	+15.0	-39.0	+7.7	-29.7

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 this EIS/EIR for a description of these facilities.

² Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

4.6 JURISDICTIONAL WATERS AND STREAMS

Implementation of Alternative 3 would involve various grading and construction activities within jurisdictional areas, as described above, and these activities would remove, divert, and substantially alter many of the drainages within the Project area. Like the proposed RMDP (Alternative 2), Alternative 3 would eliminate many of the minor, ephemeral drainages on site and route flows into the buried storm drain systems incorporated into the Specific Plan development. The Chiquito Canyon drainage would be lined with buried bank stabilization, but the proposed bank stabilization in the upper reach would be constructed beyond the lateral limits of the existing streambed so that relocation of the channel would not be necessary. In the lower reach, the Chiquito Canyon drainage would be relocated into a lined channel parallel to Chiquito Canyon Road, reducing sinuosity. In San Martinez Grande Canyon, buried bank stabilization is proposed, but would be constructed beyond the lateral limits of the streambed such that relocation or straightening of the channel would not be necessary. In Long Canyon, the valley containing the existing drainage would be filled and a new stream channel would be constructed following the approximate alignment of the existing channel, although elevated due to the fill material, in the same configuration as under the proposed RMDP. The new channel proposed in Long Canyon would have resource quality exceeding that of the existing channel, due to the degraded and morphologically unstable character of the existing drainage. The Potrero valley would also be filled under Alternative 3, and the existing channel would be eliminated and replaced with a buried storm drain system in the upper reach, and a soft-bottom channel incorporating grade stabilization measures in the lower reach. The width of the proposed channel in the lower reach would be substantially greater than that of the existing channel. The existing alkali marsh wetland at the downstream end of Potrero Canyon would not be filled under this alternative, and bank stabilization would be discontinued upstream of this area to prevent adverse hydrologic consequences. On the Santa Clara River mainstem, extensive bank stabilization on the north bank, two segments of bank stabilization on the south bank, and two bridges would affect flows and resource values within the channel. However, hydrologic impacts would be minor and would occur only under infrequent storm events (refer to revised Section 4.1, Surface Water Hydrology and Flood Control for more information). Existing agricultural areas adjacent to the river corridor would be excavated to create additional riverbed, and this process would widen the river corridor in some areas. Overall, the changes to on-site drainages under Alternative 3 would result in a net gain of both jurisdictional acreage and riparian condition, as shown in (Revised) Tables 4.6-8 and 4.6-10, due to the creation and enhancement streambeds on the site.

Impacts to Waters of the United States

The acreages of Corps jurisdiction permanently and temporarily impacted from implementation of Alternative 3 are presented in (Revised) Table 4.6-8, above. Alternative 3 would result in permanent adverse impacts to 67.74-70.0 acres of waters of the United States, including wetlands (a 18-25 percent reduction in acres impacted compared to the proposed RMDP Project), and would create 116-137.4 acres of new river habitat through jurisdictional area, through implementation of the restoration and enhancement activities, as described in the RMDP. These restoration and enhancement activities described in the RMDP (44 would result in a 26 percent increase in acres created compared to the proposed RMDP Project). This would result in a net permanent gain of 48.38-67.4 acres of Corps jurisdictional areas, a less-than-significant impact under Significance Criterion 2. This change in jurisdictional acreage would also be one of the factors affecting stream/wetland functions and services within the Project area (Significance Criterion 3), discussed in Subsection 4.6.4.4.6.5.3.3, below. Net

4.6 JURISDICTIONAL WATERS AND STREAMS

permanent gains in Corps jurisdictional acreage would occur both in the Santa Clara River mainstem (14.1 ~~35.2~~ acre gain) and in the tributary drainages (34.3 ~~32.2~~ acre gain) under this Alternative. The substantial acreage of waters of the United States to be preserved in perpetuity within the River Corridor SMA, the High Country SMA, and the Salt Creek area further contribute to the determination that this impact would be less than significant. However, the 30.78 ~~37.6~~ acres of temporary impacts proposed under this alternative would represent a significant adverse impact on waters of the United States, absent mitigation (Significance Criterion 4). Temporary impacts to waters would be mitigated to a less-than-significant level through the incorporation of Mitigation Measure SW-4, which would require restoration and revegetation of temporary impact zones.

(Revised) Table 4.6-10
Fill of Federally Protected Wetlands Resulting from Implementation of Alternative 3 (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	2.2	0.0	0.2	0.0	2.4
	Temporary	2.7	0.0	0.0	0.0	2.7
Bank Stabilization	Permanent	2.0	0.0	4.2	0.0	6.2
	Temporary	6.3	0.0	0.4	0.0	6.7
Drainage Graded	Permanent	0.0	0.0	0.0	0.0	0.0
	Temporary	0.0	0.0	0.0	0.0	0.0
Other Facilities ⁽¹⁾	Permanent	0.1	0.0	0.4	0.0	0.5
	Temporary	0.5	0.0	0.1	0.0	0.6
Restoration	Permanent	0.0	0.0	0.0	0.0	0.0
	Temporary	0.0	1.2	0.0	0.0	1.2
Total Impacts	Permanent	4.4	0.0	4.8	0.0	9.2
	Temporary	9.5	1.2	0.5	0.0	11.2
Percent Reduction in Permanent Adverse Impacts, Compared to Proposed Project		68%	No Change	30%	No Change	55%

¹ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

Source: URS (2010)

Impacts to CDFG-Jurisdictional Streams

The acreages of permanently and temporarily adversely impacted CDFG jurisdictional streams resulting from implementation of Alternative 3 were determined using a GIS database, and are presented in **(Revised) Table 4.6-9**. Alternative 3 would result in permanent adverse impacts to CDFG jurisdictional areas including 73.3 acres of tributary drainages and 22.7 ~~20.0~~ acres of the Santa Clara River mainstem.

4.6 JURISDICTIONAL WATERS AND STREAMS

This alternative would also create new riparian habitat through the restoration and enhancement activities described in the RMDP. These activities would result in the restoration and enhancement of , totaling 94.2 up to 94.0 acres in the river mainstem and 127.8-151.2 acres in the tributaries.

To mitigate these impacts applying the mitigation ratios specified in revised Mitigation Measure BIO-2, ~~142.9~~143.4 acres of mitigation for tributary impacts and 131.5 acres of mitigation for river mainstem impacts would be required. As shown on (Revised) Table 4.6-9, the capacity for mitigation creation under Alternative 3 provides for ~~151.2~~148.9 acres in the tributaries and ~~94.0~~145.8 acres in the mainstem of the river. Thus, the mitigation acreage available within the Project area would be sufficient to accommodate the mitigation needs of this alternative, and no off-site mitigation areas would be required. The Project area, therefore, has sufficient mitigation capacity within the tributary drainages under this alternative, and no off-site mitigation for temporal losses of function in tributaries would be required.

However, because the acreage required to mitigate impacts to the river mainstem under Alternative 3 would exceed the mitigation acreage available on site (143.4 acres of river mainstem mitigation required vs. 94.0 acres of suitable river mainstem mitigation areas available on site), the balance (37.5 acres) would be mitigated to less than significant through creation, preservation, and enhancement of off-site riparian areas in the Santa Clara River mainstem as required by revised Mitigation Measure SW-7. Incorporation of the mitigation ratios established in revised Mitigation Measure BIO-2 at on-site and off-site areas as allowed by revised Mitigation Measure SW-7 would reduce this impact to a less-than-significant level.

The substantial acreage of jurisdictional streambeds to be preserved in perpetuity within the River Corridor SMA, the High Country SMA, and the Salt Creek area also contribute to the determination that the impact of the proposed RMDP under Criteria 1, 2, and 3 would be less than significant after mitigation.

These mitigation acreages assume that mitigation would be ~~initiated~~established within a two-year period after impacts occur. ~~If a longer period elapses before mitigation is initiated~~ Otherwise, higher mitigation ratios would apply as specified in revised Mitigation Measure BIO-2. ~~If The mitigation ratios specified in revised Mitigation Measure BIO-2 avoid, reduce, or compensate for impacts associated with is initiated two years prior to impacts, no temporal loss of functions and values, would occur, and With mitigation,~~ impacts would be ~~mitigated at a 1:1 ratio less than significant under Significance Criterion 1 and Significance Criterion 4.~~ The substantial acreage of jurisdictional streambeds to be preserved in perpetuity within the River Corridor SMA, the High Country SMA, and the Salt Creek area ~~further also~~ contribute to the determination that this impact would be less than significant after mitigation. Alternative 3 would result in a net gain of ~~54.5-76.6~~ acres of CDFG jurisdictional streambed in the tributaries, and a net gain of ~~71.5-69.7~~ acres of jurisdictional streambed in the river mainstem. In total, this alternative would result in a net gain of ~~126-146.3~~ acres of CDFG jurisdictional areas site wide. Impacts relative to Significance Criterion 2 would, therefore, be less than significant. This change in jurisdictional acreage would be one of the factors affecting stream/wetland functions and values within the Project area (Significance Criterion 3), discussed in **Subsection 4.6.4, 4.6.5.3.3**, below.

4.6 JURISDICTIONAL WATERS AND STREAMS

In addition to the permanent impacts described above, Alternative 3 would also result in an additional ~~72.6-73.3~~ acres of temporary adverse impacts to CDFG jurisdictional areas (~~51.6~~ 51.7 acres in the river mainstem and ~~21.0~~ 21.7 acres in the tributaries). Absent mitigation, this impact would be considered significant under Significance Criterion 4. This impact would be reduced to a less-than-significant level through incorporation of Mitigation Measure SW-4, which requires revegetation and restoration of all temporary impact zones. The ratios and timeframes specified in revised Mitigation Measure BIO-2 would apply, and ratios greater than 1:1 would be required if mitigation is not initiated within a two-year period after temporary impacts occur.

Both permanent and temporary impacts would have associated temporal loss of riparian functions and values, which would constitute a substantial adverse effect on state-protected streambeds. Absent mitigation, this impact would be significant under Significance Criterion 1. This impact would be reduced to a less-than-significant level through incorporation of Mitigation Measures BIO-1, and BIO-3 through BIO-18, which establish standards for restoration of riparian habitat, and implementation of revised Mitigation Measure BIO-2, which establishes standards for the expansion of riparian habitat to compensate for temporal loss of habitat functions and values.

Impacts to Federally-Protected Wetlands

The acreages of federally-protected wetlands permanently and temporarily impacted from implementation of Alternative 3 are presented in (Revised) **Table 4.6-10**, above. These acreages are a subset of the impacted waters of the United States shown in (Revised) **Table 4.6-8**, above. Alternative 3 would result in permanent adverse impacts to ~~7.02~~ 9.2 acres of wetlands (~~+9~~ 55 percent reduction compared to proposed RMDP Project) and would temporarily impact an additional ~~5.58~~ 11.2 acres. Absent mitigation, this impact would be considered significant under Significance Criterion 1 and 4. However, the additional avoidance of wetlands in Potrero Canyon and additional creation and enhancement of wetlands in the Salt Creek watershed required by revised Mitigation Measures SW-1 and SW-2 would reduce this impact to a less-than-significant level. Mitigation Measure SW-4 would mitigate temporary impacts to a less-than-significant level by requiring restoration and revegetation of temporary impact zones.

SCP Direct Impacts

The SCP component of Alternative 3 is a permitting and management plan for an upland plant species, and would not result in any direct impacts to waters of the United States or CDFG jurisdictional streams.

4.6.5.3.2 Indirect Impacts

RMDP Indirect Impacts

The indirect impacts to jurisdictional streams and wetlands associated with adoption of Alternative 3 are anticipated to be similar to those of the proposed RMDP. These impacts are associated with changes in hydrology and water quality, and are addressed in revised **Section 4.1**, Surface Water Hydrology and Flood Control, revised **Section 4.2**, Geomorphology and Riparian Resources, and revised **Section 4.4**, Water Quality, of this EIS/EIR.

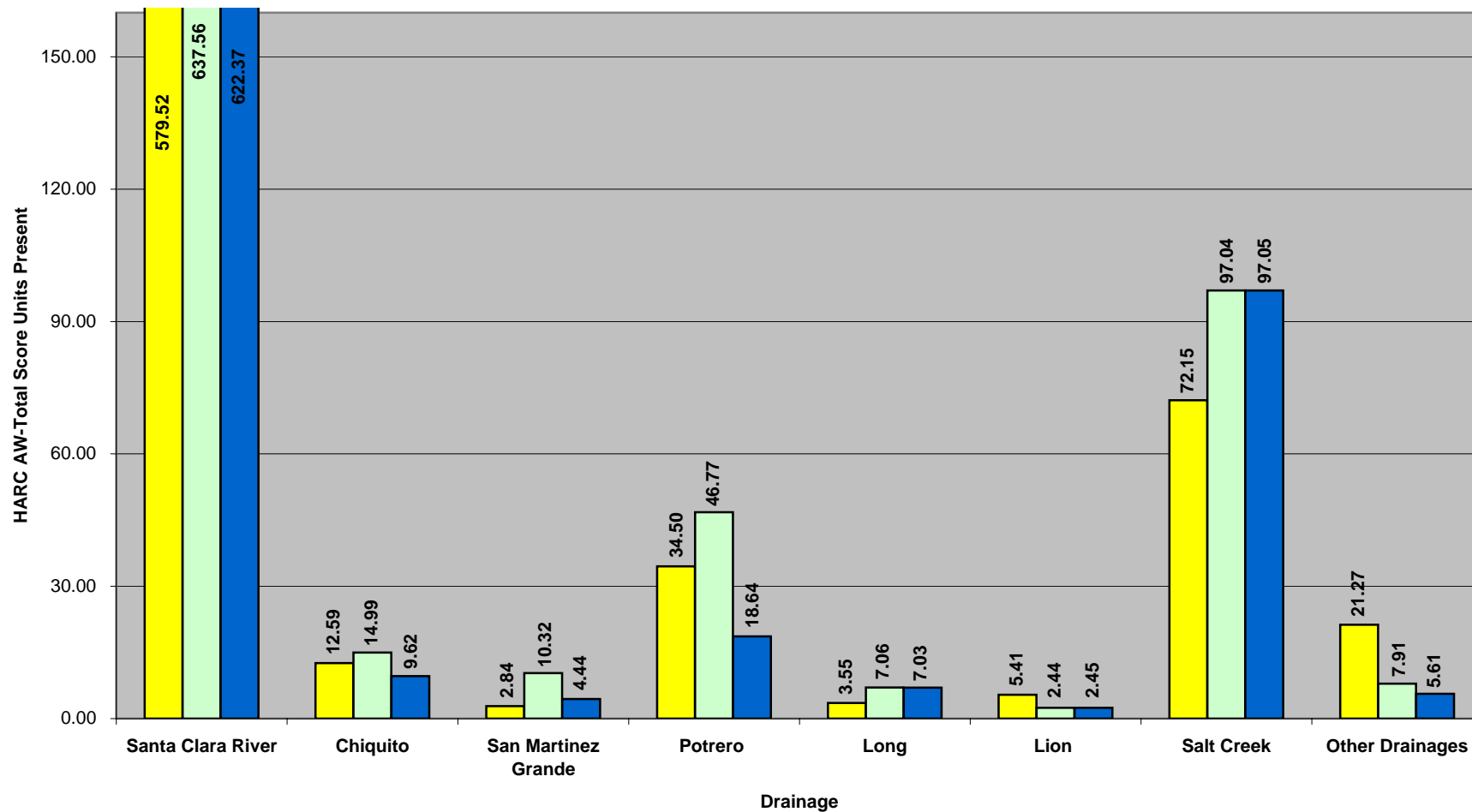
SCP Indirect Impacts

Implementation of the SCP component of Alternative 3 would facilitate build-out of the approved VCC development, and partial build-out of the Specific Plan development (approximately two percent reduction in Specific Plan compared to the proposed Project). Impacts to jurisdictional streams and waters associated with build-out of the Specific Plan development are included among the direct impacts of the RMDP Project component, and are discussed in the preceding subsections. Build-out of the VCC development would require the construction of bank stabilization along the Castaic Creek and Hasley Canyon drainages, as well as placement of 14 grade control structures within the Hasley Canyon drainage. Build-out of the VCC development would result in permanent adverse impacts to approximately 9.1 acres of waters of the United States (10.7 percent of VCC total) and 24.1 acres of CDFG jurisdictional streams (22 percent of VCC total) within the VCC planning area. These activities have been previously authorized by the Corps (Permit No. 89-00419-AOA), but authorization from CDFG pursuant to Fish and Game Code section 1600 et seq. has not yet been granted. Build-out of the Entrada development would require the conversion of portions of the unnamed drainages in that planning area to buried storm drains, resulting in permanent adverse impacts to approximately 1.2 acres of waters of the United States and 2.1 acres of CDFG jurisdictional streams.

Mitigation to reduce the impacts associated with the build out of VCC and Entrada to less than significant would be similar to that proposed for the RMDP. However, the applicant is not seeking the permitting authorization from the Corps (Entrada only) and CDFG at this time that would be necessary under the Clean Water Act and California Fish and Game Code to alter these jurisdictional waters/streams. Any future request for such authorization would require a site specific application to the Corps and CDFG, at a minimum, and related review pursuant to the ~~Clean Water Act~~ CWA, the California Fish and Game Code, and NEPA/CEQA, as appropriate.

4.6.5.3.3 Secondary Impacts

Implementation of Alternative 3 would affect the riparian condition of the aquatic resources on site as shown in (Revised) Table 4.6-11 and **Figure 4.6-7**. Changes in riparian condition would stem from two sources: changes in the acreage of jurisdictional areas on site and changes in the overall quality (measured by the HARC Total Score) of on-site riparian areas. As discussed above, implementation of this alternative would result in a net gain of jurisdictional area on site. When combined with the changes in HARC total scores that would occur under this alternative, Alternative 3 would result in a Project-wide increase of 84,292.5 HARC AW-score units, an 1142.7 percent increase over the existing condition, and the impact would be considered less than significant under Significance Criterion 3. This gain would occur mainly within the Santa Clara River mainstem. Compared to the proposed Project, implementation of Alternative 3 would result in an increase of 56,958.0 HARC AW-score units ~~in the river reaches~~. This change is attributable to the increased size of many assessment reaches post-Project, as well as to the removal of agricultural and grazing activities from the RMDP site and the proposed enhancement and restoration described in the RMDP.



SOURCE: URS – February 2009

FIGURE 4.6-7

Impacts to Riparian Condition Resulting from Implementation of Alternative 3

4.6 JURISDICTIONAL WATERS AND STREAMS

(Revised) Table 4.6-11
Riparian Condition Resulting from Implementation of Alternative 3
Compared to Existing Condition and Alternative 2
(HARC AW-Score Units)

	Santa Clara River	Chiquito	San Martinez Grande	Lion	Long	Potrero	Salt	Other Drainages	Totals
Existing Condition	584.0 ¹	12.4	2.1	5.4	3.6	35.2	75.2	22.2	740.0
Alternative 3	637.6	15.0	10.3	2.4	7.1	46.8	97.1	7.9	824.1
Change	+53.6	+2.6	+8.2	-3.0	+3.5	+11.6	+21.9	-14.3	+84.2
Percentage Change	+9%	+21%	+396%	-56%	+97%	+33%	+29%	-64%	+11%
Alternative 2	622.4	9.6	4.4	2.5	7.0	18.6	97.1	5.6	767.2
Change Relative to Alternative 2	+15.2	+5.4	+5.9	No Change	No Change	+28.1	No Change	+2.3	+56.9

¹ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

Source: URS (2010)

4.6.5.4 Impacts of Alternative 4 (Elimination of Planned Potrero Bridge and Addition of VCC Spineflower Preserve)

If Alternative 4 were implemented, a long-term CWA section 404 permit and Master Streambed Alteration Agreement would be issued authorizing drainage and flood control improvements as identified in **Subsection 3.4.4 3.2.4** of this the Draft EIS/EIR. These authorizations would ~~facilitate~~ allow the construction of bank stabilization, bridges, grade control structures, utility crossings, and the WRP outfall, and would allow the grading of certain drainages to accommodate building pads. However, Alternative 4 would authorize 11,930 fewer linear feet of buried bank stabilization (11 percent reduction), 23 more linear feet of drainages converted into underground storm drains (less than one percent increase), 15 fewer grade control structures (8 percent reduction), and one less roadway bridge over the Santa Clara River (33 percent decrease) when compared with the proposed ~~RMDP Project~~ (see **Figures 3.0-5, 3.0-6, 3.0-9, 3.0-12, 3.0-19, 3.0-20, and 3.0-21** in **Section 3.0**, Description of Alternatives of this EIS/EIR). This alternative would include impacts to tributary drainages similar to those of the proposed Project, but would not impact the Santa Clara River corridor as heavily, as the proposed bridge crossing the river at Potrero Canyon would not be constructed under this alternative.

4.6.5.4.1 Direct Impacts

RMDP Direct Impacts

In the Chiquito Canyon, San Martinez Grande Canyon, and minor on site drainages, Alternative 4 would involve the same drainage control structures as the proposed RMDP, and would have similar impacts. The upper end of Long Canyon would remain unstabilized with the exception of a filled portion to facilitate a road crossing. In Potrero Canyon, the upper and middle portions of the existing drainage would be eliminated during grading of the valley, and a new drainage channel lined with buried soil cement bank stabilization would be constructed in the same alignment. Grading and bank stabilization would be discontinued upstream of the cismontane alkali marsh in lower Potrero Canyon (HARC Reach PO-7), which would be preserved. In the river corridor, bank stabilization would still result in impacts, but would be pulled landward to lessen the jurisdictional area to be impacted. The construction of grade control structures in tributary drainages would be necessary to prevent excessive current velocities. Some areas along the banks of the Santa Clara River that are currently under agricultural use would be excavated to create additional riverbed area. The extent of jurisdictional areas impacted by this alternative are quantified and compared to those of the proposed RMDP in (Revised) Tables 4.6-12 and 4.6-13.

Implementation of Alternative 4 would involve various grading and construction activities within jurisdictional areas, as described above, and these activities would remove, divert, and substantially alter many of the drainages within the ~~p~~Project area. Like the proposed RMDP (Alternative 2), Alternative 4 would eliminate many of the minor, ephemeral drainages on site and route flows into the buried storm drain systems incorporated into the Specific Plan development. The alignments of the Chiquito Canyon and San Martinez Grande Canyon drainages under this alternative are the same as those in the proposed Project in the RMDP; the drainages would be realigned to flow parallel to Chiquito Canyon Road and San Martinez Grande Canyon Road, and channel sinuosity would be reduced. In Long Canyon, the lower portion of the valley (approximately the downstream three-fourths) containing the existing drainage would be filled and a new stream channel would be constructed following the approximate alignment of the existing channel, although elevated due to the fill material. The upstream portion of the Long Canyon drainage would be avoided, with the exception of one segment to be filled to facilitate the Magic Mountain Parkway road crossing. The new channel proposed in Long Canyon would have resource quality exceeding that of the existing channel, due to the degraded and morphologically unstable character of the existing drainage. The Potrero valley would also be filled under Alternative 4, and the existing channel would be eliminated and replaced with a buried storm drain system in the upper reach, and a soft-bottom channel incorporating grade stabilization measures in the lower reach. The width of the proposed channel in the lower reach would be somewhat narrower than that of the existing channel. The existing alkali marsh wetland at the downstream end of Potrero Canyon would not be filled under this alternative, and bank stabilization would be discontinued upstream of this area to prevent adverse hydrologic consequences.

On the Santa Clara River mainstem, extensive bank stabilization on the north bank, two segments of bank stabilization on the south bank, and two bridges would affect flows and resource values within the channel. However, hydrologic impacts would be minor and would occur only under infrequent, large magnitude storm events (refer to revised Section 4.1, Surface Water Hydrology and Flood Control for more information). Existing agricultural areas adjacent to the river corridor would be excavated to create additional riverbed, and this process would widen the river corridor in many areas.

4.6 JURISDICTIONAL WATERS AND STREAMS

(Revised) Table 4.6-12
Fill of Corps Jurisdictional Waters (Including Wetlands) Resulting From
Implementation of Alternative 4 (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	3.2 ⁵	0.3	0.0	0.3	0.1	0.4	0.0	0.1	1.3	4.5
	Temporary	5.7	0.2	0.1	0.0	0.1	0.0	0.0	0.1	0.4	6.1
Bank Stabilization	Permanent	2.3	1.3	0.2	0.0	0.3	0.5	0.0	0.0	2.3	4.6
	Temporary	11.1	3.6	0.8	0.0	0.5	1.7	0.0	0.1	6.8	17.9
Converted Drainage to Buried Storm Drain	Permanent	0.1	0.9	0.0	0.7	7.2	3.4	0.0	24.6	36.7	36.8
Drainage to be Regraded	Permanent	0.0	0.0	0.0	3.6	15.4	0.0	0.0	0.0	19.0	19.0
Drainage Displaced by Development and Manufactured Open Space	Permanent	0.2	5.5	1.3	0.0	0.5	0.0	0.0	0.0	7.3	7.5
Existing Drainage to be Restored	Temporary	0.0	0.0	0.0	0.0	0.0	0.0	7.2	0.2	7.4	7.4
Other Facilities ¹	Permanent	0.0	0.1	0.0	0.0	0.3	0.4	0.2	0.0	1.0	1.0
	Temporary	1.5	0.1	0.0	0.0	0.3	0.4	0.0	0.0	0.9	2.4
Total Acreage Filled	Permanent	5.7	8.0	1.6	4.5	23.8	4.8	0.2	24.8	67.6	73.3
	Temporary	18.3	4.0	0.9	0.0	0.9	2.1	7.3	0.3	15.5	33.8
New Jurisdictional Acres Created ²		40.9	7.9	4.9	9.4	24.5	1.2	17.7	0.0	65.7	106.6
Net Permanent Change		+35.2	-0.2	+3.3	+4.9	+0.8	-3.5	+17.5	-24.8	-2.0	+33.3
Total Mitigation Required ³		24.1	12.0	2.5	4.5	24.6	6.9	7.5	25.1	83.1	107.1
Potential Mitigation Acreage Available ⁴		94.0	10.5	5.0	18.6	56.8	2.0	21.1	0.0	114.0	207.9
Excess/Deficit		+69.9	-1.5	+2.5	+14.1	+32.1	-4.8	+13.6	-25.0	+30.9	+100.8

Notes:

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 this EIS/EIR for a description of these facilities.

2 New river and tributary Corps jurisdictional areas from the creation and enhancement activities described in the RMDP.

3 Minimum mitigation acreage required to ensure no net loss of waters of the United States. Greater mitigation acreage may be required based on further analysis required under section 404(b)(1) Guidelines.

4 Figures indicate potential compensatory mitigation area available for Corps jurisdiction (including temporary impact areas), adjacent wetlands beyond the OHWM, and adjacent upland buffer habitat.

5 Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

4.6 JURISDICTIONAL WATERS AND STREAMS

(Revised) Table 4.6-13

Fill of CDFG Jurisdictional Streams Resulting from Implementation of Alternative 4 (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	4.9 ²	0.5	0.0	0.3	0.1	0.4	0.0	0.1	1.6	6.4
	Temporary	8.4	0.4	0.1	0.0	0.1	0.0	0.0	0.1	0.6	9.0
Bank Stabilization	Permanent	6.1	1.9	0.2	0.0	0.1	0.5	0.0	0.0	2.8	8.8
	Temporary	38.3	5.2	0.8	0.0	1.1	1.7	0.0	0.0	8.9	47.2
Converted Drainage to Buried Storm Drain	Permanent	0.1	1.0	0.0	0.7	7.6	3.4	0.0	25.2	37.9	38.0
Drainage to be Regraded	Permanent	0.0	0.0	0.0	3.6	19.2	0.0	0.0	0.0	22.8	22.8
Drainage Displaced by Development and Manufactured Open Space	Permanent	6.5	8.6	1.3	0.0	0.7	0.0	0.0	0.0	10.6	17.2
Existing Drainage to be Restored	Temporary	1.4	0.0	0.0	0.0	0.0	0.0	7.2	0.2	7.4	8.8
Other Facilities ¹	Permanent	2.4	0.2	0.0	0.0	0.3	0.4	0.2	0.0	1.1	3.5
	Temporary	4.3	0.2	0.0	0.0	0.3	0.4	0.0	0.0	1.0	5.3
Total Acreage Filled	Permanent	20.0	12.3	1.6	4.5	28.0	4.8	0.2	25.3	76.6	99.6
	Temporary	52.4	5.7	0.9	0.0	1.5	2.1	7.3	0.3	17.8	70.2
Mitigation Required		131.4	25.9	3.9	6.6	53.2	9.3	7.1	39.9	145.7	277.1
Mitigation Capacity		94.0	10.5	5.0	18.6	56.8	2.0	21.1	0.0	114.0	210.9
Excess/Deficit (+/-)		-37.5	-15.3	+1.2	+12.0	+3.6	-7.2	+14.0	-39.8	-31.7	-66.2

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 this EIS/EIR for a description of these facilities.

² Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

4.6 JURISDICTIONAL WATERS AND STREAMS

Impacts on Waters of the United States

The acreages of Corps jurisdiction permanently and temporarily impacted from implementation of Alternative 4 are presented in (Revised) Table 4.6-12, above. Within the Santa Clara River mainstem, the proposed RMDP would increase the Corps jurisdictional acreage compared to existing conditions. Within the tributary drainages on site, ~~the proposed RMDP Alternative 4~~ would decrease the jurisdictional acreage by ~~0.5-2.0~~ acre of waters of the United States. In total, Alternative 4 would result in permanent adverse impacts to ~~71.0-73.3~~ acres of waters of the United States (an ~~14.21~~ percent reduction in impacts compared to the proposed ~~RMDP Project~~), and would create ~~84.7~~ up to 106.6 acres of new ~~river habitat jurisdictional area~~ through the restoration and enhancement activities described in the RMDP. This would result in a net permanent gain of ~~13.6-33.3~~ acres of jurisdictional areas, a less-than-significant impact under Significance Criterion 2. This change in jurisdictional acreage would be one of the factors affecting stream/wetland functions and services within the Project area (Significance Criterion 3), discussed in **Subsection 4.6.5.4.3**, below. The substantial acreage of waters of the United States to be preserved in perpetuity within the River Corridor SMA, the High Country SMA, and the Salt Creek area under this alternative further contribute to the determination that this impact would be less than significant. However, the ~~27.3-33.8~~ acres of temporary adverse impacts proposed under this alternative would represent a significant impact on waters of the United States, absent mitigation under Significance Criterion 4. Temporary impacts would be mitigated to a less-than-significant level through the incorporation of Mitigation Measure SW-4, which requires that temporary impact zones be restored and revegetated following construction.

Impacts on CDFG-Jurisdictional Streambeds

The acreages of permanently and temporarily adversely impacted CDFG jurisdictional streams resulting from implementation of Alternative 4 were determined using a GIS database, and are presented in (Revised) Table 4.6-13. Alternative 4 would result in permanent adverse impacts to CDFG jurisdictional areas including 76.6 acres of tributary drainages and ~~22.7-20.0~~ acres of the Santa Clara River mainstem. This alternative would also create new riparian habitat through the restoration and enhancement activities described in the RMDP. ~~These activities would result in the restoration and enhancement of, totaling 94.2 up to 94.0~~ acres in the river mainstem and ~~97.8-114.0~~ acres in the tributaries. Alternative 4 would result in a net gain of ~~21.5-36.4~~ acres of CDFG jurisdictional streambed in the tributaries, and a net gain of ~~71.5-69.6~~ acres of jurisdictional streambed in the river mainstem. In total, this alternative would result in a net gain of ~~93-106.0~~ acres of CDFG jurisdictional areas site-wide. Impacts relative to Significance Criterion 2 would be less than significant. This change in jurisdictional acreage would be one of the factors affecting stream/wetland functions and values within the Project area (Significance Criterion 3), discussed in **Subsection 4.6.5.4.3**, below.

In addition to the permanent impacts described above, Alternative 4 would also result in ~~68.2-70.2~~ acres of temporary adverse impacts to CDFG jurisdictional areas (~~51.6-52.4~~ acres in the river mainstem and ~~16.6-17.8~~ acres in the tributaries). Absent mitigation, this impact would be considered significant under Significance Criterion 4. This impact would be reduced to a less-than-significant level through incorporation of Mitigation Measure SW-4, which requires revegetation and restoration of all temporary impact zones. The ratios and timeframes specified in revised Mitigation Measure BIO-2 would apply, and

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ratios greater than 1:1 would be required if mitigation is not initiated within a two-year period after temporary impacts occur.

Both permanent and temporary impacts would have associated temporal loss of riparian functions and values, which would constitute a substantial adverse effect on state-protected streambeds. Absent mitigation, this impact would be significant under Significance Criterion 1. This impact would be reduced to a less-than-significant level through incorporation of Mitigation Measures BIO-1, and BIO-3 through BIO-18, which establish standards for restoration of riparian habitat, and partial implementation of revised Mitigation Measure BIO-2, which establishes standards for the expansion of riparian habitat to compensate for temporal loss of habitat functions and values.

Applying the mitigation ratios specified in revised Mitigation Measure BIO-2, 145.7 acres of mitigation in tributary drainages and 131.4 acres of mitigation in the river mainstem would be required to mitigate the temporal loss of functions and values that would occur under Alternative 4. As shown on (Revised) Table 4.6-13, the capacity for on-site mitigation creation under Alternative 4 provides for 114.0 ~~139~~ acres in the tributaries and 145.8 ~~94.0~~ acres in the mainstem of the river. ~~The Project area has sufficient mitigation capacity within the river mainstem under this alternative, and no off-site mitigation for temporal losses of function in the river mainstem would be required. However, b~~

Because the acreage required to mitigate impacts to tributaries and river mainstem under this Alternative would exceed the tributary mitigation acreage available on site (146-145.7 acres of tributary mitigation required vs. 114.0 ~~139~~ acres of suitable tributary mitigation areas available and 131.4 acre of river mainstem mitigation required vs. 94.0 acres of suitable river mainstem mitigation areas available), the balance (31.7 ~~17~~ acres for tributaries and 37.5 acres for the mainstem) would be mitigated below the level of significance to less than significant through creation, preservation, and enhancement of off-site tributary riparian areas as required by revised Mitigation Measures SW-6 (for tributaries) and SW-7 (for river mainstem).

These mitigation acreages assume that mitigation would be ~~initiated~~ established within a two-year period after impacts occur. If a longer period elapses before mitigation is initiated, higher mitigation ratios would apply as specified in revised Mitigation Measure BIO-2. ~~If The mitigation is initiated two years prior to impacts, no ratios specified in revised Mitigation Measure BIO-2 avoid, reduce, or compensate for impacts associated with temporal loss of functions and values would occur, and impacts would be mitigated at a 1:1 ratio.~~

The substantial acreage of jurisdictional streambeds to be preserved in perpetuity within the River Corridor SMA, the High Country SMA, and the Salt Creek area ~~further also~~ contribute to the determination that these impacts would be less than significant after mitigation.

Impacts to Federally Protected Wetlands

The acreages of federally protected wetlands permanently and temporarily impacted from implementation of this alternative are presented in (Revised) Table 4.6-14, below. These acreages are a subset of the impacted waters of the United States shown in (Revised) Table 4.6-12, above. Alternative 4 would result in permanent adverse impacts to 7.15 ~~9.4~~ acres of wetlands (18 ~~54~~ percent reduction compared to the

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proposed Project RMDP) and would temporarily impact an additional 11.7 ~~5.43~~ acres. Absent mitigation, this impact would be considered significant under Significance Criterion 1 and 4. However, the additional avoidance of wetlands in Potrero Canyon and additional creation and enhancement of wetlands in the Salt Creek watershed required by revised Mitigation Measures SW-1 and SW-2 would reduce this impact to a less-than-significant level by decreasing impact acreages and ensuring increased post-project function scores in these areas.

(Revised) Table 4.6-14						
Fill of Federally Protected Wetlands Resulting from Implementation of RMDP Alternative 4 (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	2.2 ¹	0.0	0.1	0.0	2.3
	Temporary	3.2	0.0	0.0	0.0	3.2
Bank Stabilization	Permanent	2.0	0.0	0.0	0.0	2.0
	Temporary	6.6	0.0	0.3	0.0	6.9
Drainage Graded	Permanent	0.0	0.0	4.8	0.0	4.9
	Temporary	0.0	0.0	0.0	0.0	0.0
Other Facilities ⁽¹⁾	Permanent	0.1	0.0	0.1	0.0	0.2
	Temporary	0.5	0.0	0.1	0.0	0.5
Restoration	Permanent	0.0	0.0	0.0	0.0	0.0
	Temporary	0.0	1.2	0.0	0.0	1.2
Total Impacts	Permanent	4.4	0.0	5.0	0.0	9.4
	Temporary	10.2	1.2	0.4	0.0	11.7
Percent Change in Permanent Impacts Compared to Proposed RMDP		68% Reduction	No Change	28% Reduction	No Change	54% Reduction

¹ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

Source: URS (2010)

SCP Direct Impacts

Implementation of the SCP component of Alternative 4 would facilitate partial build-out of the Specific Plan development, but would not facilitate development within the VCC planning area because the location of one of the preserves under Alternative 4 would make site grading infeasible. Direct impacts to jurisdictional streams and waters associated with build-out of the Specific Plan development are included among the direct impacts of the RMDP Project component, and are discussed in the preceding subsections.

4.6.5.4.2 Indirect Impacts

RMDP Indirect Impacts

The indirect impacts to jurisdictional streams and wetlands associated with adoption of Alternative 4 are anticipated to be similar to those of the proposed Project. These impacts are associated with changes in hydrology and water quality, and are addressed in revised **Section 4.1**, Surface Water Hydrology and Flood Control, revised **Section 4.2**, Geomorphology and Riparian Resources, and revised **Section 4.4**, Water Quality, of this EIS/EIR.

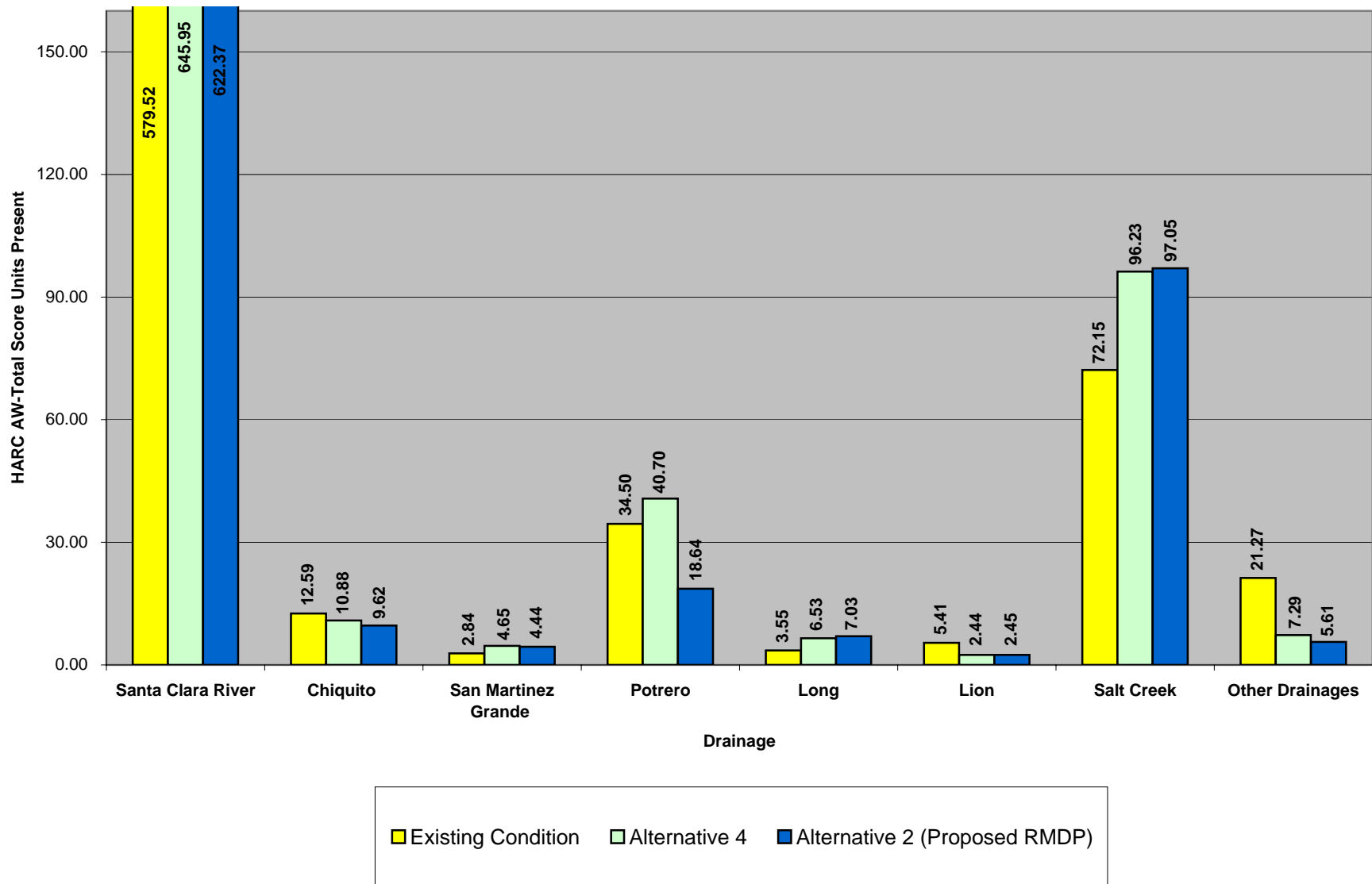
SCP Indirect Impacts

Implementation of the SCP component of Alternative 4 would facilitate partial build-out of the Specific Plan and Entrada developments (approximately one percent reduction in Specific Plan development compared to proposed Project), but would not facilitate development within the VCC planning area. Indirect impacts to jurisdictional waters and streams associated with build out of the Specific Plan development are included among the direct impacts of the RMDP Project component, and are discussed in the preceding subsections. The SCP component of Alternative 4 would result in a net gain of 11.5 acres of Corps jurisdiction and 91 acres of CDFG jurisdiction, and the impact would be less than significant. The temporary impacts proposed would be considered significant absent mitigation (Significance Criterion 4), but would be reduced to a less-than-significant level through incorporation of Mitigation Measure SW-4, which requires restoration and revegetation of temporary impact zones.

Mitigation to reduce the impacts associated with the build out of the Entrada planning area to less than significant would be similar to that proposed for the RMDP. However, the applicant is not seeking the permitting authorization from the Corps and CDFG at this time that would be necessary under the Clean Water Act and California Fish and Game Code to alter these jurisdictional waters/streams. Any future request for such authorization would require a site specific application to the Corps and CDFG, at a minimum, and related review pursuant to the ~~Clean Water Act~~ CWA, the California Fish and Game Code, and NEPA/CEQA, as appropriate.

4.6.5.4.3 Secondary Impacts

Implementation of Alternative 4 would affect the riparian condition of the aquatic resources on site as shown in (Revised) **Table 4.6-15** and **Figure 4.6-8**. Changes in riparian condition would stem from two sources: changes in the acreage of jurisdictional areas on site and changes in the overall quality (measured by the HARC Total Score) of on-site riparian areas. As discussed above, implementation of this alternative would result in a net gain of CDFG jurisdictional area on-site. When combined with the change in HARC total score that would occur under this alternative, Alternative 4 would result in a Project-wide increase of ~~74.783-15~~ HARC AW-score units, and an ~~10-11.4~~ percent increase from the existing condition. Impacts under Significance Criterion 3 would therefore be less than significant. Compared to the proposed Project, implementation of Alternative 4 would result in an increase of ~~47.547~~ HARC AW-Score Units. This change is attributable to the increased size of many assessment reaches



SOURCE: URS – February 2009

FIGURE 4.6-8

Impacts to Riparian Condition Resulting from Implementation of Alternative 4

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(Revised) Table 4.6-15
Riparian Condition Resulting from Implementation of
Alternative 4 Compared to Existing Condition and Alternative 2 (HARC AW-Score Units)

	Santa Clara River	Chiquito	San Martinez Grande	Lion	Long	Potrero	Salt	Other Drainages	Totals
Existing Condition	584.0	12.4	2.1	5.4	3.6	35.2	75.2	22.2	740.0
Alternative 4	646.0	10.9	4.7	2.4	6.5	40.7	96.2	7.3	814.7
Change	+62.0	-1.5	+2.6	-3.0	+2.9	+5.5	+21.0	-14.9	+74.7
Percentage of Change	+10%	-10%	+130%	-60%	+80%	+20%	+30%	-70%	+10%
Alternative 2	622.4	9.6	4.4	2.5	7.0	18.6	97.1	5.6	767.2
Change Relative to Alternative 2	+23.6	+1.3	+0.3	-0.1	-0.5	+22.1	-0.9	+1.7	+47.5

¹ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

Source: URS (2010)

under this alternative, as well as to the removal of agricultural and grazing activities from the RMDP site and the proposed enhancement and restoration described in the ~~RMDP-proposed Project~~. As discussed in revised Section 4.1, Surface Water Hydrology and Flood Control of this EIS/EIR, no downstream hydrologic impacts would occur as a result of the proposed Project, and riparian condition in the Santa Clara River downstream of the Project area, therefore, would not be affected.

4.6.5.5 Impacts of Alternative 5 (Widen Tributary Drainages and Addition of VCC Spineflower Preserve)

Implementation of Alternative 5 would include issuance of a long-term CWA section 404 permit and Master Streambed Alteration Agreement ~~that would authorize the drainage and flood control improvements identified in Subsection 3.2.5. These authorizations would facilitate allow~~ the construction of bank stabilization, bridges, grade control structures, utility crossings, and the WRP outfall, and ~~would~~ allow the grading of certain drainages to accommodate building pads. However, Alternative 5 would authorize 15,549 fewer linear feet of buried bank stabilization (15 percent reduction), 839 fewer linear feet of drainages converted into underground storm drains (1.4 percent reduction), 16 fewer grade control structures (9 percent reduction), and the same number of roadway culverts/bridges, when compared with the proposed ~~RMDP Project~~ (see **Figures 3.0-9, 3.0-20, 3.0-24, 3.0-25, 3.0-26, 3.0-27, and 3.0-28** in **Section 3.0**, Description of Alternatives of this EIS/EIR). Alternative 5 would not impact the Santa Clara River corridor or tributary drainages as heavily as the proposed Project.

4.6.5.5.1 Direct Impacts

RMDP Direct Impacts

In the Santa Clara River, Chiquito Canyon, San Martinez Grande Canyon, and Potrero Canyon drainages, Alternative 5 would involve a substantial decrease in acres permanently impacted compared to the proposed ~~Project~~RMDP, and an increase in new jurisdictional areas created. In the minor drainages, the impacts of this alternative would be approximately the same as impacts of the proposed Project. The construction of grade control structures in tributary drainages would be necessary to prevent excessive current velocities. Some agricultural lands along the banks of the Santa Clara River would be excavated to create additional riverbed area. The extent of jurisdictional areas impacted by this alternative are quantified and compared to those of the proposed RMDP in (Revised) **Tables 4.6-16 and 4.6-17**.

Implementation of Alternative 5 would involve various grading and construction activities within jurisdictional areas, as described above, and these activities would remove, divert, and substantially alter many of the drainages within the ~~p~~Project area. Like the proposed RMDP (Alternative 2), Alternative 5 would eliminate many of the minor, ephemeral drainages on site and route flows into the buried storm drain systems incorporated into the Specific Plan development. The Chiquito Canyon drainage would be lined with buried bank stabilization, but the proposed bank stabilization in the upper reach would be constructed beyond the lateral limits of the existing streambed so that relocation of the channel would not be necessary. In the lower reach, the Chiquito Canyon drainage would be relocated into a lined channel slightly narrowed than the existing streambed and parallel to Chiquito Canyon Road, reducing sinuosity. In San Martinez Grande Canyon, buried bank stabilization is proposed, but would be constructed beyond the lateral limits of the streambed such that relocation or straightening of the channel would not be necessary. In Long Canyon, the lower portion of the valley (approximately the downstream three-fourths) containing the existing drainage would be filled and a new stream channel would be constructed following the approximate alignment of the existing channel, although elevated due to the fill material. The upstream portion of the Long Canyon drainage would be avoided, with the exception of one segment to be filled to facilitate the Magic Mountain Parkway road crossing. The new channel proposed in Long Canyon would have resource quality exceeding that of the existing channel, due to the degraded and morphologically unstable character of the existing drainage. The Potrero valley would also be filled under this alternative, and the existing channel would be eliminated and replaced with a buried storm drain system in the upper reach, and a soft-bottom channel incorporating grade stabilization measures in the lower reach. The width of the proposed channel in the lower reach would be substantially greater than that of the existing channel, and would allow the stream to meander without reducing sinuosity. The existing alkali marsh wetland at the downstream end of Potrero Canyon would not be filled under this alternative, and bank stabilization would be limited to the eastern side of the drainage in this area to prevent adverse hydrologic consequences.

On the Santa Clara River mainstem, extensive bank stabilization on the north bank, two segments of bank stabilization on the south bank, and three bridges would affect flows and resource values within the channel. However, hydrologic impacts would be minor and would occur only under infrequent, large magnitude storm events (refer to revised **Section 4.1**, Surface Water Hydrology and Flood Control for more information). Existing agricultural areas adjacent to the river corridor would be excavated to create additional riverbed, and this process would widen the river corridor in many areas.

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(Revised) Table 4.6-16
Fill of Corps Jurisdictional Waters (Including Wetlands) Resulting From
Implementation of Alternative 5 (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	4.4 ⁵	0.3	0.1	0.3	0.4	0.4	0.0	0.1	1.5	6.0
	Temporary	8.2	0.2	0.1	0.0	0.1	0.0	0.0	0.1	0.4	8.6
Bank Stabilization	Permanent	6.6	0.5	0.0	0.0	0.0	0.5	0.0	0.0	1.1	7.7
	Temporary	11.0	7.8	1.1	0.0	2.0	1.7	0.0	0.1	12.8	23.7
Converted Drainage to Buried Storm Drain	Permanent	0.1	0.9	0.0	0.7	8.1	3.4	0.0	24.5	37.6	37.7
Drainage to be Regraded	Permanent	0.0	0.0	0.0	3.7	14.4	0.0	0.0	0.0	18.1	18.1
Drainage Displaced by Development and Manufactured Open Space	Permanent	0.2	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.8
Existing Drainage to be Restored	Temporary	0.0	0.0	0.0	0.0	0.0	0.0	7.2	0.1	7.4	7.4
Other Facilities ¹	Permanent	0.0	0.3	0.1	0.0	0.3	0.4	0.2	0.0	1.3	1.3
	Temporary	0.6	0.4	0.1	0.0	0.4	0.4	0.0	0.0	1.3	1.8
Total Acreage Filled	Permanent	11.3	3.6	0.1	4.6	23.2	4.8	0.2	24.7	61.2	72.4
	Temporary	19.8	8.4	1.2	0.0	2.5	2.1	7.3	0.3	21.8	41.6
New Jurisdictional Acres Created ²		34.3	11.9	7.1	9.4	81.2	1.2	17.7	0.0	128.5	162.8
Net Permanent Change		+23.1	+8.3	+6.9	+4.8	+58.0	-3.5	+17.5	-24.7	+67.3	+90.4
Total Mitigation Required ³		31.0	12.0	1.4	4.6	25.7	6.9	7.5	25.0	83.0	114.0
Potential Mitigation Acreage Available ⁴		111.2	23.7	19.1	14.1	89.4	-1.0	29.0	-24.9	149.4	260.6
Excess/Deficit		+80.2	+11.7	+17.7	+9.4	+63.8	-7.9	+21.5	-49.9	+66.4	+146.6

Notes:

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 this EIS/EIR for a description of these facilities.

² New river and tributary Corps jurisdictional areas from the creation and enhancement activities described in the RMDP.

³ Minimum mitigation acreage required to ensure no net loss of waters of the United States. Greater mitigation acreage may be required based on further analysis required under section 404(b)(1) Guidelines.

⁴ Figures indicate potential compensatory mitigation area available for Corps jurisdiction (including temporary impact areas), adjacent wetlands beyond the OHWM, and adjacent upland buffer habitat.

⁵ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

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(Revised) Table 4.6-17
Fill of CDFG Jurisdictional Streams Resulting from Implementation of Alternative 5 (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	8.3	0.6	0.1	0.3	0.6	0.4	0.0	0.1	2.1	10.4
	Temporary	15.5	0.4	0.1	0.0	0.1	0.0	0.0	0.1	0.6	16.1
Bank Stabilization	Permanent	7.6	1.1	0.0	0.0	0.0	0.5	0.0	0.9	2.6	10.1
	Temporary	38.4	10.0	1.1	0.0	2.0	1.7	0.0	0.1	14.9	53.3
Converted Drainage to Buried Storm Drain	Permanent	0.1	1.0	0.0	0.7	8.6	3.4	0.0	24.1	37.8	38.0
Drainage to be Regraded	Permanent	0.0	0.0	0.0	3.7	17.9	0.0	0.0	0.0	21.6	21.6
Drainage Displaced by Development and Manufactured Open Space	Permanent	9.4	4.1	0.0	0.0	0.0	0.0	0.0	0.0	4.1	13.5
Existing Drainage to be Restored	Temporary	1.4	0.0	0.0	0.0	0.0	0.0	7.2	0.2	7.4	8.8
Other Facilities ¹	Permanent	2.3	0.4	0.1	0.0	0.3	0.4	0.2	0.0	1.4	3.6
	Temporary	0.9	0.4	0.1	0.0	0.4	0.4	0.0	0.0	1.3	2.3
Total Acreage Filled	Permanent	27.6	7.1	0.1	4.6	27.4	4.8	0.2	25.2	69.5	97.1
	Temporary	56.2	10.9	1.2	0.0	2.5	2.1	7.3	0.3	24.3	80.5
Mitigation Required		163.5	23.5	1.6	6.9	54.0	9.9	7.1	39.7	142.6	306.0
Mitigation Capacity		111.2	23.7	19.1	14.1	89.4	-1.0	29.0	-24.9	149.4	260.6
Excess/Deficit (+/-)		-52.3	+0.3	+17.5	+7.2	+35.5	-10.9	+21.9	-64.6	+6.9	-45.4

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 this EIS/EIR for a description of these facilities.

² Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

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Impacts to Waters of the United States

The acreages of Corps jurisdiction permanently and temporarily impacted by implementation of Alternative 5 are presented in (Revised) Table 4.6-16, above. Alternative 5 would result in permanent adverse impacts to ~~65.8~~ 72.4 acres of waters of the United States (a ~~21~~ 22 percent reduction in impacts compared to the proposed Project RMDP), and would create ~~162.8~~ 145 acres of new ~~river habitat jurisdictional areas~~ through the restoration and enhancement activities described in the RMDP. This would result in a net permanent gain of ~~79~~ 90.4 acres of jurisdictional areas, and the impact would be less than significant under Significance Criterion 2. This change in jurisdictional acreage would be one of the factors affecting stream/wetland functions and services within the Project area (Significance Criterion 3), discussed in **Subsection 4.6.5.5.3**, below. Net permanent gains in Corps jurisdictional acreage would occur both in the Santa Clara River mainstem (~~12.4~~ 23.1 acre gain) and in the tributary drainages (~~67.0~~ 67.3 acre gain) under this Alternative. The substantial acreage of waters of the United States to be preserved in perpetuity within the River Corridor SMA, the High Country SMA, and the Salt Creek area further contribute to the determination that this impact would be less than significant. However, the ~~35.2~~ 41.6 acres of temporary adverse impacts proposed under this alternative would represent significant impact on waters of the United States, absent mitigation (Significance Criterion 4). Temporary impacts would be mitigated to a less-than-significant level through Mitigation Measure SW-4, which requires that temporary impact zones be restored and revegetated following construction.

Impacts to CDFG-Jurisdictional Streams

The acreages of permanently and temporarily adversely impacted CDFG jurisdictional streams resulting from implementation of Alternative 5 were determined using a GIS database, and are presented in (Revised) Table 4.6-17. Alternative 5 would result in permanent adverse impacts to CDFG jurisdictional areas including ~~70.2~~ 69.5 acres of tributary drainages and ~~29.8~~ 27.6 acres of the Santa Clara River mainstem. This alternative would also create new riparian habitat through the restoration and enhancement activities described in the RMDP. These activities would result in the restoration and enhancement of, totaling 86.5 up to 111.2 acres in the river mainstem and 163.5–149.4 acres in the tributaries. Alternative 5 would therefore result in a net gain of ~~93.3~~ 125.2 acres of CDFG jurisdictional streambed in the tributaries, and a net gain of ~~56.7~~ 55.0 acres of jurisdictional streambed in the river mainstem. In total, this alternative would result in a net gain of ~~150~~ 180.2 acres of CDFG jurisdictional areas site-wide. Impacts relative to Significance Criterion 2 would, therefore, be less than significant. This change in jurisdictional acreage would be one of the factors affecting stream/wetland functions and values within the Project area (Significance Criterion 3), discussed in **Subsection 4.6.5.5.3**, below.

In addition to the permanent impacts described above, Alternative 5 would also result in ~~35.2~~ 80.5 acres of temporary adverse impacts to CDFG jurisdictional areas (~~14.0~~ 56.2 acres in the river mainstem and ~~21.2~~ 24.3 acres in the tributaries). Absent mitigation, this impact would be considered significant under Significance Criterion 4. This impact would be reduced to a less-than-significant level through incorporation of Mitigation Measure SW-4, which requires revegetation and restoration of all temporary impact zones. The ratios and timeframes specified in revised Mitigation Measure BIO-2 would apply, and ratios greater than 1:1 would be required if mitigation is not initiated within a two-year period after temporary impacts occur.

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Both permanent and temporary impacts would have associated temporal loss of riparian functions and values, which would constitute a substantial adverse effect on state-protected streambeds. Absent mitigation, this impact would be significant under Significance Criterion 1. This impact would be mitigated to a less-than-significant level through incorporation of Mitigation Measures BIO-1, and BIO-3 through BIO-18, which establish standards for restoration of riparian habitat, and partial implementation of revised Mitigation Measure BIO-2, which establishes standards for the expansion of riparian habitat to compensate for temporal loss of habitat functions and values.

Applying the mitigation ratios specified in revised Mitigation Measure BIO-2, ~~142.5–142.6~~ acres of mitigation in tributary drainages and 163.5 acres of mitigation in the river mainstem would be required to mitigate the temporal loss of functions and values that would occur under Alternative 5. As shown on (Revised) Table 4.6-17, the capacity for on-site mitigation creation under Alternative 5 provides for ~~149.4186.4~~ acres in the tributaries and ~~142.5–111.2~~ acres in the mainstem of the river. The Project area, therefore, has sufficient mitigation capacity within the tributary drainages under this alternative, and no off-site mitigation for temporal losses of function in tributaries would be required.

However, because the acreage required to mitigate impacts to the river mainstem under Alternative 5 would exceed the mitigation acreage available on site (163.5 acres of river mainstem mitigation required vs. ~~142.5–111.2~~ acres of suitable river mainstem mitigation areas available on site), the balance (~~21–52.3~~ acres) would be mitigated below the level of significance through creation, preservation, and enhancement of off-site riparian areas in the Santa Clara River mainstem as required by revised Mitigation Measure SW-7.

These mitigation acreages assume that mitigation would be ~~initiated~~ established within a two-year period after impacts occur. If a longer period elapses before mitigation is initiated, higher mitigation ratios would apply as specified in revised Mitigation Measure BIO-2. ~~If The mitigation ratios specified in revised Mitigation Measure BIO-2 avoid, reduce or compensate for impacts associated with is initiated two years prior to impacts, no temporal loss of functions and values, would occur. With mitigation, and impacts would be mitigated at a 1:1 ratio less than significant.~~

The substantial acreage of jurisdictional streambeds to be preserved in perpetuity within the River Corridor SMA, the High Country SMA, and the Salt Creek area ~~further also~~ contribute to the determination that these impacts would be less than significant after mitigation.

Impacts to Federally Protected Wetlands

The acreages of federally protected wetlands permanently and temporarily impacted from implementation of Alternative 5 are presented in (Revised) Table 4.6-18, below. These acreages are a subset of the impacted waters of the United States shown in (Revised) Table 4.6-16, above. Alternative 5 would result in permanent adverse impacts to ~~7.84~~ 14.6 acres of wetlands (~~29~~ 10 percent reduction compared to proposed RMDPPProject) and would temporarily impact an additional ~~6.95~~ 13.5 acres. Absent mitigation, this impact would be considered significant under Significance Criteria 1 and 4. However the additional

4.6 JURISDICTIONAL WATERS AND STREAMS

(Revised) Table 4.6-18
Fill of Federally Protected Wetlands Resulting from Implementation of Alternative 5 (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	3.1	0.0	0.2	0.0	3.2
	Temporary	4.2	0.0	0.0	0.0	4.3
Bank Stabilization	Permanent	6.6	0.0	4.2	0.0	10.8
	Temporary	7.2	0.0	0.7	0.0	7.9
Drainage Graded	Permanent	0.0	0.0	0.0	0.0	0.0
	Temporary	0.0	0.0	0.0	0.0	0.0
Other Facilities	Permanent	0.1	0.0	0.4	0.0	0.5
	Temporary	0.1	0.0	0.1	0.0	0.2
Restoration	Permanent	0.0	0.0	0.0	0.0	0.0
	Temporary	0.0	1.2	0.0	0.0	1.2
Total Impacts	Permanent	9.8	0.0	4.8	0.0	14.6
	Temporary	11.5	1.2	0.8	0.0	13.5
Percent Reduction in Permanent Impacts Compared to Proposed Project		28%	No Change	30%	No Change	29%

¹ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

Source: URS (2010)

4.6 JURISDICTIONAL WATERS AND STREAMS

avoidance of wetlands in Potrero Canyon and additional creation and enhancement of wetlands in the Salt Creek watershed required by revised Mitigation Measures SW-1 and SW-2, along with the restoration of temporary impact zones mandated by Mitigation Measure SW-4 would reduce these impacts to a less-than-significant level.

SCP Direct Impacts

The SCP is a permitting and management plan for an upland plant species, and would not result in any direct impacts on jurisdictional waters and streams.

4.6.5.5.2 Indirect Impacts

RMDP Indirect Impacts

The indirect impacts to jurisdictional streams and wetlands associated with adoption of Alternative 5 are anticipated to be similar to those of the proposed Project, as urbanization of the Project area would occur under both alternatives. Indirect impacts would be associated with changes in hydrology and water quality, and are addressed in revised **Section 4.1**, Surface Water Hydrology and Flood Control, revised **Section 4.2**, Geomorphology and Riparian Resources, and revised **Section 4.4**, Water Quality, of this EIS/EIR.

SCP Indirect Impacts

Implementation of the SCP component of Alternative 5 would facilitate partial build-out of the Newhall Ranch Specific Plan development (approximately four percent reduction in Specific Plan development compared to proposed Project) and partial development of the Entrada Planning Area, but would not facilitate any development within the VCC planning area. Indirect impacts to jurisdictional streams and waters associated with build-out of the Specific Plan development are included among the direct impacts of the RMDP Project component, and are discussed in the preceding subsections. The SCP component of Alternative 5 would result in a net gain of 134 acres of Corps jurisdiction and 147 acres of CDFG jurisdiction, and the impact would be less than significant under Significance Criterion 2. The temporary impacts proposed would be considered significant absent mitigation (Significance Criterion 4), but would be reduced to a less-than-significant level through incorporation of Mitigation Measure SW-4, which requires restoration and revegetation of temporary impact zones.

Mitigation to reduce the impacts associated with the build-out of the Entrada planning area to less than significant would be similar to that proposed for the RMDP. However, the applicant is not seeking the permitting authorization from the Corps and CDFG at this time that would be necessary under the Clean Water Act and California Fish and Game Code to alter these jurisdictional waters/streams. Any future request for such authorization would require a site-specific application to the Corps and CDFG, at a minimum, and related review pursuant to the Clean Water Act, the California Fish and Game Code, and NEPA/CEQA, as appropriate.

4.6.5.5.3 Secondary Impacts

Implementation of Alternative 5 would affect the riparian condition of the aquatic resources on site as shown in (Revised) Table 4.6-19 and **Figure 4.6-9**. Changes in riparian condition would stem from two sources: changes in the acreage of jurisdictional areas on site and changes in the overall quality (measured by the HARC Total Score) of on-site riparian areas. As discussed above, implementation of this alternative would result in a net gain of CDFG jurisdictional area on site. When combined with the changes in HARC Scores that would occur under this alternative, Alternative 5 would result in a Project-wide increase of 114.7+23.30 HARC AW-score units, a 16.9 percent increase over the existing condition, and the impact would be less than significant under Significance Criterion 3. Compared to the proposed Project, implementation of Alternative 5 would result in an increase of 87.62 HARC AW-score units. This change is attributable to the increased size of many assessment reaches post-Project, as well as to the removal of agricultural and grazing activities from the RMDP Project site and the proposed enhancement and restoration described in the RMDP-proposed Project.

4.6.5.6 **Impacts of Alternative 6 (Elimination of Planned Commerce Center Drive Bridge and Maximum Spineflower Expansion/Connectivity)**

If Alternative 6 were implemented, a long-term CWA section 404 permit and Master Streambed Alteration Agreement would be issued authorizing the improvements identified in **Subsection 3.4.6, 3.2.6**, of ~~this the Draft~~ EIS/EIR. These authorizations would ~~facilitate~~ allow the construction of bank stabilization, bridges, grade control structures, utility crossings, and the WRP outfall, and would allow the grading of certain drainages to accommodate building pads. However, Alternative 6 would authorize 3,728 fewer linear feet of buried bank stabilization (3.5 percent increase), 16,510 fewer linear feet of drainages converted into underground storm drains (27.5 percent reduction), 2 fewer grade control structures (one percent decrease), and one less river bridge (33 percent decrease) when compared with the proposed RMDP (see **Figures 3.0-9, 3.0-14, 3.0-31, 3.0-32, 3.0-33, 3.0-34, and 3.0-35** in **Section 3.0**, Description of Alternatives of this EIS/EIR). This alternative would not require as much grading of major jurisdictional drainages as the proposed RMDP Project, particularly in Potrero Canyon. The previously approved bridge crossing the river at Commerce Center Drive would not be constructed under this alternative.

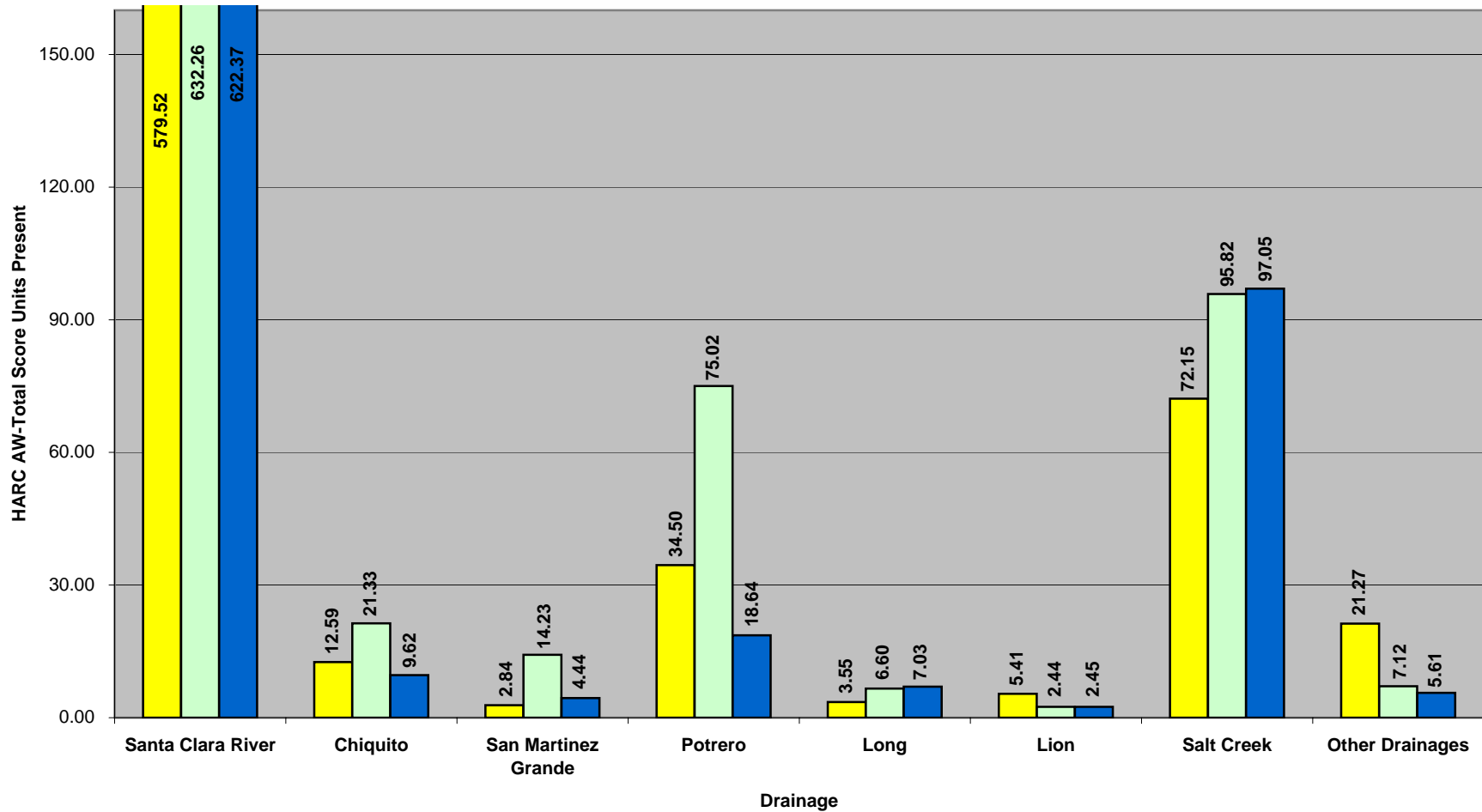
4.6 JURISDICTIONAL WATERS AND STREAMS

(Revised) Table 4.6-19
Riparian Condition Resulting from Implementation of
Alternative 5 Compared to Existing Condition and Alternative 2 (HARC AW-Score Units)

	Santa Clara River	Chiquito	San Martinez Grande	Lion	Long	Potrero	Salt	Other Drainages	Totals
Existing Condition	584.0	12.4	2.1	5.4	3.6	35.2	75.2	22.2	740.0
Alternative 5	632.3	21.3	14.2	2.4	6.6	75.0	95.8	7.1	854.8
Change	+48.3	+8.9	+12.1	-3.0	+3.0	+39.8	+20.6	-15.1	+114.7
Percent of Change	+8%	+72%	+583%	-56%	+83%	+113%	+27%	-68%	+16%
Alternative 2	622.4	9.6	4.4	2.5	7.0	18.6	97.1	5.6	767.2
Change Relative to Alternative 2	+9.9	+11.7	+9.8	+0.0	-0.4	+56.4	-1.2	+1.5	+87.6

¹ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

Source: URS (2010)



SOURCE: URS – February 2009

FIGURE 4.6-9

Impacts to Riparian Condition Resulting from Implementation of Alternative 5

4.6.5.6.1 Direct Impacts

RMDP Direct Impacts

In the Santa Clara River and all five major on-site tributaries, which include Chiquito, San Martinez Grande Canyon, Potrero Canyon, Long Canyon, and Lion Canyon, implementation of Alternative 6 would require less fill than the proposed RMDP. In addition, the acreage of minor drainages graded to accommodate building pads would be reduced. The construction of grade control structures in tributary drainages would remain necessary to prevent excessive current velocities. Some areas along the banks of the Santa Clara River that are currently under agricultural use would be excavated to create additional riverbed area. The extent of jurisdictional areas impacted by this alternative are quantified and compared to those of the proposed RMDP in (Revised) Tables 4.6-20 and 4.6-21.

Implementation of Alternative 6 would involve various grading and construction activities within jurisdictional areas, as described above, and these activities would remove, divert, and substantially alter many of the drainages within the pProject area. Like the proposed RMDP (Alternative 2), Alternative 6 would eliminate many of the minor, ephemeral drainages on site and route flows into the buried storm drain systems incorporated into the Specific Plan development. The extent of impacts to minor drainage would be slightly reduced under Alternative 6 compared to the proposed ProjectRMDP, as this alternative would preserve the lower portion of Middle Canyon. The Chiquito Canyon drainage would be lined with buried bank stabilization, but the proposed bank stabilization in the upper reach would be constructed beyond the lateral limits of the existing streambed so that relocation of the channel would not be necessary. In the lower reach, the Chiquito Canyon drainage would be relocated into a lined channel parallel to Chiquito Canyon Road, reducing sinuosity. In San Martinez Grande Canyon, buried bank stabilization is proposed, but would be constructed beyond the lateral limits of the streambed such that relocation or straightening of the channel would not be necessary. In Long Canyon, the lower portion of the valley (approximately the downstream half) containing the existing drainage would be filled and a new stream channel would be constructed approximating the alignment of the existing channel, although elevated due to the fill material. The upstream half of the Long Canyon drainage would be avoided, with the exception of one segment to be filled to facilitate the Magic Mountain Parkway road crossing. The new channel proposed in Long Canyon would have resource quality exceeding that of the existing channel, due to the degraded and morphologically unstable character of the existing drainage. The Potrero valley would also be filled under this alternative, and the existing channel would be eliminated and replaced with a soft-bottom channel incorporating grade stabilization measures. The extreme upstream portion of the drainage, known as Via Canyon, would not be impacted under this alternative. The width of the proposed channel would be substantially greater than that of the existing channel, and would allow the stream to meander without reducing sinuosity. The existing alkali marsh wetland at the downstream end of Potrero Canyon would not be filled under this alternative, and bank stabilization would be discontinued upstream of this area to prevent adverse hydrologic consequences.

4.6 JURISDICTIONAL WATERS AND STREAMS

(Revised) Table 4.6-20
Fill of Corps Jurisdictional Waters (Including Wetlands) Resulting From
Implementation of Alternative 6 (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	2.4 ⁵	0.3	0.1	0.3	0.6	0.4	0.0	0.1	1.8	4.2
	Temporary	5.2	0.2	0.1	0.0	0.2	0.0	0.0	0.1	0.6	5.7
Bank Stabilization	Permanent	3.0	0.8	0.0	0.0	0.0	0.5	0.0	0.0	1.4	4.3
	Temporary	11.2	5.9	0.0	0.0	0.0	1.7	0.0	0.1	7.7	18.9
Converted Drainage to Buried Storm Drain	Permanent	0.0	0.9	0.0	0.7	0.4	3.4	0.0	18.0	23.3	23.3
Drainage to be Regraded	Permanent	0.0	0.0	0.0	2.2	21.9	0.0	0.0	0.0	24.1	24.1
Drainage Displaced by Development and Manufactured Open Space	Permanent	0.1	3.3	0.0	0.0	0.0	0.0	0.0	0.0	3.3	3.4
Existing Drainage to be Restored	Temporary	0.0	0.0	0.0	0.0	0.0	0.0	7.2	0.2	7.4	7.4
Other Facilities ¹	Permanent	0.0	0.3	0.1	0.0	0.4	0.4	0.2	0.0	1.4	1.4
	Temporary	0.6	0.4	0.1	0.0	0.5	0.4	0.0	0.0	1.3	1.9
Total Acreage Filled	Permanent	5.5	5.6	0.1	3.2	23.3	4.8	0.2	18.1	55.2	60.7
	Temporary	17.0	6.5	0.2	0.0	0.6	2.1	7.3	0.3	16.9	33.9
New Jurisdictional Acres Created ²		36.0	9.0	4.9	7.1	62.3	1.2	-0.6	0.0	84.0	119.9
Net Permanent Change		+30.5	+3.5	+4.8	+3.9	+39.1	-3.5	-0.8	-18.1	+28.8	+59.2
Total Mitigation Required ³		22.5	12.0	0.3	3.2	23.9	6.9	7.5	18.4	72.1	94.6
Potential Mitigation Acreage Available ⁴		90.6	15.1	22.1	29.3	177.2	2.0	3.7	-1.0	248.3	339.0
Excess/Deficit		+68.2	+3.1	+21.8	+26.1	+153.3	-4.8	-3.8	-19.5	+176.2	+244.4

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 this EIS/EIR for a description of these facilities.

² New river and tributary Corps jurisdictional areas from the creation and enhancement activities described in the RMDP.

³ Minimum mitigation acreage required to ensure no net loss of waters of the United States. Greater mitigation acreage may be required based on further analysis required under section 404(b)(1) Guidelines.

⁴ Figures indicate potential compensatory mitigation area available for Corps jurisdiction (including temporary impact areas), adjacent wetlands beyond the OHWM, and adjacent upland buffer habitat.

⁵ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

4.6 JURISDICTIONAL WATERS AND STREAMS

(Revised) Table 4.6-21
Fill of CDFG Jurisdictional Streams Resulting from Implementation of Alternative 6 (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	5.4	0.5	0.1	0.3	0.6	0.4	0.0	0.1	2.0	7.4
	Temporary	11.4	0.4	0.1	0.0	0.1	0.0	0.0	0.1	0.6	12.0
Bank Stabilization	Permanent	8.8	1.4	0.0	0.0	0.0	0.5	0.0	0.0	2.0	10.7
	Temporary	38.4	7.4	0.0	0.0	0.0	1.7	0.0	0.1	9.2	47.6
Converted Drainage to Buried Storm Drain	Permanent	0.1	1.0	0.0	0.7	0.8	3.4	0.0	18.5	24.4	24.5
Drainage to be Regraded	Permanent	0.0	0.0	0.0	2.2	25.8	0.0	0.0	0.0	28.1	28.1
Drainage Displaced by Development and Manufactured Open Space	Permanent	6.3	6.4	0.0	0.0	0.0	0.0	0.0	0.0	6.4	12.7
Existing Drainage to be Restored	Temporary	1.4	0.0	0.0	0.0	0.0	0.0	7.2	0.2	7.4	8.8
Other Facilities ¹	Permanent	2.3	0.4	0.1	0.0	0.3	0.4	0.2	0.0	1.4	3.6
	Temporary	1.0	0.4	0.1	0.0	0.6	0.4	0.0	0.0	1.5	2.4
Total Acreage Filled	Permanent	22.8	9.8	0.1	3.2	27.5	4.8	0.2	18.7	64.2	87.0
	Temporary	52.1	8.2	0.2	0.0	0.6	2.1	7.3	0.3	18.7	70.8
Mitigation Required		128.8	24.7	0.4	4.5	52.0	9.9	7.5	26.0	124.9	253.7
Mitigation Capacity		90.6	15.1	22.1	29.3	177.2	2.0	3.7	-1.0	248.3	339.0
Excess/Deficit (+/-)		-38.2	-9.6	+21.7	+24.8	+125.2	-7.9	-3.8	-27.1	+123.4	+85.2

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 this EIS/EIR for a description of these facilities.

² Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

4.6 JURISDICTIONAL WATERS AND STREAMS

On the Santa Clara River mainstem, extensive bank stabilization on the north bank, two segments of bank stabilization on the south bank, and two bridges would affect flows and resource values within the channel. However, hydrologic impacts would be minor and would occur only under infrequent, large magnitude storm events (refer to revised Section 4.1, Surface Water Hydrology and Flood Control, for more information). Existing agricultural areas adjacent to the river corridor would be excavated to create additional riverbed, and this process would widen the river corridor in many areas.

Impacts to Waters of the United States

The acreages of Corps jurisdiction permanently and temporarily impacted from implementation of Alternative 6 are presented in (Revised) Table 4.6-20. Alternative 6 would result in permanent adverse impacts to ~~58.6~~ 60.7 acres of waters of the United States (a ~~29.35~~ percent reduction in impacts compared to the proposed ~~Project~~RMDP), and would create ~~up to 111~~ 119.9 acres of new ~~river habitat~~ jurisdictional areas through the restoration and enhancement activities described in the RMDP. This would result in a net permanent gain of ~~52.4~~ 59.2 acres of jurisdictional areas, and impacts under Significance Criterion 2 would be less than significant. Net permanent gains in Corps jurisdictional acreage would occur both in the Santa Clara River mainstem (~~15.5~~ 30.5 acre gain) and in the tributary drainages (~~36.9~~ 28.8 acre gain) under this Alternative. This change in jurisdictional acreage would be one of the factors affecting stream/wetland functions and services within the Project area (Significance Criterion 3), discussed in **Subsection 4.6.5.6.3**, below. The substantial acreage of waters of the United States to be preserved in perpetuity within the River Corridor SMA, the High Country SMA, and the Salt Creek area further contribute to the determination that this impact would be less than significant. However, the ~~26.9~~ 33.9 acres of temporary adverse impacts proposed under this alternative would represent a significant impact on waters of the United States, absent mitigation (Significance Criterion 4). This impact would be mitigated to a less-than-significant level through Mitigation Measure SW-4, which would require the restoration and revegetation of temporary impact zones following construction.

Impacts to CDFG Jurisdictional Streambeds

The acreages of permanently and temporarily adversely impacted CDFG jurisdictional streams resulting from implementation of Alternative 6 were determined using a GIS database, and are presented in (Revised) Table 4.6-21. Alternative 6 would result in permanent adverse impacts to CDFG jurisdictional areas including ~~65.2~~ 64.2 acres of tributary drainages and ~~20.0~~ 22.8 acres of the Santa Clara River mainstem.

To mitigate these impacts applying the mitigation ratios specified in revised Mitigation Measure BIO-2, ~~124.5~~ 124.9 acres of mitigation for tributary impacts and 128.8 acres of mitigation for river mainstem impacts would be required. As shown on (Revised) Table 4.6-21, the capacity for mitigation creation under Alternative 6 provides for ~~248.3~~ 238.3 acres in the tributaries and ~~142.5~~ 90.6 acres in the mainstem of the river. Thus, the mitigation acreage available within the Project area would be sufficient to accommodate the mitigation needs of this alternative, and no off-site mitigation lands would be required. The Project area, therefore, has sufficient mitigation capacity within the tributary drainages under this alternative, and no off-site mitigation for temporal losses of function in tributaries would be required.

4.6 JURISDICTIONAL WATERS AND STREAMS

However, because the acreage required to mitigate impacts to the river mainstem under Alternative 6 would exceed the mitigation acreage available on site (128.8 acres of river mainstem mitigation required vs. 90.6 acres of suitable river mainstem mitigation areas available on site), the balance (38.2 acres) would be mitigated to less than significant through creation, preservation, and enhancement of off-site riparian areas in the Santa Clara River mainstem as required by revised Mitigation Measure SW-7.

These mitigation acreages assume that mitigation would be ~~initiated~~established within a two-year period after impacts occur. If a longer period elapses before mitigation is initiated, higher mitigation ratios would apply as specified in revised Mitigation Measure BIO-2. ~~If The mitigation ratios specified in revised Mitigation Measure BIO-2 avoid, reduce, or compensate for impacts associated with is initiated two years prior to impacts, no temporal loss of functions and values, would occur, and impacts would be mitigated at a 1:1 ratio.~~

The substantial acreage of jurisdictional streambeds to be preserved in perpetuity within the River Corridor SMA, the High Country SMA, and the Salt Creek area ~~further~~also contribute to the determination that this impact would be less than significant after mitigation.

This alternative would also create new riparian habitat through the restoration and enhancement activities described in the RMDP. These activities would result in the restoration and enhancement of, totaling 91.6 up to 90.6 acres in the river mainstem and 220.4-248.3 acres in the tributaries. Alternative 6 would result in a net gain of ~~155.4-182.6~~ acres of CDFG jurisdictional streambed in the tributaries, and a net gain of ~~71.6-66.9~~ acres of jurisdictional streambed in the river mainstem. In total, this alternative would result in a net gain of ~~227-249.5~~ acres of CDFG jurisdictional areas site-wide. Impacts relative to Significance Criterion 2 would therefore be less than significant. This change in jurisdictional acreage would be one of the factors affecting stream/wetland functions and values within the Project area (Significance Criterion 3), discussed in **Subsection 4.6.5.6.3**, below.

In addition to the permanent impacts described above, Alternative 6 would also result in ~~69.6-70.8~~ acres of temporary adverse impacts to CDFG jurisdictional areas (~~51.6-52.1~~ acres in the river mainstem and ~~18.0-18.7~~ acres in the tributaries). Absent mitigation, this impact would be considered significant under Significance Criterion 4. This impact would be reduced to a less-than-significant level through incorporation of Mitigation Measure SW-4, which requires revegetation and restoration of all temporary impact zones. The ratios and timeframes specified in revised Mitigation Measure BIO-2 would apply, and ratios greater than 1:1 would be required if mitigation is not initiated within a two-year period after temporary impacts occur.

Both permanent and temporary impacts would have associated temporal loss of riparian functions and values, which would constitute a substantial adverse effect on state-protected streambeds. Absent mitigation, this impact would be significant under Significance Criterion 1. This impact would be reduced to a less-than-significant level through incorporation of Mitigation Measures BIO-1, and BIO-3 through BIO-18, which establish standards for restoration of riparian habitat, and revised Mitigation Measure BIO-2, which establishes standards for the expansion of riparian habitat to compensate for temporal loss of habitat functions and values.

4.6 JURISDICTIONAL WATERS AND STREAMS

Impacts to Federally Protected Wetlands

As shown on (Revised) **Table 4.6-22**, below, Alternative 6 would result in permanent adverse impacts to ~~6.22~~ 9.5 acres of wetlands (a ~~28-54~~ percent reduction in impacts compared to the proposed ~~RMDP~~ Project) and would temporarily impact an additional ~~4.87~~ 12.0 acres. These acreages are a subset of the impacted waters of the United States shown in (Revised) **Table 4.6-20**, above. Absent mitigation, this impact would be considered significant under Significance Criteria 1 and 4. However, the additional avoidance of wetlands in Potrero Canyon and additional creation and enhancement of wetlands in the Salt Creek watershed required by revised Mitigation Measures SW-1 and SW-2, as well as the revegetation of temporary impact zones required by Mitigation Measure SW-4, would reduce these impacts to a less-than-significant level.

(Revised) Table 4.6-22
Fill of Federally Protected Wetlands Resulting from Implementation of Alternative 6

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	1.5	0.0	0.2	0.0	1.7
	Temporary	2.7	0.0	0.0	0.0	2.7
Bank Stabilization	Permanent	3.1	0.0	4.3	0.0	7.4
	Temporary	7.8	0.0	0.0	0.0	7.8
Drainage Graded	Permanent	0.0	0.0	0.0	0.0	0.0
	Temporary	0.0	0.0	0.0	0.0	0.0
Other Facilities ⁽¹⁾	Permanent	0.0	0.0	0.4	0.0	0.4
	Temporary	0.1	0.0	0.3	0.0	0.3
Restoration	Permanent	0.0	0.0	0.0	0.0	0.0
	Temporary	0.0	1.2	0.0	0.0	1.2
Total Impacts	Permanent	4.7	0.0	4.9	0.0	9.5
	Temporary	10.6	1.2	0.3	0.0	12.0
Percent Reduction in Permanent Impacts Compared to Proposed Project		66%	No Change	29%	No Change	54%

¹ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

Source: URS (2010)

SCP Direct Impacts

Implementation of the SCP component of Alternative 6 would facilitate partial build-out of the Newhall Ranch Specific Plan and Entrada developments, but would not facilitate any development within the VCC planning area. Direct impacts to jurisdictional streams and waters associated with build-out of the

4.6 JURISDICTIONAL WATERS AND STREAMS

Specific Plan development are included among the direct impacts of the RMDP Project component, and are discussed in the preceding subsections.

4.6.5.6.2 Indirect Impacts

RMDP Indirect Impacts

The indirect impacts to jurisdictional streams and wetlands associated with adoption of Alternative 6 are anticipated to be similar to those of the proposed Project. These impacts are associated with changes in hydrology and water quality, and are addressed in revised Section 4.1, Surface Water Hydrology and Flood Control, revised Section 4.2, Geomorphology and Riparian Resources, and revised Section 4.4, Water Quality, of this EIS/EIR.

SCP Indirect Impacts

Implementation of the SCP component of Alternative 6 would facilitate partial build-out of the Newhall Ranch Specific Plan development (approximately 11 percent reduction in Specific Plan development compared to proposed Project), but would not facilitate any development within the VCC planning area. Indirect impacts to jurisdictional streams and waters associated with build-out of the Specific Plan development are included among the direct impacts of the RMDP Project component, and are discussed in the preceding subsections. The SCP component of Alternative 6 would result in a net gain of 108 acres of Corps jurisdiction and 227 acres of CDFG jurisdiction, and the impact would be less than significant under Significance Criterion 2. The temporary impacts proposed would be considered significant absent mitigation (Significance Criterion 4), but would be reduced to a less-than-significant level through incorporation of Mitigation Measure SW-4, which requires restoration and revegetation of temporary impact zones.

Mitigation to reduce the impacts associated with the build out of the Entrada planning area to less than significant would be similar to that proposed for the RMDP. However, the applicant is not seeking the permitting authorization from the Corps and CDFG at this time that would be necessary under the Clean Water Act and California Fish and Game Code to alter these jurisdictional waters/streams. Any future request for such authorization would require a site specific application to the Corps and CDFG, at a minimum, and related review pursuant to the Clean Water Act, the California Fish and Game Code, and NEPA/CEQA, as appropriate.

4.6.5.6.3 Secondary Impacts

Implementation of Alternative 6 would affect the riparian condition of the aquatic resources on site as shown in (Revised) **Table 4.6-23** and **Figure 4.6-10**. Changes in riparian condition would stem from two sources: changes in the acreage of jurisdictional areas on site and changes in the overall quality (measured by the HARC Total Score) of on-site riparian areas. As discussed above, implementation of this alternative would result in a net gain of CDFG jurisdictional area on site. When combined with the changes in HARC scores that would occur under this alternative, Alternative 6 would result in a Project-wide increase of 208.5216.94 HARC AW-score units, a 2829.7 percent increase over the existing condition, and the impact would be considered less than significant under Significance Criterion 3.

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Compared to the proposed Project, implementation of Alternative 6 would result in an increase of 181,326 HARC AW-Score Units. This change is attributable to the increased size of many assessment reaches post-Project, as well as to the removal of agricultural and grazing activities from the ~~RMDP Project site~~ and the ~~proposed~~ enhancement and restoration described in the ~~RMDP-proposed Project~~.

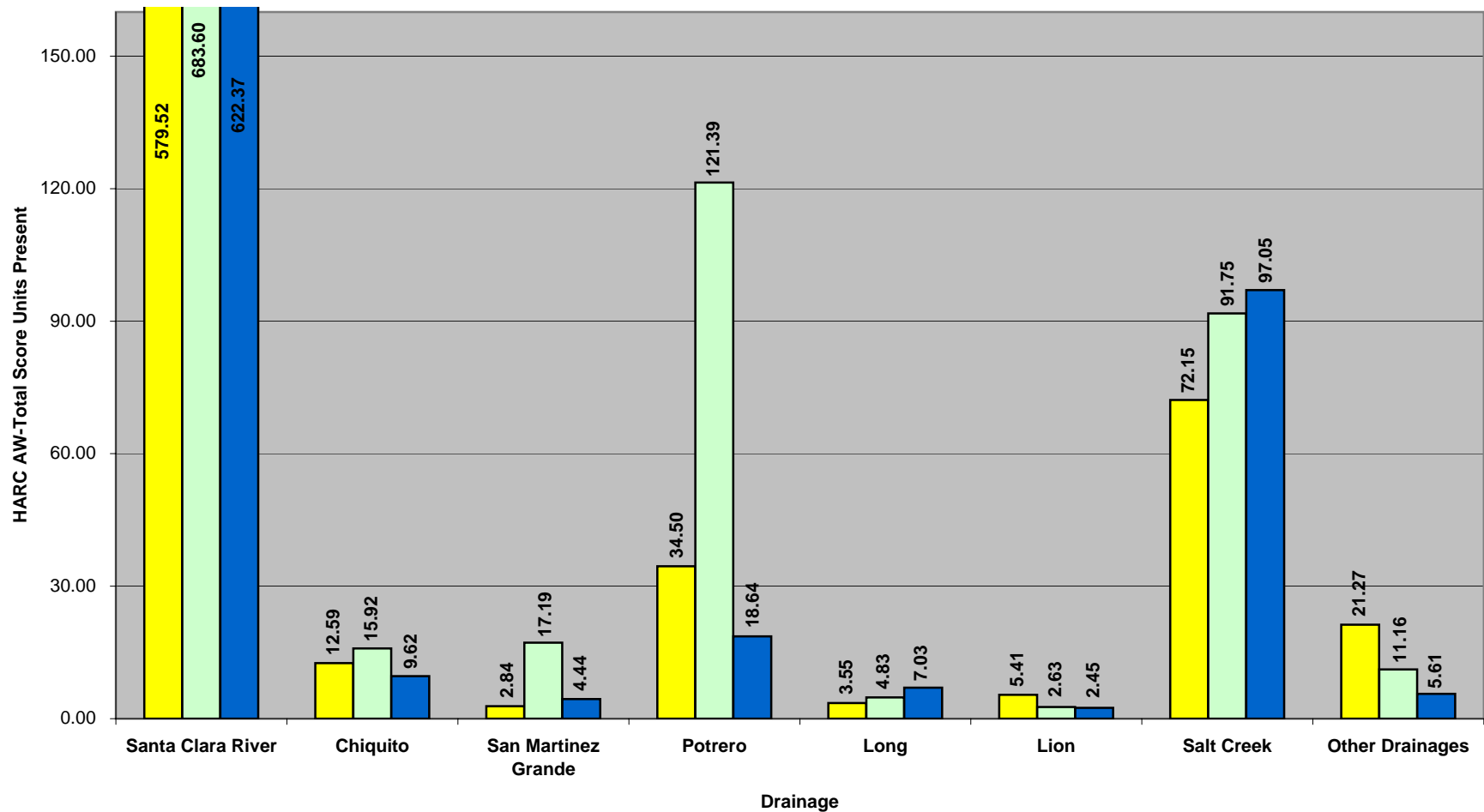
4.6.5.7 Impacts of Alternative 7 (Avoidance of 100-Year Floodplain, Elimination of Two Planned Bridges, and Avoidance of Spineflower)

If Alternative 7 were implemented, a long-term CWA section 404 permit and Master Lake/Streambed Alteration Agreement would be issued authorizing the improvements identified in **Subsection 3.4.7, 3.2.7**, of ~~this the Draft~~ EIS/EIR. These authorizations would facilitate the construction of bank stabilization, bridges, grade control structures, utility crossings, and the WRP outfall, and would allow the grading of certain drainages to accommodate building pads. This alternative has been designed to avoid impacting the Santa Clara River corridor and the eight major tributary drainages on the site. However, localized bridge impacts to these drainages would still occur. Alternative 7 would authorize 39,703 more linear feet of buried bank stabilization (38 percent increase), 40,515 fewer linear feet of drainages converted into underground storm drains (67.5 percent reduction), 189 fewer grade control structures (100 percent reduction), and two less river bridges (66 percent increase) when compared with the proposed ~~RMDP Project~~ (see **Figures 3.0-38, 3.0-39, 3.0-40, 3.0-41, 3.0-42, 3.0-43, and 3.0-44** in **Section 3.0**, Description of Alternatives of this EIS/EIR). The increase in the amount of bank stabilization proposed under this alternative is related to the substantial decrease in drainages converted to buried storm drains; these drainages would be left in open channels, some of which would require stabilization. The previously approved Commerce Center Bridge and the Potrero Canyon Bridge would not be constructed under this alternative.

4.6.5.7.1 Direct Impacts

RMDP Direct Impacts

Implementation of Alternative 7 would avoid the placement of fill into the Santa Clara River and the Long Canyon, Potrero Canyon, San Martinez Grande Canyon, and Chiquito Canyon drainages, except as required for bridge crossings. Bank stabilization in these drainages would be installed in upland areas, outside agency jurisdiction. Because the existing stream channels would not be narrowed by bank stabilization, and, in fact, would be widened in many cases, no grade control structures would be required. Grading of minor drainages on site to accommodate building pads would be substantially reduced compared to the proposed ~~Project~~RMDP. The extent of jurisdictional areas impacted by this alternative are quantified and compared to those of the proposed RMDP in ~~(Revised)~~ **Tables 4.6-24 and 4.6-25**.



SOURCE: URS – February 2009

FIGURE 4.6-10

Impacts to Riparian Condition Resulting from Implementation of Alternative 6

4.6 JURISDICTIONAL WATERS AND STREAMS

(Revised) Table 4.6-23
Riparian Condition Resulting from Implementation of
Alternative 6 Compared to Existing Condition and Alternative 2 (HARC AW-Score Units)

	Santa Clara River	Chiquito	San Martinez Grande	Lion	Long	Potrero	Salt	Other Drainages	Totals
Existing Condition	584.0 ¹	12.4	2.1	5.4	3.6	35.2	75.2	22.2	740.0
Alternative 6	683.6	15.9	17.2	2.6	4.8	121.4	91.8	11.2	948.5
Change	+99.6	+3.5	+15.1	-2.8	+1.2	+86.2	+16.6	-11.0	+208.5
% of Change	+17%	+29%	+728%	-52%	+33%	+245%	+22%	-50%	+28%
Alternative 2	622.4	9.6	4.4	2.5	7.0	18.6	97.1	5.6	767.2
Change Relative to Alternative 2	+61.2	+6.3	+12.8	+0.2	-2.2	+102.8	-5.1	+5.6	+181.3

¹ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

Source: URS (2010)

4.6 JURISDICTIONAL WATERS AND STREAMS

(Revised) Table 4.6-24
Fill of Corps Jurisdictional Waters (Including Wetlands) Resulting From
Implementation of Alternative 7 (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	1.4	0.4	0.1	0.1	0.4	0.2	0.0	0.1	1.3	2.7
	Temporary	2.6	0.2	0.1	0.0	0.3	0.1	0.0	0.1	0.8	3.5
Bank Stabilization	Permanent	2.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.3	2.2
	Temporary	6.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	6.4
Converted Drainage to Buried Storm Drain	Permanent	0.0	0.1	0.0	0.7	0.4	0.0	0.0	6.7	7.9	7.9
Drainage to be Regraded	Permanent	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Drainage Displaced by Development and Manufactured Open Space	Permanent	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Existing Drainage to be Restored	Temporary	0.0	0.0	0.0	0.5	0.0	0.0	7.2	1.3	9.0	9.0
Other Facilities ¹	Permanent	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.2
	Temporary	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
Total Acreage Filled	Permanent	3.5	0.5	0.1	0.8	0.9	0.5	0.2	6.8	9.7	13.1
	Temporary	10.3	0.2	0.1	0.5	0.5	0.1	7.3	1.3	10.1	20.3
New Jurisdictional Acres Created ²		41.2	10.1	5.1	8.0	43.2	5.1	-0.6	0.0	70.9	112.1
Net Permanent Change		+37.7	+9.7	+5.0	+7.3	+42.3	+4.6	-0.8	-6.8	+61.3	+99.0
Total Mitigation Required ³		13.7	0.7	0.2	1.3	1.4	0.6	7.5	8.1	19.7	33.5
Potential Mitigation Acreage Available ⁴		291.7	64.7	23.1	39.2	170.2	50.3	3.7	7.1	358.3	650.0
Excess/Deficit		+278.0	+64.0	+22.9	+37.9	+168.9	+49.7	-3.8	-1.1	+338.6	+616.6

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 this EIS/EIR for a description of these facilities.

² New river and tributary Corps jurisdictional areas from the creation and enhancement activities described in the RMDP.

³ Minimum mitigation acreage required to ensure no net loss of waters of the United States. Greater mitigation acreage may be required based on further analysis required under section 404(b)(1) Guidelines.

⁴ Figures indicate potential compensatory mitigation area available for Corps jurisdiction (including temporary impact areas), adjacent wetlands beyond the OHWM, and adjacent upland buffer habitat.

⁵ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

4.6 JURISDICTIONAL WATERS AND STREAMS

(Revised) Table 4.6-25
Fill of CDFG Jurisdictional Streams Resulting from Implementation of Alternative 7 (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	2.3 ²	0.8	0.1	0.1	0.7	0.2	0.0	0.0	1.9	4.2
	Temporary	4.1	0.5	0.1	0.0	0.5	0.1	0.0	0.0	1.2	5.3
Bank Stabilization	Permanent	5.5	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.5	5.9
	Temporary	16.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	16.7
Converted Drainage to Buried Storm Drain	Permanent	0.1	0.1	0.0	0.7	0.8	0.0	0.0	7.2	8.8	8.9
Drainage to be Regraded	Permanent	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Drainage Displaced by Development and Manufactured Open Space	Permanent	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Existing Drainage to be Restored	Temporary	1.7	0.0	0.0	0.5	0.0	0.0	7.2	1.4	9.0	10.7
Other Facilities ⁽¹⁾	Permanent	0.9	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.3	1.2
	Temporary	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7
Total Acreage Filled	Permanent	8.8	0.9	0.1	0.8	1.6	0.5	0.2	7.4	11.4	20.2
	Temporary	27.2	0.5	0.1	0.5	0.5	0.1	7.3	1.4	10.3	37.5
Mitigation Required		67.5	1.8	0.2	1.6	3.3	0.4	7.5	11.0	25.7	93.2
Mitigation Capacity		291.7	64.7	23.1	39.2	170.2	50.3	3.7	7.1	358.3	650.0
Excess/Deficit (+/-)		+224.2	+62.9	+22.9	+37.6	+166.9	+49.9	-3.8	-3.9	+332.6	+556.8

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 this EIS/EIR for a description of these facilities.

² Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

4.6 JURISDICTIONAL WATERS AND STREAMS

Implementation of Alternative 7 would involve various grading and construction activities within jurisdictional areas, as described above, and these activities would remove, divert, and substantially alter many of the drainages within the Project area. Like the proposed RMDP (Alternative 2), Alternative 7 would eliminate many of the minor, ephemeral drainages on site and route flows into the buried storm drain systems incorporated into the Specific Plan development. The extent of impacts to minor drainages would be reduced under this alternative compared to the proposed ~~RMDP~~Project, as this alternative would preserve the entire Middle Canyon and Magic Mountain Canyon drainages, and portions of the Off-Haul Canyon and Exxon Canyon drainages. In addition, Alternative 7 has been designed to minimize impacts to the major drainages on the site. The Chiquito Canyon drainage would be lined with buried bank stabilization along its eastern bank, constructed substantially beyond the existing stream bank so that relocation of the channel would not be necessary. In San Martinez Grande Canyon buried bank stabilization is proposed along the majority of the east bank and a small portion of the west bank, but would be constructed beyond the lateral limits of the streambed such that relocation or straightening of the channel would not be necessary. The valleys containing the Long Canyon and Potrero Canyon drainages would not be filled under this alternative, and these existing drainages would instead be lined with buried bank stabilization constructed outside the existing streambeds. The existing alkali marsh wetland at the downstream end of Potrero Canyon would not be filled under this alternative, and bank stabilization would be limited to the east bank in this area to prevent adverse hydrologic consequences and permit expansion and enhancement of the wetlands complex.

On the Santa Clara River mainstem, buried bank stabilization would be constructed outside to 100-year floodplain, and one bridge would affect flows and resource values within the channel. However, hydrologic impacts would be negligible under all but the most extreme flow conditions (refer to revised Section 4.1, Surface Water Hydrology and Flood Control for more information). Existing agricultural areas adjacent to the river corridor would be excavated to create additional riverbed, and this process would widen the river corridor in many areas.

Impacts to Waters of the United States

The acreages of Corps jurisdictional streams permanently and temporarily impacted from implementation of Alternative 7 are presented in (Revised) **Table 4.6-24**, above. Alternative 7 would result in permanent adverse impacts to ~~11.4~~13.1 acres of waters of the United States (~~87~~86 percent reduction in impacts compared to the proposed ~~RMDP~~Project), and would create ~~106~~up to 112.1 acres of new ~~river habitat jurisdictional area~~ through the restoration and enhancement activities described in the RMDP. This would result in a net permanent gain of ~~95~~99.0 acres of jurisdictional areas. Net permanent gains in Corps jurisdictional acreage would occur both in the Santa Clara River mainstem (~~16.2~~37.7 acre gain) and in the tributary drainages (~~78.4~~61.3 acre gain) under this Alternative, and impacts under Significance Criterion 2 would be less than significant. This change in jurisdictional acreage would be one of the factors affecting stream/wetland functions and services within the Project area (Significance Criterion 3), discussed in **Subsection 4.6.5.7.3**, below. The substantial acreage of waters of the United States to be preserved in perpetuity within the River Corridor SMA, the High Country SMA, and the Salt Creek area further contribute to the determination that this impact would be less than significant. The ~~14.7~~20.3 acres of temporary impacts proposed under this alternative would represent a significant impact on waters of the United States absent mitigation (Significance Criterion 4). This impact would be mitigated to a less-

4.6 JURISDICTIONAL WATERS AND STREAMS

than-significant level through the incorporation of Mitigation Measure SW-4, which would require revegetation of temporary impact zones.

Impacts to CDFG Jurisdictional Streams

The acreages of permanently and temporarily adversely impacted CDFG jurisdictional streams resulting from implementation of Alternative 7 were determined using a GIS database, and are presented in (Revised) Table 4.6-25. Alternative 7 would result in permanent adverse impacts to CDFG jurisdictional areas including ~~11.6~~11.4 acres of tributary drainages and ~~6.4~~8.8 acres of the Santa Clara River mainstem.

To mitigate these impacts applying the mitigation ratios specified in revised Mitigation Measure BIO-2, ~~25.3~~25.7 acres of mitigation for tributary impacts and 67.5 acres of mitigation for river mainstem impacts would be required. As shown on (Revised) Table 4.6-25, the capacity for mitigation creation under Alternative 7 provides for ~~358.3~~289.8 acres in the tributaries and ~~315.9~~291.7 acres in the mainstem of the river. Thus, the mitigation acreage available within the Project area would be sufficient to accommodate the mitigation needs of this alternative, and no off-site mitigation lands would be required.

These mitigation acreages assume that mitigation would be ~~initiated~~established within a two-year period after impacts occur. If a longer period elapses before mitigation is initiated, higher mitigation ratios would apply as specified in revised Mitigation Measure BIO-2. ~~If The mitigation ratios specified in revised Mitigation Measure BIO-2 avoid, reduce, or compensate for impacts associated with this initiated two years prior to impacts, no temporal loss of functions and values, would occur, and impacts would be mitigated at a 1:1 ratio.~~

The substantial acreage of jurisdictional streambeds to be preserved in perpetuity within the River Corridor SMA, the High Country SMA, and the Salt Creek area ~~further~~also contribute to the determination that this impact would be less than significant after mitigation.

This alternative also would create new riparian habitat through the restoration and enhancement activities described in the RMDP. These activities would result in the restoration and enhancement of, totaling 290 up to 291.7 acres in the river mainstem and 280-358.3 acres in the tributaries. Alternative 7 would result in a net gain of ~~268~~346.9 acres of CDFG jurisdictional streambed in the tributaries, and a net gain of ~~284~~278.2 acres of jurisdictional streambed in the river mainstem. In total, this alternative would result in a net gain of ~~552~~625.1 acres of CDFG jurisdictional areas site-wide. Impacts relative to Significance Criterion 2 would, therefore, be less than significant. This change in jurisdictional acreage would be one of the factors affecting stream/wetland functions and values within the Project area (Significance Criterion 3), discussed in **Subsection 4.6.5.7.3**, below.

In addition to the permanent impacts described above, Alternative 7 would also result in ~~36.9~~37.5 acres of temporary adverse impacts to CDFG jurisdictional areas (27.2 acres in the river mainstem and ~~9.7~~10.3 acres in the tributaries). Absent mitigation, this impact would be considered significant under Significance Criterion 4. This impact would be reduced to a less-than-significant level through incorporation of Mitigation Measure SW-4, which requires revegetation and restoration of all temporary impact zones. The ratios and timeframes specified in revised Mitigation Measure BIO-2 would apply, and ratios greater than 1:1 would be required if mitigation is not initiated within a two-year period after temporary impacts occur.

4.6 JURISDICTIONAL WATERS AND STREAMS

Both permanent and temporary impacts would have associated temporal loss of riparian functions and values, which would constitute a substantial adverse effect on state-protected streambeds. Absent mitigation, this impact would be significant under Significance Criterion 1. This impact would be reduced to a less-than-significant level through incorporation of Mitigation Measures BIO-1, and BIO-3 through BIO-18, which establish standards for restoration of riparian habitat, and revised Mitigation Measure BIO-2, which establishes standards for the expansion of riparian habitat to compensate for temporal loss of habitat functions and values.

Impacts to Federally Protected Wetlands

The acreages of federally protected wetlands permanently and temporarily impacted from implementation of this alternative are presented in (Revised) Table 4.6-26. These acreages are a subset of the impacted waters of the United States shown in (Revised) Table 4.6-24, above. Alternative 7 would result in permanent adverse impacts to 1.09–3.2 acres of wetlands (87–84 percent reduction in impacts compared to the proposed RMDP Project) and would temporarily impact an additional 3.34–9.0 acres. Absent mitigation, these impacts would be considered significant (Significance Criteria 1 and 4). However, the additional avoidance of wetlands in Potrero Canyon and additional creation and enhancement of wetlands in the Salt Creek watershed required by revised Mitigation Measures SW-1 and SW-2 would reduce these impacts to a less-than-significant level.

(Revised) Table 4.6-26						
Fill of Federally Protected Wetlands Resulting from Implementation of Alternative 7						
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	0.9	0.0	0.2	0.0	1.1
	Temporary	1.0	0.0	0.3	0.0	1.4
Bank Stabilization	Permanent	2.1	0.0	0.0	0.0	2.1
	Temporary	5.9	0.0	0.0	0.0	5.9
Drainage Graded	Permanent	0.0	0.0	0.0	0.0	0.0
	Temporary	0.0	0.0	0.0	0.0	0.0
Other Facilities	Permanent	0.0	0.0	0.0	0.0	0.0
	Temporary	0.5	0.0	0.0	0.0	0.5
Restoration	Permanent	0.0	0.0	0.0	0.0	0.0
	Temporary	0.0	1.2	0.0	0.0	1.2
Total Impacts	Permanent	3.0	0.0	0.2	0.0	3.2
	Temporary	7.5	1.2	0.3	0.0	9.0
Percent Reduction in Permanent Impacts Compared to Proposed Project		78%	No Change	97%	No Change	84%

¹ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

Source: URS (2010)

SCP Direct Impacts

Implementation of the SCP component of Alternative 7 would facilitate partial build-out of the Newhall Ranch Specific Plan development, but would not facilitate any development within the VCC planning area. Direct impacts to jurisdictional streams and waters associated with build-out of the Specific Plan development are included among the direct impacts of the RMDP Project component, and are discussed in the preceding subsections.

4.6.5.7.2 Indirect Impacts

RMDP Indirect Impacts

The indirect impacts to jurisdictional streams and wetlands associated with adoption of Alternative 7 are anticipated to be similar to those of the proposed Project. These impacts are associated with changes in hydrology and water quality, and are addressed in revised Section 4.1, Surface Water Hydrology and Flood Control, revised Section 4.2, Geomorphology and Riparian Resources, and revised Section 4.4, Water Quality, of this EIS/EIR.

SCP Indirect Impacts

Implementation of the SCP component of Alternative 7 would facilitate partial build-out of the Newhall Ranch Specific Plan and Entrada developments (approximately 20 percent reduction in Specific Plan development compared to proposed Project), but would not facilitate any development within the VCC planning area. Indirect impacts to jurisdictional streams and waters associated with build-out of the Specific Plan development are included among the direct impacts of the RMDP Project component, and are discussed in the preceding subsections. The SCP component of Alternative 7 would result in a net gain of 93.5 acres of Corps jurisdiction and 550 acres of CDFG jurisdiction, and the impact would be less than significant under Significance Criterion 2. The temporary impacts proposed would be considered significant absent mitigation (Significance Criterion 4), but would be reduced to a less-than-significant level through incorporation of Mitigation Measure SW-4, which requires restoration and revegetation of temporary impact zones.

Mitigation to reduce the impacts associated with the build out of the Entrada planning area to less than significant would be similar to that proposed for the RMDP. However, the applicant is not seeking the permitting authorization from the Corps and CDFG at this time that would be necessary under the Clean Water Act and California Fish and Game Code to alter these jurisdictional waters/streams. Any future request for such authorization would require a site specific application to the Corps and CDFG, at a minimum, and related review pursuant to the Clean Water Act, the California Fish and Game Code, and NEPA/CEQA, as appropriate.

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4.6.5.7.3 Secondary Impacts

Implementation of Alternative 7 would affect the riparian condition of the aquatic resources on site as shown in (Revised) **Table 4.6-27** and **Figure 4.6-11**. Changes in riparian condition would stem from two sources: changes in the acreage of jurisdictional areas on site and changes in the overall quality (measured by the HARC Total Score) of on-site riparian areas. As discussed above, implementation of this alternative would result in a net gain of CDFG jurisdictional area on site. When combined with the changes in HARC scores that would occur under this alternative, Alternative 7 would result in a Project-wide increase of 434.3442.86 HARC AW-score units, a 5960.5 percent increase over the existing condition, and the impact would be considered less than significant under Significance Criterion 3.

Compared to the proposed Project, implementation of Alternative 7 would result in an increase of 407.218 HARC AW-Score Units. This change is attributable to the increased size of many assessment reaches post-Project, as well as to the removal of agricultural and grazing activities from the RMDP site and the proposed enhancement and restoration described in the RMDP.

4.6.5.8 Impacts of the Draft LEDPA (Elimination Of Planned Potrero Bridge, Additional Spineflower Preserve Acreage, And Larger Riparian Areas In Tributary Drainages)

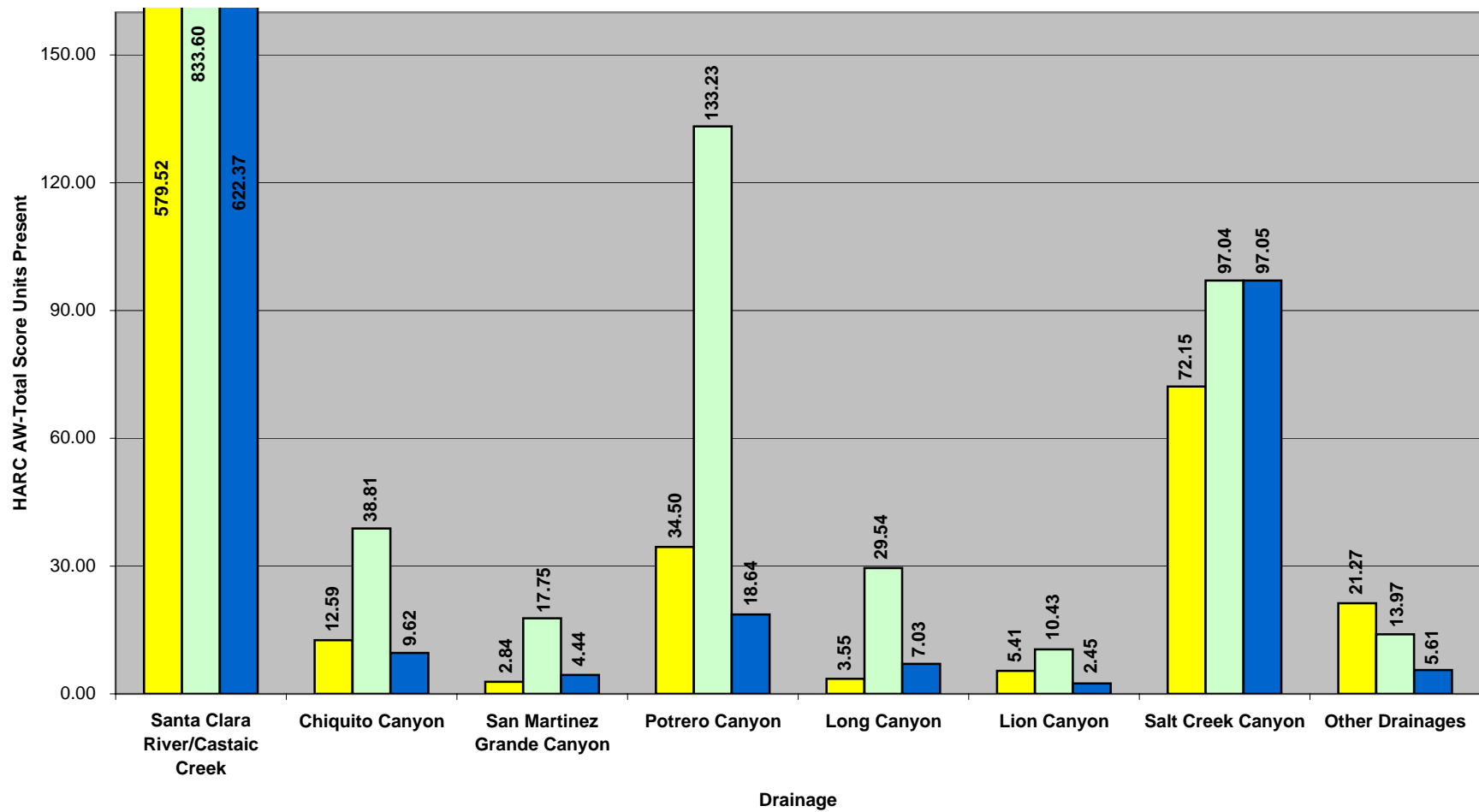
If the Draft LEDPA were implemented, a long-term CWA section 404 permit and Master Streambed Alteration Agreement would be issued authorizing the improvements identified in Subsection 3.4, Description of Alternatives of this Final EIS/EIR. These authorizations would allow the construction of bank stabilization, bridges, grade control structures, utility crossings, and the WRP outfall, and the grading of certain drainages to accommodate building pads. However, the Draft LEDPA would authorize 69,913 lf (5,516 fewer linear feet of buried bank stabilization, a 7 percent reduction), 56,291 lf (3,554 fewer linear feet of drainages converted into underground storm drains, a 6 percent reduction), and one less river bridge (33 percent decrease), when compared with the proposed Project. This alternative would not require as much fill of major jurisdictional drainages as the proposed Project, particularly in Potrero Canyon (see (Revised) Tables 4.6-8 and 4.6-9).

4.6.5.8.1 Direct Impacts

RMDP Direct Impacts

Under the Draft LEDPA, infrastructure would be constructed in and adjacent to the Santa Clara River and tributary drainages within the Project area. The Draft LEDPA proposes one bridge, Long Canyon Road bridge, and one previously approved bridge, Commerce Center Drive bridge, across the main stem of the Santa Clara River. The Potrero Canyon Road bridge would be eliminated under the Draft LEDPA.

Buried bank stabilization would be installed in upland and riparian areas along approximately one-half of the north bank (18,811 lf) and one-third of the south bank (7,728 lf) of the Santa Clara River. Twenty-five storm drain outlets would be installed along the north bank and 10 such 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 would be installed on the north side of the Santa Clara River between San Martinez Grande Canyon and Chiquito Canyon for the utility corridor.



SOURCE: URS – February 2009

FIGURE 4.6-11

Impacts to Riparian Condition Resulting from Implementation of Alternative 7

4.6 JURISDICTIONAL WATERS AND STREAMS

(Revised) Table 4.6-27
Riparian Condition Resulting from Implementation of
Alternative 7 Compared to Existing Condition and Alternative 2 (HARC AW-Score Units)

	Santa Clara River	Chiquito	San Martinez Grande	Lion	Long	Potrero	Salt	Other Drainages	Totals
Existing Condition	584.0	12.4	2.1	5.4	3.6	35.2	75.2	22.2	740.0
Alternative 7	833.6	38.8	17.8	10.4	29.5	133.2	97.0	14.0	1174.4
Change	249.7	26.5	15.7	5.0	25.9	98.0	21.9	-8.2	434.3
Percentage Change	+43%	+214%	+757%	+92%	+719%	+278%	+29%	-37%	+59%
Alternative 2	622.4	9.6	4.4	2.5	7.0	18.6	97.1	5.6	767.2
Change Relative to Alternative 2	+211.2	+29.2	+13.3	+8.0	+22.5	+114.6	No Change	+8.4	+407.2

¹ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

Source: URS (2010)

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Overall, the Draft LEDPA 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. The Draft LEDPA 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 over tributaries and 13 culvert road crossings over tributaries.

Chiquito Canyon. Under the Draft LEDPA, Chiquito Canyon would require stabilizing treatments to protect the channel and surrounding development from excessive vertical scour and lateral channel migration. 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 5,722 lf of buried bank stabilization would be installed along the west bank and 7,069 lf of buried bank stabilization would be installed along the east bank of Chiquito Canyon. In addition, approximately 2,624 lf of drainage would be converted to buried storm drain. Three 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.⁴

San Martinez Grande Canyon. The Draft LEDPA proposes to construct a soft-bottom channel to incorporate the existing alignment of San Martinez Grande Canyon Road between SR-126 and the northern Project boundary. Portions of the existing drainage would be permanently altered by construction of the modified tributary drainage, including buried bank stabilization and grade stabilizing structures. Approximately 3,686 lf of buried bank stabilization would be installed along the west bank and 2,558 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.

Potrero Canyon. In Potrero Canyon, the Draft LEDPA would require bank stabilization along both sides of the Potrero Canyon drainage. In the southeastern upstream reaches of Potrero Canyon, the existing drainage would be graded and flows would be converted to buried storm drain. At a point approximately four-fifths of the way up the drainage, from the drainage's mouth at the river, the storm drain would convey flows into a soft-bottom channel constructed approximately parallel to the existing drainage. Geotechnically stabilized earthen fill would be constructed in the upper two-thirds of Potrero Valley to support residential and commercial development, as well as a wide, reconstructed channel and riparian corridor. Bank stabilization would be constructed in upland areas, effectively widening the soft-bottom channel in this reach. The fill portion of Potrero Canyon would be discontinued immediately upstream of the mesic meadow, which meadow would remain preserved. Approximately 18,316 lf of Potrero Canyon would consist of reconstructed channel.

One new bridge and three road crossing culverts would be constructed at approximately even intervals between the upstream end of the mesic meadow and just downstream of the point where the drainage

⁴ In addition, as part of the Caltrans SR-126 road widening project, the existing six-lane bridge allowing SR-126 to cross the Castaic Creek drainage would be expanded to eight lanes.

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begins to branch. The Via Canyon portion of the upper Potrero Valley would be reconstructed as well. Grade stabilization structures are proposed along the entire length of the reconstructed soft-bottom channel. Approximately 17,202 lf of buried bank stabilization would be installed along the west bank, and 17,130 lf of buried bank stabilization would be installed along the east bank of Potrero Canyon. Approximately 9,389 lf of drainage would be converted to buried storm drain.

Long Canyon. In Long Canyon, the Draft LEDPA proposes to 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.

Under the Draft LEDPA, approximately 9,618 lf of Long Canyon would consist of reconstructed channel, while roughly 800 lf would be preserved and 961 lf would be converted to buried storm drain. There would be 8,040 lf of buried bank stabilization along the west bank, and 6,665 lf along the east bank of Long Canyon. The Draft LEDPA includes four road crossing culverts in Long Canyon, including a large fill-supported crossing for Magic Mountain Parkway.

Lion Canyon. The main branch of Lion Canyon would be stabilized for its entire length, selectively regraded in some areas, and stabilized with grade control structures in others. Approximately 5,835 lf of the existing drainage would be permanently altered by construction of stabilizing elements. 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 be converted for maintenance access to the water quality basin near the confluence with the Santa Clara River.

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 allowing SR-126 to cross the Castaic Creek drainage would be expanded to eight lanes.

(New) **Table 4.6-28a** quantifies the extent of the Draft LEDPA's impact on Corps' jurisdictional waters (including wetlands) in the Santa Clara River and the tributary drainages within the Project site. (New) **Table 4.6-28b** quantifies the extent of the Draft LEDPA's impact on CDFG's jurisdictional areas in the River and tributary drainages.

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(New) Table 4.6-28a

**Fill of Corps Jurisdictional Waters (Including Wetlands) Resulting From
Implementation of Draft 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	3.0 ⁵	0.2	0.1	0.1	0.3	0.0	0.0	0.2	0.9	3.9
	Temporary	4.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.4	4.9
Bank Stabilization	Permanent	1.1	0.5	0.1	3.1	9.8	0.9	0.0	0.0	14.5	15.5
	Temporary	8.1	3.2	1.5	0.0	2.9	2.2	0.0	0.1	9.9	18.0
Converted Drainage to Buried Storm Drain	Permanent	0.1	0.9	0.0	0.7	4.6	3.3	0.0	17.2	26.6	26.7
Drainage to be Regraded	Permanent	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.7	0.7
Drainage Displaced by Development and Manufactured Open Space	Permanent	0.1	2.2	0.0	0.7	7.0	0.4	0.0	7.5	17.8	17.9
Existing Drainage to be Restored	Temporary	2.0	0.0	0.0	0.0	0.1	0.0	7.2	0.0	7.3	9.3
Other Facilities ¹	Permanent	0.2	0.6	0.0	0.5	0.0	0.0	0.2	0.0	1.4	1.6
	Temporary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Acreage Filled	Permanent	4.5	4.4	0.2	5.7	21.8	4.7	0.2	24.8	61.8	66.3
	Temporary	14.6	3.6	1.6	0.0	2.9	2.2	7.3	0.1	17.6	32.2
New Jurisdictional Acres Created ²		32.9	11.1	6.0	22.5	70.0	1.3	20.4	0.0	131.3	164.2
Net Permanent Change		+28.4	+6.8	+5.8	+16.7	+48.2	-3.4	+20.2	-24.8	+69.4	+97.9
Total Mitigation Required ³		19.0	8.0	1.8	5.7	24.7	6.9	7.5	24.9	79.5	98.5
Potential Mitigation Acreage Available ⁴		109.0	19.4	16.0	44.0	54.7	-2.1	19.9	-24.7	127.2	236.2
Excess/Deficit		+90.0	+11.4	+14.2	+38.3	+30.0	-9.0	+12.4	-49.6	+47.7	+137.7

Notes:

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 this EIS/EIR for a description of these facilities.

² New river and tributary Corps jurisdictional areas from the creation and enhancement activities described in the RMDP.

³ Minimum mitigation acreage required to ensure no net loss of waters of the United States. Greater mitigation acreage may be required based on further analysis required under section 404(b)(1) Guidelines.

⁴ Figures indicate potential compensatory mitigation area available for Corps jurisdiction (including temporary impact areas), adjacent wetlands beyond the OHWM, and adjacent upland buffer habitat.

⁵ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acre.

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(New) Table 4.6-28b
Fill of CDFG Jurisdictional Streams Resulting from Implementation of Draft LEDPA (Acres)

Project Component	Impact Type	Santa Clara River Mainstem	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	4.9	0.3	0.1	0.3	0.4	0.4	0.0	0.0	1.6	6.5
	Temporary	7.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2	7.3
Bank Stabilization	Permanent	5.2	0.7	0.0	0.3	10.0	0.6	0.0	0.0	11.7	16.9
	Temporary	17.6	4.1	1.4	0.0	2.5	1.9	0.0	0.1	10.0	27.6
Converted Drainage to Buried Storm Drain	Permanent	0.3	1.0	0.0	0.7	5.0	3.3	0.0	17.7	27.7	28.0
Drainage to be Regraded	Permanent	0.0	0.0	0.0	4.5	9.6	0.0	0.0	0.0	14.0	14.0
Drainage Displaced by Development and Manufactured Open Space	Permanent	4.6	5.6	0.0	0.0	0.0	0.0	0.0	7.7	13.3	17.9
Existing Drainage to be Restored	Temporary	1.2	0.0	0.0	0.0	0.0	0.0	7.2	0.0	7.2	8.4
Other Facilities ¹	Permanent	2.3	0.7	0.1	0.0	0.9	0.3	0.2	0.0	2.3	4.6
	Temporary	4.3	0.5	0.1	0.0	0.4	0.2	0.0	0.0	1.3	5.7
Total Acreage Filled	Permanent	17.3	8.4	0.2	5.7	26	4.7	0.2	25.4	70.6	87.9
	Temporary	30.2	4.7	1.6	0	2.9	2.2	7.3	0.1	18.7	49.0
Mitigation Required		89.1	19.6	2.5	8.4	51.8	9.4	7.7	39.7	139.1	228.2
Mitigation Capacity		109.7	22.1	13.3	40.7	86	1.7	20.3	0	184.3	293.8
Excess/Deficit (+/-)		+20.6	+2.5	+10.8	+32.3	+34.2	-7.7	+12.6	-39.7	+45.2	+65.6

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 this EIS/EIR for a description of these facilities.

² Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acre.

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Impacts to Waters of the United States

(New) Table 4.6-28a, above, presents the Draft LEDPA's permanent and temporary impacts to the Corps' jurisdictional acreage. The Draft LEDPA would result in permanent adverse impacts to 66.3 acres of waters of the United States, including wetlands (a 29 percent reduction in acres impacted compared to the proposed Project), and would create 164.2 acres of new jurisdictional area through restoration and enhancement activities described in the RMDP (48 percent increase in acres created compared to the proposed Project). This would result in a net permanent gain of 97.9 acres of Corps jurisdictional areas, a less-than-significant impact under Significance Criterion 2. This change in jurisdictional acreage also would be one of the factors affecting stream/wetland functions and services within the Project area (Significance Criterion 3), discussed in **Subsection 4.6.4**. Net permanent gains in Corps jurisdictional acreage would occur both in the Santa Clara River mainstem (28.4 acre gain) and in the tributary drainages (67.2 acre gain). The substantial acreage of waters of the United States to be preserved in perpetuity within the River Corridor SMA, the High Country SMA, and the Salt Creek area further contribute to the determination that this impact would be less than significant. However, the 32.2 acres of temporary impacts proposed under the Draft LEDPA would represent a significant adverse impact on waters of the United States, absent mitigation (Significance Criterion 4). Temporary impacts to waters would be mitigated to a less-than-significant level through the incorporation of Mitigation Measure SW-4, which would require restoration and revegetation of temporary impact zones.

Impacts to CDFG-Jurisdictional Streams

(New) Table 4.6-28b, above, presents the Draft LEDPA's permanent and temporary impacts to CDFG's jurisdictional areas. The Draft LEDPA would result in permanent adverse impacts to CDFG jurisdictional areas, including 17.3 acres of the Santa Clara River mainstem and 70.6 acres of tributary drainages. The Draft LEDPA would also create new riparian habitat through the restoration and enhancement activities described in the RMDP. These activities would result in the restoration and enhancement of up to 109.7 acres in the river mainstem and 184.3 acres in the tributaries.

To mitigate these impacts applying the mitigation ratios specified in revised Mitigation Measure BIO-2, 89.1 acres of mitigation for river mainstem impacts and 138.4 acres of mitigation for tributary impacts would be required. As shown on (New) Table 4.6-28b, the capacity for mitigation creation under the Draft LEDPA provides for 184.3 acres in the tributaries and 109.7 acres in the mainstem of the river. Thus, the mitigation acreage available within the Project area would be sufficient to accommodate the mitigation needs of this alternative, and no off-site mitigation areas would be required.

These mitigation acreages assume that mitigation would be established within a two-year period after impacts occur. Otherwise, higher mitigation ratios would apply as specified in revised Mitigation Measure BIO-2. The mitigation ratios specified in revised Mitigation Measure BIO-2 avoid, reduce, or compensate for impacts associated with temporal loss of functions and values. With mitigation, impacts would be less than significant under Significance Criterion 1 and Significance Criterion 4. The substantial acreage of jurisdictional streambeds to be preserved in perpetuity within the River Corridor SMA, the High Country SMA, and the Salt Creek area also contribute to the determination that this impact would be less than significant after mitigation. The Draft LEDPA would result in a net gain of 113.7 acres of CDFG jurisdictional streambed in the tributaries, and a net gain of 92.4 acres of jurisdictional streambed

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in the river mainstem. In total, the Draft LEDPA would result in a net gain of 206.1 acres of CDFG jurisdictional areas site wide. Impacts relative to Significance Criterion 2 would be less than significant. This change in jurisdictional acreage would be one of the factors affecting stream/wetland functions and values within the Project area (Significance Criterion 3).

In addition to the permanent impacts described above, the Draft LEDPA would also result in an additional 48.9 acres of temporary adverse impacts to CDFG jurisdictional areas (30.2 acres in the river mainstem and 18.7 acres in the tributaries). Absent mitigation, this impact would be considered significant under Significance Criterion 4. This impact would be reduced to a less-than-significant level through implementation of Mitigation Measure SW-4, which requires revegetation and restoration of all temporary impact zones, and revised Mitigation Measure BIO-2. The ratios and timeframes specified in revised Mitigation Measure BIO-2 would apply, and ratios greater than 1:1 would be required if mitigation is not initiated within a two-year period after temporary impacts occur.

Both permanent and temporary impacts would have associated temporal loss of riparian functions and values, which would constitute a substantial adverse effect on state-protected streambeds. Absent mitigation, this impact would be significant under Significance Criterion 1. This impact would be reduced to a less-than-significant level through incorporation of Mitigation Measures BIO-1, and BIO-3 through BIO-18, which establish standards for restoration of riparian habitat, and implementation of revised Mitigation Measure BIO-2, which establishes standards for the expansion of riparian habitat to compensate for temporal loss of habitat functions and values.

Impacts to Federally-Protected Wetlands

(New) Table 4.6-28c, below, presents the Draft LEDPA's permanent and temporary impacts to federally-protected wetland acreages. These acreages are a subset of the impacted waters of the United States shown in (New) Table 4.6-28a, above. The Draft LEDPA would result in permanent adverse impacts to 7.7 acres of wetlands (62 percent reduction compared to proposed Project), and temporary impacts to an additional 11.4 acres. Absent mitigation, this impact would be considered significant under Significance Criterion 1 and 4. However, the additional avoidance of wetlands in Potrero Canyon and additional creation and enhancement of wetlands in the Salt Creek watershed required by revised Mitigation Measure SW-1 and SW-2 would reduce this impact to a less-than-significant level. Mitigation Measure SW-4 would mitigate temporary impacts to a less-than-significant level by requiring restoration and revegetation of temporary impact zones.

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(New) Table 4.6-28c
Fill of Federally Protected Wetlands Resulting from Implementation of
Draft 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	2.5	0.0	0.1	0.0	2.6
	Temporary	2.7	0.0	0.0	0.0	2.7
Bank Stabilization	Permanent	1.0	0.0	3.9	0.0	4.9
	Temporary	5.3	0.0	1.2	0.0	6.5
Drainage Graded	Permanent	0.0	0.0	0.0	0.0	0.0
	Temporary	0.0	0.0	0.0	0.0	0.0
Other Facilities ¹	Permanent	0.3	0.0	0.0	0.0	0.3
	Temporary	1.0	0.0	0.1	0.0	1.0
Restoration	Permanent	0.0	0.0	0.0	0.0	0.0
	Temporary	0.1	1.2	0.0	0.0	1.2
Total Impacts	Permanent	3.7	0.0	3.9	0.0	7.7
	Temporary	9.0	1.1	1.2	0.0	11.4
Percent Reduction in Permanent Adverse Impacts, Compared to Proposed RMDP		72%	No Change	43%	No Change	62%

¹ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acre and are included in the Total columns and rows.

Source: URS (2010)

SCP Direct Impacts

The SCP component of the Draft LEDPA is a permitting and management plan for an upland plant species, and would not result in any direct impacts to waters of the United States or CDFG jurisdictional streams.

4.6.5.8.2 Indirect Impacts

RMDP Indirect Impacts

The indirect impacts to jurisdictional streams and wetlands associated with adoption of the Draft LEDPA are anticipated to be similar to those of the proposed RMDP. These impacts are associated with changes in hydrology and water quality, and are addressed in revised **Section 4.1**, Surface Water Hydrology and Flood Control, revised **Section 4.2**, Geomorphology and Riparian Resources, and revised **Section 4.4**, Water Quality, of this EIS/EIR.

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SCP Indirect Impacts

The Draft LEDPA would result in a greater level of spineflower protection than the proposed SCP, with increased preservation of occupied habitat and less loss when compared to the proposed Project (Alternative 2). Within the preserves, spineflower management and monitoring actions would be the same as the proposed Project.

Implementation of the proposed SCP would facilitate build-out of the Specific Plan, VCC, and Entrada developments. Impacts to jurisdictional streams and waters associated with build-out of the Specific Plan development are included among the direct impacts of the RMDP project component, and are discussed in the preceding subsections. Build-out of the VCC development would require the construction of bank stabilization along the Castaic Creek and Hasley Canyon drainages, as well as placement of 14 grade control structures within the Hasley Canyon drainage. Build-out of the VCC development would result in permanent impacts to approximately nine acres of waters of the United States (10.7 percent of VCC total) and 24.1 acres of CDFG jurisdictional streams (22 percent of VCC total). These activities were previously authorized by the Corps (Permit No. 89-00419-AOA), but authorization from CDFG pursuant to Fish & Game Code section 1600 *et seq.* has not yet been granted. These impacts would be significant absent mitigation under Significance Criteria 1, 2, 3, and 4. Within the Entrada planning area, implementation of the proposed SCP would help to facilitate an urban development, which would result in 2.6 acres of permanent adverse impacts to waters of the United States and 5.7 acres of permanent adverse impacts to CDFG jurisdictional streams. These impacts would be significant absent mitigation under Significance Criteria 1, 2, 3, and 4.

Mitigation to reduce the impacts associated with the build-out of VCC and Entrada to less than significant would be similar to that proposed for the RMDP. However, the applicant is not seeking the permitting authorization from the Corps (Entrada only) and CDFG at this time that would be necessary under the Clean Water Act and California Fish & Game Code to alter these jurisdictional waters/streams. Any future request for such authorization would require a site specific application to the Corps and CDFG, at a minimum, and related review pursuant to the Clean Water Act, the California Fish & Game Code, and NEPA/CEQA, as appropriate.

4.6.5.8.3 Secondary Impacts

Implementation of the Draft LEDPA would affect the riparian condition of the aquatic resources on site as shown in (New) **Table 4.6-28d** and (New) **Figure 4.6-12**. 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, implementation of the Draft LEDPA would result in a net gain of jurisdictional area on site. When combined with the changes in HARC total scores that would occur, the Draft LEDPA would result in a Project-wide increase of 147.0 HARC AW-score units, a 24 percent increase over the existing condition, and the impact would be considered less than significant under Significance Criterion 3. This gain would occur mainly within the Santa Clara River mainstem. Compared to the proposed Project, implementation of the Draft LEDPA would result in an increase of 147.0 HARC AW-score units. This change is attributable to the increased size of many assessment reaches post-Project, as well as to the removal of

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agricultural and grazing activities from the RMDP site and the proposed enhancement and restoration described in the RMDP.

(New) Table 4.6-28d
Riparian Condition Resulting from Implementation of
Draft LEDPA Compared to Existing Condition and Alternative 2 (HARC AW-Score Units)

	Santa Clara River	Chiquito	San Martinez Grande	Lion	Long	Potrero	Salt	Other Drainages	Totals
Existing Condition	584.0 ¹	12.4	2.1	5.4	3.6	35.2	75.2	22.2	740.0
Draft LEDPA	672.0	25.5	11.75	2.4	27.3	72.5	96.2	6.5	914.2
Change	+88.0	+13.1	+9.7	-3.0	+23.7	+37.3	+21.0	-15.7	+174.0
Percentage Change	+15%	+106%	+462%	-56%	+658%	+106%	+28%	-71%	+24%
Alternative 2	622.4	9.6	4.4	2.5	7.0	18.6	97.1	5.6	767.2
Change Relative to Alternative 2	+49.6	+15.9	+7.4	-0.1	+20.3	+53.9	-0.9	+0.9	+147.0

¹ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acre and are included in the Total columns and rows.

Source: URS (2010)

4.6.5.98 Summary Comparison of Impacts to Jurisdictional Waters and Streams: All Alternatives

For reference and ease of comparison, the post-jurisdictional acreages of waters of the United States, including and federally protected wetlands and CDFG jurisdictional streams are presented in (New) Tables 4.6-28a-4.6-28b, (Revised) Table 4.6-28, and (Revised) Table 4.6-29, respectively. Predicted changes in the riparian condition of on-site drainages under each of the alternatives discussed in this section are summarized in (Revised) Table 4.6-30, below. Due to a combination of the proposed enhancement of existing riparian zones and creation of new jurisdictional areas, all of the alternatives analyzed in this EIS/EIR would result in a net improvement in the riparian condition, as measured by the HARC of on-site resources.

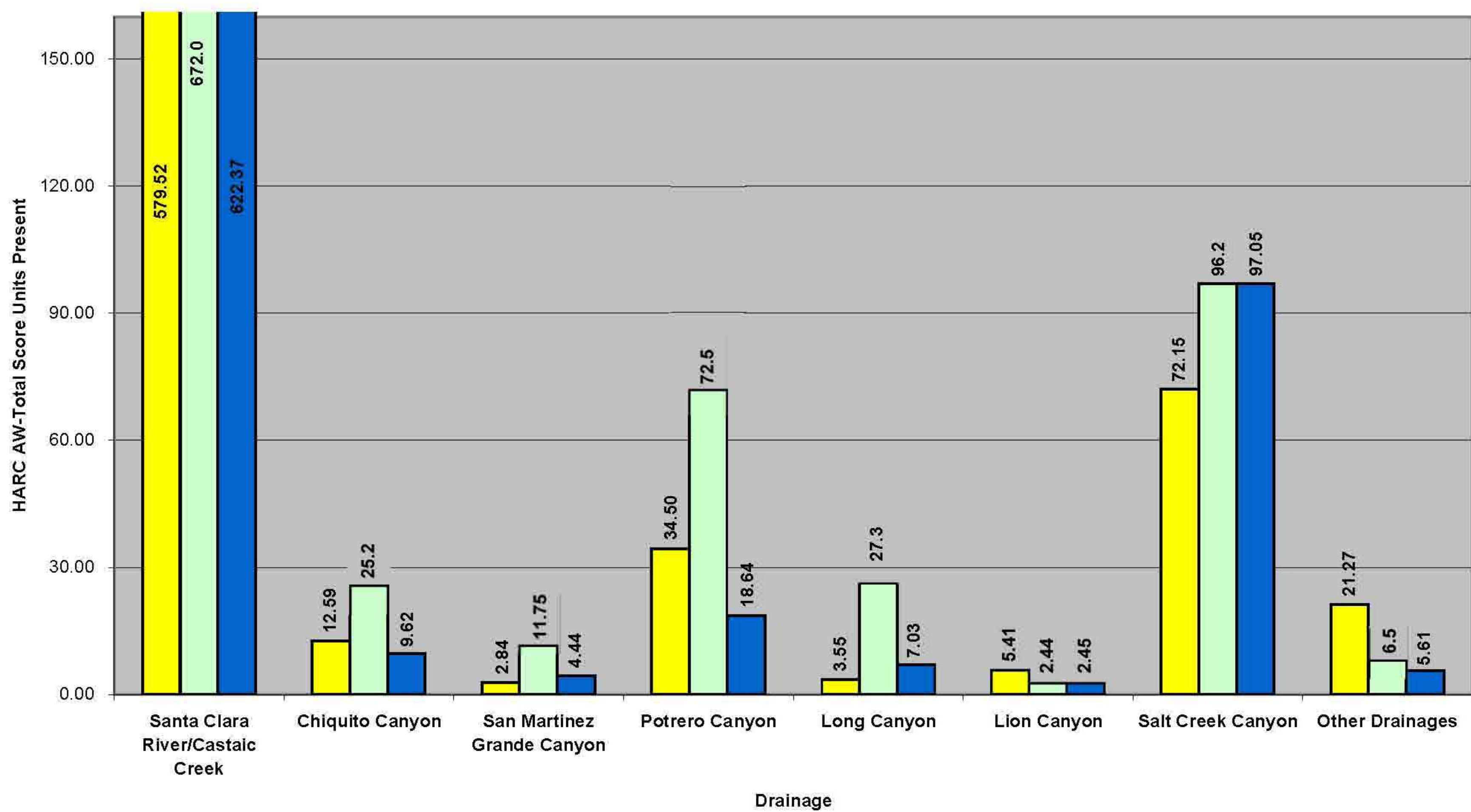


FIGURE 4.6-12

Impacts to Riparian Condition Resulting from Implementation of Draft LEDPA

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<div>(Revised) Table 4.6-28</div> <div>Summary of Impacts to Waters of the United States -- All Alternatives</div>									
	Santa Clara River (Including Wetlands, Acres)	Chiquito Canyon (Acres)	San Martinez Grande Canyon (Acres)	Lion Canyon (Acres)	Long Canyon (Acres)	Potrero Canyon (Including Wetlands, Acres)	Salt (Including Wetlands, Acres)	Other Drainages (Including Wetlands, Acres)	Total all Waters of U.S. (Including Wetlands, Acres)
Existing Condition (Acres)	471.2	12.2	2.6	6.9	5.7	38.7	88.5	34.4	660.1
Post-Alternative 2 Jurisdictional Acres	485.8	12.5	5.8	3.4	7.7	27.2	105.9	7.2	655.5
Change from Existing	+14.5	+0.3	+3.2	-3.5	+2.0	-11.6	+17.5	-27.2	-4.8
Post-Alternative 3 Jurisdictional Acres	506.4	15.7	8.7	3.4	7.1	70.2	106.4	9.6	727.5
Change from Existing	+35.2	+3.4	+6.1	-3.5	+1.4	+31.5	+18.0	-24.8	+67.4
Change Compared to Alternative 2	+20.7	+3.1	+2.9	No Change	-0.6	+43.1	+0.5	+2.5	+72.0
Post-Alternative 4 Jurisdictional Acres	506.4	12	5.9	3.4	10.6	39.5	105.9	9.6	693.4
Change from Existing	+35.2	-0.2	+3.3	-3.5	+4.9	+0.8	+17.5	-24.8	+33.3
Change Compared to Alternative 2	+20.7	-0.5	+0.1	No Change	+2.9	+12.3	No Change	+2.5	+37.9
Post-Alternative 5 Jurisdictional Acres	494.3	20.5	9.5	3.4	10.5	96.7	105.9	9.7	750.5
Change from Existing	+23.1	+8.3	+6.9	-3.5	+4.8	+58.0	+17.5	-24.7	+90.4
Change Compared to Alternative 2	+8.5	+8.0	+3.7	No Change	+2.7	+69.6	No Change	+2.6	+95.0
Post-Alternative 6 Jurisdictional Acres	501.7	15.7	7.3	3.4	9.6	77.8	87.7	16.3	719.3
Change from Existing	+30.5	+3.5	+4.8	-3.5	+3.9	+39.1	-0.8	-18.1	+59.2
Change Compared to Alternative 2	+15.9	+3.2	+1.5	No Change	+1.8	+50.6	-18.3	+9.1	+63.9
Post-Alternative 7 Jurisdictional Acres	508.9	21.9	7.6	11.5	13	81	87.7	27.6	759.1
Change from Existing	+37.7	+9.7	+5.0	+4.6	+7.3	+42.3	-0.8	-6.8	+99.0
Change Compared to Alternative 2	+23.1	+9.4	+1.8	+8.1	+5.2	+53.9	-18.3	+20.4	+103.6
Post-Draft LEDPA Jurisdictional Acres	499.6	18	8.4	3.5	22.4	86.9	106.5	9.6	754.9
Change from Existing	+28.4	+5.8	+5.8	-3.4	+16.7	+48.2	+18.0	-24.8	+94.8
Change Compared to Alternative 2	+13.9	+5.5	+2.6	+0.1	+14.7	+59.8	+0.5	+2.4	+99.5
¹ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.									

4.6 JURISDICTIONAL WATERS AND STREAMS

(Revised) Table 4.6-29

Summary of Impacts to CDFG Jurisdictional Streams -- All Alternatives

	Santa Clara River	Chiquito	San Martinez Grande	Lion	Long	Potrero	Salt	Other Drainages	Totals
Existing Condition (Acres)	760.3	18.3	2.6	6.9	5.7	43.0	94.1	35.0	965.7
Post-Alternative 2 Jurisdictional Acres	801.5	16.4	5.8	3.7	10.7	27.3	115.8	10.4	991.6
Change from Existing	+41.3	-1.9	+3.3	-3.2	+5.0	-15.7	+21.7	-24.6	+25.9
Post-Alternative 3 Jurisdictional Acres	830.0	23.1	14.4	3.7	10.7	80.4	115.8	10.3	1088.4
Change from Existing	+69.8	+4.9	+11.9	-3.1	+5.0	+37.5	+21.7	-24.7	+122.7
Change (Alt 3 v. Alt 2)	+28.5	+6.7	+8.6	No Change	No Change	+53.1	No Change	-0.1	+96.8
Post-Alternative 4 Jurisdictional Acres	829.9	16.3	6.4	3.7	9.9	63.5	115.8	9.6	1055.2
Change from Existing	+69.7	-2.0	+3.9	-3.1	+4.2	+20.6	+21.7	-25.4	+89.5
Change (Alt 4 v. Alt 2)	+28.4	-0.1	+0.6	No Change	-0.8	+36.2	No Change	-0.8	+63.6
Post-Alternative 5 Jurisdictional Acres	815.3	31.2	19.4	3.7	9.8	107.0	115.8	9.6	1111.8
Change from Existing	+55.1	+13.0	+16.9	-3.1	+4.1	+64.1	+21.7	-25.4	+146.1
Change (Alt 5 v. Alt 2)	+13.8	+14.8	+13.6	No Change	-0.9	+79.7	No Change	-0.8	+120.2
Post-Alternative 6 Jurisdictional Acres	827.2	23.2	22.8	3.7	7.9	170.0	115.8	16.0	1186.6
Change from Existing	+67.0	+5.0	+20.3	-3.1	+2.2	+127.1	+21.7	-19.0	+220.9
Change (Alt 6 v. Alt 2)	+25.7	+6.8	+17.0	No Change	-2.8	+142.7	No Change	+5.6	+195.0
Post-Alternative 7 Jurisdictional Acres	1038.5	56.6	23.7	14.8	44.1	190.0	115.8	27.9	1511.4
Change from Existing	+278.3	+38.4	+21.2	7.9	+38.4	+147.1	+21.7	-7.1	+545.7
Change (Alt 7 v. Alt 2)	+237.0	+40.2	+17.9	11.1	+33.4	+162.7	No Change	+17.5	+519.8
Post-Draft LEDPA Jurisdictional Acres	852.7	32.1	15.7	3.8	40.7	103.0	114.2	9.6	1171.8
Change from Existing	+92.5	+13.9	+13.2	-3.1	+35.0	+60.1	+20.1	-25.4	+206.1
Change (Draft LEDPA v. Alt 2)	+51.2	+15.7	+9.9	0.1	+30.0	+75.7	-1.6	-0.8	+180.2

¹ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

4.6 JURISDICTIONAL WATERS AND STREAMS

(Revised) Table 4.6-30
Summary of Impacts to Riparian Condition as Measured by the HARC -- All Alternatives

Reach Score	Santa Clara River	Chiquito	San Martinez Grande	Lion	Long	Potrero	Salt	Other Drainages	TOTALS
Existing Condition	584.0	12.4	2.1	5.4	3.6	35.2	75.2	22.2	740.1
Alternative 2	622.4	9.6	4.4	2.5	7.0	18.6	97.1	5.6	767.2
Change	+38.4	-2.8	+2.3	-2.9	+3.4	-16.6	+21.9	-16.6	+27.1
Percentage of Change	+7%	-23%	+110%	-54%	+94%	-47%	+29%	-75%	+4%
Alternative 3	637.6	15.0	10.3	2.4	7.1	46.8	97.1	7.9	824.1
Change	+53.6	+2.6	+8.2	-3.0	+3.5	+11.6	+21.9	-14.3	+84.0
Percentage of Change	+9%	+21%	+391%	-55%	+96%	+33%	+29%	-64%	+11%
Change (Alt 3 v. 2)	+15.2	+5.4	+5.9	-0.1	+0.1	+28.2	No Change	+2.3	+56.9
Alternative 4	646	10.9	4.7	2.4	6.5	40.7	96.2	7.3	814.7
Change	+62.0	-1.5	+2.6	-3.0	+2.9	+5.5	+21.0	-14.9	+74.6
Percentage of Change	+11%	-12%	+124%	-56%	+81%	+16%	+28%	-67%	+10%
Change (Alt 4 v. 2)	+23.6	+1.3	+0.3	-0.1	-0.5	+22.1	-0.9	+1.7	+47.5
Alternative 5	632.3	21.3	14.2	2.4	6.6	75.0	95.8	7.1	854.8
Change	+48.3	+8.9	+12.1	-3.0	+3.0	+39.8	+20.6	-15.1	+114.7
Percentage of Change	+8%	+72%	+578%	-55%	+83%	+113%	+27%	-68%	+16%
Change (Alt 5 v. 2)	+9.9	+11.7	+9.8	-0.1	-0.4	+56.4	-1.3	+1.5	+87.6
Alternative 6	683.6	15.9	17.2	2.6	4.8	121.4	91.8	11.2	948.5
Change	+99.6	+3.5	+15.1	-2.8	+1.2	+86.2	+16.6	-11.0	+208.4
Percentage of Change	+17%	+28%	+719%	-51%	+34%	+245%	+22%	-50%	+28%
Change (Alt 6 v. 2)	+61.2	+6.3	+12.8	+0.1	-2.2	+102.8	-5.3	+5.6	+181.3
Alternative 7	833.6	38.8	17.8	10.4	29.5	133.2	97.0	14.0	1174.4
Change	+249.6	+26.4	+15.7	+5.0	+25.9	+98.0	+21.8	-8.2	+434.3
Percentage of Change	+43%	+213%	+745%	+93%	+721%	+278%	+29%	-37%	+59%
Change (Alt 7 v. 2)	+211.2	+29.2	+13.4	+7.9	+22.5	+114.6	-0.1	+8.4	+407.2
Draft LEDPA	672	25.5	11.75	2.4	27.3	72.5	96.2	6.5	914.2
Change	+88.0	13.1	9.7	-3.0	23.7	37.3	21.0	-15.7	174.0
Percentage of Change	+15%	+106%	+462%	-56%	+658%	+106%	+21.8%	-71%	24%
Change (Draft LEDPA v. 2)	+49.6	+15.9	+7.4	-0.1	+20.3	+53.9	-0.9	+0.9	+147.0

¹ Data presented herein reflects GIS source data, with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10th of an acre. Values reported as 0.0 may represent up to 0.04 acres.

4.6 JURISDICTIONAL WATERS AND STREAMS

(Revised) **Table 4.6-31** shows a comparative analysis of wetland impacts of Alternatives 2 through 7 and the Draft LEDPA. As discussed in **Subsection 4.6.2.1**, above, there is a rebuttable presumption that "practicable alternatives that do not involve special aquatic sites are presumed to be available." (40 C.F.R. 230.10(a)(3).) As shown in (Revised) **Table 4.6-31**, none of the Alternatives 2 through 7 completely avoids all five wetland areas on the Project site. Alternatives 3 through 7 and the Draft LEDPA would avoid impacts to one of the wetland sites, the cismontane alkali marsh in lower Potrero Canyon, that would be impacted under Alternative 2. Alternatives 3 through 7 could be considered practicable alternatives to the proposed Project, but only with respect to that particular wetland site. In addition, Alternative 7 would also avoid the Potrero Canyon Saltgrass Wetland site. However, because of the difficulty in currently predicting which alternative (or hybrid alternative) the lead agencies will ultimately select after receiving and considering public comments, further analysis of the relative practicability of alternatives that avoid and minimize impacts to waters of the United States, including wetland areas will be included in the Corps' 404(b)(1) analysis to determine the Least Environmentally Damaging Practicable Alternative.

(Revised) Table 4.6-31
Summary of Impacts to Wetlands -- Alternatives 2-7

Wetland Area	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Draft LEDPA
Santa Clara River Fringe Wetlands	Permanent and temporary impacts due to the installation of three bridges, buried bank stabilization, etc. (23.63 acres)	Permanent and temporary impacts due to the installation of two bridges, buried bank stabilization, etc. (13.85 acres)	Permanent and temporary impacts due to the installation of two bridges, buried bank stabilization, etc. (14.52 acres)	Permanent and temporary impacts due to the installation of three bridges, buried bank stabilization, etc. (21.30 acres)	Permanent and temporary impacts due to the installation of two bridges, buried bank stabilization, etc. (15.22 acres)	Permanent and temporary impacts due to the installation of one bridge, buried bank stabilization, etc. (10.45 acres)	Permanent and temporary impacts due to the installation of one bridge, buried bank stabilization, etc. (12.74 acres)
Potrero Canyon Wetlands	Valley filled, lower wetland channelized (6.87 acres impacted)	Valley filled, lower wetland mostly avoided (4.78 acres impacted)	Valley filled, lower wetland mostly avoided (4.97 acres impacted)	Valley filled, lower wetland mostly avoided (4.79 acres impacted)	Valley filled, lower wetland mostly avoided (4.85 acres impacted)	Bridge impacts, lower wetland avoided (0.19 acres impacted)	Valley filled, lower wetland mostly avoided (3.94 acres impacted)
Salt Creek/Graves Canyon Confluence	Restoration and minor trail crossings (0.03 acres)	Restoration and minor trail crossings (0.03 acres)	Restoration and minor trail crossings (0.03 acres)	Restoration and minor trail crossings (0.03 acres)	Restoration and minor trail crossings (0.03 acres)	Restoration and minor trail crossings (0.03 acres)	Restoration and minor trail crossings (0.03 acres)
Middle Canyon Spring Complex	Completely avoided (2.13 acres)	Completely avoided (2.13 acres)	Completely avoided (2.13 acres)	Completely avoided (2.13 acres)	Completely avoided (2.13 acres)	Completely avoided (2.13 acres)	Completely avoided (2.13 acres)

Source: URS, 2009.

4.6 JURISDICTIONAL WATERS AND STREAMS

4.6.6 MITIGATION MEASURES

The County of Los Angeles previously adopted mitigation measures to minimize impacts to jurisdictional streams and wetlands within the Specific Plan area as part of the adoption of the Newhall Ranch Specific Plan and WRP. These measures are found in the previously certified Newhall Ranch Specific Plan Program EIR, the adopted Mitigation Monitoring Plans for the Specific Plan and WRP (May 2003), and are summarized in **Table 4.6-1**, above. In addition, these mitigation measures are set forth in full below, and preceded by "SP," which stands for Specific Plan.

- SP-4.2-2** All necessary permits or letters of exemption from the United States Army Corps of Engineers, United States Fish and Wildlife Service, California Department of Fish and Game, and the Regional Water Quality Control Board for Specific Plan-related development are to be obtained prior to construction of drainage improvements. The performance criteria to be used in conjunction with 1603 agreements and/or 404 permits are described in Section 4.6, Biological Resources, Mitigation Measures 4.6-1 through 4.6-10 (restoration) and 4.6-11 through 4.6-16 (enhancement).
- SP-4.2-3** All necessary streambed agreement(s) are to be obtained from the California Department of Fish and Game wherever grading activities alter the flow of streams under CDFG jurisdiction. The performance criteria to be used in conjunction with 1603 agreements and/or 404 permits are described in Section 4.6, Biological Resources, Mitigation Measures 4.6-1 through 4.6-10 (restoration) and 4.6-11 through 4.6-16 (enhancement).
- SP-4.6-1** The restoration mitigation areas located within the River Corridor SMA shall be in areas that have been disturbed by previous uses or activities. Mitigation shall be conducted only on sites where soils, hydrology, and microclimate conditions are suitable for riparian habitat. First priority will be given to those restorable areas that occur adjacent to existing patches (areas) of native habitat that support sensitive species, particularly endangered or threatened species. The goal is to increase habitat patch size and connectivity with other existing habitat patches while restoring habitat values that will benefit sensitive species.
- SP-4.6-2** A qualified biologist shall prepare or review revegetation plans. The biologist shall also monitor the restoration effort from its inception through the establishment phase.
- SP-4.6-3** Revegetation Plans may be prepared as part of a California Department of Fish and Game 1603 Streambed Alteration Agreement and/or an United States Army Corps of Engineers section 404 permit, and shall include:
- Input from both the Project proponent and resource agencies to assure that the Project objectives applicable to the River Corridor SMA and the criteria of this 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,

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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.).

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- 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" 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.
- 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 (*Ricinus 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-4.6-26a** 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.

4.6 JURISDICTIONAL WATERS AND STREAMS

- Mitigation requirements for oak tree replacement are set forth in Mitigation Measure 4.6-48, below.

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-4.6-47a 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-4.6-55 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 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.

SP-4.6-63 Riparian resources that are impacted by build-out of the Newhall Ranch Specific Plan shall be restored with similar habitat at the rate of one acre replaced for each acre lost.

Water Reclamation Plant

SP-5.0-18 All necessary permits or letters of exemption from the United States Army Corps of Engineers, United States Fish and Wildlife Service, California Department of Fish and Game, and the Regional Water Quality Control Board for WRP-related development are to be obtained.

SP-5.0-30 Comply with permit requirements established by the California Department of Fish and Game, the United States Army Corps of Engineers, and/or the United States Fish and Wildlife Service, relative to removal and replacement of riparian habitat.

SP-5.0-32 Comply with permit requirements of Federal, State and regional agencies with jurisdiction over discharge of reclaimed water to the Santa Clara River relative to potential impacts on the River's biological values.

4.6 JURISDICTIONAL WATERS AND STREAMS

4.6.6.2 Mitigation Measures Already Required by the Adopted VCC EIR

The County of Los Angeles adopted mitigation measures to minimize impacts to jurisdictional waters and streams within the VCC planning area as part of the approval of the VCC project. These measures are found in the previously certified VCC EIR (April 1990), and are summarized in **Table 4.6-2**, above. In addition, these mitigation measures are set forth in full below, and preceded by "VCC-SW," which stands for Valencia Commerce Center - Streams/Wetlands.

At the time of adoption, the VCC mitigation measures represented the best available mitigation imposed by Los Angeles County. Moreover, as noted in **Subsection 4.6.1.2.1**, above, additional environmental review will be conducted by Los Angeles County with respect to the VCC planning area, because the applicant recently submitted the last tentative parcel map for build-out of the VCC planning area. Implementation of the previously adopted, applicable VCC mitigation measures and additional mitigation requirements (*e.g.*, measures similar to those previously adopted for the Specific Plan area and/or recommended for the proposed Project) would ensure that significant impacts to jurisdictional waters and streams within the VCC planning area are reduced to the extent feasible.

- VCC-SW-1** On December 11th, 1990, a 404 Permit was issued by the Army Corps of Engineers for the Commerce Center project. The project will implement measures required as part of the 404 permit to protect wildlife habitat. Mitigation includes: the use of Armorflex along Castaic Creek; a widened channel and preservation of existing riparian habitat; annual Vireo surveys; cultural and paleontological surveys of all drainages; and a weed eradication program. The use of Armorflex may not be approved by the Department of Public Works; therefore, the type of lining actually used may change as a potential issue of safety.
- VCC-SW-2** The Castaic Creek channel will follow the existing bank contours of the creek and will minimize encroachment into the riparian vegetation community, so that there is no net loss of riparian habitat or acreage of Castaic Creek. In order to minimize potential effects on downstream populations of UTS, the channel will be designed so that the pre and post project flow will be approximately the same in volume and velocity.
- VCC-SW-3** Soft bottom channels will be incorporated into the project design to allow for the retention of existing riparian vegetation.
- VCC-SW-4** A vegetation restoration plan will be used to revegetate areas temporarily disturbed by construction in the Creek.

4.6.6.3 Mitigation Measures Relating to the Entrada Planning Area

The County of Los Angeles has not yet prepared or released a draft EIR for the proposed development within the portion of the Entrada planning area that would be facilitated by approval of the SCP component of the proposed Project. As a result, there are no previously adopted mitigation measures for the Entrada planning area. However, the adoption and implementation of measures similar to those previously adopted for the Specific Plan area and/or recommended for the proposed Project would ensure

4.6 JURISDICTIONAL WATERS AND STREAMS

that potential impacts to jurisdictional waters and streams within the Entrada planning area are reduced to the extent feasible.

4.6.6.4 Additional Mitigation Measures Proposed by this EIS/EIR

Based on the analysis above, the following mitigation measures, which are in addition to those previously adopted by the County of Los Angeles in connection with its approval of the Specific Plan, WRP, and VCC projects, are proposed to reduce potentially significant impacts to jurisdictional waters and streams, as applicable. It should be noted that not all of the proposed mitigation measures are applicable to all of the Project alternatives. Implementation of the mitigation measures provided below would minimize the impacts of the proposed Project (Alternative 2) on jurisdictional streams and wetlands, and would reduce these impacts to a less-than-significant level. These measures would only be necessary if Alternative 2 were implemented because none of the other alternatives considered in this EIS/EIR would result in significant impacts upon these resources. The additional measures are preceded by "SW," to designate that they are related to impact mitigation for streams and waters. There are additional mitigations measures which minimize and reduce the impacts to jurisdictional streams in revised Section 4.5, Biological Resources, BIO-1 through BIO-16.

- SW-1** To reduce the impacts of the proposed pProject on federally-protected wetlands, the proposed channel 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. ~~are eismontane alkali marsh (seep wetland) at that reach.~~ The proposed lined channel through the wetland shall not 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.
- 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 construction-related noise, emissions from equipment, and temporal loss of upland and riparian habitats in 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:

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- 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 through 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 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 would 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 construction 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 native 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 through SP-4.6-15 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 jurisdictional delineation of waters of the United States and CDFG jurisdictional streams. The acreages and locations of impacts, as well as the acreage and

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location of mitigation required, will be recalculated and included in the Construction Notification and Sub-Notification Agreement.

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 greater value than the impacted site; (b) preservation of property containing jurisdictional tributaries to the Santa Clara River having an equal or greater value than the impacted site via a conservation easement or analogous method; or (c) habitat enhancement activities in jurisdictional tributaries for the necessary acreage (*e.g.*, exotic species removal under the terms and conditions 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 analogous 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 referenced in this section and is reproduced below for convenience.

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

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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 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.)
 - 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.)

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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).

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(Revised) Table 4.5-68
CDFG Jurisdictional Permanent Impacts Mitigation Ratios

Ratios Listed by Vegetation Types & Quality

Vegetation Community	Veg Code / ID	HIGH Reach Value*	MEDIUM Reach Value**	LOW Reach Value***
		(Mit. Ratio)	(Mit. Ratio)	(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 revised **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 revised **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 revised **Section 4.2**.

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4.6.7 SUMMARY OF SIGNIFICANCE FINDINGS

Using the significance criteria identified in this section, it has been determined that the proposed Project and alternatives would result in potentially significant but mitigable impacts to jurisdictional waters and streambeds. (Revised) **Table 4.6-32** presents a summary of the significance threshold exceedance, if any, of each of the Project alternatives, and the reduced level of impact that could be achieved for each alternative by applying appropriate mitigation measures.

4.6.8 SIGNIFICANT UNAVOIDABLE IMPACTS

With implementation of the above mitigation measures, no significant unavoidable impacts on jurisdictional waters and streams are expected to result from the proposed Project or any of the alternatives evaluated in this EIS/EIR.

4.6 JURISDICTIONAL WATERS AND STREAMS

(Revised) Table 4.6-32
Summary of Significant Jurisdictional Waters and Streams Impacts - Pre- and Post-Mitigation

Significance Criteria	Applicable Mitigation Measures	Planning Area	Impact of Alternatives - Pre/Post-Mitigation							
			Alt 1 Pre/ Post	Alt 2 Pre/ Post	Alt 3 Pre/ Post	Alt 4 Pre/ Post	Alt 5 Pre/ Post	Alt 6 Pre/ Post	Alt 7 Pre/ Post	Draft LEDPA Pre/Post
1) The Project would result in a substantial adverse effect on federally protected wetlands or a substantial change to state-protected streambeds through direct removal, filling, hydrologic interruption, loss of functions or services, or other means	SW-1 SW-2 SW-3	NRSP	NI	SI/M	SI/M	SI/M	SI/M	SI/M	SI/M	SI/M
		VCC	NI	SI/M	SI/M	NI	NI	NI	NI	SI/M
		Entrada	NI	SI/M	SI/M	SI/M	SI/M	SI/M	SI/M	SI/M
2) The Project would result in a permanent net loss of CDFG jurisdictional streams or waters of the United States	SW-3	NRSP	NI	SI/M	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS
		VCC	NI	SI/M	NS/NS	NI	NI	NI	NI	NS/NS
		Entrada	NI	SI/M	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS
3) The Project would result in a permanent net loss of stream/wetland functions or services	No Mitigation Required	NRSP	NI	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS
		VCC	NI	NS/NS	NS/NS	NI	NI	NI	NI	NS/NS
		Entrada	NI	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS
4) The Project would result in substantial adverse construction impacts within Corps or CDFG jurisdictional areas through temporary removal, filling, hydrologic interruption, loss of functions or services, or other means.	SW-4	NRSP	NI	SI/M	SI/M	SI/M	SI/M	SI/M	SI/M	SI/M
		VCC	NI	NI	NI	NI	NI	NI	NI	NI
		Entrada	NI	NI	NI	NI	NI	NI	NI	NI

SU = Significant unavoidable impact

SI/M = Significant Impact, but mitigated to less-than-significant level

NS = Not significant or adverse. No mitigation required.

NI = No impact, and no mitigation required