DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT CORPS OF ENGINEERS
P.O. BOX 532711
LOS ANGELES, CALIFORNIA 90053-2325

REPLY TO
ATTENTION OF

November 29, 2012

Office of the Chief
Planning Division

TO INTERESTED PARTIES:

The Los Angeles District Corps of Engineers (Corps) requests your review and comment on the Draft Supplemental Environmental Assessment (SEA)/Environmental Impact Report (EIR) for Phase II of the Murrieta Creek Flood Control, Environmental Restoration and Recreation Project, Temecula, Riverside County, California. The project was originally documented in the September 2000 Final Environmental Impact Statement (EIS)/Environmental Impact Report (EIR). This Draft SEA/EIR, prepared in compliance with the National Environmental Policy Act and California Environmental Quality Act, assesses the environmental impacts associated with implementation of the Phase II plan, as modified. The Phase II project extends from just upstream of Winchester Road to 1,000 feet downstream of 1st Street, approximately 2.5 miles in length. In this area, the Corps proposes to construct features to reduce the impact of flooding, while also providing opportunities for recreation.

Modifications or refinements from the Original Phase II Plan (2000 EIS/EIR) include use of soil cement in areas with a slope less than 2:1 and use of buried riprap in areas with a 2:1 and 3:1 slope; construction of maintenance roads and access ramps; and establishment of an unmaintained riparian terrace/corridor ranging between 20 feet and 125 feet in width. Vegetation clearing for the proposed project is scheduled to begin in February 2013, and construction is expected to continue for approximately 12 to 18 months.

Impacts to environmental resources would be similar to those addressed in the 2000 EIS/EIR. Mitigation measures identified in the Original Phase II Plan would be sufficient to minimize and compensate for impacts associated with the Modified Phase II Project.

In an effort to conserve paper and resources, the Draft SEA/EIR may be accessed on our website at http://www.spl.usace.army.mil/Media/PublicNotices/ProjectPublicNotices.aspx by selecting the Murrieta Creek Phase II link. Please respond with comments on the Draft SEA/EIR by January 16, 2013. Correspondence may be sent to:

Josephine R. Axt, Ph.D.
Chief, Planning Division
U.S. Army Corps of Engineers
Los Angeles District
P.O. Box 532711
ATTN: Ms. Tiffany Bostwick
Los Angeles, California 90053-2325
OR
tiffany.bostwick@usace.army.mil

If you have any questions regarding the project or would like to request the document in hard copy or on CD, please contact Ms. Tiffany Bostwick, Project Environmental Coordinator, at (213) 452-3845.

Thank you for your attention to this document.

Sincerely,

Josephine R. Axt, Ph.D.
Chief, Planning Division

Enclosure

US Army Corps of Engineers®

Murrieta Creek Flood Control/Environmental Restoration and Recreation Project

Riverside County, California

DRAFT ENVIRONMENTAL ASSESSMENT
and
ENVIRONMENTAL IMPACT REPORT

U.S. Army Corps of Engineers
Los Angeles District
P. O. Box 532711
Los Angeles, CA 90053-2325

Riverside County Flood Control
and Water Conservation District
1995 Market Street
Riverside, Ca 92501

NOVEMBER 2012

U. S. Army Corps of Engineers
South Pacific Division
Los Angeles District

DRAFT FINDING OF NO SIGNIFICANT IMPACT

Murrieta Creek Flood Control, Environmental Restoration and Recreation Project
Riverside County, California

I have reviewed the Supplemental Environmental Assessment (SEA) that has been prepared for the Murrieta Creek Flood Control, Environmental Restoration and Recreation Project in Riverside County, California. The SEA is in compliance with the National Environmental Policy Act (NEPA) and all applicable environmental regulations.

The U.S. Army Corps of Engineers (Corps), in coordination with the non-Federal sponsor, the Riverside County Flood Control and Water Conservation District (RCFC&WCD), proposes to construct the modified channel improvements within Phase II of the overall flood control project. The changes discussed are post authorization modifications of the September 2000 Murrieta Creek Flood Control, Environmental Restoration and Recreation Final Feasibility Report (FR) and Final Impact Statement/Environmental Impact Report (EIS/EIR). The Recommended Plan was approved for construction with the signing of the Record of Decision (ROD) on November 28, 2001 by the Corps.

The Modified Phase II Plan is approximately 13,000 feet in length, from the 200 feet upstream of Winchester Road to 1,000 feet downstream of 1st Street, and includes the following components: 1) variable channel widths of 140 to 364 feet; 2) placement of buried rip-rap for slope toe protection along in areas with a slope of 2:1 and 3:1; 3) soil cement protection in areas with slopes steeper than 2:1; 4) an unmaintained vegetated corridor (averaging 70 feet in width); 5) four grade control structures; 6) removal of Via Montezuma, an existing road crossing Murrieta Creek; 7) future operation and maintenance and emergency repairs; and 8) an equestrian trail (a degraded granite surface extending along the creek's west side) and a bicycle trail (a paved maintenance road extending along the creek's east side).

Project construction is scheduled to begin in February 2013, and would be completed in August 2014. Due to funding or weather constraints the project construction may be delayed beyond 2014.

Approximately 2.64 acres of riparian, 0.32 acres of freshwater marsh/wetland and open water/open channel, and 0.75 acres of coastal sage scrub habitat would be permanently impacted as part of the Modified Phase II Project. Project components in the proposed modifications include approximately 20.40 acres of upland and coastal sage scrub habitat and establishment of approximately 24.62 acres of unmaintained riparian habitat. Approximately 4.61 acres of freshwater marsh/wetland and open water/open channel habitat would be type-converted into riparian and upland habitat. By implementation of the project revegetation plan, construction activities associated with the Modified Phase II Plan would yield a net increase in both habitat quality and acreage for riparian and upland habitat.

The least Bell's vireo, listed as endangered under the Endangered Species Act of 1973, as amended (ESA), was detected within the Phase II project area. The Corps will initiate formal consultation under Section 7 of the ESA with the U. S. Fish and Wildlife Service (USFWS). Prior to construction, a biological opinion would be obtained by the Corps.

Short-term construction related impacts would be minimized by implementation of the environmental commitments identified in this EA and 2000 EIS/EIR. No construction will occur during heavy rain, to avoid impacts to water quality. If water flow is low during the months of December through March, water will be diverted and work will be accomplished within the dry-bed of the creek. Watering of the construction site will be conducted to minimize fugitive dust. Measures have been incorporated to avoid impacts to biological and other environmental resources.

The proposed modification will not significantly impact any resources other than those described in the previously prepared environmental documents. The change in channel configuration from the original design will lessen the project impact. Both Corps and RCFC&WCD will continue to coordinate with the USFWS and the California Department of Fish and Game (CDFG) to identify any actions that might further minimize environmental impacts.

The project remains in compliance with all applicable federal and state laws and statutes. A 401 state water quality certification was obtained from the Regional Water Quality Control Board (RWQCB) on August 15, 2003 for the overall flood control project. The Corps and RCFC&WCD will continue to coordinate with the RWQCB on the proposed Modified Phase II Plan. Based on the analyses in the SEA/EIR Addendum, no new significant impacts were identified for the Modified Phase II Plan that were not already assessed in the original EIS/EIR, nor was it necessary to change the conclusion of the kinds, levels, or locations of impacts described in the original EIS/EIR. I have determined that the proposed modification will not have a significant impact upon the existing environment or the quality of the human environment. Therefore, preparation of a Supplemental Environmental Impact Statement/Environmental Impact Report is not required.

_____ _____

DATE

R. Mark Toy, P.E.
Colonel, US Army
Commander and District Engineer

Executive Summary

Introduction

This Supplemental Environmental Assessment/Environmental Impact Report (SEA/EIR) has been prepared to assess the environmental impacts associated with implementation of the Modified Phase II Plan. The Modified Phase II Plan is a modification of the Murrieta Creek Flood Control, Environmental Restoration and Recreation Phase II plan described and recommended for authorization in the September 2000 Feasibility Report (FR) and Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR). The Recommended Plan in the 2000 FR/EIS/EIR was authorized by Congress in Section 101(a)(5) of Public Law 106-53, the Water Resources Development Act of 1999.

The U.S. Army Corps of Engineers (Corps) proposes to construct various improvements to provide flood control, a multi-purpose trail, and higher quality riparian habitat along the existing Murrieta Creek channel within the location described herein. The Riverside County Flood Control and Water Conservation District (RCFC&WCD) owns the channel right of way, will provide funding, and will operate and maintain the project. The entire Murrieta Creek Project was addressed in a previously adopted EIS/EIR (September 2000) (SCH Number 2000071051). Since that time, new information has become available, including the Western Riverside County Multiple-Species Habitat Conservation Plan (WRC-MSHCP) and the presence of the Federally and State Endangered least Bell's vireo (*Vireo bellii pusillus*).

The Modified Phase II Plan includes the following key changes to the Original Phase I Plan:

- Channel modification from the confluence with Santa Gertudis Creek (200 feet upstream of Winchester Road) to 1,000 feet downstream of 1st Street, approximately 13,000 feet in length.
- Replacement of gabions with soil cement in areas with less than a 2:1 (horizontal:vertical) slope and buried riprap in areas with a 2:1 and 3:1 slope.
- Construction of maintenance roads on the east and west channel banks, and the addition of five access ramps in four locations.
- A 2:1 slope on channel banks, from 200 feet upstream of Winchester Road extending 400 feet downstream of Winchester Road, transitioning to a 3:1 slope extending downstream to 300 feet upstream of Rancho California Road. The slope would transition to 1:4 slope extending to 350 feet below 1st Street where it would transition to a 1:2 slope for 450 feet, transitioning to a 2:1 slope as it connects with the Phase I constructed slope.
- An unmaintained vegetated terrace/corridor ranging between 20 feet and 150 feet in width. Average width would be approximately 70 feet.
- Fifteen drop inlets (manholes) of either 2 x 2 foot square or 4 x 4 foot square structures would be placed along the maintenance road to allow drainage into the creek.
- Instead of one drop structure mentioned in the recommended plan, four grade control structures would be placed in the creek.

Supplemental Environmental Assessment/Environmental Impact Report

This Supplemental Environmental Assessment/Environmental Impact Report (SEA/EIR):

- Evaluates the differences in impacts between the Modified Phase II Plan and the Original Phase II Plan as documented in the 2000 EIS/EIR.
- Documents new information and newly identified areas of potential concern that have arisen since publication, circulation, and adoption of the 2000 EIS/EIR.

This SEA/EIR concludes that impacts associated with the Modified Phase II Plan would not be substantially different with respect to the Original Phase II Plan as documented in the 2000 EIS/EIR. There were no increases in impacts for any resource. There would be a slight reduction in impacts for most resources. Mitigation measures identified in the EIS/EIR 2000 continue to be sufficient to minimize and compensate for impacts associated with the Modified Phase II Plan. These measures are incorporated in this SEA/EIR.

A revegetation plan for the Modified Phase II project is being prepared to provide direction for the design and establishment of wetland, riparian and upland habitats along areas of Murrieta Creek disturbed by project construction. The plan would ensure that restoration concepts identified in the project 2000 EIS/EIR would be developed into a functioning habitat. The objective is to actively and passively restore native riparian habitat and provide habitat values greater than those associated with the existing conditions. The revegetation plan would also emphasize sensitive species habitat. The revegetation plan would identify objectives, goals, and standards to guide the restoration efforts.

In addition, the revegetation plan would provide: (1) descriptions of native plant pallets proposed for the project area; (2) guidance for the layout, design, soil salvaging, and planting schedule for each habitat type; and (3) criteria for monitoring and evaluating the success of the habitat once established. Additional revegetation plans would be developed for each of the subsequent phases for the Murrieta Creek Project.

Table of Contents

Appendices

Table of Figures

Table of Tables

1.0 INTRODUCTION

The U.S. Army Corps of Engineers (Corps) and Riverside County Flood Control and Water Conservation District (RCFC&WCD) prepared this Supplemental Environmental Assessment/Environmental Impact Report (SEA/EIR) to assess the environmental impacts associated with implementation of the Modified Phase II Plan. The Phase II project was originally analyzed in the Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the Murrieta Creek Flood Control, Environmental Restoration and Recreation Project prepared by the Corps in September 2000. The modifications to the Phase II project proposed in this SEA/EIR were developed in coordination with RCFC&WCD, the non-Federal local sponsor for the project.

The construction of the Modified Phase II Plan is a jointly funded activity between the federal government and RCFC&WCD, the non-Federal sponsor. Upon completion of construction, RCFC&WCD would be solely responsible for future maintenance activities. As a result, this SEA/EIR has been prepared in compliance with the National Environmental Policy Act (NEPA of 1969) and the requirements of the California Environmental Quality Act (CEQA, as amended), Article 14, Sections 15220 and 15164.

Subsequent to preparation of the 2000 Final EIS/EIR and during preparation of the detailed design for Phase II of the project, minor modifications were made to some of the project features identified in the Final EIS/EIR. In addition, Phase I was shortened and now extends from near the United States Geological Survey (USGS) stream gage upstream 3,000 linear feet to approximately 1000 feet downstream of 1st Street. Thus, Phase II now extends from 1000 feet downstream of 1st Street (to tie in with the Phase I constructed channel improvements) to 200 feet upstream of Winchester Road Bridge. This SEA/EIR evaluates impacts associated with the construction, operation, maintenance, and potential emergency repairs associated with the modified Phase II.

The Corps has and would continue to coordinate with resource agencies to ensure that impacts to environmental resources are minimized and mitigated.

1.1 Project Location

The Murrieta Creek Phase II Project is located in the City of Temecula, in southwestern Riverside County, California. Specifically, the project area is located along the I-15 freeway, between the Phase I project area 1000 feet south of First St. and 200 feet upstream of Winchester Road (just downstream of the Santa Gertrudis Creek confluence) (Figure 1-1).

The proposed project is located within and along Murrieta Creek. The project footprint is adjacent to several commercial facilities in the City of Temecula, including Old Town Temecula. Facilities include restaurants, boutiques, retailers, and business and residential complexes.

Murrieta Creek is approximately 13.5 miles long and drains an area of approximately 220 square miles. Murrieta Creek is an important component of the Santa Margarita River watershed, which

encompasses approximately 750 square miles. Elevations in Murrieta Creek range between approximately 1,000 to 4,500 feet above mean sea level.

Murrieta Creek flows through the cities of Wildomar, Murrieta and Temecula. Two major tributaries flow into Murrieta Creek: Santa Gertrudis Creek and Warm Springs Creek. Santa Gertrudis Creek, the larger of the two tributaries, joins Murrieta Creek immediately upstream of Winchester Road, approximately 3 miles upstream of the United States Geological Survey (USGS) gauging station. The Warm Springs Creek confluence is located approximately 4 miles upstream of the USGS gauging station between Elm and Date streets. Murrieta and Temecula Creeks converge downstream to form the Santa Margarita River. The Santa Margarita River flows through San Diego County, passing through U.S. Marine Corps Base Camp Pendleton and discharges into the Pacific Ocean.

1.2 Overview of the Murrieta Creek Flood Control, Environmental Restoration and Recreation Project

The overall Murrieta Creek study area from the 2000 EIS/EIR extended from the upstream limit at McVicar Street in the City of Wildomar to approximately 0.5 mile north of Murrieta Creek's confluence with Temecula Creek. Within the study area, the creek gradient is about 18 feet/mile. Its elevation change from the upstream to downstream termini is approximately 220 feet. The study area includes the 100-year floodplain of the creek.

The RCFC&WCD periodically mows vegetation, repairs erosion and conducts sediment removal within the Murrieta Creek to maintain sufficient flood conveyance capacity.

The approved project is intended to provide 100-year flood protection, environmental restoration, and recreation components. The project is being designed by the Corps in conjunction with the RCFC&WCD. Future maintenance of the project (Phases I, II, III, and IV) would be the RCFC&WCD's responsibility. The Corps and RCFC&WCD are in the process of preparing a detailed revegetation plan, including descriptions of native plant pallets for revegetating the channel and banks after construction of the Phase II improvements.

1.2.1 Background

Portions of Murrieta Creek flood control channel were constructed by Riverside County in 1939, following the damaging floods of 1938. For the subsequent 25 years, no major modifications to the channel were made. By 1969, severe bank erosion and channel degradation had taken place, considerably reducing the flood conveyance of the channel. In 1969, the RCFC&WCD embarked upon a program of restoring levees and deepening within certain reaches of the channel to provide additional flood flow capacity. Additional channel widening and deepening occurred from approximately Rancho California Road to Winchester Road to protect adjacent development constructed in the early 1970s. Channel restoration also took place in 1978, 1980, 1993, and 1998 through certain reaches of the channel. The channel restoration took place along certain reaches of the channel and have generally extended from downstream of Old Town Temecula to as far upstream near Vineyard Parkway/Lemon Streetin Murrieta (USACE, 1998a).

Despite past channel restoration in certain reaches, the study area is still prone to flooding. In particular, the Old Town areas of Murrieta and Temecula are susceptible to substantial flooding during periods of heavy rains. The flood control solutions associated with the proposed action are intended to reduce this potential for flooding.

Congress, in the Flood Control Act of 1936, established as a nationwide policy that flood control (i.e., flood damage reduction) on navigable waters and their tributaries is in the interest of the general public welfare and is, therefore, a proper activity of the Federal Government in cooperation with the states and local entities. It provided that the Federal Government may improve streams or participate in improvements "for flood control purposes if the benefits to whomsoever they may accrue are in excess of the estimated costs, and if the lives and social security of people are otherwise adversely affected." The 1936 Act, as amended, and more recently under the Water Resources Development Act of 1986, specifies the details for Federal participation. These subsequent actions have also enlarged the scope of the Federal interest to include consideration of all alternatives in controlling flood waters, reducing the susceptibility of property to flood damage, including improvements for protection from groundwater induced damages, and relieving human and financial losses.

The Feasibility Study for the Murrieta Creek Flood Control/Environmental Restoration and Recreation Project was authorized by U.S. Senate Resolution, dated 28 March 1996, which directed the Secretary of the Army to:

"Review the report of the Board of Engineers for Rivers and Harbors dated 31 December 1985, San Diego Streams, California, for the purpose of watershed management, including flood control, environmental restoration, stormwater retention, water conservation and supply, and related purposes, and with a specific focus on the Santa Margarita Watershed, including Murrieta Creek, San Diego and Riverside Counties, California."

1.2.2 Past Prepared Environmental and Feasibility Study Reports

Final EIS/EIR 2000 for Murrieta Creek Flood Control, Environmental Restoration and Recreation Project

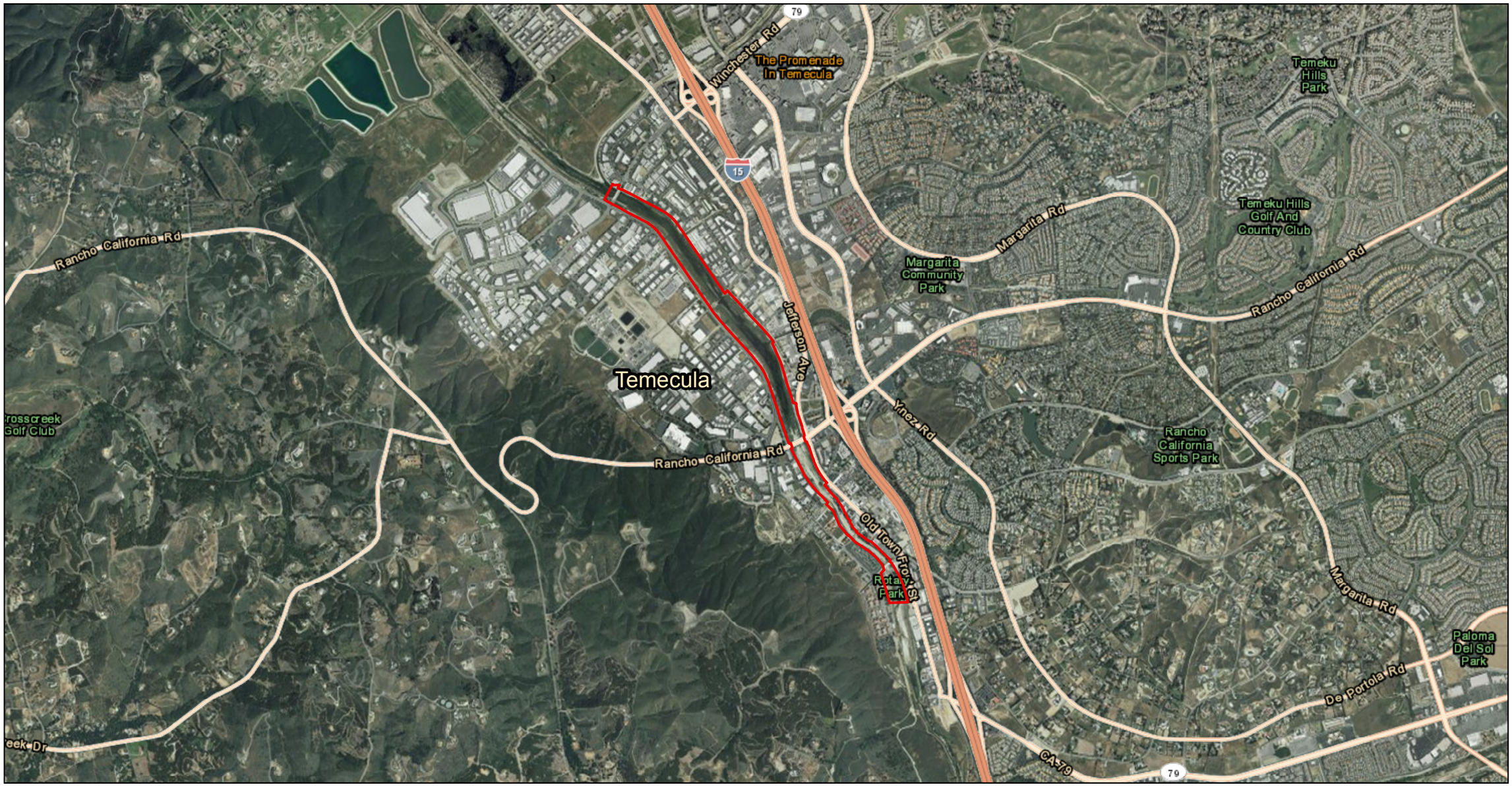
A Final EIS/EIR was completed in September 2000 that evaluated alternative means of providing flood control and protection along Murrieta Creek in Riverside County, California. A total of six alternatives were carried forward for detailed evaluation in this EIS/EIR, including the No Action Alternative (continuation of existing floodplain maintenance practices) and five structural alternatives. Alternative 6 was the Recommended Plan identified in the Final EIS/EIR, and is described below. Alternative 6 was selected and approved by RCFC&WCD on January 28, 2003.

The 2000 Final EIS/EIR assumed that the proposed project's construction would be accomplished in three phases. Scenario assumptions used in the EIS/EIR for the analysis were projected for each of the three phases (e.g., construction equipment, excavation quantities, etc.). The Original Phase I construction consisted of Downstream Channel Improvements (i.e., downstream of Rancho California Road), Phase II included the Multi-Purpose Detention Basin

(constructed on approximately 270 acres) with the storage capacity and hydraulic capacity to manage the 100-year tributary flow between the USGS stream gage south of Old Town Temecula and Tenaja Road in the city of Murrieta, and Phase III involved Upstream Channel Improvements (i.e. upstream of the basin). The proposed project also included the construction of a recreational trail system, a regional sports park, bridge replacements, and environmental restoration. The project area was analyzed in the EIS/EIR as six separate reaches. The 2000 Final EIS/EIR contains a comprehensive list of earlier reports published for the project.

1.3 Environmental Analysis

Impacts to the Original Phase II Plan was evaluated and described in the 2000 EIS/EIR. This SEA/EIR focuses evaluation of impacts from the Original Phase II Plan to the proposed Modified Phase II Plan on applicable environmental resources. Sections 4.0 through 17.0 describes the comparison of impacts between the Original and Modified Phase II Plans. Section 18.0 contain an evaluation of growth-inducing impacts and Section 19.0 discusses cumulative impacts. Measures proposed to avoid, minimize, and mitigation potential impacts are summarized in Section 20.0. Lastly, a summary of compliance with environmental laws, regulations, and statutes are located in Section 21.0 and a summary of the evaluation findings of this SEA/EIR is found in Section 22.0.



Legend

Right of Way for Murrieta Creek

N

Sources:

Imagery Background:
ESRI ArcGIS Online Basemap Sources
Copyright:© 2012 Esri, DeLorme, NAVTEQ, TomTom

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

Map Created: November 27, 2012

0 0.25 0.5 1 Miles

Figure 1-1 Project Location

MURRIETA CREEK FLOOD CONTROL/ ENVIRONMENTAL RESTORATION AND RECREATION PROJECT
Draft Supplemental Environmental Assessment and Environmental Impact Report for Phase II Modifications

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

2.0 PURPOSE AND NEED

2.1 PURPOSE

The primary purpose of the Modified Phase II Plan is the same as was identified in the 2000 Final EIS/EIR: Reduce the impact of flooding along Murrieta Creek. This would result in protection of human life and reduce public and private flood inundation damages to residential, commercial, industrial, historic property, and bridges and road crossings along Murrieta Creek. In addition, the proposed action would construct a maintenance road of both sides of the channel, establish, and maintain a rich and diverse biotic community while maintaining flood capacity. Restoration activities would create additional habitat within the project area and enhance the riparian/wetland corridor improving connectivity with adjacent downstream habitat. Implementation of the restoration plan would increase the functional capacity of the habitats and increase riparian vegetation.

2.2 NEED

In the absence of structural flood control solutions, flooding would continue to occur along Murrieta Creek and downstream along the Santa Margarita River. Potential damages from future events could include flood inundation of residences and commercial structures in the cities of Murrieta and Temecula. At the time the 2000 EIS/EIR was prepared, an estimated 542 structures were located within the 100-year floodplain and are considered at risk. The continued development of the areas adjacent to Murrieta Creek may put more structures at risk.

3.0 ALTERNATIVES

3.1 Introduction to the Alternatives Analysis

Reasonable alternatives for the entire Murrieta Creek project including Phase II were evaluated in the 2000 Final EIS/EIR. The 2000 Final EIS/EIR evaluated six primary alternatives including the No Action Alternative and considered, but did not carry forward, nine other alternatives (i.e., channelization, nonstructural, and other drainage improvements). Alternative 6 of the 2000 EIS/EIR was selected and approved by the Corps and RCFC&WCD.

The purpose of this SEA/EIR is to assess the environmental impacts associated with implementation of the Modified Phase II Plan, and compare them to impacts associated with the original Phase II evaluated in the 2000 Final EIS/EIR.

The comparison would include only the portions of the 2000 recommended plan that is within the same location as the modified Phase II plan. Section 3.3 presents the approved recommended plan while Section 3.4 presents the modified Phase II plan. Section 3.5 provides a review of the alternatives considered and eliminated from detailed study, as documented in the 2000 EIS/EIR.

3.2 Alternatives Considered and Eliminated from the 2000 Final EIS/EIR.

As discussed in the 2000 EIS/EIR, a determination of the range and scope of the alternative plans was accomplished with input from RCFC&WCD, local cities, and resource agencies. Both non-structural and structural measures were identified and evaluated. The original EIS/EIR provided a detailed discussion for each alternative considered and the reasons for elimination for further consideration in the document (EIS/EIR, 2000, Section 2.2). The following is a summary of those alternatives eliminated from further analysis in the 2000 EIS/EIR. Alternative 6 was selected and approved by the Corps and RCFC&WCD. Phase II is a component of the previously approved project, and potential alternatives are limited to the Phase II project footprint. While designing Phase II, minor modifications to the original project were evaluated for engineering and environmental considerations. The proposed Phase II design is feasible while complying with the previous environmental commitments.

Non-structural alternatives initially considered during this process included the following:

- **Flood Insurance.** The provision of flood insurance to property owners within the flood-prone area was considered as a means to mitigate for monetary losses associated with flood damages. This approach was rejected because it would not alleviate the safety risks and physical damages to structures that result from flooding.
- **Evacuation.** The development of detailed evacuation plans for the flood-prone areas could increase public safety, but would do nothing to prevent property damage within the affected areas. An evacuation approach would have to be combined with improved flood warning.
- **Flood Warning.** By providing a warning system for the affected areas, it would be possible to provide property owners and tenants a chance to remove personal belongings from the area prior to flooding. This approach would increase public safety and would decrease damage to small items that are easily transported or stored above the 100-year flood level. This approach would not address the more substantive issue of structural damage within the flood zone.

- **Emergency Response.** Typical actions taken as part of an emergency response include using heavy equipment and materials to maintain streets to provide safe driving conditions. This can include, but not be limited to, barricading and/or sandbagging locations subject to hazardous flooding. This approach would not address the issue of structural damage within the flood zone.
- **Floodproofing.** This approach would consist of floodproofing individual structures through methods such as floodwalls along property lines, raising building elevations above the 100-year flood level, or some combination of these. This approach would not be economically feasible given that there are over 540 structures within the flood-prone area that would require protection.
- **Floodplain Management.** Floodplain management can be an effective means of preventing flood damage in areas that have not yet been developed—for example, limiting the construction of buildings in a floodplain or requiring that structures be elevated above flood levels can reduce future damages. This approach, however, is considerably less effective in areas that have already been developed, such as the land along Murrieta Creek. The flood-prone area includes over 540 structures, including buildings that were constructed in the 1800s (before the implementation of zoning and General Plans).

Structural alternatives initially considered included the following:

- **Ring Levees.** The term "ring levees" refers to the construction of flood control berms around individual structures or small groups of structures. This approach is infeasible given the number of structures within the flood-prone area and the space constraints within the Old Town Temecula area and the City of Murrieta designated historic district.
- **Dams.** Dams can be used to detain peak flood flows upstream from flood-prone areas. Within the Murrieta Creek watershed, however, dams would not be an effective means of reducing peak flows because of the area's hydrological and topographic characteristics. More specifically, the natural drainages that could be feasibly dammed upstream from the study area are not large enough to provide the desired 100-year flood protection.
- **Channelization.** By removing the natural contours of a channel and lining it with an impervious substance such as grouted stone or concrete, channel capacity can be dramatically increased. This type of approach eliminates virtually all biological resource values associated with a creek and also substantially degrades the esthetic and other community values associated with a natural water feature.

3.3 Comparison of the Modified Phase II Plan and Original Phase II Plan, 2000 EIS/EIR

Table 3-1 provides a comparison matrix of the features and parameters of the Modified Phase II Plan and original Phase II Plan detailed in the 2000 Final EIS/EIR. The comparison would include only the portions of the 2000 recommended plan that are within the same boundaries as the modified Phase II plan. Table 3-1 describes the key differences between these two plans.

Table 3-1 Comparison of Key Project Features

Project Features	Recommended Plan (2000 Final EIS/EIR)	Modified Phase II Plan	Key Differences
Project boundary	200 feet upstream of Winchester Road to 1,000 feet downstream of 1st Street	200 feet upstream of Winchester Road to 1,000 feet downstream of 1st Street	None
Channel Modification Length	Approximately 12,800 feet	Approximately 13,000 feet	Modified Phase II would increase the length of the project area by 200 feet.

Project Features	Recommended Plan (2000 Final EIS/EIR)	Modified Phase II Plan	Key Differences
Embankment slope	From Winchester Road a 3:1 slope would be constructed on the channel banks that would extend downstream of Rancho California Road for a distance of approximately 600 feet. The channel would transition to a 0.5:1 slope over the next 500 feet. The channel would continue the 0.5:1 slope for approximately 3,000 feet to just below 1st Street bridge. Downstream of 1st Street, the channel banks would transition back to a 3:1 slope over a distance of approximately 200 feet. The 3:1 slope would continue over the next 2,800 feet downstream to the terminus of the channel modifications.	From 200 feet upstream of Winchester Road a 2:1 slope would be constructed along the channel banks. This extends to 1,600 feet downstream of Winchester Road bridge. The channel would transition to 3:1 slope over the next 200 feet. The channel would continue the 3:1 slope to 1,000 feet downstream of Rancho California Road bridge where the slope would then transition to 1:4 over the next 300 feet. The 1:4 slope would continue to 300 feet below 1st Street bridge then transition to 1:2 slope over the next 50 feet. The channel would continue the 1:2 slope for 450 feet and then transition to a 2:1 slope over the next 200 feet at which it would connect with Phase 1 constructed slope	Modified Phase II would result in steeper side slopes, and a wider earthen channel invert width.
Bridge Replacement	Replacement of the Main Street Bridge	Removed Main Street Bridge replacement element. However, City of Temecula plans to replace the Main Street Bridge.	Reduction in impacts to wetland and riparian habitat associated with bridge construction.
Gabions	Placement of gabions at selected locations from Rancho California Road downstream to 1st Street to reinforce the banks in areas with less than 3:1 slopes.	None proposed.	The gabions have been replaced with soil cement and riprap for bank protection in Phase II.
Soil Cement	None proposed.	Approximately 68,650 cubic yards of soil cement is proposed in areas with steeper than 2:1 slope.	Soil cement would be used for bank protection.
Rip Rap	None proposed.	Approximately 35,109 cubic yards of rip rap is proposed in areas with a 2:1 and 3:1 slope. The riprap would be buried with soil and vegetation placed on top.	Buried riprap placed for bank protection.
Access Ramps	None proposed.	Five access ramps would be place in four locations. These would range from 200 feet to 300 feet in length.	This would not create new impacts.

Project Features	Recommended Plan (2000 Final EIS/EIR)	Modified Phase II Plan	Key Differences
Drop Inlets	None proposed	Fifteen drop inlets will be placed along the maintenance road path. Fourteen on the west bank of the channel and one on the east bank.	These would require a 2 x 2 foot or 4 x 4 foot concrete structure placed in the bank. These would connect to existing pipes to allow drainage into Murrieta Creek.
Grade Control Structures	One proposed at station 113+50.	Four grade control structures are proposed. One at station 113+50, one just upstream of station 189+00, and one each at the confluence of Long Canyon and Empire Creeks.	This is an increase of three grade control structures .
Removal of Via Montezuma	Not proposed	The existing dip crossing at Via Montezuma would be closed. Ramps will be placed here to allow maintenance access to the creek.	This would reduce the traffic in the creek, reducing impacts to water quality.
Permanent Impacts to vegetation	0.5 acres alkali marsh, 0.5 acres of coastal sage scrub	Approximately 12 acres of permanent vegetation impacts.	There is a 11 acre increase in permanent impacts to vegetation.
Temporary Disturbance of vegetation	52.6 acres	Approximately 86.3 acres would be impacted temporarily.	There is a 33.7 acre increase in the amount of vegetation temporarily impacted.
Unmaintained riparian corridor	20-60 feet in width	Varies between 20 feet and 150 feet in width. Average width ~ 70 feet.	Results in net increase of undisturbed riparian vegetation.
Recreation	Pedestrian/Bicycle and Equestrian trail	Top of each bank would be used as a maintenance road; top of east bank would also be used as a pedestrian and bicycle trail; top of west bank would be used as a pedestrian, bicycle, and equestrian trail.	A portion of the proposed trail in the 2000 EIS/EIR has been constructed between Winchester and Rancho California Roads.
Excavation Requirements	1,100,481 cy[1]	952,000 cy	15.5 percent increase in excavated material.[2]

1 This number includes both Phase I and II cubic yards of excavation. The 2000 EIS/EIR did not break out the amounts by phases.
2 This percentage was based on the 320,000 c y excavated in Phase I plus the cy for Phase II, divided by the 2000 EIS/EIR estimate.

3.4 Approved Recommended Plan – Original Phase II Plan (2000 Final EIS/EIR)

The approved recommended plan consisted of channel modification (i.e., widening, and deepening), levee construction, construction of a drop structure, constructin of gabions, and operation and maintenance for flood risk management of Murrieta Creek from Tenaja Road in the city of Murrieta to the USGS stream gage south of Old Town Temecula. The original proposed project also included the construction of a multi-purpose detention basin, equestrian and pedestrian/bicycle trail system, bridge placement or replacement, and environmental restoration. For comparison to the modifications made for Phase II construction, the approved recommended plan features that are within the Phase II project area are described below based on the 2000 Final EIS/EIR descriptions.

3.4.1 Channel Construction Features

Channel improvements would occur along a 12,800-foot length of Murrieta Creek between Winchester Road and the USGS gage. From Winchester Road to approximately 600 feet downstream of Rancho California Road the channel would be widened and the side slopes graded to a 3:1 slope. The channel would then transition to a 0.5:1 slope over the next 500 feet and continue for approximately 3,000 feet to just below 1st Street Bridge. Downstream of 1st Street, the channel banks would transition back to a 3:1 slope over a distance of approximately 200 feet. The 3:1 channel slope would continue over the next 2,800 feet downstream to the terminus of the channel improvements. Gabions would be utilized to reinforce the channel banks in areas between the 3:1 slopes. The purpose of these improvements is to provide increased capacity of the creek to convey flood flows in the downstream reaches.

Deepening of Murrieta Creek would occur from Winchester Road to the USGS gage. The excavation depth would range from 2 to 6 feet depending upon the location along the creek. A drop structure would be constructed in Murrieta Creek approximately 300 feet upstream of Rancho California Road. This drop structure would lower the creekbed elevation by 3 feet over a distance of 50 feet. The drop structure would consist of a grouted stone surface with grouted stone aprons extending up the slopes along either side of the creek.

The unmaintained vegetated corridor would extend downstream from the Ranch California Road to 6th Street along the east side of the creek. The corridor would be 50 feet wide at the Rancho California Road and would gradually decrease to 20 feet in width at 6th Street. The corridor would remain 20 feet wide to 200 feet downstream of 1st Street where it would gradually increase and to a width of 60 feet to a point approximately 100 feet upstream of the USGS gage.

A pedestrian/bicycle trail would be constructed along the maintenance/service road on the eastern side of Murrieta Creek from Rancho California to the detention basin. The paved trail would include an undercrossing beneath Winchester Road. An equestrian trail would be constructed utilizing the maintenance/service road on the western side of Murrieta Creek from the upstream end of the project area to just downstream of Old Town Temecula (downstream of 1st Street). The trail would consist of a 20 feet-wide unpaved service road between Murrieta

Creek and Diaz Road. Trail crossings beneath Winchester and Rancho California Roads would be included to ensure safe crossing of the roads for the horses and riders.

Main Street bridge would be demolished and replaced within the project area. The new bridge would allow for the channel modifications. This bridge would be longer and wider to meet current design and safety standards for bridge construction. The City of Temecula would be designing and constructing the new bridge.

3.4.2 Operation and Maintenance

Operation and maintenance of the channel improvements would consist of periodic inspections and repairs to channel side slopes, gabions, riprap, and the service roads. In addition, a maintenance schedule for vegetation management and sediment removal would be established for the channel to preserve the flood flow capacity. The extent of maintenance in the channel invert would vary through the project boundary, although an annually maintained corridor is a feature throughout the entire project area. Maintenance activities would not affect the unmaintained vegetated corridors.

The channel invert outside the unmaintained vegetation corridor would be subject to annual mowing and periodic sediment removal (every 5 to 12 years). Sediment removal between 6th Street to 1,300 feet downstream of Main Street would be performed on a more frequent basis than the other channel segments (every 1 to 5 years) due to the constricted nature of this reach. Maintenance is not scheduled for the side slopes of the channel but would be performed in the event of an emergency or erosion.

The 2000 Final EIS/EIR described the operation and maintenance activities and evaluated the associated impacts. The RCFC&WCD would be responsible for operation and maintenance of the entire project.

3.4.3 Material Required for Construction

Construction would require earthen fill material that would be obtained from native material excavated on site. Other materials to be procured off site include plastic covers for stockpiles, planters, topsoil, sod, and other materials required to establish vegetation. Most of the material is assumed to be available from sources located approximately 10 to 15 miles from the project area.

3.4.4 Duration of Construction

Construction duration for Phase II is estimated at approximately 12 months. About 1,100,000 cubic yards of material would be excavated; of this amount, approximately 960,000 cubic yards would require off-site disposal, with the remaining material utilized to construct the future basin side slopes and embankments during future project phases. All surplus excavation material and construction debris, including existing structures, would be hauled off site to an approved landfill requiring 48,000 truck trips for the Phase II project.

3.4.5 Staging/Stockpiling Areas

Construction equipment would generally be staged at four locations between Winchester and Rancho California Roads and at one location south of Rancho California Road (Figure 2-5, EIS/EIR, 2000). Some equipment staging and stockpiling would take place at the proposed ecological restoration area.

3.4.6 Bridge Replacement

The channel improvements described above would require the replacement of the Main Street Bridge.

3.4.7 Construction Equipment

Typical equipment to be used during the construction period include loaders, scrapers, dozers, trucks, blades, roller compactors, a process plant, concrete mixers, water trucks, and backhoes. Construction equipment would be operated up to eight hours a day. The Original Phase I construction activities might not be continuous, meaning that the 12 months of construction activity might be spread out over more than 12 calendar months.

3.5 Modified Phase II Plan

The Murrieta Creek Modified Phase II Plan would be essentially the same design and maintenance as the 2000 Final EIS/EIR design from 200 feet upstream of Winchester Road to 1,000 feet downstream of 1st Street. The Modified Phase II Plan would:

- Replace the previously proposed gabions with approximately 68,650 cubic yards of soil cement in areas with less than a 2:1 slope and 35,109 cubic yards of buried riprap in areas with a 2:1 and 3:1 slope.
- Add five maintenance access ramps.
- Place fifteen drop inlets along the maintenance road path.
- Remove Via Montezuma Road dip crossing.
- Place four grade control structures instead of one.
- Construct maintenance road on both sides of the channel; the west side maintenance road would also be used as a recreation trail for pedestrians, bicyclists, and equestrians; the east bank would be used as a pedestrian and bicycle trail.
- Include channel operation and maintenance activities.
- Creation of approximately 24.6 acres of unmaintained riparian corridor (see Figures 3-1a through 3-1e, Project Features).

The sideslopes would be graded to a steeper slope, reducing the width required and increasing the channel bottom width and capacity (see Table 3-1). Construction of the Modified Phase II Plan would entail excavation of approximately 952,000 cubic yards of material and would result in the temporary disturbance to approximately 121 acres of existing vegetation along Murrieta

Creek. Appendix B contains draft design plates of the Modified Phase II Plan showing the design profile and typical cross sections.

3.5.1 Channel Construction Features

The purpose of these improvements is to provide increased flood conveyance through the reach transecting downtown Temecula. Channel widening and deepening would involve excavation of the side slopes of Murrieta Creek through the entire project area within publicly owned property. No additional real estate acquisition is required; however, temporary construction easements may be required for construction.

The excavation depth would range from 2 feet to 11 feet depending on the location along the creek. The excavated earthen channel would vary in slope. From 200 feet upstream of Winchester Road a 2:1 slope would be constructed on the channel bank which extends to 1,600 feet downstream of Winchester Road. The channel would transition to a 3:1 slope over the next 200 feet. The channel would continue the 3:1 slope to 1,000 feet downstream of Rancho California Road where the slope would transition to 1:4 over the next 300 feet. The 0.25:1 slope would continue to 300 feet below 1st Street then it would transition to a 0.50:1 slope over the next 50 feet. The channel would continue the 0.50:1 slope for 450 feet and transition to a 2:1 slope the next 200 feet till it connects with the Phase I constructed slope.

Soil cement and riprap would replace the use of gabions throughout the project for bank protection. Soil cement would be used on slopes that less than a 2:1 and riprap on the areas with a 2:1 and 3:1. The riprap would be covered with 1 foot of soil and then the soil would be stabilized with the same seed mix as the rest of the side slopes. Table 3.2 below shows the side channel slopes and protections used for this project and the location in the channel where these change.

Table 3.2 Side Slopes and Slope Protection

Slope (H:V)	Slope Protection	Start Point for Slope	End Point for Slope
2:1	Buried riprap	Upstream project end	Upstream side of Long Canyon Creek
2:1 to 3:1 transition for 200 feet	Buried riprap	Upstream side of Long Canyon Creek	Downstream side of Long Canyon Creek
3:1	Buried riprap	Downstream side of Long Canyon Creek	Beginning of transition 1000 feet downstream of Rancho California Road
3:1 to 1:4 transition for 300 feet	Buried riprap for 3:1 slope, soil cement at start of transition	Beginning of transition 1000 feet downstream of Rancho California Road	1300 feet downstream of Rancho California Road
1:4	Soil cement	1300 feet downstream of Rancho California Road	350 feet below 1stStreet
1:2 for 450 feet	Soil cement	350 feet below 1stStreet	Connection to existing Reach 1 channel 1000 feet below 1st Street

Five access ramps would be included in four locations along Murrieta Creek. These ramps would be constructed to allow channel maintenance access. These locations and descriptions are:

- One approximately 15-foot wide by 300-foot long concrete ramp with a 10% slope located downstream of Winchester Road, on the west bank.
- Two approximately 265-foot long concrete ramps located downstream of Via Montezuma Road, on the west and east banks.
- One approximately 200 feet long ramp located 800 feet upstream of Rancho California Road, on the east bank.
- One approximately 265-foot long ramp located 1,000 feet upstream of Main Street, on the west bank.

A 15 foot wide maintenance road would be placed on the slope tops of both sides of the channel for the entire project length. The right bank (right side of creek when facing downstream) would be decomposed granite and the left bank would be asphalt. Where possible, the maintenance roads would connect to other roads or trails in the project area. If a connection to other roads or trails is not possible, then a turn-around would be placed to allow maintenance vehicles to maneuver. There are two creeks that confluence on the left side of Murrieta Creek. Empire Creek is approximately 1,700 feet downstream of Via Montezuma Road and Long Canyon Creek is approximately 1,800 feet upstream of Via Montezuma Road.

Via Montezuma dip crossing will be removed from the channel with this project. The road currently is an approximately 675 foot long concrete road that dips into Murrieta Creek. This road would be replaced with Overland bridge during a future project by the City of Temecula.

The project would include the placement of fifteen drop inlets along the maintenance road to allow drainage into the creek. Fourteen of the drop inlets will be placed along the west bank and one on the east bank. These drop inlets would connect to existing pipes within the right-a-way. The pipes may need to be cut or extended to fit with the drop inlet structure. Each drop inlet construction would be different; however, they would be between a 2 x 2 foot or 6 x 6 foot concrete box structure. The box structure would have a shaft that extends to street grade and is covered by a grate to allow flows into the structure.

Four grouted grade control structures would be placed for this project. Each are described as follows:

1. Upstream of Winchester Road a temporary grade control would be placed to protect the flood control measures constructed in the project area. This structure would be pulled out from the upstream end of the Phase I and reused at the upstream end of Phase II. This structure would be removed when Phase III is constructed. The grade control structure is a two foot thick grouted stone placed on a 2:1 slope on the upstream side and a 1:1 slope on the downstream side. The bottom of the structure would be placed five feet under the low flow invert. The upstream protection would be flush with the existing channel invert. The downstream invert would be seven feet lower and flush with the new channel invert.
2. The three remaining grade control structures would lower the creekbed at the confluence of Long Canyon and Empire Creeks to match that of Murrieta Creek and to lower Murrieta's creekbed upstream of Rancho California Road to increase flow capacity under the bridge. These structures would be two foot thick grouted stone trapezoidal structures.

The top of the structure would be flush with the upstream end channel invert. The structure slope would be buried approximately five feet under the new channel invert. On the downstream slope, there would be approximately six feet of exposed slope. The grade control structure at Long Canyon and Empire Creeks would have a 1:1 slope with a ten foot wide top. The required fill material would be approximately 4,320 cy at Long Canyon and 8,100 cy at Empire Creek. The structure in Murrieta Creek upstream of Rancho California would have a 2:1 slope with a twenty foot wide top and require approximately 112,320 cy of fill.

The unmaintained vegetated corridor would extend the entire length of the project area along the east side of the creek bottom. The corridor would be a two-foot-high elevated bench that would vary from 20 feet to 150 feet in width. Starting from the upstream end of the project to about 700 feet upstream of Rancho California Road, the bench would be 150 feet wide. The bench would then narrow down to 20 feet in width through the Old Town reach. It would gradually widen to 70 feet to connect with the Phase I construction improvements.

3.5.2 Operation and Maintenance

Operation and maintenance of the project area would consist of periodic inspections and repairs to channel side slopes, drop inlets, grade control structures, and maintenance roads. In addition, a maintenance schedule for vegetation management and sediment removal would be established for the channel to preserve the flood flow capacity of the channel. The extent of maintenance varies within the channel although an annually maintained corridor is a feature throughout the entire project area. Maintenance activities would not affect the unmaintained vegetated corridor described in section 3.4.1 “Channel Construction Features” above, except for weeding and plant maintenance during the first 5 year monitoring period.

Maintenance activities would include, regular mowing of the channel invert, debris and sediment removal, repairs of degraded and eroded areas, weeding of the of the unmaintained riparian terrace/corridor and vegetated slopes, and maintenance of landscaped sites. Maintenance of the vegetated slopes may also include cutting of large trees and shrubs that would affect the flow conveyance capacity of the channel. If vegetation is removed or damaged by heavy flows within the unmaintained corridor, revegetation would be allowed to return as a result of natural recruitment. Natural regeneratijoon is one of the strongest allies to the restoration of existing riparian habitats by regrowth of vegetative material and the existence of a native seed bank. Emergency or other erosion repairs conducted on the bank, sideslopes or unmaintained riparian corridor would be stabilized and re-seeded with a native seed mix at the completion of repair activities. Impacts associated with the maintenance and operation of the project would be minimized by the implementation of maintenance specific minimization measures and the timing of maintenance activities. Future routine maintenance activities would occur outside of rainy events and sensitive species nesting seasons.

Future routine maintenance activities are a part of this project and would be regularly conducted within the project area. Prior to commencement of operation and maintenance activities, the Corps would provide an Operation and Maintenance (O&M) Manual to the RCFC&WCD, and a Corps Section 404 Regulatory Permit would be obtained by the local sponsor for activities

resulting in the discharge of fill material. Operation and maintenance activities would be conducted in accordance with the conditions identified in the Section 404 Regulatory Permit. A Section 401 Water Quality Certificate for the construction and maintenance of the entire project has been obtained from the RWQCB. Conditions identified in the previously issued Section 401 Water Quality Certification and the Phase II 1602 Streambed Alteration Agreement would be implemented for the project construction as well as future maintenance to minimize impacts on environmental resources. Detailed mitigation commitments are identified in Section 20.0 of this SEA/EIR. The Corps Environmental Resources Branch is coordinating this action with the Regulatory Division.

3.5.3 Project Features to Mitigate and Avoid Impacts to Biological Resources

An unmaintained corridor would be established along the eastern side of the entire Phase II project, with the exception of the outlets of Long Canyon and Empire Creek. With implementation of the project revegetation and monitoring plan, the unmaintained corridor (riparian terrace) would attain a more natural condition than existing conditions. The increased width of the corridor would provide for a net increase in riparian habitat and increase the structural diversity and habitat value within Murrieta Creek. Mitigation for habitat disturbance would occur within or adjacent to Murrieta Creek.

3.5.4 Material Required for Construction

Construction would require approximately 952,000 cubic yards of earthen fill material that would be recycled from material excavated on site. Other materials to be procured off site include approximately 35,109 cubic yards of riprap and 68,650 cubic yards of soil cement, and plastic covers for stockpiles, planters, topsoil, sod, and other materials required to establish vegetation. Most of the material is assumed to be available from sources located approximately 10 to 15 miles from the project area.

3.5.5 Construction Duration and Schedule

Project construction for Phase 2 is anticipated to take 12 to 18 months to complete. During construction, excavation activities would not be carried out in the creek channel during heavy rains or floods. Every effort would be made to complete the project in the 12 to 18 months. Project construction is scheduled to begin in February 2013 to avoid any nesting bird species. The clearing and grubbing, demolition and removal of structures, and excavation would all be completed over sections of the creek length as construction progresses, and is expected to take approximately four months. Grading/planting, levee construction, and maintenance road construction is anticipated to take roughly eight months.

It is anticipated that construction equipment would be operated up to eight hours a day. Operations would be limited to 6:30 a.m. to 7:00 p.m. Monday through Friday. No work would be permitted on Federal holidays, Saturday or Sunday without prior written approval.

3.5.6 Staging and Stockpiling Areas

Staging and stockpiling areas would be located adjacent to the work areas. Construction facilities, stockpiling, loading, processing, and hauling of excavated material would be as described above for the original project, with the exception for a batch plant and soil cement processing required for construction of soil cement protected slopes. Approximately 952,000 cy of excess material would be generated, of which a portion would be reused to construct the bench for the vegetated corridor (riparian terrace) and as miscellaneous fill material. Disposal of the remaining excavated materials would occur at the detention basin site upstream (haul route is approximately less than 6 miles round trip). Total truck trips would be approximately 15,000. For the Modified Phase II channel improvements, construction equipment could be staged at four different locations:

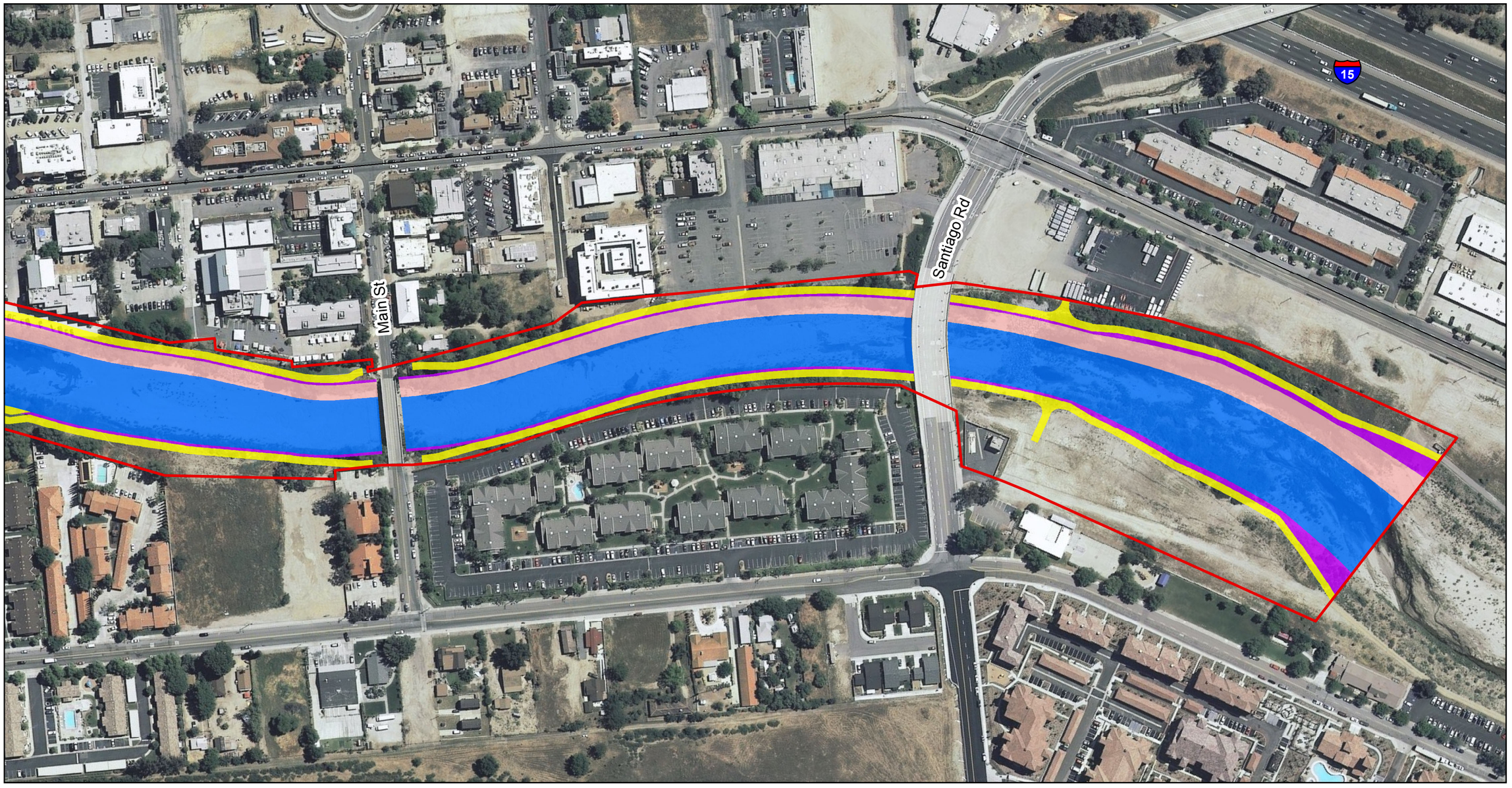
1. A 200 foot wide by 700 foot long area on the right bank approximately 200 feet downstream of 1st Street. This site is currently an unvegetated vacant site that would be returned to preconstruction conditions upon completion of construction.
2. The site on the upstream end of the project is 1150 feet wide by 1500 feet long within the project boundaries for the Phase III basin. This site is currently vegetated with grasses that would be converted to soccer fields. This site may also be used as an optional disposal site.
3. A 35 foot long by 300 foot wide unvegetated vacant lot 200 feet upstream of Main Street on the right bank. The site would be accessed from Pujol Street.
4. A City of Temecula-owned, triangular-shaped property at the corner of Rancho California Rd and Diaz Rd would serve as staging area.

3.5.7 Construction Equipment

Construction equipment required for the excavation of the creek channel typically includes the following equipment types and numbers:

- Dozers (1)
- Scrapers (3)
- Graders (2)
- Loaders (2)
- Pickup truck (1)
- Water trucks (2)
- Flatbed truck (1)
- Trencher (1)
- Crane (1)
- Pile Hammer (2)
- Compactors (2)
- Excavators (1)

- Dump trucks (20)
- Brush chipper/shredders and chain saws.
- Air compressor (1)



Legend

- Right of Way
- Soil Cement Slope
- Maintenance Roads
- Channel Invert
- Riparian Terrace

Sources:

Imagery Background:
ESRI ArcGIS Online Basemap Sources
Copyright:© 2012 Esri, DeLorme, NAVTEQ, TomTom

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

Map Created: November 27, 2012

0 100 200 400 Feet

Figure 3-1a Project Features

MURRIETA CREEK FLOOD CONTROL/ ENVIRONMENTAL RESTORATION AND RECREATION PROJECT
Draft Supplemental Environmental Assessment and Environmental Impact Report for Phase II Modifications

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

Draft

Legend

- Right of Way
- Soil Cement Slope
- Maintenance Roads
- Riparian Terrace
- Channel Invert
- Vegetated Slope
- Grade Control Structure

Sources:

Imagery Background:
ESRI ArcGIS Online Basemap Sources
Copyright:© 2012 Esri, DeLorme, NAVTEQ, TomTom

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

Map Created: November 27, 2012

0 100 200 400 Feet

Figure 3-1b Project Features

MURRIETA CREEK FLOOD CONTROL/ ENVIRONMENTAL RESTORATION AND RECREATION PROJECT
Draft Supplemental Environmental Assessment and Environmental Impact Report for Phase II Modifications

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

Draft

Legend

- Right of Way
- Riparian Terrace
- Maintenance Roads
- Vegetated Slope
- Channel Invert
- Grade Control Structure

N

Sources:

Imagery Background:
ESRI ArcGIS Online Basemap Sources
Copyright:© 2012 Esri, DeLorme, NAVTEQ, TomTom

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

Map Created: November 27, 2012

0 100 200 400 Feet

Figure 3-1c Project Features

MURRIETA CREEK FLOOD CONTROL/ ENVIRONMENTAL RESTORATION AND RECREATION PROJECT
Draft Supplemental Environmental Assessment and Environmental Impact Report for Phase II Modifications

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

Draft

Legend

- Right of Way
- Maintenance Roads
- Grade Control Structure
- Channel Invert
- Riparian Terrace
- Vegetated Slope

N

Sources:

Imagery Background:
ESRI ArcGIS Online Basemap Sources
Copyright:© 2012 Esri, DeLorme, NAVTEQ, TomTom

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

Map Created: November 27, 2012

0 100 200 400 Feet

Figure 3-1d Project Features

MURRIETA CREEK FLOOD CONTROL/ ENVIRONMENTAL RESTORATION AND RECREATION PROJECT
Draft Supplemental Environmental Assessment and Environmental Impact Report for Phase II Modifications

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

Draft

Legend

- Right of Way
- Maintenance Roads
- Channel Invert
- Riparian Terrace
- Vegetated Slope
- Grade Control Structure

N

Sources:

Imagery Background:
ESRI ArcGIS Online Basemap Sources
Copyright:© 2012 Esri, DeLorme, NAVTEQ, TomTom

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

Map Created: November 27, 2012

0 100 200 400 Feet

Figure 3-1e Project Features

MURRIETA CREEK FLOOD CONTROL/ ENVIRONMENTAL RESTORATION AND RECREATION PROJECT
Draft Supplemental Environmental Assessment and Environmental Impact Report for Phase II Modifications

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

Draft

4.0 GEOLOGY AND SOILS

4.1 Affected Environment

Soils within the general area are dominated by Riverwash. Riverwash is found on slopes of zero to eight percent in valley fills and on alluvial fans. These sandy, gravelly, or cobbly areas lie in the beds of the major streams and larger creeks, such as Murrieta Creek. Other soil types potentially occurring within the general area include Graingerville sandy loam, drained, saline-alkali, zero to five percent; Graingerville sandy loam, sandy substratum, drained, zero to five percent; Chino silt loam, drained, saline alkali; and rock land (USDA, 1971).

Along Murrieta Creek, surficial creekbed material consists of well-sorted, fine-to-medium sands with occasional gravels. This alluvial sand and gravel layer is several yards thick. Below this are a reported 50 to 100 feet of the Quaternary-age Pauba Formation, composed of coarse fanglomerates and interbedded sands, silts, and some marls (USACE, 1998). The project area and vicinity consists of several types of earth materials, including Pauba Formation, Terrace Deposits, Older Alluvium, and Alluvium.

4.2 Environmental Effects

4.2.1 Construction

Original Phase II Plan (No Action Alternative)

The Original Phase II Plan would involve excavating and grading approximately 70 acres of Murrieta Creek. Vegetation within the project footprint would be cleared and grubbed. Approximately, 1,100,481 cubic yards of alluvial substrate would be removed from the channel invert to lower the invert elevation by approximately 3-8 feet. Construction would also involve creating side slopes between 3:1 and 1:4 over a distance of 12,800 feet. Gabions would be utilized to reinforce the channel banks with 3:1 slopes. A grouted stone drop structure would be constructed approximately 300 feet upstream of Rancho California Road. A 20 to 60 foot wide unmaintained vegetated corridor would be constructed between Rancho California Road downstream to the project terminus. The Main Street bridge would be replaced. Accordingly, concrete would be discharged for the construction of bridge abutment and piers.

During construction, there would be substantial disturbance of existing topsoil in the channel invert associated with excavation activities to deepen the channel. However, the composition of the newly exposed substrate would remain the same. However, the loss of alluvial substrate would be temporary, since sedimentation from future flows through the project area would replace the excavated topsoil. Upon completion of construction, the general topography of the channel would largely remain the same; the channel would be slightly wider and deeper. The discharge of gabions and rip rap would be limited to the banks of the channel. Furthermore, the discharge materials would be natural substrate (i.e. rocks and rip rap) which are chemically inert.

Modified Phase II Plan (Preferred Alternative)

The Modified Phase II Plan would involve excavating and grading and disturbance from equipment and vehicle access to approximately 121 acres of Murrieta Creek. Vegetation within the excavation footprint would be cleared and grubbed. Approximately, 952,000 cubic yards of alluvial substrate would be removed from the channel invert to lower the invert elevation to depths ranging from 3 to 8 feet. Construction would also involve creating steeper side slopes when compared to the Original Phase II Plan. The Modified Phase II Plan would change the side slopes over most of the project area from 3:1 (using gabions) to 2:1 (using soil cement). A grouted stone drop structure would be constructed approximately 300 feet upstream of Rancho California Road. A 20 to 125 foot wide unmaintained vegetated corridor would be constructed between Rancho California Road downstream to the project terminus. The Main Street bridge would not be replaced. Accordingly, there would be no discharge of concrete for the construction of bridge piers and abutments.

During construction, there would be substantial disturbance of existing topsoil in the channel invert associated with excavation activities to deepen the channel. However, the composition of the newly exposed substrate would remain the same. However, the loss of alluvial substrate would be temporary, since sedimentation from future flows through the project area would replace the excavated topsoil. Upon completion of construction, the general topography of the channel would largely remain the same; the channel would be slightly wider and deeper. The discharge of gabions and rip rap would be limited to the banks of the channel. Furthermore, the discharge materials would be natural substrate (i.e. soil cement and rip rap) which are chemically inert.

The changes associated with the Modified Phase II Plan when compared to the Original Phase II Plan are minor. The Modified Phase II Plan would:
Lengthen the project footprint by 200 feet, resulting in a length increase of 1.6%.
Decrease the volume of excavation by 148,481 cubic yards, resulting in a decrease of approximately 13.5%.

NEPA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

4.2.2 Operations and Maintenance

Original Phase II Plan (No Action Alternative)

As identified in the 2000 Final EIS/EIR and summarized in Section 3.0, future maintenance activities would be regularly conducted within the project area by the RCFCDWCD. Activities such as invasive weed removal from the embankments and regular mowing of the dictation in the channel invert outside of the unmaintained riparian corridor would not change the soils or geology of the project area. At maximum, use of mowers and the mechanical disturbance of the

dictation would loosen topsoil. Maintenance of the gabion/riprap embankments; the drop structure; access roads; and landscaped sites would entail the like-for-like replacement of materials at localized areas. The removal of debris and sediment from the channel to maintain the design width and depth could entail substantial disturbance of existing topsoil in the channel invert. The volume and the geographic extent of the sediment and debris removal process would vary. However, the composition of the newly exposed substrate would remain the same. The loss of alluvial substrate would be temporary, since sedimentation from future flows through the project area would replace the excavated topsoil. The general topography of the channel would largely remain the same. The repair of degraded and eroded areas to grade would entail the discharge of native materials.

If vegetation is removed or damaged by heavy flows within the unmaintained riparian corridor, revegetation would be allowed to occur via natural recruitment. Natural regeneration is one of the strongest allies to the restoration of existing riparian habitats by regrowth of vegetative material and the existence of a native seed bank.

Emergency and other erosion repairs conducted on the bank, side slopes or unmaintained riparian corridor the area would be stabilized and re-seeded with a native seed mix at the completion of repair activities.

Impacts associated with the maintenance and operation of the project would be minimized by the implementation of project mitigation measures (Section 20.0) and the timing of maintenance activities. Future maintenance has been evaluated and mitigated for the life of the project.

Modified Phase II Plan (Preferred Alternative)

Future maintenance activities would be regularly conducted within the project area by the RCFCDWCD. With the exception of the length increase of 1.6%, the operations and maintenance activities under the Modified Phase II Plan would remain unchanged.

NEPA Impact Determination

Operations and maintenance activities would be the sole responsibility of RCFCDWCD. Therefore, no impact determination is made under NEPA.

CEQA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

5.0 WATER RESOURCES

5.1 Affected Environment

The Phase II project area is located between the Phase I project area, approximately 1,000 feet south of First Street, and 200 feet upstream of Winchester Road. As discussed in the 2000 Final EIS/EIR, Murrieta Creek drains an area of approximately 220 square miles and is an important component of the Santa Margarita River watershed, which encompasses approximately 750 square miles. Elevations within the Murrieta Creek watershed range between approximately 1,000 to 4,500 feet above mean sea level (msl). Murrieta Creek is fed by two main tributaries, Warm Springs Creek and Santa Gertrudis Creek. Tucalota Creek is also a major tributary to Santa Gertrudis Creek and is part of its approximate 70 square mile drainage. Warm Springs Creek and Santa Gertrudis Creek enter Murrieta Creek just downstream of Elm Street and just upstream of Winchester Avenue, respectively.

Stormwater runoff is the primary water source for Murrieta Creek during the winter season. Additional sources include natural springs (rising groundwater) and irrigation runoff. Flow data from the USGS gauging station in Temecula indicate that total flows during the 2011 water year (October 2010 through September 2011), totaled 28,720 acre-feet. Average annual flows from 1974 through 2011 were 15,520 acre-feet (USGS 2012).

Population within the Murrieta Creek valley has been increasing rapidly over the past decade, converting larger amounts of former grazing and other agricultural uses to various urban uses. As summarized in the 2008 Santa Margarita Region Annual Monitoring Report, the results of the trend analysis and regression calculations of water quality monitoring indicate that there are no statistically significant trends in the water quality monitoring data (RCFC&WCD 2009). The lack of trends in the data presented in the Annual Monitoring Report contrasts with the rapid population growth over the same time frame. The significant growth in population and resulting urban land use area that has occurred in the area contrasts sharply with the lack of statistically significant increases in concentrations of constituents of concern that would otherwise be expected in stormwater runoff from urbanized areas. These results demonstrate and can be attributed to the effectiveness of the RFCF&WCD and other Permittee's programs, under the National Pollutant Discharge Elimination System (NPDES) program, at addressing the Focus Area Constituents of Concern, which are targeted and designed to prevent the discharge of these constituents into the Receiving Waters.

Flooding

In a natural ecosystem, rainfall infiltrates the soil and replenishes groundwater basins, evaporates, or flows into natural drainage channels with a minimum of flooding. Development reduces the amount of infiltration by introducing impervious surfaces (i.e., streets, parking lots, buildings) in the landscape. The greater the amount of hard surfaces, the larger the amount of rainfall that becomes surface run-off. Increased surface run-off means higher floodwater levels and potential for increased flooding.

Potential flooding along Murrieta Creek is related to inadequate capacity of the existing channel. Major flooding events have occurred along Murrieta Creek in 1938, 1969, 1980*, 1993*, 1995*, and 1998* (*Presidential Disaster Declaration). In January 1993 Camp Pendleton Marine Base sustained $88 million in flood damage. Cities of Murrieta and Temecula sustained $12 million in damages. This large flood event resulted in two to six feet of sediment deposition in the Murrieta Creek streambed from Winchester Road south into the Old Town area of the city of Temecula (RCFC&WCD, 2003).

Groundwater and Water Supply

As discussed in the 2000 Final EIS/EIR, depth to groundwater varies considerably within the project area, mostly due to the presence of several earthquake faults in the area. Groundwater depths also vary considerably as distance from the centerline of the creek increases. Downstream of Winchester Avenue, reported depth to groundwater of 24 to 30 feet occur (USACE, 1998a). Prior to intense development in the area, rising groundwater was a major source for stream flow.

Data supplied by the former Murrieta Creek Water District indicate that the groundwater encountered within their water supply wells meets all California Department of Health Services drinking water standards. Primary standards adopted by this department are enforceable for all public drinking water supplies. Secondary standards for drinking water address the taste, odor, and appearance.

Surface Water Quality

The California Regional Water Quality Control Board (RWQCB) San Diego Region enforces water quality standards within Murrieta Creek to assure that the established water quality-related impairment of beneficial uses are protected. Each RWQCB has developed a Basin Plan that identifies beneficial uses of various water bodies within its jurisdiction. Murrieta Creek occurs within the jurisdiction of the San Diego RWQCB (Region 9).

Beneficial uses for surface water resources in the region were established by the San Diego RWQCB in the Water Quality Control Plan for the San Diego (Region 9) (Basin Plan, September 8, 1994, with amendments effective on or before April 4, 2011). The following beneficial uses are applicable to Murrieta Creek.

- Municipal and Domestic Supply (MUN) – Includes uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.
- Agricultural Supply (AGR) – Includes uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.
- Industrial Process Supply (PROC) – Includes uses of water for industrial activities that depend primarily on water quality.
- Industrial Service Supply (IND) – Includes uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization.

- Ground Water Recharge (GWR) – Includes uses of water for purposes of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.
- Contact Water Recreation (REC-1) – Includes uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and SCUBA diving, surfing, white water activities, fishing, or use of natural hot springs. This is a potential beneficial use for Murrieta Creek.
- Non-contact Water Recreation (REC-2) – Includes the uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beach combing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
- Warm Freshwater Habitat (WARM) – Includes uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including invertebrates.
- Wildlife Habitat (WILD) – Includes uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

Surface waters in the Santa Margarita River basin, including the Temecula Creek, Murrieta Creek, and the Santa Margarita River, have historically been monitored by the RCWD, Eastern Municipal Water District (EMWD), and the Natural Resource Office (NRO) at Marine Corps Base Camp Pendleton.

Historically, Murrieta Creek water quality samples were collected at the USGS gauging station upstream from the confluence of Murrieta and Temecula Creeks. These samples represent existing water quality in the Murrieta hydrologic area. Results show that concentrations of most constituents have historically been highly variable, and water quality objectives for the Murrieta hydrologic area have frequently been exceeded at this sampling location. See Section 3.3.2 of the 2000 Final EIS/EIR for additional information.

5.2 Environmental Effects

5.2.1 Construction

Original Phase II Plan (No Action Alternative)

The Original Phase II Plan would involve excavating and grading approximately 70 acres of Murrieta Creek. Vegetation within the project footprint would be cleared and grubbed. Approximately, 1,100,481 cubic yards of alluvial substrate would be removed from the channel invert to lower the invert elevation by approximately 3-8 feet. Construction would also involve creating side slopes between 3:1 and 1:4 over a distance of 12,800 feet. Gabions would be utilized to reinforce the channel banks with 3:1 slopes. A grouted stone drop structure would be

constructed approximately 300 feet upstream of Rancho California Road. A 20 to 60 foot wide unmaintained vegetated corridor would be constructed between Rancho California Road downstream to the project terminus. The Main Street Bridge would be replaced. Accordingly, concrete would be discharged for the construction of bridge abutment and piers.\

Flooding

The Original Phase II Plan would widen and deepen approximately 12,800 feet of the channel from 200 feet upstream of Winchester Road to 1,000 feet downstream of 1st Street. The channel would be deepened by approximately 3 to 8 feet. The project would increase the flood conveyance capacity and provide approximately a 100-year level of flood protection.

Surface Water Quality

Impacts and mitigation measures described in the 2000 Final EIS/EIR remain unchanged. In summary, the Original Phase II Plan would involve substantial grading and excavation to widen and deepen the channel. In addition, the earthen embankments would need to be excavated for the installation of gabion/riprap embankments. As a result, there will be a number of earth moving equipment working within the channel invert. Furthermore, there would be a number of on road dump trucks accessing the worksite to transport excess fill material off-site. As a result, there would be substantial disturbance to substrate during construction that could impact water quality. However, all construction and maintenance activities will not be conducted from December 1 through February 28 in order to avoid winter rains and to correspondingly reduce the potential for water quality impacts. Furthermore, work areas would be isolated from active flows to prevent or minimize turbidity during construction. There would be a temporary increase in turbidity when initial water flows across disturbed areas introduce unconsolidated or loose topsoil into the water column. However, since most of the substrate is alluvial, sand and gravel are expected to quickly settle out of the water column. The use of earth moving equipment within the channel could impact water quality by introducing oils and solvents to the work area. However, the implementation of best management practices listed below would minimize the potential for accidental releases and spills. Moreover, all terms and conditions of the 401 Water Quality Certification would be implemented.

Groundwater and Water Supply

Construction would entail excavation and grading across approximately 70 acres of the channel. The elevation of the channel invert would be lowered by approximately 8 feet. The Original Phase II Plan would also entail construction of two grouted-riprap drop structures in the channel each measuring approximately 50 feet wide and 200 feet long (0.2 acre in area). These concrete structures are not permeable. These structures would reduce the amount of area available for groundwater recharge by approximately 0.4 acre. The Main Street Bridge would be replaced. Accordingly, concrete would be discharged for the construction of bridge abutment and piers. However, since new structures would replace existing piers and abutments, the change in the amount of area available for groundwater recharge would be minimal. With the exception of the drop structures and the bridge piers and abutments, there would be no discharge of impermeable fill material within the invert; the permeable alluvial substrate would remain in place. The earthen embankments would be excavated and lined with gabion embankments. However, water would still be able to percolate through the gabions to retain area along the embankments available for groundwater recharge.

Modified Phase II Plan (Preferred Alternative)

In comparison to the Original Phase II Plant, the Modified Phase II Plan would in general: Increase the project length by approximately 200 feet, representing an increase of 1.6% in length compared to the Original Phase II Plan.

- Construct five access ramps approximately 30 feet in width and 200 to 300 foot in length.
- Increase the width of *the unmaintained riparian corridor* to an average width of 70 feet.
- Widen the width of the channel in some reaches by utilizing steeper slopes ranging from 2:1 to 1:4.
- Utilize soil cement for bank stabilization and instead of gabions.
- Utilize grade control structures instead of drop structures.

Flooding

The Modified Phase II Plan, like Original Phase II Plan, would widen and deepen the channel. However, the length of the channel being modified would be extended by approximately 200 feet. Due to the steeper 2:1 slopes allowed by the use of soil cement embankment, the channel would be slightly wider, and therefore the volume of material excavated from the channel would be less. In particular, Modified Phase II Plan would decrease the volume of excavation by 148,481 cubic yards, resulting in a decrease of approximately 13.5% when compared to the Original Phase II Plan. Though there are minor differences between the Modified Phase II Plan and the Original Phase II Plan, potential impacts to flooding remain unchanged: The Modified Phase II Plan would increase the flood conveyance capacity and provide approximately a 100-year level of flood protection.

Surface Water Quality

The acreage of channel invert that would be disturbed would be slightly larger since the length of the channel being modified would be extended by approximately 200 feet. Due to the steeper 2:1 slopes allowed by the use of soil cement embankment, the channel would be slightly wider, and therefore the volume of material excavated from the channel would be less. In particular, Modified Phase II Plan would decrease the volume of excavation by 148,481 cubic yards, resulting in a decrease of approximately 13.5% when compared to the Original Phase II Plan. Though there are minor differences between the Modified Phase II Plan and the Original Phase II Plan, potential impacts to surface water quality would likely remain the same. Modified Phase II Plan would involve substantial grading and excavation to widen and deepen the channel. In addition, the earthen embankments would need to be excavated for the installation of gabion/riprap embankments. As a result, there will be a number of earth moving equipment working within the channel invert. Furthermore, there would be a number of on road dump trucks accessing the worksite to transport excess fill material off-site. As a result, there would be substantial disturbance to substrate during construction that could impact water quality. However, all construction and maintenance activities will not be conducted from December 1 through February 28 in order to avoid winter rains and to correspondingly reduce the potential for water quality impacts. Furthermore, work areas would be isolated from active flows to prevent or minimize turbidity during construction. There would be a temporary increase in turbidity when initial water flows across disturbed areas introduce unconsolidated or loose topsoil into the water column. However, since most of the substrate is alluvial, sand and gravel

are expected to quickly settle out of the water column. The use of earth moving equipment within the channel could impact water quality by introducing oils and solvents to the work area. However, the implementation of best management practices listed below would minimize the potential for accidental releases and spills. Moreover, all terms and conditions of the 401Water Quality Certification would be implemented.

Groundwater and Water Supply

Construction would entail excavation and grading across approximately 70 acres of the channel. The elevation of the channel invert would be lowered by approximately 8 feet. The Modified Phase II Plan would replace the to drop structures with two grade control structures each measuring approximately 50 feet wide and 200 feet long (0.2 acre in area). These concrete structures are not permeable. Therefore, like the Original Phase II plan, the Modified Phase II Plan would reduce the amount of area available for groundwater recharge by possibly 0.4 acre. The earthen embankments would be excavated and lined with soil cement embankments. In contrast to the Modified Phase II Plan, the soil cement embankments would not be permeable. Therefore, water would not percolate into the ground beneath the embankments. However, in comparison to the Original Phase II Plan where most reaches would have a 3:1 slope, the Modified Phase II plan would entail construction of steeper slopes at various reaches ranging from 2:1 to 1:4. Therefore, the reduction in surface area along the embankments available for groundwater recharge would be minimal. During construction, there would be substantial disturbance of existing topsoil in the channel invert associated with excavation activities to widen and deepen the channel. However, the composition of the newly exposed substrate would remain the same, and would still allow for groundwater recharge.

NEPA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

5.2.2 Operations and Maintenance

Original Phase II Plan (No Action Alternative)

As identified in the 2000 Final EIS/EIR and summarized in Section 3.0, future maintenance activities would be regularly conducted within the project area by the RCFC&WCD. Operations and maintenance activities would be undertaken to maintain the integrity of the built structures and the design configuration of the channel. Therefore, these activities would continue to maintain the approximately a 100-year level of flood protection provided by the Original Phase II Plan.

Regular mowing of the channel invert *outside of the unmaintained riparian corridor* and debris and sediment removal from the channel would entail a limited number of mechanized or earth

moving equipment working within the channel invert. As a result, there would be disturbance to substrate during operations and maintenance activities that could impact water quality. However, with the exception of emergency maintenance activities, operations and maintenance activities would not be conducted from December 1 through February 28 in order to avoid winter rains and to correspondingly reduce the potential for water quality impacts. Furthermore, work areas would be isolated from active flows to prevent or minimize turbidity during construction. There would be a temporary increase in turbidity when initial water flows across disturbed areas introduce unconsolidated or loose topsoil into the water column. However, since most of the substrate is alluvial, sand and gravel are expected to quickly settle out of the water column. The use of earth moving equipment within the channel could impact water quality by introducing oils and solvents to the work area. However, the implementation of best management practices listed below would minimize the potential for accidental releases and spills. Moreover, all terms and conditions of the 401 Water Quality Certification would be implemented.

Maintenance of the gabion and riprap embankments or maintenance of the drop structure would in most cases entail a like-for-like replacement of existing structures, and therefore would not increase impermeable surface area within the channel invert. In some cases, maintenance may require minor extension of the drop structure such as concrete aprons which may increase the impermeable surface area. Given the approximately 70 acres of native substrate within the channel, impacts to groundwater recharge due to increases in impermeable surface area would *de minimis*. Other operations and maintenance activities would not affect groundwater and water supply.

Modified Phase II Plan (Preferred Alternative)

Future maintenance activities would be regularly conducted within the project area by the RCFCDWCD. Monitoring and maintenance of the restoration areas would be the responsibility of the Corps for 5 years after completion of construction. Activities that result in the discharge of dredged or fill material into waters of the United States would be subject to Section 404 of the Clean Water Act implemented by the Corps Regulatory program. As a result, general impacts associated with operations and maintenance activities are evaluated under NEPA.

The changes in the Modified Phase II Plan indicated above would entail *de minimis* changes to operations and maintenance activities associated with the Original Phase II Plan.

NEPA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

5.3 Environmental Commitments (NEPA)/Mitigation Measures (CEQA)

W-1 Channel construction and maintenance activities will not be conducted if bank to bank flows exist and during rain events to reduce the potential for significant impacts to water quality. The construction contractor will monitor and record weather reports for any indication of potential rain events. The contractor shall divert the low flow channel consistent with the Storm Water Pollution Prevention Plan (SWPPP) and regulatory permits to minimize working within the live channel.

W-2 During construction and maintenance activities, equipment will be in proper working condition and inspected for leaks and drips on a daily basis prior to commencement of any in-channel maintenance work.

W-3 RCFC&WCD would develop and Implement a spill prevention and remediation plan and workers will be instructed as to it requirements. Construction supervisors and workers and maintenance personnel would be instructed to (1) be alert for indications of equipment related contamination such as stains and odors, and (2) respond immediately with appropriate actions as detailed in the spill prevention and remediation plan if indications of equipment-related contamination are noted.

W-4 During construction and maintenance activities, fuels, solvents, and lubricants would be stored in a bermed area so that potential spills and/or leaks will be contained. Soil contamination resulting from spills and/or leaks would be remediated as required by Federal and/or state law. Storage areas would be constructed so that containers would not be subjected to damage by construction and maintenance equipment.

W-5 Implementation of appropriate best management practices (BMPs) to minimize soil erosion and transport of pollutants, and train operators.

W-6 Whenever possible, confine construction work within the flood control channel to low-flow periods. All construction activities within the channel would be limited during wet weather, to include specifications for: construction material stockpiling, channel slope protection, grading, levee openings, and excavation.

W-7 Construct sediment barriers (e.g. sandbags, silt fence, temporary containment dam) downstream of each major construction operation to trap sediments.

W-8 Conduct dewatering operations behind temporary sheet pile cofferdams.

W-9 Cover and secure stockpiles of bulk granular building materials

W-10 Stabilize any areas of exposed soil, such as dirt stockpiles, dirt berms, and temporary dirt roads, with controlled amounts of sprinkled water.

W-11 At the close of each working day, sweep up any materials tracked onto the street or laying uncontained in the construction areas, and dispose of any trash accumulated in construction areas.

W-12 Contain concrete, asphalt, and masonry wastes and dispose of these wastes away from project construction sites.

W-13 Prohibit refueling and maintenance of equipment and vehicles near the flood control channel. Prohibited locations shall include all land and structures (e.g. bridges) within 50 feet of the creek.

W-14 Keep spill kits containing absorbent materials at the construction site.

W-15 Store fuels and other hazardous materials away from project drainage.

W-16 Required Opinions, Concurrences, and Permits:

- Applicable Regulatory Section 404 Permit (RCFC&WCD to obtain for operation and maintenance activities)
- Section 401 Water Quality Certification
- Section 402 National Pollution Discharge Elimination System General Construction
- A Storm Water Pollution Prevention Plan will be prepared and implemented during construction.

6.0 BIOLOGICAL RESOURCES

6.1 Affected Environment

The Final EIS/EIR for the Murrieta Creek Flood Control Project (Corps 2000) has an extensive discussion of the biological resources found in and around the project area. The EIS/EIR describes the various habitat areas (i.e., alluvial scrub, riparian, and aquatic resources) and the fish and wildlife within the project area. That information is incorporated by reference as per 40 CFR 1502.21. The EIS/EIR included information from the California Natural Diversity Data Base (CNDDB), the Fish and Wildlife Baseline Conditions Report on Biological Resources at Murrieta Creek (USACE, 1998b), the report for the Delineation of Wetlands of the Murrieta Creek Flood Control Project Riverside County, California (USACE, 1992), and the Murrieta Creek Floodplain Maintenance Plan (FMP) Project Wetland Delineation conducted by Dudek & Associates in 2000. Further discussion is provided in the 2003 Supplemental Environmental Assessment for the Phase I Modifications of the Murrieta Creek Flood Control Project (Corps 2003). Additional, extensive data relative to biological resources has been collected since the Final EIS/EIR and SEA were completed in 2000 and 2003. This new information, described below, has been incorporated into the biological resources discussion and analysis of this SEA.

Field surveys were conducted by Corps and Aspen Staff biologists (2012, 2011, 2010, 2008), to update and supplement the biological resources data. One objective of the field surveys was to determine if habitat for sensitive species was present in or adjacent to the Murrieta project site. The surveys included:

- vegetation community identification and mapping,
- identification of observed plant species,
- evaluation of existing habitat for potential special-status plant and wildlife habitat,
- evaluation of aquatic habitat,
- identification of aquatic species, and
- incidental species observations.

The August/September 2012 field investigations were focused primarily within the Phase II project limits.

6.1.1 Vegetation Communities

Habitat located within the proposed Phase II project area remains consistent with conditions previously described by the 2000 EIS/EIR, unless otherwise noted. The existing channel bottom has continued to be annually maintained (mowed) by Riverside County Flood Control and Water Conservation District (RCFC&WCD) according to the Murrieta Creek Channel Maintenance Plan (CMP) (RCFC&WCD 1999). The RCFC&WCD regularly maintains the channel, typically in the fall prior to the winter season, to reduce the potential for flooding by mowing majority of the creek bottom annually (approximately 62.4 acres within the Phase II area) and a vegetated corridor (ranging in average width of 20 to 30 feet, approximately 8.4 acres) every 2 to 4 years. As a result, the vegetation within the creek ranges 0 to 4 years in age in any given time of the

year. Figures 6-1 and 6-2 shows the condition of the channel subject to recent maintenance mowing. There are a few patches of vegetation along the banks of the creek that may not be maintained regularly due to its location.

By late spring, vegetation in the channel is recovering, with regrowth of species typical of riparian scrub and freshwater marsh vegetation communities. The following discussion describes the habitat within the Phase II project area as documented during vegetation surveys performed in the summer of 2012. Recovering habitat within the Phase II area consists primarily of riparian vegetation, freshwater marsh, and non-native/disturbed areas. Urban development and a section of Riversidian coastal sage scrub occur adjacent to Murrieta Creek.

Figure 6-1. Post Maintenance Mowing Channel Conditions Upstream of Rancho California Road

Source: Google Maps, website accessed November 2012.

Figure 6-2. Post Maintenance Mowing Channel Conditions in Vicinity of Via Montezuma

Source: Google Maps, website accessed November 2012.

The following is a description of the vegetation communities observed within the Phase II project area and its immediate vicinity. Distribution of communities within the project area is depicted in Figures 6-3a through 6-3e, Vegetation Maps. In addition, plant species observed in the project area are discussed below. All plant community descriptions are derived from Holland (1986), and Gray and Bramlet (1992). The mapped vegetation communities occupy approximately 121.37 acres in Phase II as shown in Table 6-1 and are discussed as follows:

Table 6-1. Vegetation Communities in Phase II

Vegetation Communities and Other Cover Types[1]	**Acreage**
Cottonwood willow riparian	1.01
Riparian Scrub	17.58
Mulefat Scrub	5.62
Freshwater Marsh/wetland	0.90
Coastal Sage Scrub (CSS)	2.16
Open Water/Open Channel	44.82
Ornamental/exotic/ nonnative/disturbed	46.43
Unvegetated/ Barren/Developed	2.85
Total	121.37

Based on Holland's Preliminary Descriptions of the Terrestrial Natural Communities of California (1986).

CWR- Cottonwood Willow Riparian
This community is winter-deciduous and requires moist, bare mineral soil for germination and establishment, provided when flood waters recede. Early stands develop as uniform-aged stands from seedlings established on open post-flood sites (Holland, 1986). Southern cottonwood-willow riparian forest and disturbed cottonwood/willow riparian woodland is present in patches, in various stages of maturity, throughout the Murrieta Creek corridor. Several species of willows including black willow (*Salix gooddingii*) yellow willow (*S. lasiandra*) and arroyo willow (*S. lasiolepis*), and sometimes Fremont cottonwood (*Populus fremonttii*), are the dominant trees in riparian woodlands and forests within the project area. In the project area these woodlands are narrow due to the confined channel and often have dense understories of emergent willows, mulefat (*Baccharis salicifolia*), and mugwort (*Artemisia douglasiana*). Tree canopy may be open (woodland) or closed (forest) depending on location and is greater than 20 feet tall in specific areas. These woodlands and forests are found in areas of Murrieta Creek supporting perennial surface water. The more mature stands occur downstream of Phase I and in portions of the project near Kalima Street, upstream of Phase II. Activities from clearing, off-road vehicle activity, and invasion by exotic species such as giant reed, tamarisk, pepper-tree (*Schinus* spp.), and eucalyptus (*Eucalyptus* spp.), among others, have disturbed or degraded this vegetation in some parts of the project area.

Approximately 1.01 acres of Cottonwood Willow Riparian habitat occur within the Phase II project area.

RS- Riparian Scrub
Southern willow scrub (Holland 1986) is a dense, broadleafed, winter-deciduous riparian thicket habitat dominated by several willow species, with scattered emergent cottonwood and California sycamore (*Platanus racemosa*). Riparian scrub vegetation is typically less mature than "willow riparian" habitat. Most stands are too dense to allow much understory development. Site factors include loose, sandy or fine gravelly alluvium associated with stream channel deposition. Stands wholly dominated by scrubby willows are termed southern willow scrub; stands with significant cover of other species are termed mixed riparian scrub. Scattered individuals of cottonwood or western sycamore may exist as canopy emergents within this community.

This is an early seral community that requires periodic flooding for its maintenance (Holland, 1986). In long periods without scouring or damaging floods, willow riparian scrub develops into a riparian woodland or forest. This vegetation occurs in small patches scattered throughout the creek in the Phase II project area. On the vegetation maps (Figures 6-3a to 6-3e), this vegetation community is mapped as southern willow scrub, disturbed southern willow scrub, emergent southern willow scrub and riparian scour zone.

Approximately 17.58 acres of Riparian Scrub habitat occur within the Phase II project area.

MF- Mulefat
Mulefat scrub is a riparian shrub community that is strongly dominated by mulefat, often in association with scattered willow species, heliotrope (*Heliotropum curassavicum*), mugwort, and blue elderberry (*Sambucus 46oronate*). Mulefat-dominated scrub usually occurs along intermittent streams and is common in many sections of Murrieta Creek.

Approximately 5.62 acres of mulefat scrub habitat occur within the Phase II project area.

M- Freshwater Marsh/Wetland

Freshwater marsh is characterized by standing or slowly-flowing surface water, with vegetation dominated by tall perennial wetlands species emergent above the water line (Holland 1986). Marshes are often covered by uniform stands of bulrushes (*Scirpus* spp.) or cattails (*Typha* spp.). Other typical species include nutsedges (*Cyperus* spp.) and rushes (*Juncus* ssp.). This vegetation matches the freshwater marsh described by Holland (1986) and includes the Bulrush series, Bulrush – cattail series, and Cattail series described by Sawyer and Keeler-Wolf (1995). Within the Phase II project area, these communities are prevalent in the hydric portions of the creek between Rancho California Boulevard and the Santa Gertrudis Creek area.

Approximately 0.90acres of freshwater marsh and freshwater marsh/mowed channel habitat occur within the Phase II project area.

CSS- Riversidian Sage Scrub

Coastal sage scrub (CSS) is comprised of low, soft-woody sub-shrubs to about three feet high, and is one of the major shrub-dominated communities within California. This community occurs on xeric sites with shallow soils or on dry sites, such as steep, south-facing slopes or clay-rich soils that are slow to release stored water. Sage scrub species are typically drought deciduous plants with shallow root systems. The Riversidian association is characterized by a higher evapotranspiration stress (i.e., loss of water from the soil and vegetation during the life cycle of the plants growing in this community) during the summer than the other associations (O'Leary 1990). This upland community within slopes and ROW of the project area is fairly open and is dominated by brittlebush *(Enceliafarinosa)* in association with California sagebrush *(Artemisia californica)* and Mojave yucca *(Yucca schidigera).* Because of the open composition of this community, exotic herbaceous species (i.e., having little or no woody tissue and persisting usually for a single growing season) such as annual bur-sage *(Ambrosia acanthicarpa),* Russian thistle *(Salsola tragus),* tocalote *(Centaurea melitensis),* mustard *(Brassica* spp.), wild oats *(Avena* spp.), and red brome *(Bromus rubens)* are prevalent in the spaces between the shrubs.

Approximately 2.16 acres of CSS, including disturbed CSS, restored CSS, and emergent *Hazardia squarrosa* habitat occur within the Phase II project area.

Ow- Open Water/ Open Channel

Though not considered a vegetation community because of the lack of vegetation, open water and open channels are associated with water and occasionally with wetland communities. They provide habitat for a variety of wildlife species. Open water habitat can contain a sandy substrate with pure sand or sand with very sparse aquatic vegetation. Much of the creek channel proper from immediately upstream of Old Town Temecula to approximately Calle Del Oso Oro Road is unvegetated and mostly consists of sandy channel bottom or sand banks. There are however, small patches of juvenile willows and mulefat scattered along the unvegetated portion of the creek, especially where there is a semi-permanent source of water from urban and/or agricultural runoff. Included in this community, in addition to naturally occurring open water and sandy areas

within the channel, is the cleared region as described in the CMP where varying portions of the channel bed are annually cleared by mowing and/or sediment removal by RCFC&WCD.

Approximately 44.82 acres of open water, open channel, and mowed channel is mapped within the Phase II of the proposed project.

Orn- Ornamental/exotic/ nonnative/disturbed
Non-native woodlands are generally dominated by several species of eucalyptus trees and other less extensive stands of ornamental trees, such as elm (*Ulmus* spp.) and Peruvian pepper. These species were planted for aesthetic and horticultural purposes, and most sites where they are now found in the project area are probably old plantings or recruits. Salt Cedar areas are dominated by dense stands of the invasive salt cedar (*Tamarix* sp.). Arundo (*Arundo donax*) is another aggressive non-native/invasive that is present within the Phase II project area.

The small amount of vegetation that begins to reclaim the soil is dominated by non-native, weedy species that are adapted to frequent disturbance. Many of the characteristic species of disturbed habitat are also indicator species of annual non-native grassland, but disturbed areas mapped here have less overall vegetation cover and greater relative abundance of forbs rather than grasses. The areas mapped as disturbed include dirt access roads, maintenance buffers, and other barren areas with limited vegetation that have not shown signs of recolonization by natives.

Approximately 46.43 acres of ornamentals, exotic, non-native, and disturbed areas occur within the Phase II project area.

Un- Unvegetated/Developed
These areas as mapped (Figures 6-3a to 6-3e) are devoid of vegetation due to recent or on-going disturbances or permanent land use changes. A variety of land uses in and around the project area have little or no native or non-native vegetation. These include developed lands, paved areas (e.g., roads and parking areas), barren soil (e.g., equipment yards or unpaved parking areas), concrete (e.g., lined channel banks), riprap channel armoring, and rock outcrops.

Approximately 2.85 acres of developed, rock outcrop, stone habitat occur within the Phase II project area.

6.1.2 Wildlife

Murrieta Creek is primarily surrounded by urban development. A narrow corridor of Riversidian coastal sage scrub exists near the Phase II project area along the east side of the channel. Wildlife species likely to occur along the creek in these areas would be limited to widespread, mobile generalist species including reptiles, small mammals and birds well suited for life in an urbanized surrounding. Portions of Murrieta Creek do offer suitable habitat for a variety of wildlife species and may provide a limited corridor for animal dispersal to the mature Riparian woodlands in Temecula Creek to the south and the coastal sage scrub habitat located at the nearby Santa Rosa Plateau. Murrieta Creek is likely used for foraging by a variety of bird species, and as a transportation corridor for relatively urban tolerant mammals such as raccoons

(*Procyon lotor*), coyotes (*Canis latrans*), bobcat (*Felis rufus*), and other small mammals and rodents.

Common mammal species observed during surveys include desert cottontail (*Sylvilagus audubonii*) and California ground squirrel (*Otospermophilus beecheyi*). Tracks located in muddy sections of the creek indicate the site is well used by such species as raccoon, coyote, and possum (*Didelphis virginiana*). Beaver (*Castor 49oronate49s*), although not directly observed during the survey, are known residents of Murrieta Creek.

Numerous bird species were observed within Phase II of the proposed project or adjacent to the project area. Some of the bird species observed included red-winged blackbird (*Agelaius phoeniceus*), American crow (*Corvus brachyrhynchos*), greater road runner (*Geococcyx californianus*), bushtit (*Psaltiparus minimus*), and marsh wren (*Cistothorus palustris*). Several raptor species were observed foraging across the area including red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*). Similarly, great blue heron (*Ardea 49oronate*), egrets (*Ardea alba*), and several mallards (*Anas platyrhynchos*) were observed foraging along the creek bed. The least Bell's vireo (*Vireo bellii pusillus*) (LBV) was observed foraging in several locations along the Phase II project area during the 2011 LBV nesting surveys.

Common reptile and amphibian species that are expected to occur within the proposed project area include western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), western toad (*Anaxyrus boreas*), and bullfrog (*Rana catesbeiana*). Although many of the species observed are important members of wildland ecosystems and communities, most are common and have wide distributions in the region.

6.1.3 Special Status Species

Special status species include those listed as threatened or endangered under the Federal or California Endangered Species Acts, species proposed for listing, species of special concern, and other species identified either by the U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Game (CDFG) as unique or rare, and which have the potential to occur within the study area.

Wildlife

The California Natural Diversity Database (CNDDB) and supplemental investigations listed 62 special-status wildlife species with potential to occur in the vicinity of the study area. See Table 6-2 below for a list of sensitive wildlife.

Many of these species are not associated with the vegetation communities found within the Murrieta Creek study area or are located in similar habitats but of higher quality, found outside the study area. Futhermore, the periodic and often frequent flooding of Murrieta Creek may limit the potential for many species to occur.

Four of the federally or state listed threatened or endangered wildlife species have moderate to high potential to occur or are present within the Phase II project area. These include Swainson's hawk (*Buteo swainsoni*) (State Threatened), southwestern willow flycatcher (*Empidonax traillii extimus*) (Federally Endangered, State Endangered), coastal California gnatcatcher (*Polioptila californica californica*) (Federally Threatened), and least Bell's vireo (*Vireo bellii pusillus*) (Federally Endangered, State Endangered). Of these species, the least Bell's vireo (LBVI) has been observed in the project area. The coastal California gnatcatcher (CAGN) has been observed foraging downstream of the project area, and critical habitat occurs west of the project area ranging from 0.15 to 1.15 miles away. USFWS protocol surveys were completed for least Bell's vireo in the project area in 2011, 2010 and 2008. Protocol surveys were completed for southwestern willow flycatcher in the project area in 2008.

Twenty-one wildlife species designated as CDFG Species of Special Concern were found to have moderate to high potential to occur within the Phase II project area. Eight wildlife species listed in the MSHCP for Riverside County were found to have moderate to high potential to occur within the Phase II project area. These MSHCP species may also be federally or state listed, or listed as a Species of Special Concern.

Sensitive species, including their status, habitat requirements, and potential to occur within the study areas are presented in Table 6-2 below.

Table 6-2. Known and Potential Occurrence of Sensitive Wildlife Species Within and Adjacent to Proposed Project

Scientific Name	Common Name	Status	Potential for Occurrence	Habitat and Known Occurrences
INVERTEBRATES				
Branchinecta lynchi	Vernal pool fairy shrimp	FT	Low	Endemic to the grasslands of the Central Valley, Central Coast Mountains and the South Coast Mountains in rain filled pools. Vernal pools have not been documented in the Project area. This Reach of Murrieta Creek consists of a confined channel bordered by urban development. This species has not been documented in the Project area..
Branchinecta sandiegonensis	San Diego fairy shrimp	FE	Low	Endemic to San Diego and Orange County mesas. Vernal pools have not been documented in the Project area. This Reach of Murrieta Creek consists of a confined channel bordered by urban development. This species has not been documented in the Project area.

Table 6-2. Known and Potential Occurrence of Sensitive Wildlife Species Within and Adjacent to Proposed Project				
Scientific Name	Common Name	Status	Potential for Occurrence	Habitat and Known Occurrences
Euphydryas editha quino	Quino checkerspot	FE	Low	Open canopied habitats in sage scrub, chaparral, grasslands; strongly associated with host plants. This Reach of Murrieta Creek consists of a confined channel bordered by urban development. Suitable habitat consisting of host plants is not present in the Project area.
Streptocephalus woottoni	Riverside fairy shrimp	FE	Low	Restricted to deep, seasonal, long-lived vernal pools, vernal pool-like ephemeral ponds, and stock ponds. Vernal pools have not been documented in the Project area. This Reach of Murrieta Creek consists of a confined channel bordered by urban development. This species prefers warm water with low to moderate dissolved solids. This species has not been documented in the Project area.
AMPHIBIANS				
Anaxyrus californicus	Arroyo Toad	FE	Low	Semi-arid regions that support intermittent to perennial streams including Valley-foothill and desert riparian/desert wash habitats. Closest population is known from the Santa Rosa Plateau. Habitat conditions in this Project Reach consist of marsh habitat upstream of Rancho California Road and dry stream channel downstream. Most of this reach does not support adequate breeding conditions for this species.
Rana aurora draytonii	California red-legged frog	FT, CSC, MSHCP	Low	Dense, shrubby riparian vegetation associated with deep, still or slow-moving water. Only one extant population is known from Santa Rosa Plateau Ecological Reserve in Riverside County. Although perennial water occurs in portions of this reach this species has not been detected in the Project area.

Table 6-2. Known and Potential Occurrence of Sensitive Wildlife Species Within and Adjacent to Proposed Project				
Scientific Name	Common Name	Status	Potential for Occurrence	Habitat and Known Occurrences
Spea (=Scaphiopus) hammondii	Western spadefoot	CSC	High	Streams, ponds, and temporary rain pools that last at least three weeks. This species is known to occur in the watershed. Documented in 2003 in Warm Springs Creek (CNDDB, 2009).
FISH				
Catostomus santaanae	Santa Ana sucker	FT, CSC	Low	Sand, rubble, or boulder-bottomed streams. This species has not been documented in the Project area.
Gila orcutti	Arroyo chub	CSC, MSHCP	High	Slow water sections of south coastal streams with mud or sand bottoms. This species is known to occur in the Project area watershed.
REPTILES				
Actinemys marmorata pallid	Southwestern pond turtle	CSC, MSHPC	Present	Deep pools in rivers and streams below 6000 feet in elevation with adequate basking sites. This species has been documented on the Project site during surveys in 2000, downstream of the Main Street bridge.
Anniella pulchra pulchra	Silvery (=California) legless lizard	CSC	Moderate	Sandy or loose loamy soils under sparse vegetation of beaches, chaparral, or pine-oak woodland; or sycamores, cottonwoods, or oaks that grow on stream terraces; also in desert scrub at the western edge of the Mojave Desert. Often found under or near surface objects such as logs, rocks, old boards, woodrat nests. Mesic to xeric sections of the Project may provide potential habitat.
Aspidoscelis hyperythra	Orange-throated whiptail	CSC	Moderate	Low-elevation coastal scrub, chaparral, and valley-foothill hardwood; prefers washes and other sandy areas with patches of brush and rocks; feeds primarily on termites. Suitable habitat may occur on the Project site. This species has been documented within 2 miles of the Project area.

Table 6-2. Known and Potential Occurrence of Sensitive Wildlife Species Within and Adjacent to Proposed Project

Scientific Name	Common Name	Status	Potential for Occurrence	Habitat and Known Occurrences
Aspidoscelis tigris steinegeri	Coastal western whiptail	None	Moderate	Found in deserts and semi-arid areas with sparse vegetation and open areas. Also found in woodland and riparian areas. This species has been documented downstream of the Project area at the confluence with the Santa Margarita River.
Charina bottae umbratica	Southern rubber boa	ST	Low	Occurs in conifer forests near streams and meadows. This species is known to occur in the Transverse Range, San Bernardino, San Gabriel and San Jacinto Mountains. Suitable habitat does not occur in the Project area.
Crotalus ruber ruber	Northern red-diamond rattlesnake	CSC	Moderate	Found in a number of vegetative associations, and more frequently in habitats with heavy brush and large rocks or boulders. Limited suitable habitat is present in the Project site. This species has been documented with 5 miles of the Project area (CNDDB, 2012).
Eumeces skilltonianus interparietalis	Coronado skink	CSC	Low	Grassland, chaparral, pinyon-juniper and juniper-sage woodland, pine-oak and pine forests in coast ranges of Southern California. This species has been documented downstream of the Project area near the confluence with Santa Margarita River.
Lampropeltis zonata parvirubra	San Bernardino mountain kingsnake	CSC	Low	Canyons with rocky outcrops or rocky talus slopes in conifer forest or chaparral habitats. Suitable habitat does not occur in the Project area.

Table 6-2. Known and Potential Occurrence of Sensitive Wildlife Species Within and Adjacent to Proposed Project

Scientific Name	Common Name	Status	Potential for Occurrence	Habitat and Known Occurrences
Phrynosoma coronatum blainvillei	Coast (San Diego) horned lizard	CSC	Moderate	Coastal sage, annual grassland, chaparral, oak woodland, riparian woodland, and coniferous forest with loose, fine soils with a high sand fraction; an abundance of native ants or other insects; open areas with limited overstory for basking; and low but relatively dense shrubs for refuge. Suitable habitat does occur in dry areas of the Project site and the species has been documented within 3 miles of the Project area.
Salvadora hexalepis virgultea	Coast patch-nosed snake	CSC	Low	Brushy or shrubby vegetation in coastal Southern California. This species has not been documented in the Project area.
Thamnophis hammondii	Two-striped garter snake	CSC	Moderate	Permanent streams, intermittent creeks, vernal pools. Suitable habitat does occur within the Project area. This species has been documented within 5 miles of the Project area.
Xantusia henshawi henshawi	Granite night lizard	CSC	Low	Restricted to narrow microenvironment of rocky outcrops and/or flaked granite. Suitable habitat does not occur in the Project area.
BIRDS				
Accipiter cooperii	Cooper's hawk	MSHCP	Present	Nests in woodlands, especially riparian growths and residential areas. This species has been observed foraging near the Project area.
Accipiter striatus	Sharp-shinned hawk		Low	Habitat consists of a variety of woodlands with high canopy and proximity to open areas. Suitable foraging habitat may occur in open grasslands and agricultural fields near the Project area.
Agelaius tricolor	Tricolored blackbird	CSC	Moderate	Freshwater marshes, uplands, and agricultural fields. Suitable habitat occurs in the Project area.

Table 6-2. Known and Potential Occurrence of Sensitive Wildlife Species Within and Adjacent to Proposed Project

Scientific Name	Common Name	Status	Potential for Occurrence	Habitat and Known Occurrences
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	CSC	High	Open scrub habitats and brushy slopes with grassy patches. This species has been documented within 3 miles of the Project area.
Amphispiza belli belli	Bell's sage sparrow	CSC	Moderate	Coastal sage scrub and chaparral. This species has been documented downstream of Project areas near the confluence with Santa Margarita River
Aquila chrysaetos	Golden eagle	FP, CSC, MSHCP	Moderate	Undeveloped open terrain with grassland, pasture, sage scrub, and open woodland; regular inhabitant of rugged foothills and backcountry terrain with scattered farms, grassland valleys, and rock outcrops, as well as lakes and rivers. This species is known from the Santa Rosa Plateau and may forage in the Project area.
Athene cunicularia	Burrowing owl (burrow sites)	CSC, MSHCP	Moderate	Open lowlands including grasslands, desert scrub, and agricultural areas. Suitable may occur in and near Project areas. This species has been documented within 2 miles of the Project area (CNDDB, 2012).
Buteo regalis	Ferruginous hawk	CSC	Moderate (migrant)	Common in southern California grasslands and agricultural areas from mid-September to early April. This species may be found foraging in or adjacent to the Project area.
Buteo swainsoni	Swainson's hawk	ST	Moderate (migrant)	Developed, non-native grassland, coastal sage scrub, agricultural fields, and chaparral for foraging. Suitable foraging habitat may occur within or near the Project area..
Campylorhyncus bruneicapillus sandiegensis	San Diego cactus wren	CSC	Low	Coastal sage scrub with cacti for nesting. Suitable habitat for this species does not occur within Project area.

Table 6-2. Known and Potential Occurrence of Sensitive Wildlife Species Within and Adjacent to Proposed Project				
Scientific Name	Common Name	Status	Potential for Occurrence	Habitat and Known Occurrences
Circus cyaneus	Northern harrier	CSC	Moderate	Open habitats, meadows, grasslands, coastal sage scrub, chaparral. Has been documented within 5 miles of Project areas (CNDDB, 2012).
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	FSC, SE	Low	Cottonwood-willow riparian habitat. This species has been detected within 2 miles of Project areas (CNDDB, 2012). Although riparian habitat is present in the Project area it is limited to narrow stringers of willows and cottonwoods often less than one tree in width.
Tachycineta bicolor	Tree swallow	MSHCP	Moderate	The tree swallow can be found in wet habitats like flooded meadows, marshes, lakeshores, streams, and open areas near woods has been documented within 5 miles of Project areas (CNDDB, 2012).
Cypseloides niger	Black swift	CSC	Low	Rugged terrain and coastal cliffs. Suitable habitat does not occur in the Project area.
Dendroica petechia brewsteri	Yellow warbler	CSC, MSHCP	High	Riparian habitat. Although highly urbanized riparian habitat in the Project area may support his species.
Elanus leucurus	White-tailed kite	DFGFP, MSHCP	High	Low elevation, open grasslands, agricultural fields, wetlands, oak woodlands; uses areas with dense canopies for cover. This species has been detected at the upstream terminus of the Project near the proposed detention basin and may periodically forage in the river channel.
Empidonax traillii extimus	Southwestern willow flycatcher	FE, SE MSHCP	Moderate	Dense structured riparian thickets. This species has not been documented in the Project area but has been observed in downstream areas of the Santa Margarita River. Habitat conditions in the Project area would likely only support a migrant bird. Nesting habitat is marginal.

Table 6-2. Known and Potential Occurrence of Sensitive Wildlife Species Within and Adjacent to Proposed Project

Scientific Name	Common Name	Status	Potential for Occurrence	Habitat and Known Occurrences
Eremophila alpestris actia	California horned lark	CSC	High	A variety of open habitats lacking trees and shrubs. This species has been documented within 2 miles of the Project site (CNDDB, 2009)
Falco columbarius	Merlin	FP, CSC	Low	Breed in open country and winter in open grasslands, agricultural fields. This species has not been documented in the Proejct area.
Falco mexicanus	Prairie falcon	CSC	Low	Forages in open arid areas; requires cliffs for nesting. Suitable foraging habitat may occur within or near Project areas.
Falco peregrines	Peregrine falcon	SE**,** FP	Low	Large variety of open habitats; breeds in woodland, forest, and coastal habitats. Suitable foraging habitat occurs within or near Project areas.
Icteria virens	Yellow-breasted chat	CSC	Present	Dense riparian thickets of willow and other brushy tangles near watercourses. This species was detected in Project area during surveys completed in 2003.
Lanius ludovicianus	Loggerhead shrike	CSC	Low	Open habitats with sparse shrubs and trees, other perches, bare ground, and low or sparse herbaceous cover and riparian woodlands. This species has not been documented in the Project area.
Plegadis chihi	White-faced ibis	CSC	Low	Nest in dense marsh vegetation near foraging areas in shallow water or muddy fields. This species has not been documented in the Project area.
Polioptila californica californica	Coastal California gnatcatcher	FT, CSC	High	Low, coastal sage scrub. This species has been detected foraging at the downstream portion of Phase I, within 0.25 miles of the Phase II project area. Phase II does not support habitat for this species, however the bird may forage within the project area.

Table 6-2. Known and Potential Occurrence of Sensitive Wildlife Species Within and Adjacent to Proposed Project				
Scientific Name	Common Name	Status	Potential for Occurrence	Habitat and Known Occurrences
Progne subis	Purple martin	CSC	Low	Valley foothill and montane hardwood and hardwood-conifer woodland, coniferous, and riparian habitats. This species has not been documented i in the Project area.
Vireo bellii pusillus	Least Bell's vireo (nesting)	FE, SE, MSHCP	Present	Summer resident of cottonwood-willow forest, oak woodland, shrubby thickets, and dry washes with willow thickets at the edges. Nesting vireo has been detected in two locations upstream of Rancho California Road.
Xanthocephalus xanthocephalus	Yellow-headed blackbird	CSC	Present	Marshes with tall emergent vegetation. This species was documented in the project area during surveys conducted in 2006 (Varanus).
MAMMALS				
Antrozous pallidus	Pallid bat	CSC	Low	Deserts, grasslands, shrublands, woodlands, and forests with rocky areas for roosting; very sensitive to disturbance at roosting sites. While roosting habitat is not present on the Project Site this species may utilize Project areas for foraging.
Chaetodipus californicus femoralis	Dulzura (California) pocket mouse	CSC	Low	Dry shrublands and lowland grasslands. This species has been documented within 3 miles of Project areas (CNDDB, 2009).
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse	CSC	Low	Coastal scrub, chaparral, disturbed grasslands. Limited suitable habitat may be present in Project areas. This species has been documented within 5 miles of the Project.
Chaetodipus fallax pallidus	Pallid San Diego pocket mouse	CSC	Low	Sage scrub, chaparral, non-native grasslands. Limited suitable habitat may be present in Project areas.
Dipodomys merriami parvus	San Bernardino kangaroo rat	FE, CSC	Low	Undisturbed Riversidian alluvial sage scrub with sandy loam soils. This species has not been documented in the Project area.

Table 6-2. Known and Potential Occurrence of Sensitive Wildlife Species Within and Adjacent to Proposed Project				
Scientific Name	Common Name	Status	Potential for Occurrence	Habitat and Known Occurrences
Dipodomys stephensi	Stephens' kangaroo rat	FE, ST	Low	Annual grasslands with sparse perennial vegetation. Some portions of the Project area may provide limited suitable habitat. This species has been documented within 1 mile of the Project.
Eumops perotis californicus	Western mastiff bat	CSC	Low	Open semi-arid to arid; conifer and deciduous woodlands, coastal scrub, chaparral, grasslands; roosts in crevices of cliffs, structures. While roosting habitat is not present on the Project Site this species may utilize Project areas for foraging.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	CSC	Present	Non-native grasslands, Riversidean sage scrub, alluvial fan sage scrub, chaparral, disturbed. This species has been detected in the Project area.
Lynx rufus	Bobcat	MSHCP	Low	Most closely associated with rocky and brushy areas near perennial water source. This species has not been detected in the Project area.
Neotoma lepida intermedia	San Diego desert woodrat	CSC	Low	Coastal sage scrub, chaparral, desert habitats.
Nyctinomops femorosaccus	Pocketed free-tailed bat	CSC	Low	Arid areas, including pine-juniper woodlands, desert scrub, desert wash, desert riparian, palm oasis. While roosting habitat is not present on the Project Site this species may utilize Project areas for foraging.
Onychomys torridus Ramona	Southern grasshopper mouse	CSC	Low	Desert areas with low to moderate shrub cover. This species has not been detected in the Project area.
Perognathus longimembris internationalis	Jacumba pocket mouse	CSC	Low	Lower elevation grasslands and coastal scrub; open ground with fine, sandy soils. Dry portions of the Project area may provide suitable habitat for this species.

Table 6-2. Known and Potential Occurrence of Sensitive Wildlife Species Within and Adjacent to Proposed Project

Scientific Name	Common Name	Status	Potential for Occurrence	Habitat and Known Occurrences
Perognathus longimembris brevinasus	Los Angeles pocket mouse	CSC	Low	Lower elevation grasslands and coastal scrub; open ground with fine, sandy soils. Dry portions of the Project area may provide suitable habitat for this species.
Puma concolor	Mountain lion	SP, MSHCP	Low	Rocky areas, ledges, cliffs within chaparral and open woodlands. This species has not been detected in the Project area.

FT = Federally Threatened Species
FE = Federally Endangered Species
FSC = Federal Species of Special Concern
PT = Federally Proposed Threatened Species
FP = Federally Protected Species
ST= State Threatened species
SE = State Endangered Species
CSC = California Species of Special Concern
DFGFP = CDFG Fully Protected Species
SP = State Fully Protected Species
MSHCP = MSHCP Murrieta Creek Phase II Planning Species

Results of LBVI Protocol Surveys

In 2011, 2010 and 2008, protocol surveys were conducted for the least Bell's vireo (LBVI) to support the permitting and approval process for the proposed construction in the Phase II project area. During the 3 years of surveys, LBVI were observed at six locations within the Phase II project area. During the 2010 and 2008 surveys, two pairs were detected each year, one of which was observed with a nest and fledgling each year. In 2011, LBVI were detected at three locations (one pair and two individuals) within the Phase II project limits (as shown in the map below), however no evidence of nesting was detected. Occupied LBVI habitat by the pair was estimated at 0.4 acres (see Figure 6-4).

Surveys for the southwestern willow flycatcher were performed concurrently with LBVI in 2008, however no SWWF were detected.

Figure 6-4. Locations of LBVI sighted in Phase II during the2011 LBV Protocol Surveys

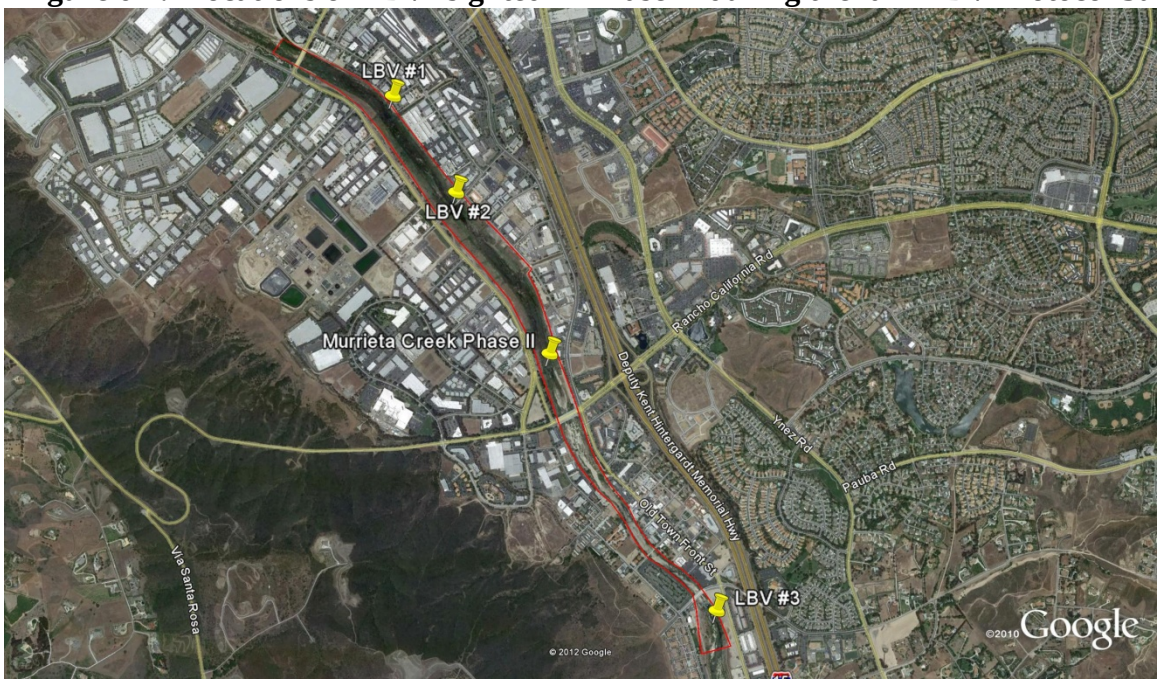
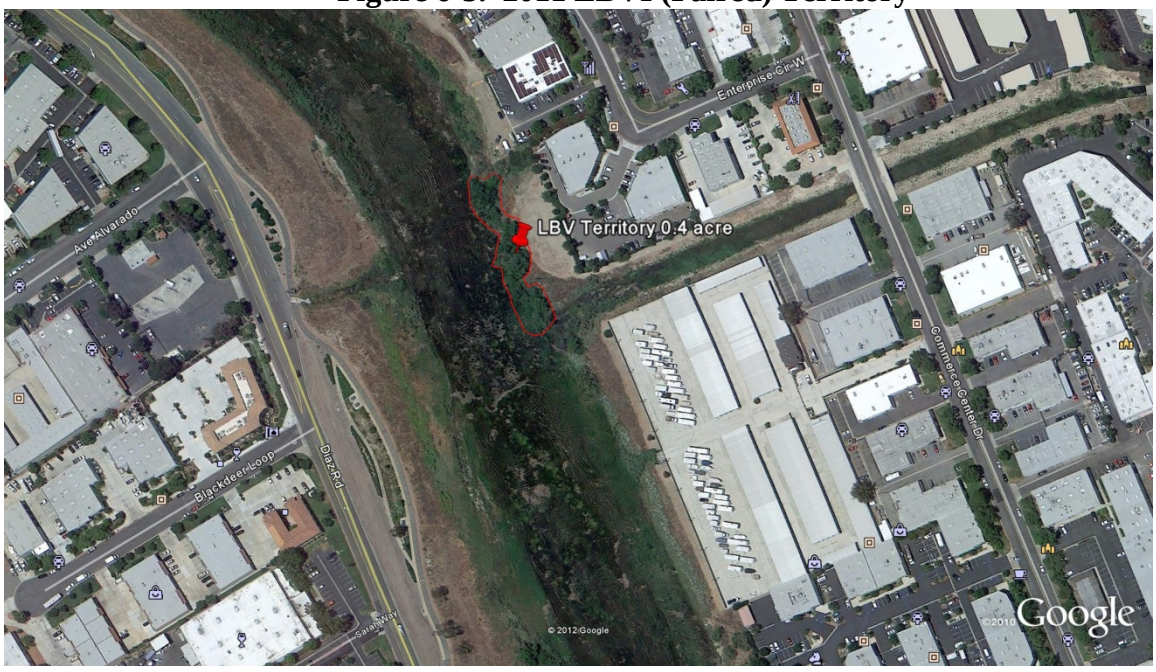


Figure 6-5. 2011 LBVI (Paired) Territory



Past Protocol Surveys

The USACE conducted protocol level surveys for several sensitive wildlife species between April and July 2000, during development of the EIS/EIR. Protocol surveys were conducted for various special status wildlife species including three sensitive bird species: the Federally threatened coastal California gnatcatcher (CAGN) (*Polioptila californica californica*); Federally endangered least Bell's vireo (LBVI) (*Vireo bellii pusillus*); and Federally endangered southwestern willow flycatcher (SWWF) (*Empidonax traillii extimus*); two amphibians: the Federally endangered arroyo southwestern toad (*Bufo microscaphus californicus*); and the Federally threatened California red-legged frog (*Rana aurora draytoni*); one invertebrate: the Federally endangered Quino checkerspot butterfly (*Euphydryas editha quino*); and one reptile: the southwestern pond turtle (*Clemmys marmorata 62orona*), a California species of special concern.

With the exception of the southwestern pond turtle, none of these species were observed within the entire Murrieta Creek project area, including Phase II, between April and July 2000. In the Phase II area, one southwestern pond turtle was observed just downstream of the Main Street bridge.

Yellow-breasted chat (*Icteria virens*), a state species of special concern, and southwestern pond turtle were observed utilizing the Phase I project area during a reconnaissance survey conducted by Aspen biologists in May 2003. Also, in July 2003, the USFWS notified the Corps that a CAGN had been observed foraging within the Phase I project area during their on-site meeting. Yellow-breasted chat was later observed in Phase II during LBVI protocol surveys in 2011.

While CAGN has not been observed in the Phase II project area, due to the adjacency of Phase I to Phase II and the close proximity to critical habitat in the downstream portions of the Phase II area, CAGN may use the Phase II site for foraging.

Plants

A list of federally and state-listed plants, along with sensitive plants as listed by the California Native Plant Society (CNPS) are shown in Table 6-3 below. The California Natural Diversity Database (CNDDB) search and supplemental investigations listed 31 special-status plant species within the vicinity of the study area.

Many of these species are not associated with the vegetation communities found within the Murrieta Creek study area or are located in similar habitats but of higher quality, found outside the study area. Futhermore, the periodic and often frequent flooding of Murrieta Creek may limit the potential for many species to occur.

No federally or state listed plant species have moderate to high potential to occur within the Phase II project area. Two CNPS list 1B species have potential to occur with the project area, including chapparal sand-verbena (*Abronia villosa var. aurita*) and smooth tarplant (*Hemizonia pungens* ssp. *laevis*). Smooth tarplant has been known to occur along Murrieta Creek and has

been observed during surveys of the creek within the Phase II project area. This species is also listed in the MSHCP for Riverside County.

No other species have moderate to high potential to occur within the Phase II project area.

Sensitive plant species, including their status, habitat requirements, and potential to occur within the study areas are presented in Table 6-3.

Table 6-3 Endangered, Threatened, and Sensitive Plant Species with the Potential to Occur in the Vicinity of the Proposed Project

Scientific Name	Common Name	Status	Potential for Occurrence	Blooming Period	Known and Potential Occurrence and Elevational Limits
Abronia villosa var. Aurita	Chaparral sand-verbena	1B.1	Moderate	Jan-Sep	Chaparral, coastal scrub, desert dunes (sandy); 80-1600 m (262-5249 ft). This species has been documented just upstream of Project areas (CNDDB, 2009).
Allium marvinii	Yucaipa onion	1B.1, NEPS	Low	Apr-May	Chaparral (clay openings); 760-1065 m (2493-3494 ft). Project area elevation lie well below the known range for this species.
Allium munzii	Munz's onion	FE, ST, 1B.1, NEPS	Low	Mar-May	Chaparral, cismontane woodland, coastal scrub, grasslands; 300-1070 m (984-3510 ft). This species has not been documented near Project areas.
Astragalus pachypus var. jaegeri	Jaeger's milk-vetch	1B.1	Low	Dec-Jun	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland (sandy or rocky); 365-915 m (1197-3002 ft). The known elevation range for this species is above that of the Project area.

Table 6-3 Endangered, Threatened, and Sensitive Plant Species with the Potential to Occur in the Vicinity of the Proposed Project

Scientific Name	Common Name	Status	Potential for Occurrence	Blooming Period	Known and Potential Occurrence and Elevational Limits
Atriplex 64oronate var. notatior	San Jacinto Valley crownscale	FE, 1B.1	Low	Apr-Aug	Playas, valley and foothill grassland, vernal pools (alkaline); 139-500 m (456-1640 ft). This species has not been documented near Project areas.
Atriplex parishii	Parish's brittlescale	1B.1	Low	Jun-Oct	Chenopod scrub, playas, vernal pools; 25-1900 m (82-6233 ft). This species has not been documented near Project areas.
Berberis nevinii	Nevin's barberry	FE, SE, 1B.1	Low	Mar-Apr	Chaparral, cismontane woodland, coastal scrub, riparian scrub / sandy or gravelly); 295-825 m (970-2706 ft). This species has been documented within 5 miles of Project areas (CNDDB, 2009).
Brodiaea filifolia	Thread-leaved brodiaea	FT, SE, 1B.1	Low	Mar-Jun	Chaparral openings, cismontane woodland, coastal scrub, playas, valley and foothill grasslands, and vernal pools/ often clay; 40-1220 m (131-4003 ft). This species has been documented within approximately 6.0 miles of Project areas (CNDDB, 2009).

Table 6-3 Endangered, Threatened, and Sensitive Plant Species with the Potential to Occur in the Vicinity of the Proposed Project

Scientific Name	Common Name	Status	Potential for Occurrence	Blooming Period	Known and Potential Occurrence and Elevational Limits
Calochortus plummerae	Plummer's mariposa lily	1B.2	Low	May-Jul	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grasslands (granitic, rocky); 100-1700 m (328-5577 ft). Closest reported documentation is more than 5 miles from Project areas.
Centromadia pungens ssp. Laevis	Smooth tarplant	1B.1	Present	Apr-Sep	Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland (alkaline); 0-480 m (0-1574 ft). This species has been detected in Project areas.
Chorizanthe parryi var. parryi	Parry's spineflower	1B.1	Low	Apr-Jun	Chaparral, coastal scrub (sandy or rocky openings); 40-1705 m (131-5594 ft). This species has been documented within approximately 6 miles of Project areas.
Chorizanthe polygonoides var. longispina	Long-spined spineflower	1B.2	Low	Apr-Jul	Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland (often clay); 30-1530 m (98-5020 ft). This species has been documented within approximately 3 miles of the Project site.

Table 6-3 Endangered, Threatened, and Sensitive Plant Species with the Potential to Occur in the Vicinity of the Proposed Project

Scientific Name	Common Name	Status	Potential for Occurrence	Blooming Period	Known and Potential Occurrence and Elevational Limits
Deinandra mohavensis	Mojave tarplant	SE, 1B.3	Low	Jul-Oct (Jan)	Chaparral, coastal scrub, riparian scrub (mesic); 640-1600 m (2100-5249 ft). Project areas are below the known elevation range of this species.
Dodecahema leptoceras	Slender-horned spineflower	FE, SE, 1B.1, NEPS	Low	Apr-Jun	Chaparral, cismontane woodland, coastal scrub (alluvial fan) / sandy; 200-760 m (660-2493 ft). This species has not been documented near Project areas.
Dudleya multicaulis	Many-stemmed dudleya	1B.2, NEPS	Low	Apr-Jul	Chaparral, coastal scrub, valley and foothill grassland / often clay; 15-790 m (49-2590 ft). This species has not been documented near Project areas.
Dudleya viscida	Sticky dudleya	1B.2	Low	May – Jun	Coastal Scrub, Coastal Bluff Scrub and Chaparral from sea level to 550m (0 – 1800 ft.) in elevation.
Eriastrum densifolium ssp. sanctorum	Santa Ana River woollystar	FE, SE, 1B.1	Low	May-Sep	Chaparral, coastal scrub (alluvial fan) / sandy or gravelly; 91-610 m (298-2001 ft). This species has not been documented near Project areas.

Table 6-3 Endangered, Threatened, and Sensitive Plant Species with the Potential to Occur in the Vicinity of the Proposed Project

Scientific Name	Common Name	Status	Potential for Occurrence	Blooming Period	Known and Potential Occurrence and Elevational Limits
Galium californicum ssp. primum	California bedstraw	1B.2	Low	May-Jul	Chaparral, lower montane coniferous forests; shady areas; 1350-1700 m (4429-5577 ft). The known elevation range for this species is well above that of Project areas.
Harpagonella palmeri	Palmer's grapplinghook	4.2	Low	Mar – May	Chaparral, Coastal Scrub, Valley and Foothill Grassland from 15 – 830 m (50 – 2,725 ft) in elevation.
Horkelia cuneata ssp. puberula	Mesa horkelia	1B.1	Low	Feb-Jul (Sep)	Chaparral, cismontane woodland, coastal scrub (sandy or gravelly); 70-810 m (230-2657 ft).
Lasthenia glabrata ssp. Coulteri	Coulter's goldfields	1B.1	Low	Feb-Jun	Marshes and swamps, playas, vernal pools; up to 1220 m (4003 ft).
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	1B.2	Low	Jan-Jul	Chaparral, coastal scrub; up to 885 m (2903 ft). This species has not been documented near Project areas.
Lilium parryi	Lemon lily	1B.2	Low	Jul-Aug	Lower montane coniferous forests, meadows and seeps, riparian forests; 1220-2745 m (4002-9005 ft). The Project areas are well below the known elevation range for this species.

Table 6-3 Endangered, Threatened, and Sensitive Plant Species with the Potential to Occur in the Vicinity of the Proposed Project

Scientific Name	Common Name	Status	Potential for Occurrence	Blooming Period	Known and Potential Occurrence and Elevational Limits
Mimulus clevelandii	Cleveland's bush monkey flower	4.2	Low	Apr-Jul	Chaparral, lower montane coniferous forest (often in disturbed areas, openings, rocky); 815-2000 m (2,674-6,562 ft). The Project areas are below the known elevation range for this species.
Monardella hpoleuca ssp. Lanata	Felt-leaved monardella	1B.2	Low	Jun – Aug	Chaparral and Cismontane Woodland from 300 – 1,575 m (984 – 5,167 ft) in elevation.
Muhlenbergia californica	California muhly	4.3	Low	Jun-Sep	Chaparral, coastal scrub; stream banks, canyons, moist ditches; 100-2000 m (328-6561 ft)
Nama stenocarpum	Mud nama	2.2	Low	Jan-Jul	Marshes and swamps (lake margins, riverbanks); 5-500 m (16-1640 ft)
Navarretia fossalis	Spreading navarretia	FT, 1B.1, NEPS	Low	Apr-Jun	Chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, vernal pools; 30-1300 m (98-4265 ft)
Navarretia prostrate	Prostrate vernal pool navarretia	1B.1	Low	Apr – May	Coastal Scrub, Valley and Foothill Grassland and Vernal Pools from 15 – 700 m (50 – 2,300 ft) in elevation.
Phacelia stellaris	Brand's phacelia	1B.1, NEPS	Low	Mar-Jun	Coastal scrub, dunes; restricted to sandy benches along Santa Ana River in Riverside County (RCIP, 2003); up to 400 m (1312 ft)

Table 6-3 Endangered, Threatened, and Sensitive Plant Species with the Potential to Occur in the Vicinity of the Proposed Project

Scientific Name	Common Name	Status	Potential for Occurrence	Blooming Period	Known and Potential Occurrence and Elevational Limits
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	2.1, NEPS	Low	May-Sep	Meadows and seeps, marshes and swamps, riparian forest, vernal pools / alkaline; 5-435 m (16-1427 ft)

FE –Federally listed Endangered FT – Federally listed Threatened SR – California Rare SE – California-listed Endangered ST – California-listed Threatened MSHCP – Murrieta Creek Phase II MSHCP Planning Species NEPS – Narrow Endemic Plant Species	CNPS 1B – Rare or endangered in California and elsewhere CNPS 2 – Rare or endangered in California, more common elsewhere CNPS 3 – More information needed (Review List) CNPS 4 – Limited Distribution (Watch List) 0.1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat) 0.2 = Fairly endangered in California (20-80% occurrences threatened) 0.3 = Not very endangered in California (<20% of occurrences threatened or no current threats known)

6.2 Environmental Effects

General
The significance criteria from the 2000 Final EIS/EIR for the Murrieta Creek Flood Control Project were used to determine whether impacts to biological resources from the Phase II Proposed Action are considered significant. These criteria include:

- Substantial loss of riparian habitat, coastal sage scrub vegetation;
- Substantial loss of individuals of a Federally-listed species or designated critical habitat; and/or
- Substantial impedance to the movement or migration of fish or wildlife.

Impacts on biological resources were evaluated in comparison to those impacts that were originally identified and mitigated for in the 2000 Final EIS/EIR. Any incremental impacts or changes identified herein that are additional to those identified in the previous documents are addressed accordingly.

Direct impacts would occur when sensitive biological resources are altered, disturbed, destroyed, or removed during construction of the proposed project. Direct impacts would result from such

activities as removal, grading, or brushing of vegetation, or the mechanical crushing from equipment and vehicles. Other direct impacts could include loss of foraging, nesting, or burrowing habitat for wildlife species, and habitat disturbance that results in unfavorable substrate conditions to allow vegetative regeneration or results in the introduction of exotic invasive species. Noise from construction can also directly affect nesting birds or wildlife movement, depending on the time of year and time of day the construction occurs.

Potential indirect impacts resulting from implementation of the proposed project include increased erosion and sedimentation, changes to hydrology, or long-term degradation of natural vegetation communities. These changes may, in turn, affect vegetation communities and sensitive species.

Both direct and indirect impacts can be classified as either temporary or permanent, depending on the duration of the impact. Temporary impacts may be considered to have reversible effects on biological resources. Permanent impacts are those impacts resulting in the irreversible removal of biological resources, such as the permanent removal of habitat.

Project-related impacts to vegetation, special-status plants, and special-status wildlife have previously been analyzed in the 2000 Final EIS/EIR. The 2000 Final EIS/EIR included a series of mitigation measures that would be implemented to compensate for impacts of the Murrieta Creek Flood Control Project. Construction-related environmental commitments from the 2000 Final SEIS/EIR, and additional commitments developed for this document, will be implemented. A full list of environmental commitments can be found in Chapter 9 of this document.

6.2.1 Construction

6.2.1.1 Original Phase II Plan (No Action Alternative)

Under the No Action alternative, the project would be the same as the approved recommended plan and would result in the construction of previously authorized flood control features that were developed and evaluated in detail in the 2000 EIS/EIR. These features, many of which are also part of the proposed modified project, include channel modification (i.e., widening, and deepening), levee construction, construction of a drop structure, gabions (rather than the currently proposed soil cement), and operation and maintenance for flood risk management. The footprint for the Modified Phase II Plan (approximately 13,000 feet) is slightly greater than that of the No Action Alternative (2000 EIS/EIR approved recommended plan – approximately 12,800 feet). In addition, the 2000 EIS/EIR plan proposed to construct/replace a Main Street Bridge that would increase the impacts to wetland and riparian habitat as compared to the proposed Modified Phase II Plan. The No Action alternative would also create a smaller unmaintained riparian corridor/terrace that would vary in width between 20-60 feet, as compared to the currently proposed average width of approximately70 feet (ranging from 20 to 150 feet in width, which would accommodate an additional 24.6 acres of native vegetation).

With or without the project, the RCFC&WCD would continue their ongoing annual channel maintenance, although like the Modified Phase II plan, the riparian terrace would not be subject to mowing or excavation.

For comparison to the detailed modifications, Table 3-1 in Chapter 3 of this SEA/EIR provides a comparison matrix of the features and parameters of the Modified Phase II Plan and original Phase II Plan detailed in the 2000 EIS/EIR.

In conclusion, the environmental impacts of the No Action alternative (construction of the original plan) would be similar in many respects to those described for the currently proposed project, although benefits resulting from a narrower riparian terrace would be less.

Impacts of a “No Construction” alternative were addressed as the No Action alternative in the 2000 EIS/EIR.

6.2.1.2 Modified Phase II Plan (Preferred Alternative)

Impacts to biological resources relative to construction of the Murrieta Creek Flood Control Project have been extensively analyzed in the 2000 Final EIS/EIR. Impacts to biological resources are expected from removal of vegetation, construction noise, and water turbidity. Environmental commitments and mitigation measures proposed to lessen the impact of potential effects are outlined in Section 20.0 of this SEA/EIR.

VEGETATION AND HABITAT

Implementation of the proposed Modified Phase II Plan (recommended plan) would result in both temporary and permanent effects to native and non-native vegetation within the proposed Phase II project area of the Murrieta Creek Flood Control Project. Table 6-4 below provides details on the specific habitat within the channel and right of way (ROW), excluding any buildings and the existing recreational trail on the west side of the creek, that would be disturbed as a result of implementation of the proposed Phase II project. The most substantial change (benefit) compared to existing conditions is in terms of future maintenance. Under the current, authorized and permitted CMP, RCFC&WCD may annually mow up to 62.4 acres of wetland, riparian and other habitat types growing within the channel invert, and remove sediment when certain trigger points are met. Less frequent mowing (every 2 to 4 years) and sediment removal may occur within an additional 8.4 acres of "vegetated corridor." With the proposed Modified Phase II Plan, the routine maintenance area is reduced to approximately 41 acres within the channel invert. Approximately 24.6 acres of riparian habitat will be restored within a vegetated corridor that will no longer be subject to mowing or sediment removal, over 20 acres of coastal sage scrub will be established on the banks, and 46 acres of non-native habitat will be removed and replaced with native vegetation. The following is a general summary of impacts and benefits within different project features:

CHANNEL INVERT: The proposed Phase II project would widen the existing channel. Routine maintenance (mowing) will continue to occur in this area. This activity, along with occasional flood flows, keeps the marsh, open water and low-growing riparian habitats in an early successional state. Most of this area will not be permanently affected by the proposed construction, and approximately 24.6 acres along the eastern side of the channel will be removed from the channel maintenance area and planted as an unmaintained riparian corridor/terrace (see TERRACE below). The channel invert may be temporarily affected by construction; all temporarily impacted areas will be re-seeded and/or allowed to naturally recover, with active non-native removal continuing for a minimum of 5 years post-construction.

RIPARIAN TERRACE: An elevated portion of the channel invert (floodplain terrace) on the east bank will be regraded and re-planted with riparian and riparian scrub habitats. Existing conditions in this area include a mix of native, non-native and disturbed habitats. The final terrace elevation will be either at or slightly lower than the existing elevation in this area, and approximately 2' higher than the rest of the channel invert. This terrace will not be mowed or excavated due to routine channel maintenance, although non-native habitat removal will occur as needed.

SOIL CEMENT SLOPES AND MAINTENANCE ROAD: Through Old Town Temecula, from downstream of Rancho California Road to 1st Street, an approximately 3,900 foot reach of the channel bank would be protected with soil cement. Along with a maintenance road that would continue along the entire project length, access roads and ramps, these features will permanently eliminate 11.82 acres of vegetation (primarily non-native) that currently exists on and above those banks. To compensate, native vegetation would be established on the terrace and on riprap slopes, in place of existing non-native or disturbed habitats.

RIPRAP (VEGETATED) SLOPES: The remainder of the channel banks within the Phase II project area would be protected with riprap on the bottom 8 feet of the slope. The riprap would be covered with soil and the entire bank slope would be planted with upland coastal sage scrub species. Existing slope conditions are a mix of native and non-native habitats.

Direct impacts to native and non-native plant communities would occur as a result of the removal of vegetation during bank and terrace construction activities. These ground-disturbing construction activities include clearing and grading for construction preparation, and establishing a batch plant, staging area, equipment storage area, and ROW outside of the channel. Approximately 23 acres of habitat (primarily non-native) will be impacted within the ROW. This area will be restored with native vegetation. Implementation of the proposed project would disturb a total of approximately 121.4 acres of habitat within the proposed Phase II of the Murrieta Creek Flood Control Project (including channel and ROW), of which 109.4 acres would be temporary and 12 acres would be permanent. Temporary and permanent impacts will be mitigated on-site through removal of non-native vegetation, restoring native habitat in its place, increasing the amount of vegetation on the channel slopes, and decreasing the area subject to routine maintenance.

Potential indirect impacts to native vegetation communities could include alterations in existing topography and hydrologic regimes, the accumulation of fugitive dust, disruption of native seed banks due to ground disturbance, and the colonization of non-native, invasive plant species.

Temporary Impacts to Vegetation

The Modified Phase II Plan would have the potential to result in the temporary disturbance to approximately 109.4 acres of vegetation and unvegetated areas. Jurisdictional habitats including 0.88 acres of freshwater marsh, 44.52 acres of open channel, 21.56 acres of riparian and riparian scrub habitats would be temporarily disturbed during the proposed project. In addition, project activities may remove/grade 1.4 acres of disturbed Riversidian coastal sage scrub, and 41.01 acres of ornamental/non-native/exotic and unvegetated lands. Channel modification, followed by revegetation of the unmaintained riparian corridor/terrace, would have the beneficial effects of reducing the acreage of disturbed and non-native/exotic habitats and increasing the acreage of aquatic and riparian vegetation communities.

The marshland and open channel area that currently exists in the Phase II project area is subject to regular maintenance and mowing as described in the FMP. Wetland vegetation in most of the channel invert is mowed on an annual basis and sediment is excavated when necessary from the channel bottom to maintain the flood capacity of the creek. As indicated in the original EIS/EIR, these on-going actions limit the functionality of the habitat and limit the long-term establishment of a complex marshland and riparian habitat. Temporary impacts to marshland communities from the proposed project would be minimized by implementation of a re-vegetation plan as well as natural recruitment that is likely to occur with the cessation of construction. This natural passive and active restoration will be supported by a non-native vegetation removal program that will continue for at least 5 years following construction. Within the channel cross-section, the approximately 120-foot wide low-flow channel and invert will continue to be subject to periodic

maintenance, whereas the unmaintained, on average 70-foot wide riparian terrace and side slopes will not be subject to mowing or excavation.

Although construction activities will result in the removal of some southern willow scrub and cottonwood-willow riparian forest habitat, the development and enhancement of the riparian terrace (including removal of existing non-native vegetation) will result in a net increase of high quality riparian and wetland habitat over time. In addition, the increased width of the terrace will provide for an increase in structural diversity and habitat value.

Construction activities will also result in the temporary removal of disturbed Riversidian coastal sage scrub (CSS) on the banks and outer slopes of the channel. With the implementation of the proposed revegetation plan, the amount of CSS will increase dramatically (from 2.16 to 20.4 acres), and impacts will be reduced to less than significant levels.

Temporary impacts will also occur to disturbed upland areas and non-native grasslands. Disturbed areas dominated by invasive non-native species, vacant fields and non-native grassland are not regionally unique and do not qualify as sensitive habitat. As mentioned, the proposed riparian terrace and vegetated slopes will provide an increase in habitat value over the existing disturbed areas.

Permanent Impacts to Vegetation

The Original Phase II Plan would have resulted in the permanent loss of 0.5 acre of cismontane alkali marsh that would be permanently removed as a result of the channel construction. In addition, construction of the Original Phase II Plan would have impacted more coastal sage scrub habitat than the Modified Phase II Plan. Permanent losses to these habitats were identified in the EIS/EIR and a mitigation plan that was developed to reduce impacts to less than significant levels. Channel and bank construction as proposed in the Modified Phase II Plan would not result in a permanent net loss of sensitive habitat, although it may result in a type conversion from marsh or open channel habitats to later successional stages such as riparian habitat, due to the proposed reduction in maintenance. Permanent losses will be avoided by incorporation of project design measures including the development of an unmaintained riparian terrace and implementation of the revegetation plan. Restoration efforts within the Modified Phase II Plan would result in a net benefit to populations of Riversidian coastal sage scrub, jurisdictional wetlands and riparian forests.

Table 6-4 Native Habitat Disturbed and Created by Proposed Project (includes 23.14 acres of ROW outside of channel banks)

Habitat Description	Acres Temporarily Disturbed by Project Construction	Acres Permanently Impacted by Project Construction	Acres Actively Restored or Created by Project	Net Gain/Loss*
Mulefat scrub	4.47	1.14	24.62 (no longer subject to mowing or sediment removal)	+0.42
Riparian scrub	16.28	1.3		
Cottonwood willow riparian	0.81	0.20		
Subtotal Riparian Habitat	21.56	2.64		
Freshwater Marsh/Wetland	0.88	0.03	41.11 (in Channel Invert)**	-4.61***
Open Water/Open Channel	44.52	0.29		
Subtotal Open channel/Wetland	45.4	0.32		
Coastal sage scrub (CSS)	1.4	0.75	20.40 (on vegetated slopes)	+18.25
Subtotal CSS	1.4	0.75		
			In addition to in-channel restoration cited above, 23.14 acres of native landscaping will be established in the ROW, and 12.09 acres of unvegetated area will remain.	
Ornamental/exotic/ nonnative/disturbed	38.8	7.63		
Unvegetated/Developed	2.21	0.64		
Subtotal Nonnative and Barren/Developed	41.01	8.27****		

* Additional acres of habitat created by the project is applied as mitigation for temporary and permanent impacts
** The 41.11 acres of early successional riparian, wetland, open water/channel would continue to be regularly maintained (mowed) in the channel invert to maintain design flow conveyance as part of long term operation and maintenance of the project.
*** The "loss" of wetland/open water area is primarily a type conversion to riparian and CSS habitats, as this acreage would no longer be within the routine maintenance area and will be able to develop into later successional habitat types.
**** The 8.27 acres disturbed by soil cement slopes and maintenance/access roads are mitigated through habitat restored on the vegetated slopes (19.20 acres excess from coastal sage scrub restored/created)

Special-Status Plant Species

Some smooth tarplant (CNPS List 1B) that may occur within the project area may be disturbed by heavy equipment and vehicles accessing portions of the creek banks or removed during grading of the creek channel. The soil along the channel slopes and on the creek bank are expected to be provide a seed source for the smooth tarplant. Populations of smooth tarplant present in other reaches of the creek, upstream and downstream of the Phase II project area would not be disturbed as a result of Phase II construction.

Other sensitive plant species, including the chapparal sand-verbena, has the potential to occur within the study area. However, this species has not been found during past reconnaissance

vegetation surveys. If present, impacts would be similar as described above for the smooth tarplant for the Modified Phase II Plan as well as the Original Phase II Plan. Impacts are not considered significant.

Jurisdictional Habitats

Direct effects to jurisdictional waters of the United States would occur from the proposed Phase II project, the use of temporary work areas, temporary excavation of the active channel, and vegetation clearing and grubbing. Implementation of the proposed project would temporarily impact approximately 66.96 acres of native riparian and marsh vegetation and open channel.

To minimize and compensate for the effects of the proposed project on jurisdictional waters, the Corps would implement mitigation measures **B1** which requires the restoration of disturbed areas at the conclusion of construction. To restore lost functions, the Corps would restore degraded vegetation communities present in the project area, including 41.11 acres of marsh and open channel habitats, and establish 24.62 acres of riparian terrace habitat and 20.40 acres of coastal sage scrub within the proposed project limits. Adherence to the identified mitigation measures would reduce impacts to less than significant levels.

WILDLIFE

The primary impacts of the proposed project on wildlife species are the disruption of habitat and the temporary displacement of wildlife. Other elements of the proposed project that could potentially affect wildlife and wildlife habitat, include construction-related noise disturbance, disruption of movement, and potential wildlife mortality (for any individuals that do not or cannot evacuate the construction zone).

Short-term effects of construction on wildlife resources would result from wildlife avoidance of the immediate construction zone. Noise and other disturbances caused by heavy equipment and construction crews may cause wildlife to move away from the construction zone.

Vegetation clearing and soil excavation could result in the mortality of individual small reptiles/mammals. Species with limited mobility or that occupy burrows within the construction zones could be crushed during clearing and grading activities (Trombulak and Frissell 2000).

Riparian vegetation provides necessary foraging, shelter, and nesting habitat for many bird species (Rottenborn, 1999; Bolger et al., 1997). The project area contains suitable foraging and nesting habitat for both resident and migratory birds. Ground-disturbing activities have the potential to disturb vegetation utilized by wildlife, including nesting birds. Construction noise could also disrupt breeding birds by interfering with their ability to hear vocalizations when seeking mates, establishing territories, or warning of predators. Excessive noise and human presence could also cause some individuals to abandon their nests.

With the exception of a few non-native birds, such as European starling, any active nest is fully protected against take pursuant to the Migratory Bird Treaty Act (MBTA) and relevant U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) codes.

Therefore, minimization measures related to seasonal exclusion (i.e., vegetation clearing outside of the nesting season), pre and post-construction surveys, and/or the presence of a qualified biological monitor were included to avoid or minimize impacts. Details of minimization and mitigation techniques are described in Chapter 9 of this SEA.

Special-Status Wildlife Species

A detailed description of the sensitive wildlife species with potential to occur in the project area can be found in Section 3.5 of the 2000 EIS/EIR. Four federally or state listed threatened or endangered wildlife species have moderate to high potential to occur or are present within the Phase II project area. These include least Bell's vireo (*Vireo bellii pusillus*) (Federally Endangered, State Endangered), coastal California gnatcatcher (*Polioptila californica californica*) (Federally Threatened), southwestern willow flycatcher (*Empidonax traillii extimus*) (Federally Endangered, State Endangered), and Swainson's hawk (*Buteo swainsoni*) (State Threatened). In addition, several birds protected by the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (CFGC) have the potential to nest on-site or in close proximity.

Of these species, the least Bell's vireo (LBVI) has been observed in the project area. The coastal California gnatcatcher (CAGN) has been observed foraging downstream of the project area, and critical habitat occurs west of the project area ranging from 0.15 to 1.15 miles away.

FEDERALLY LISTED SPECIES

Least Bell's vireo

Suitable least Bell's vireo (LBVI) habitat occurs within the Phase II project area. Protocol surveys in 2011 documented a total of four LBV (one pair [nesting was not ascertained] and two individuals) in three different locations (see Figure 6-4).

Direct Effects: Construction activities would result in temporary, direct loss of 1.56 acres of riparian habitat that was occupied by LBVI detected in 2011. As discussed above, overall, approximately 21.6 acres, including the occupied 0.4 acres, of riparian habitat would be temporarily disturbed by the proposed project. A majority of this riparian habitat, excluding the occupied 0.4 acres is subject to regular maintenance (i.e., mowing) by the RCFC&WCD per the CMP. The project would also result in approximately 2.6 acres of permanent impacts to riparian habitat. Construction of the flood control channel improvements would result in the displacement of LBVI, as the available habitat would be removed. Timing of vegetation removal activities outside the breeding season would prevent direct impacts to active nests, loss of eggs, and impacts to reproductive rates.

Indirect Effects: Construction of activities may result in indirect effects to LBVI, including increased levels of noise, accumulation of dust, and the introduction of non-native invasive plant species. Increased noise levels may impact vocalizations and potential active nests in any adjacent habitat, which may temporarily depress breeding in the immediate vicinity of the project. Displacement of birds from the project area may also result in increased competition as

they seek mates and resources in adjacent territories along the Murrieta Creek outside of the Phase II project area and in the surrounding region.

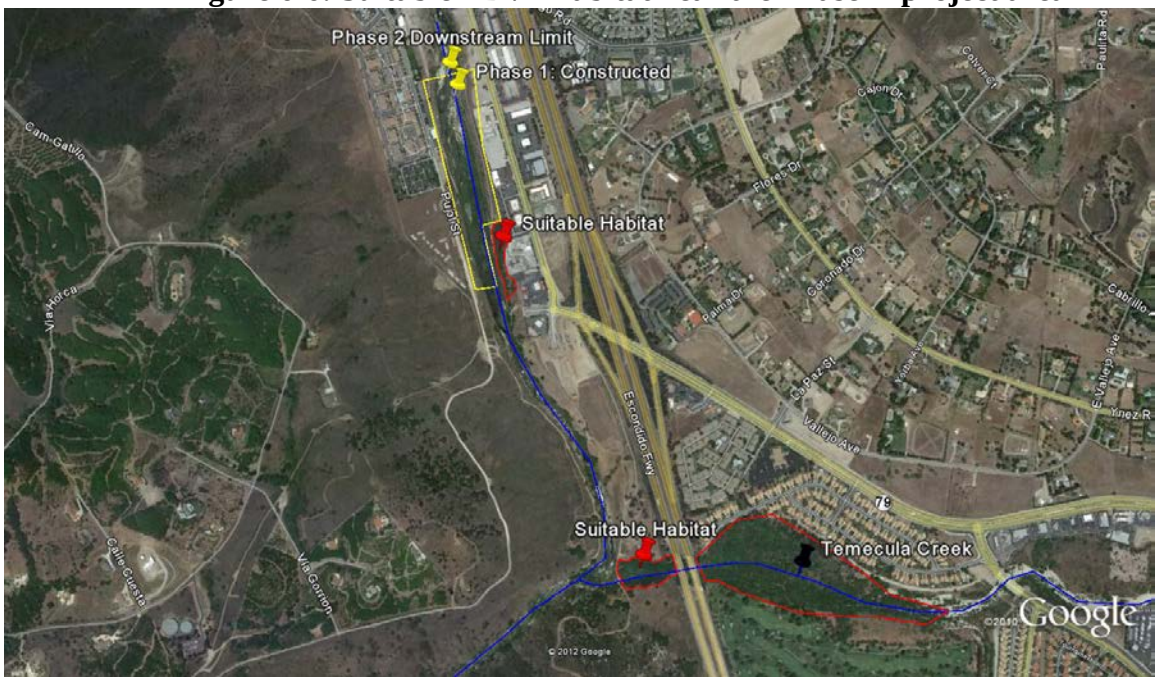
Analysis of Effects: Protocol level surveys were conducted for LBVI with positive results in the Phase II project area. LBVI was detected in the project area during surveys in 2008, 2010, and 2011. During the 2011 surveys, four LBVI (one pair and two individuals) were audibly detected at three locations (see Figure 6-4). Nesting was not ascertained, however two territories were established based on consistent presence of LBVI during the protocol surveys (LBVI #1 (pair), LBVI #3 (individual) in Figure 6-4). The LBVI #1 territory was approximately 0.4 acre and the LBVI #3 territory was approximately 1.16 acres, totaling 1.56 acres of occupied habitat. Brown-headed cowbirds (BHCO, *Molothrus ater*) were also consistently present in the Phase II project area during protocol surveys.

Recent protocol surveys in 2008 and 2010 observed two nesting pairs each year. In 2008, one pair was detected with a fledgling, while the other pair was observed to be parasitized by BHCO. In 2010, one pair was detected with a fledgling, while the other was not. Only one location was observed to be used during multiple survey years, LBVI #1, where an LBVI pair was detected during 2008 and 2011 surveys.

Construction activities associated with the proposed project would directly and indirectly affect LBVI, nest sites, and occupied habitat in the Phase II project area. This disturbance would be caused primarily by removal of vegetation in the project area, as well as construction and drilling equipment, pile driving, and haul trucks and other vehicles that would be frequently driving through and around the project area. Due to the length of the Phase II project area and the duration of construction, only the segments of channel that would have active construction would be cleared of vegetation. This will minimize effects to the riparian habitat by essentially phasing the vegetation removal as construction progresses. The increased level of noise and activity may displace some individuals, if present in areas upstream or downstream of the Phase II project area, and may prevent nesting, or attempted nests may be abandoned. However, potential for this to occur is low as construction activities would be limited to the Phase II project area, and localized to the specific segment that active construction is taking place. Construction activities will be temporary and this project would not jeopardize the species as a whole or even the entire regional population.

Removal of the vegetation would occur outside the breeding season, which would avoid direct impacts to nesting birds. Qualified biological monitors would be on site to monitor construction activities and ensure all avoidance, minimization, and other environmental commitments are being implemented to minimize impacts to biological resources. It is anticipated that by the time channel improvements is constructed at the upper end of the Phase II project area, additional suitable habitat would be available on the Phase I mitigation's riparian terrace, which is currently in its 3 year of monitoring and maintenance. Additional suitable habitat is also present just downstream of the Phase I site and further downstream near the confluence with Temecula Creek, where LBVI have been detected during recent protocol surveys (Figure 6-6).

Figure 6-6: Suitable LBVI Habitat near the Phase II project area



Furthermore, the proposed project would mitigate impacts to riparian and other native habitats by restoring an approximately 24.6 acre unmaintained riparian terrace within the channel that would provide higher quality habitat after construction. This terrace would be planted, weeded, and maintained after construction to allow for establishment of native riparian habitat. Based on established mitigation at the Phase I site, it is expected that suitable LBVI habitat would be available in Phase II within 3 to 5 years after construction.

The level of regular maintenance mowing in the Phase II project area would also be reduced with implementation of the proposed Modified Phase II Plan. Currently, 62.4 acres of the Phase II area are mowed annually, with an additional 8.4 acres mowed every 2 to 4 years. With the Modified Phase II Plan, approximately 41.11 acres would be mowed, a reduction of about 21.29 acres. This reduced mowing over existing conditions would allow for more establishment of riparian habitat and potential LBVI habitat.

Coordination: The Corps is coordinating with the USWFS and CDFG to ensure that the proposed mitigation measures and environmental commitments discussed above and in Section 20.0 of this SEA/EIR will adequately avoid and/or minimize project related effects to LBVI. The Corps will formally consult with the USFWS under Section 7 of the Endangered Species Act (ESA) to ensure that any adverse effects do not jeopardize the species. RCFC&WCD coordinate with the CDFG for compliance with the California Endangered Species Act (CESA).

Coastal California Gnatcatcher

Suitable habitat for the CAGN does not occur within the Phase II project area, however critical habitat exists east of the project area in the coastal sage scrub on the Santa Rosa Plateau, ranging from 0.15 to 1.15 miles away. CAGN have not been identified within the Phase II project area,

though they have been incidentally observed foraging in Phase I and further downstream in recent years, likely a factor of the closer proximity of the Phase I area to suitable habitat.

The proposed project is not expected to effect the CAGN due to the lack of suitable habitat in the Phase II project area and its negative detection of CAGN within the Phase II project limits. Approximately 20.40 acres of coastal sage scrub habitat would be restored on the channel side slopes, which would benefit the CAGN by providing more suitable habitat in the Phase II project area.

The project will have no effect on the CAGN, and ESA consultation is not required for this species.

Southwestern Willow Flycatcher

Habitat for SWWF is marginal within the Phase II project area as dense riparian habitat is minimal and isolated. The constrained nature of the limited habitat makes it unlikely that SWWF would occupy this portion of Murrieta Creek. Protocol surveys were performed in 2008 and no SWWF were identified.

Migrating SWWF may use the project area for stopovers and foraging, however removal of vegetation due construction of the proposed project is not expected to impact SWWF due to the availability of habitat in Phase I and in other areas along Murrieta and Temecula Creeks. Implementation of the proposed project would restore approximately 24.62 acres of higher quality riparian habitat on the unmaintained terrace, which may potentially provide suitable SWWF habitat in the Phase II project area.

The project will have no effect on the SWWF, and ESA consultation is not required for this species.

California Red-Legged Frog

The red-legged frog is listed as threatened under the ESA. Focused red-legged frog surveys were performed in a portion of the Phase II project area in 2000. No red-legged frogs were detected.

While suitable breeding habitat for red-legged frog occurs within the project area, the closest known occurrence of the species is in streams draining from the Santa Rosa Plateau. These streams are frequently scoured during large flood events, which remove suitable habitat that connects the streams to Murrieta Creek. Suitable habitat may develop in these areas with the prolonged absence of such scouring flows, however connectivity is currently lacking. Surrounding development also inhibits expansion into the Phase II project area. Furthermore, the upstream portions of the study area currently support predator species such as bullfrogs, which would further inhibit expansion of red-legged frog. Potential for red-legged frog in the Phase II project area is, therefore, considered low.

Implementation of the proposed project would temporarily remove potential red-legged frog habitat, however mitigation activities would restore habitat along the unmaintained riparian

terrace and upland slopes. Marshland areas in the channel bottom are expected to re-establish after construction. Annual mowing of the channel may impact potential red-legged frog breeding habitat by removing marsh vegetation during fall/winter months and disturbing the channel topography, which would not be different than current maintenance activities performed by the RCFC&WCD. The presence of flowing water in the channel bottom would not be impacted by mowing activities. However, due to its lack of occurrence in the Phase II project area, the proposed project would not affect the red-legged frog. To prevent potential effects to the red-legged frog, pre-construction surveys would be conducted in areas of suitable habitat.

STATE LISTED AND SENSTIVE SPECIES

Swainson's Hawk

The natural foraging habitat of Swainson's Hawks is relatively open stands of grass dominated vegetation and relatively sparse shrublands, with trees that are widely scattered or found in bands along riparian corridors. Nest trees are typically located on the edges between woodland and either grass or shrubland habitats or in isolated trees or clumps of trees in open terrain. The Swainson's hawk is not an obligate riparian species; it's occurrence in riparian habitats is variable and largely dependant on the availability and distribution of suitable nesting trees and their proximity to foraging habitats.

Currently, the majority of known Swainson's hawk territories are located in the Central Valley and Great Basin regions. The species has been extirpated in coastal southern California. Only the Central Valley and Modoc Plateau still support more than a few isolated pairs. Therefore, it is not expected that Swainson's hawk would occupy the Phase II project area.

In California, migrating flocks of up to 100 Swainson's hawks may be observed away from the major mountain ranges during the spring and fall. The Swainson's hawk may use the project area as a migratory corridor and for foraging, however large open grass/shrub land areas are minimal. While implementation of the proposed project may remove foraging habitat, additional habitat is available along Murrieta Creek in the Phase III basin as well as downstream of Phase I. The proposed project would not significantly impact the Swainson's hawk.

Burrowing Owl

Potential for burrowing owl in the Phase II project area is moderate. The area surrounding the project area is largely developed, however a minimal area of open non-native grassland that may support burrowing owl occurs along the Creek upstream of Rancho California Road. Burrowing owl have not been observed within the project area, however protocol surveys have not been performed. A burrow and dead owl were observed in the upstream Phase III area during LBVI surveys in 2010, approximately 1 mile upstream of the Phase II project area.

If present, implementation of the proposed project may impact burrowing owl habitat. However, additional suitable habitat occurs along Murrieta Creek upstream in Phase III and downstream of Phase I. Protocol surveys would be performed prior to construction to determine the presence or absence of burrowing owl in the Phase II project area. With implementation of pre-construction

surveys and the availability of suitable, adjacent habitat, the proposed project would have less than significant impacts to the burrowing owl.

Southwestern Pond Turtle

Suitable habitat for the southwestern pond turtle currently occurs near the previously constructed Phase I project area. Surveys for pond turtles were conducted between April and July 2000. One individual was observed at the southern end of the Phase I project area and one individual was observed within the Phase II project area downstream of the Main Street bridge. To minimize impacts to the southwestern pond turtle, the Corps would implement mitigation measure **B-5,** which requires trapping in all suitable pools and relocation by a qualified biologist prior to any construction related activity; and mitigation measure **B-3B**, which requires preconstruction training to identify such species during construction. Adherence to identified mitigation measures would reduce impacts to less than significant levels.

Arroyo Chub

Arroyo chub were surveyed downstream of Phase I in 1999 and were found in 7 of the 23 defined aquatic habitat types surveyed. Arroyo chub has not been observed within the Phase II project area, but has been observed downstream of Phase I in recent years. Suitable habitat exists in the Phase II area and there is high potential for arroyo chub to occur.

Implementation of the proposed project would temporarily remove potential arroyo chub habitat, however open water and marsh areas are expected to re-establish after construction. Annual mowing of the channel bottom may impact potential arroyo chub habitat by removing vegetation and disturbing the channel topography. The presence of flowing water in the channel bottom would not be impacted by mowing activities.

Wildlife Movement Corridor

Wildlife populations depend on mobility across the landscape for foraging, breeding, and rearing young (Beier and Loe 1992). The proposed project will temporarily affect the entire width of the existing channel during construction, but it is anticipated that adequate cover will remain throughout the construction process for wildlife moving up and downstream. In addition, construction and routine maintenance activities will be constrained to daylight hours, whereas many wildlife species (especially larger predators) move from dusk to dawn. The project will establish an approximately 70-foot wide riparian terrace along the entire eastern side of the channel. This unmaintained vegetated corridor will likely attain a more natural condition than is currently allowed by the channel maintenance plan and the extent of non-natives. It will provide high quality riparian vegetation as envisioned for "Constrained Linkage 13" in the MSHCP, and a greater opportunity for species such as the western pond turtle (which occurs downstream) to move into the Phase II area. Impacts to wildlife movement corridors, therefore, are not significant.

REVIEW OF PHASE I IMPACTS AND HABITAT STATUS

During implementation of Phase I of the Murrieta Creek Flood Control Project (2003 SEA/EIR addendum), several jurisdictional habitats including 6.9 acres of freshwater marsh, 0.5 acre of open channel, 0.34 acre of mulefat scrub, and 2.8 acres of southern willow riparian/cottonwood forest habitat were temporarily disturbed. Temporary impacts to freshwater marsh, open channel, mulefat scrub, and southern willow riparian/cottonwood forest were proposed to be mitigated on a 1:1 basis. Other communities that were disturbed by the Phase I project included 0.45 acre of Riversidian coastal sage scrub, 0.6 acre of highly disturbed non-native grassland, and 7.4 acres of disturbed upland habitat dominated by weedy invasive species. Temporary impacts that resulted from project construction to Riversidian coastal sage scrub were proposed to be mitigated on a 1:1 basis as well. Disturbed non-native grasslands and disturbed ruderal habitat were proposed to be replaced and enhanced on a 1:1 basis with upland coastal sage scrub habitat created along the channel sideslopes.

According to the 2003 Phase I SEA, channel widening followed by revegetation with suitable native vegetation was expected to reduce the acreage of disturbed habitat and increase the acreage of wetland, upland, and riparian vegetation. By implementing restoration activities, the project was expected to mitigate the temporary disturbance to cottonwood-willow forests, and was expected to create an additional 2 acres of riparian forest and 0.16 acre of mulefat scrub. Marshland was to be increased by 1.78 acres, and temporary impacts to the disturbed Riversidian coastal sage scrub would be completely mitigated. Disturbed habitat was enhanced to provide an estimated 10 acres of improved upland/coastal sage scrub habitat. Some sections of disturbed and barren habitat were replaced with landscaping and bicycle/walking trails, which were not considered part of the revegetation plan. Table 6-5 describes the number of acres that were planned to be restored by implementation of the Phase I project revegetation plan.

Table 6-5 Phase I Type and Size of Habitats Disturbed and Restored by Revegetation Plan

Description of Impact	Habitat Description	Acres Disturbed by Project	Acres Restored or Created by Project	Additional Acres of Habitat Created By Project
Temporary	Marsh	6.9	8.68	+1.78
	Open Channel	0.5	0.5	+0.0
	Willow riparian cottonwood forest	2.8	4.8	+2.0
	Mulefat scrub	0.34	.5	+0.16
	Disturbed coastal sage scrub	0.45	10 acres of upland/coastal sage scrub habitat will be developed	0.0
Permanent	Disturbed non native-grassland	0.6		+1.55
	Disturbed	7.4		
	Barren or developed	3.89		

Source 2003 SEA/EIR Addendum

The Corps will conduct a vegetation survey in the Phase I project area prior to construction of Phase II, to verify that the anticipated acreages of native habitats were established. If the restored/created habitats do not equal or exceed the required mitigation acreages, then the Corps and Sponsors would coordinate with resource agencies to develop a plan to fully compensate for any discrepancy.

6.2.2 Future Channel Maintenance

Operation and maintenance of the project area would consist of periodic inspections and repairs to channel sideslopes, drop structures, and maintenance roads. In addition, the on-going channel maintenance program of vegetation management (mowing) and sediment removal (as needed) would be continued to preserve the flood flow capacity. The extent of maintenance varies within the channel, although an annually maintained corridor is a feature throughout the entire project area. Routine maintenance activities would not affect the vegetated corridor/terrace, although occasional repair of eroded sideslopes may cause temporary disturbance.

Maintenance activities will include regular mowing of the channel invert, debris and sediment removal (as needed), repairs of degraded and eroded areas, and maintenance of the vegetated slopes, riparian terrace, and landscaped sites, including weeding of invasive exotic species. If vegetation is removed or damaged by heavy flows within the unmaintained corridor, revegetation will be allowed to occur via natural recruitment. Natural recruitment is an effective means of restoration through re-growth of remnant vegetative material and germination from the native seed bank.

Emergency or other erosion repairs conducted on the bank, sideslopes, or unmaintained riparian corridor would be stabilized and re-seeded with a native seed mix at the completion of repair activities. Impacts associated with the maintenance and operation of the project would be minimized by the implementation of maintenance specific measures (best management practices) and the timing of maintenance activities. Regularly occurring future maintenance will occur outside of rainy and sensitive species nesting seasons.

Operation and maintenance activities will be conducted in accordance with the applicable regulatory permit conditions that are issued for the construction and maintenance of the Phase II Project. In addition, the RCFC&WCD will implement best management practices to limit activities within flowing water, including limiting work to periods of low flow, not conducting work during rain events, and redirecting or fluming the live channel in order conduct repairs to the bank or sideslopes. In case of emergency maintenance, RCFC&WCD will comply with emergency permit authorizations from the regulatory agencies and the applicable measures from those authorizations will be implemented to minimize the potential for project related impacts.

NEPA Impact Determination

Based on the above, and with the implementation of mitigation measure below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, and with the implementation of mitigation measures below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

6.3 Environmental Commitments

The following environmental commitments have been incorporated into the plan to avoid and minimize project-related effects to ensure that potential impacts remain less than significant. These measures would be followed during construction and future operation and maintenance, as applicable.

B-1 The EIS/EIR required that a site specific revegetation plan would be developed for each phase to ensure that project related impacts have been mitigated. The Corps will submit a draft revegetation plan for Phase II to USFWS and CDFG for review at least 60 days prior to planting any plant materials (seeds or container plants) within the project area. The revegetation plan will address the acreage of habitats to be restored, the size and quantity of species to be planted, appropriate seed mixes and schedules of planting and the development of success criteria. The plan will include a 5- year maintenance and monitoring program to ensure that native plant cover is achieved, that aggressive non-native species do not out-compete the native species, and that the restoration of ecological function within the creek is successful.

B-2 Disturbance or removal of vegetation shall not exceed the limits authorized. Temporary disturbed areas shall be restored to their original condition or better. Restoration shall include the revegetation of stripped or exposed areas with native species.

B-3 To minimize construction impacts to nesting birds, vegetation removal will be scheduled to occur between August 15 and March 15 (outside of the avian nesting season).

B-3A Immediately prior to construction activities and throughout any portion of the construction period that takes place during the bird breeding season, a qualified biologist shall inspect the construction site and adjacent areas (using non-protocol surveys) to determine if any special-status species are nesting within 500 feet of the construction site. If active nests are found, the Corps biologist will coordinate with the U.S. Fish and Wildlife Service (USFWS) and/or the California Department of Fish and Game (CDFG) to determine appropriate avoidance or minimization measures.

B-3B Prior to construction activities, a qualified biologist shall conduct pre-construction training for all construction crew members. The training shall focus on required mitigation measures and conditions of regulatory agency permits and approvals. The training shall also include a summary of sensitive species and habitats potentially present within and adjacent to the proposed project site, including native southern willow scrub habitat and potential use of this habitat by least Bell's vireo.

B-4 A Corps biologist (or the environmental monitor) shall monitor construction activities to ensure compliance with environmental commitments.

B-5 To prevent impacts to southwestern pond turtles, trapping will be conducted in all suitable pools prior to any construction related activity (brush clearance, ground disturbance, construction). Trapping will be conducted by a qualified biologist and consist of at least three trapping events. Southwestern pond turtles will be transported to sections of Murrieta Creek where suitable habitat has been located outside the construction area. Trapping will be coordinated with the CDFG and USFWS to determine the appropriate methods and suitable relocation areas.

B-6 To prevent impacts to burrowing owl and red-legged frog, pre-construction surveys would be conducted for those species in suitable habitat.

B-7 With the exception of emergency repairs; mowing, sediment removal, and scheduled maintenance activities will be conducted between August 15 and March 15 (outside of the bird nesting season). Some emergency repairs may require work to occur for extended periods of time. If repair work is to be conducted during the nesting season, the work area will be surveyed for active bird nests. If active nests are identified in the work area the nests will be avoided until the end of the nesting season. A qualified biological monitor will be present during all emergency brush clearing activities within the unmaintained riparian corridor between March 15 and August 15.

B-8 Appropriate coordination/consultation will occur with resource agencies prior to conducting maintenance activities during the nesting season, and any necessary permits will be obtained.

B-9 With the exception of scheduled invasive plant removal or temporary impacts from any necessary repair work, vegetation will not be removed from the unmaintained riparian corridor or channel sideslopes as part of the scheduled maintenance plan.

B-10 If vegetation is removed from the unmaintained riparian corridor or sideslopes as a result of emergency repairs, the site will be stabilized and revegetated with a native seed mix and select container plantings to ensure the replacement of riparian trees. Revegetation plantings will be of sufficient quantity to ensure the rapid establishment of vegetation. Replacement plantings of riparian trees will not be required if the vegetation was removed as a result of natural scouring.

6.4 Western Riverside County Multiple Species Habitat Conservation Plan (WRC-MSHCP)

On June 17, 2003, the Riverside County Board of Supervisors adopted the Western Riverside County Multiple Species Habitat Conservation Plan (WRC-MSHCP). The WRC-MSHCP is a comprehensive, multi-jurisdictional plan that has as its goal the creation of a 500,000-acre conservation area that protects and manages habitat for 146 covered species. As the Corps of

Engineers is not a participating agency to the WRC-MSHCP it is exempt from WRC-MSHCP policies. However, the Corps will consult with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Federal Endangered Species Act and be subject to separate take coverage for LBVI. The Section 7 incidental take statement will also be used to obtain a State consistency determination under Section 2080.1 of the California Endangered Species Act (CESA).

Appendix G provides an analysis to determine whether the Modified Phase II Plan would result in impacts to the assembly of the Conservation Area identified in Section 3 of the WRC-MSHCP. Guidance on assembly of the WRC-MSHCP Conservation Area is provided on three geographic levels: Cores and Linkages, Area Plan Subunits, and Cells. Each geographic level has its own criteria and species survey requirements. For example, each Area Plan Subunit has its own list of Planning Species and Biological issues and Considerations that are important to Reserve Assembly. Each Cell has criteria that identifies applicable Cores and Linkages and describes the focus of desired conservation in that particular Cell or Cell Group.

Based on the analysis in Appendix G, the Modified Phase II Plan will not conflict with the conservation goals of the WRC-MSHCP. The Modified Phase II Plan will contribute to the WRC-MSHCP's overall goal of improving the conservation status of covered species by maintaining the hydrology and connectivity and enhancing the natural habitat for covered species. Moreover, the Regional Conservation Authority has expressed interest in collaborating with local sponsors to develop a long-term conservation management strategy and, subject to future talks, might manage the conservation area themselves.

Legend

- Right of Way
- Arundo
- Coastal Sage Scrub
- Cottonwood/Willow Riparian
- Developed
- Developed/Ornamental
- Disturbed
- Disturbed Coastal Sage Scrub
- Disturbed Cottonwood/Willow Riparian
- Disturbed MFS
- Disturbed Southern Willow Scrub
- Emergent Hazardia Squarrosa
- Emergent SWS
- Freshwater Marsh
- Freshwater Marsh/Mowed Channel
- Mixed Tree
- Mowed Channel
- Mule Fat Scrub
- Non-native Grasses/Ruderal
- Open Channel
- Open Water
- Ornamental
- Rock
- Restored Coastal Sage Scrub
- Riparian Scour Zone
- Ruderal
- Ruderal/Tamarisk
- Southern Willow Scrub
- Stone
- Tamarisk

N

0 100 200 400 Feet

Sources:

Imagery Background:
ESRI ArcGIS Online Basemap Sources
Copyright:© 2012 Esri, DeLorme, NAVTEQ, TomTom

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

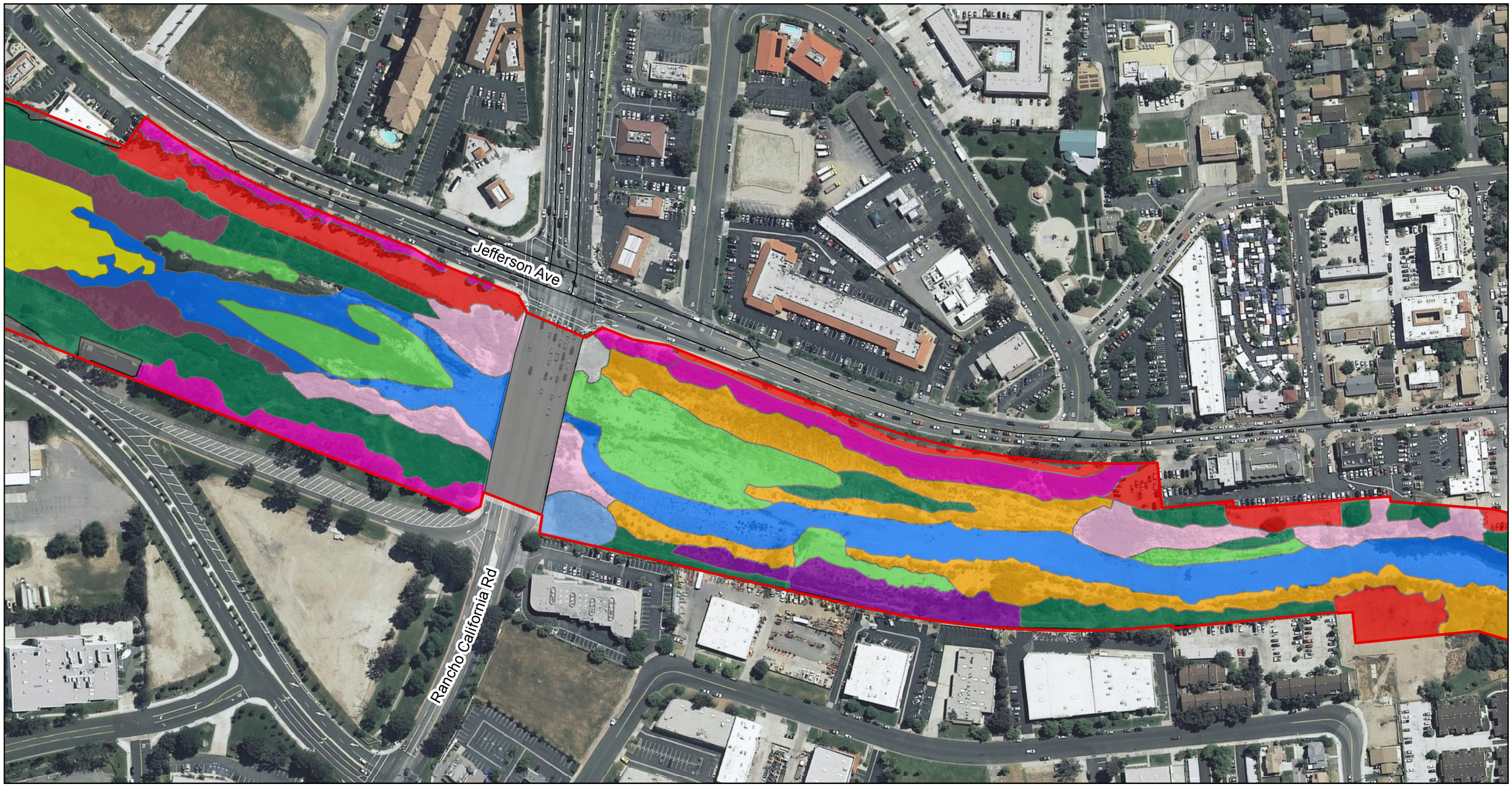
Map Created: November 28, 2012

Figure 6-3a Vegetation Maps

MURRIETA CREEK FLOOD CONTROL/ ENVIRONMENTAL RESTORATION AND RECREATION PROJECT
Draft Supplemental Environmental Assessment and Environmental Impact Report for Phase II Modifications

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

Draft



Legend

- Right of Way
- Arundo
- Coastal Sage Scrub
- Cottonwood/Willow Riparian
- Developed
- Developed/Ornamental
- Disturbed
- Disturbed Coastal Sage Scrub
- Disturbed Cottonwood/Willow Riparian
- Disturbed MFS
- Disturbed Southern Willow Scrub
- Emergent Hazardia Squarrosa
- Emergent SWS
- Freshwater Marsh
- Freshwater Marsh/Mowed Channel
- Mixed Tree
- Mowed Channel
- Mule Fat Scrub
- Non-native Grasses/Ruderal
- Open Channel
- Open Water
- Ornamental
- Rock
- Restored Coastal Sage Scrub
- Riparian Scour Zone
- Ruderal
- Ruderal/Tamarisk
- Southern Willow Scrub
- Stone
- Tamarisk

N

0 100 200 400 Feet

Sources:

Imagery Background:
ESRI ArcGIS Online Basemap Sources
Copyright:© 2012 Esri, DeLorme, NAVTEQ, TomTom

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

Map Created: November 27, 2012

Figure 6-3b Vegetation Maps

MURRIETA CREEK FLOOD CONTROL/ ENVIRONMENTAL RESTORATION AND RECREATION PROJECT
Draft Supplemental Environmental Assessment and Environmental Impact Report for Phase II Modifications

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

Draft

Legend

- Right of Way
- Arundo
- Coastal Sage Scrub
- Cottonwood/Willow Riparian
- Developed
- Developed/Ornamental
- Disturbed
- Disturbed Coastal Sage Scrub
- Disturbed Cottonwood/Willow Riparian
- Disturbed MFS
- Disturbed Southern Willow Scrub
- Emergent Hazardia Squarrosa
- Emergent SWS
- Freshwater Marsh
- Freshwater Marsh/Mowed Channel
- Mixed Tree
- Mowed Channel
- Mule Fat Scrub
- Non-native Grasses/Ruderal
- Open Channel
- Open Water
- Ornamental
- Rock
- Restored Coastal Sage Scrub
- Riparian Scour Zone
- Ruderal
- Ruderal/Tamarisk
- Southern Willow Scrub
- Stone
- Tamarisk

N

Sources:

Imagery Background:
ESRI ArcGIS Online Basemap Sources
Copyright:© 2012 Esri, DeLorme, NAVTEQ, TomTom

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

Map Created: November 27, 2012

0 100 200 400 Feet

Figure 6-3c Vegetation Maps

MURRIETA CREEK FLOOD CONTROL/ ENVIRONMENTAL RESTORATION AND RECREATION PROJECT
Draft Supplemental Environmental Assessment and Environmental Impact Report for Phase II Modifications

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

Draft

Legend

- Right of Way
- Arundo
- Coastal Sage Scrub
- Cottonwood/Willow Riparian
- Developed
- Developed/Ornamental
- Disturbed
- Disturbed Coastal Sage Scrub
- Disturbed Cottonwood/Willow Riparian
- Disturbed MFS
- Disturbed Southern Willow Scrub
- Emergent Hazardia Squarrosa
- Emergent SWS
- Freshwater Marsh
- Freshwater Marsh/Mowed Channel
- Mixed Tree
- Mowed Channel
- Mule Fat Scrub
- Non-native Grasses/Ruderal
- Open Channel
- Open Water
- Ornamental
- Rock
- Restored Coastal Sage Scrub
- Riparian Scour Zone
- Ruderal
- Ruderal/Tamarisk
- Southern Willow Scrub
- Stone
- Tamarisk

N

Sources:

Imagery Background:
ESRI ArcGIS Online Basemap Sources
Copyright:© 2012 Esri, DeLorme, NAVTEQ, TomTom

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

Map Created: November 27, 2012

0 100 200 400 Feet

Figure 6-3d Vegetation Maps

MURRIETA CREEK FLOOD CONTROL/ ENVIRONMENTAL RESTORATION AND RECREATION PROJECT
Draft Supplemental Environmental Assessment and Environmental Impact Report for Phase II Modifications

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

Draft

Legend

- Right of Way
- Arundo
- Coastal Sage Scrub
- Cottonwood/Willow Riparian
- Developed
- Developed/Ornamental
- Disturbed
- Disturbed Coastal Sage Scrub
- Disturbed Cottonwood/Willow Riparian
- Disturbed MFS
- Disturbed Southern Willow Scrub
- Emergent Hazardia Squarrosa
- Emergent SWS
- Freshwater Marsh
- Freshwater Marsh/Mowed Channel
- Mixed Tree
- Mowed Channel
- Mule Fat Scrub
- Non-native Grasses/Ruderal
- Open Channel
- Open Water
- Ornamental
- Rock
- Restored Coastal Sage Scrub
- Riparian Scour Zone
- Ruderal
- Ruderal/Tamarisk
- Southern Willow Scrub
- Stone
- Tamarisk

N

Sources:

Imagery Background:
ESRI ArcGIS Online Basemap Sources
Copyright:© 2012 Esri, DeLorme, NAVTEQ, TomTom

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

Map Created: November 27, 2012

0 100 200 400 Feet

Figure 6-3e Vegetation Maps

MURRIETA CREEK FLOOD CONTROL/ ENVIRONMENTAL RESTORATION AND RECREATION PROJECT
Draft Supplemental Environmental Assessment and Environmental Impact Report for Phase II Modifications

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

Draft

7.0 CULTURAL RESOURCES

7.1 Affected Environment

A summary of the history and prehistory of the region can be found in the 2000 Final EIS/EIR. This included a discussion of a complete cultural resources survey of all phases conducted in 1992 by Jones and Stokes, Inc.

The Corps archeology staff conducted an updated field survey in 2007 which included all portions of Phase 2. As a result of this survey, and all of the previous investigations, no historical or prehistoric sites were observed. The NAHC commented in a response in 2006 and 2012. No response was received from any Tribes listed on the NAHC list at that time. For this updated document the Pechanga expressed an interest in further consultation and comment in a letter dated November 5, 2012.

In addition to the updated field survey, a geoarchaeological investigation was conducted on behalf of the Corps by Statistical Research, Inc. (SRI) in 2006. This report was provided to the Pechanga in a letter dated June 7, 2007. This study evaluated the potential for subsurface remains along all reaches of the project. The SRI investigation examined the results from previous geotechnical trenching done for this project. In addition, they looked at archival data, aerial photographs, topographic maps, parcel maps, soil and geological maps, and archeological records. SRI determined that for all of Phase 2 there has been previous disturbance to a depth of up to 12 feet from various factors such as cultivation and development (page 51). Generally, SRI evaluated the actual APE to be mostly low to very low with some small isolated areas described as moderate to high. For Phase 2, monitoring of construction will occur as it did for Phase 1.

The Corps has determined that no resources eligible for listing on the National Register of Historic Places are present within the APE for Phase 2.

7.2 Environmental Effects

7.2.1 Construction

Original Phase II Plan (No Action Alternative)

The Original Phase II Plan would involve excavating and grading approximately 70 acres of Murrieta Creek. Vegetation within the project footprint would be cleared and grubbed. Approximately, 1,100,481 cubic yards of alluvial substrate would be removed from the channel invert to lower the invert elevation by approximately 3 to 8 feet. Construction would also involve creating side slopes between 3:1 and 1:4 over a distance of 12,800 feet. Gabions would be utilized to reinforce the channel banks with 3:1 slopes. A grouted stone drop structure would be constructed approximately 300 feet upstream of Rancho California Road. A 20 to 60 foot wide unmaintained vegetated corridor would be constructed between Rancho California Road

downstream to the project terminus. The Main Street bridge would be replaced. Accordingly, concrete would be discharged for the construction of bridge abutment and piers.

There would be extensive grading and excavation activities associated with the Original Phase II Plan. However, based on the updated 2007 field survey as well previous investigations, the Corps has determined that no resources eligible for listing on the National Register of Historic Places are present within the APE for Phase 2. Furthermore, the SRI investigation has determined that the entire Phase II reach has been disturbed to a depth of 12 feet from various factors such as cultivation and development (page 51). The depth of excavation associated with the Original Phase II Plan (approximately 3 to 8 feet below grade) would be shallower than the depth characterizing the SRI report.

Modified Phase II Plan (Preferred Alternative)

The Modified Phase II Plan would involve excavating and grading approximately 121 acres of Murrieta Creek. Vegetation within the excavation footprint would be cleared and grubbed. Approximately, 952,000 cubic yards of alluvial substrate would be removed from the channel invert to lower the invert elevation to depths ranging from 3 to 8 feet. Construction would also involve creating steeper side slopes when compared to the Original Phase II Plan. The Modified Phase II Plan would change the side slopes over most of the project area from 3:1 (using gabions) to 2:1 (using soil cement). A grouted stone drop structure would be constructed approximately 300 feet upstream of Rancho California Road. A 20 to 125 foot wide unmaintained vegetated corridor would be constructed between Rancho California Road downstream to the project terminus. The Main Street bridge would not be replaced. Accordingly, there would be no discharge of concrete for the construction of bridge piers and abutments.

There would be extensive grading and excavation activities associated with the Modified Phase II Plan. However, based on the updated 2007 field survey as well previous investigations, the Corps has determined that no resources eligible for listing on the National Register of Historic Places are present within the APE for Phase 2. As a result, none would be affected by implementation of construction. Documentation to this effect was prepared and sent to the California State Historic Preservation Officer in accordance with Section 106 of the National Historic preservation act (36 CFR 800). In a letter dated October 16, 2008 the SHPO concurred.

Furthermore, the SRI investigation has determined that the entire Phase II reach has been disturbed to a depth of 12 feet from various factors such as cultivation and development (page 51). The depth of excavation associated with the Original Phase II Plan (approximately 3 to 8 feet below grade) would be shallower than the depth characterizing the SRI report.

7.1.2 Operations and Maintenance

Original Phase II Plan (No Action Alternative)

Operations and maintenance activities would vary in size, scope, and intensity of impacts to cultural resources. Larger operations such as the removal of sediment and debris from the channel would entail impacts that would be similar to construction-related impacts. Smaller

operations such as removal of weeds from the gabion embankment would entail little or no impacts.

Modified Phase II Plan (Preferred Alternative)

Future maintenance activities would be regularly conducted within the project area by the RCFCDWCD. Monitoring and maintenance of the restoration areas would be the responsibility of the Corps for 5 years after completion of construction. Activities that result in the discharge of dredged or fill material into waters of the United States would be subject to Section 404 of the Clean Water Act implemented by the Corps Regulatory program. As a result, general impacts associated with operations and maintenance activities are evaluated under NEPA.

The changes in the Modified Phase II Plan indicated above would entail *de minimis* changes to operations and maintenance activities associated with the Original Phase II Plan.

NEPA Impact Determination

Based on the above, and with the implementation of mitigation measure below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, and with the implementation of mitigation measures below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

7.3 Environmental Commitments (NEPA)/Mitigation Measures (CEQA)

C-1 A qualified archeologist will monitor project ground disturbing activities. The purpose will be to observe subsurface deposits for buried historic or prehistoric resources. If previously unknown resources are uncovered, construction in the area of the find will be temporarily halted. The find would be then be evaluated for the National Register of Historic Places (NRHP). If it were determined to be eligible for the NRHP, the Corps would consult with the SHPO on treatment of the remains in accordance with 36 CFR 800.13.

8.0 TRAFFIC

8.1 Affected Environment

The existing circulation system serving the project area is comprised of regional access routes and local streets.

8.1.1 Regional Access

Per the City of Murrieta's general plan, regional access to the Modified Phase II project area is provided primarily by I-15 and I-215 which traverse generally through the western and central portion of the Murrieta, respectively. SR-79, which travels along the eastern border of the City, also provides regional access from the northeast. A summary of the facilities that provide regional access is provided below.

Interstate 15

Also known as the Corona Freeway, the I-15 traverses in a generally north/southdirection, diagonally through the western portion of the City of Murrieta. To the north, I-15 continues through Riverside and San Bernardino Counties and is the link to the I-10 Freeway (San Bernardino Freeway) and State Routes 91 (Riverside Freeway) and 60 (Pomona Freeway), and the greater Los Angeles area. Near the City of Murrieta, daily traffic volumes on I-15 range from approximately 109,000 to 186,000 vehicles per day.

Interstate 215

Also known as the Escondido Freeway, the I-215 traverses in a north/south direction through the central portion of the City of Murrieta. To the north, I-215 continues through Riverside County and connects at its northerly terminus with SR-60 in the Moreno Valley area. Near the City of Murrieta, daily traffic volumes on I-215 range from approximately 83,000 to 91,000 vehicles per day.

State Route 79 (Winchester Road)

Also known as Winchester Road, SR 79 runs in a northeasterly direction from the interchange at the I-15 freeway through the eastern portion of the City of Murrieta toward the City of Hemet. SR-79 generally provides a parallel north/south route to the I-215 freeway, east of the freeway. Existing daily traffic volumes on SR-79 range from approximately 5,536 to 73,741 vehicles per day.

SR 79 also provides local access to the project area. The roadway spans Murrieta Creek with a 4-lane bridge. The 2011 traffic volume within the vicinity of the project area is approximately 73,741 vehicles per day.

8.1.2 Local Access

The project area can be accessed locally via four roads that cross Murrieta Creek.

First Street (Santiago Road)

First Street is an east/west roadway that traverses Murrieta Creek and the I-15. The roadway spans Murrieta Creek with a 4-lane bridge. The 2010 traffic volume within the vicinity of the bridge is approximately 3,775 vehicles per day.

Main Street

Main Street is a quarter-mile long road, diagonally aligned from the southwest to northeast. The roadway spans Murrieta Creek with a 2-lane bridge. Traffic data is not available for Main Street.

Rancho California Road

Rancho California Road is an east-west roadway that traverses Murrieta Creek and the I-15. The roadway spans Murrieta Creek with an 8-lane bridge. The 2011 traffic volume within the vicinity of the project area is approximately 50,884 vehicles per day.

Via Montezuma Road

Via Montezuma Road is an approximately half-mile long road, diagonally aligned from the southwest to northeast. The roadway crosses Murrieta Creek with an at-grade (Arizona) crossing. Accordingly, it is subject to periodic closures during high flow conditions in the creek. The 2011 traffic volume within the vicinity of the project area is approximately 2,928 vehicles per day.

Table 8-1. Average Daily Traffic

Roadway	Average Daily Traffic (2011)
Regional	
Interstate 15	109,000 – 186,000
Interstate 215	83,000 – 91,000
State Route 79 (Winchester Road)	73,741
Local	
First Street (Santiago Road)	3,775
Main Street	Data not available.
Rancho California Road	50,884
Via Montezuma Road	2,928

Source: City of Temecula, 2009-2011 Traffic Count Summary, http://www.cityoftemecula.org/NR/rdonlyres/7909E508-A258-40BF-A377-C4BF26E42637/0/ADT_2011_Sorted.pdf

8.2 Environmental Effects

8.2.1 Construction

Original Phase II Plan (No Action Alternative)

Construction Worker Commute Trips

According to the 2000 Final EIS/EIR (p. 4-144), construction worker commutes for the construction of the Original Phase II Plan would add approximately 85 daily roundtrips to the regional and local roadways.

Construction Truck Traffic

According to the 2000 Final EIS/EIR (p. 4-144), construction worker commutes for the construction of the Original Phase II Plan would add approximately 480 daily roundtrips to the regional and local roadways.

Based on the above, a total of 585 round trips would be added to regional and local roadways for construction of the Original Phase II Plan. The percent increase of 585 trips to the daily traffic volume for both regional and local roadways are shown in Table 8-2. Though the temporary increase in traffic (ranging from 0.3% to 0.8%) on regional roadways would be minimal, the temporary increase in traffic (ranging from 1% to 19%) would be substantial. The increase in traffic would be temporary, and would return to baseline levels upon completion of construction.

Table 8-2. Average Daily Traffic (ADT) and Percent Increase of ADT

Roadway	Average Daily Traffic (2011)	Percent Increase in ADT
Regional		
Interstate 15	109,000 – 186,000	0.5%-0.3%
Interstate 215	83,000 – 91,000	0.7%-0.6%
State Route 79 (Winchester Road)	73,741	0.8%
Local		
First Street (Santiago Road)	3,775	16%
Main Street	Data not available.	
Rancho California Road	50,884	1%
Via Montezuma Road	2,928	19%

Modified Phase II Plan (Preferred Alternative)

The Modified Phase II Plan would entail the same traffic impacts as the Original Phase II Plan.

NEPA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

8.2.2 Operations and Maintenance

Original Phase II Plan (No Action Alternative)

Operations and maintenance activities would vary in size, scope, and intensity of traffic impacts. Larger operations such as the removal of sediment and debris from the channel would entail traffic impacts that would be similar to construction-related impacts. Smaller operations such as removal of weeds from the gabion embankment would entail little or no impacts.

Modified Phase II Plan (Preferred Alternative)

Future maintenance activities would be regularly conducted within the project area by the RCFCDWCD. Monitoring and maintenance of the restoration areas would be the responsibility of the Corps for 5 years after completion of construction. Activities that result in the discharge of dredged or fill material into waters of the United States would be subject to Section 404 of the Clean Water Act implemented by the Corps Regulatory program. As a result, general impacts associated with operations and maintenance activities are evaluated under NEPA.

The changes in the Modified Phase II Plan indicated above would entail *de minimis* changes to operations and maintenance activities associated with the Original Phase II Plan.

NEPA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

8.3 Environmental Commitments (NEPA)/Mitigation Measures (CEQA)

T-1 A road improvement plan would be prepared during the final design stage of the project, and implemented during the construction phase. The plan would identify road segments, bridges, and culverts that need to be improved and turnout locations that need to be constructed to accommodate project construction, maintenance, and operational activities. The plan would also include measures for identifying any damage to existing roadways caused by construction vehicles. These damages would be repaired following completion of the project.

T-2 A traffic control plan would be prepared during the final design stage of the project, and implemented during the construction phase. The plan would address and outline appropriate vehicular speeds in construction areas; travel routes, detours, bridge closures, or lane/road closures; flagperson requirements; appropriate signage and safety reflectors; coordination with local city agencies/departments and Caltrans for appropriate notification to the public; any utility relocation requirements; the location of staging areas; safety procedures to reduce hazards to motorists, bicyclists and pedestrians; approach to ensuring access to businesses and residences; and emergency information. The traffic control plan would be reviewed by appropriate entities, including the City of Temecula. The final version of the plan would be submitted to all appropriate entities.

9.0 AIR QUALITY

9.1 Affected Environment

9.1.1 Air Quality Standard

The United States Environmental Protection Agency (USEPA), the California Air Resources Board (CARB), and the local air district, the South Coast Air Quality Management District (SCAQMD), classify an area as attainment, unclassified, or nonattainment, depending on whether or not the monitored ambient air quality data shows compliance, insufficient data available, or non-compliance with the ambient air quality standards, respectively. The National (e.g., Federal) and state of California Ambient Air Quality Standards (NAAQS and CAAQS, respectively) relevant to the Murrieta Creek Phase II project area are summarized below. At the Federal level, the South Coast Air Basin (SCAB) is designated as an extreme nonattainment area for ozone (O3) and a serious nonattainment area for respirable particulate matter less than 10 microns (PM10). The SCAB is also a nonattainment area for particulate matter less than 2.5 micron, (PM2.5). The status for carbon monoxide (CO) was recently upgraded to a "serious maintenance area" from nonattainment (County of Riverside, 2011). The SCAB is in attainment for nitrogen dioxide (NO2) and sulfur dioxide (SO2). At the state level, the SCAB is also designated as an extreme nonattainment area for O3 and a nonattainment area for PM2.5 and PM10. It is in attainment for the state CO, SO2, and NO2. Table 9-1 below summarizes the Federal and state attainment and nonattainment conditions for each of the air pollutants in the SCAB.

Table 9-1. Federal and State Attainment and Nonattainment Conditions

	Attainment Status	
Pollutant	Federal Status	State Status
Ozone (O_3)	Nonattainment	Nonattainment
Inhalable particulate matter (PM_{10})	Nonattainment	Nonattainment
Fine particulate matter ($PM_{2.5}$)	Nonattainment	Nonattainment
Carbon monoxide (CO)	Attainment	Attainment
Nitrogen dioxide (NO_2)	Attainment	Attainment
Sulfur dioxide (SO_2)	Attainment	Attainment

Reference: CARB, 2011. USEPA, 2011

The attainment status in the Phase II project area has not changed since the 2000 EIS/EIR (Corps, 2000), with the exception of the PM2.5 and CO standards. PM2.5 standards were not implemented at the time of the 2000 EIS/EIR, and the attainment status for CO has been changed to nonattainment from attainment since the 2000 EIS/EIR.

Existing Air Quality

The nearest ambient air quality monitoring stations to the Phase II project area are as follows:

- Corona/Norco Station - upwind of the project area
- Rubidoux Station – upwind of the project area
- Magnolia - upwind of the project area

- Perris Valley - upwind of the project area
- Lake Elsinore - upwind of the project area

Table 9-2, Ambient Air Quality Standards for Criteria Pollutants - SCAB, cited below, identifies the national (Federal) and state ambient air quality standards for relevant air pollutants and provides a summary of highest ambient air quality measured at the five monitoring stations between 2007 and 2010 (County of Riverside, 2011). Data from these monitoring stations is considered representative of the Phase II project area for both short and long term ambient air quality depending upon the time of year, climate conditions, and air flow systems.

Table 9-2 Ambient Air Quality Conditions for Criteria Pollutants, SCAB, 2007-2010

Air Pollutant Monitored	Year			
	2007	2008	2009	2010[a]
Ozone (O_3)				
Maximum 1-hour concentration (ppm)	0.139	0.146	0.128	0.122
# of days exceeding state 0.09 ppm 1-hr standard	66	65	53	46
Maximum 8-hour concentration (ppm)	0.116	0.118	0.108	0.107
# of days exceeding national 0.075 ppm 8-hr standard	73	77	67	50
# of days exceeding state 0.07 ppm 8-hour standard	88	94	88	77
Nitrogen Dioxide (NO_2)				
Maximum 1-hour concentration (ppm)	0.07	0.09	0.08	0.062
# of days exceeding state 0.18 ppm 1-hr standard	0	0	0	0
Annual average (ppm)	0.0206	0.0258	0.0200	0.015
# of days exceeding state 0.03 ppm annual average	0	0	0	N/A
# of days exceeding national 0.0534 ppm annual average	0	0	0	N/A
Carbon Monoxide (CO)				
Maximum 1-hour concentration (ppm)	4	7	3	N/A
# of days exceeding national 35.0 ppm 1-hr standard	0	0	0	N/A
# of days exceeding state 20.0 ppm 1-hr standard	0	0	0	N/A
Maximum 8-hour concentration (ppm)	2.9	2.0	2.4	1.94
# of days exceeding national 9.0 ppm 8-hr standard	0	0	0	0
# of days exceeding state 9.0 ppm 8-hr standard	0	0	0	0
Suspended Particulates (PM_{10})				
Maximum 24-hour concentration ($\mu g/m^3$)	142	135	108	89
# of days exceeding national 150 $\mu g/m^3$ 24-hour standard	0	0	0	0
# of days exceeding state 50.0 $\mu g/m^3$ 24-hour standard	41	49	33	23
Annual average concentration ($\mu g/m^3$)	68.5	57.4	53.4	42.3
Suspended Particulates ($PM_{2.5}$)				
Maximum 24-hr concentration ($\mu g/m^3$)	75.7	57.7	49.3	54.2
# of days exceeding national 35 $\mu g/m^3$ 24-hour standard	33	14	16	8
Sulfur Dioxide (SO_2)[a]				
Maximum 24-hr concentration (ppm)	0.002	0.003	0.003	N/A
# of days exceeding state 0.04 ppm 24-hr standard	0	0	0	N/A

Reference(s):

1. Southern California Air Quality Management District (SCAQMD), http://www.aqmd.gov/smog/historicaldata.htm. Accessed September 2012.
2. California Air Resources Board (CARB), http://www.arb.ca.gov/adam/. Accessed September 2012.

Notes: ppm means parts per million; mg/m^3; micrograms per cubic meter.

a. 2010 values were obtained from CARBs iADAM: Air Quality Data Statistics database.

As identified in Table 9-2, the state one-hour standard for ozone was exceeded 230 times during the four-year period. The national eight-hour ozone standard was exceeded 267 times, and the state eight-hour standard was exceeded 347 times during this same period. The State 24-hr standard for PM10 was exceeded 146 times between 2007 and 2010, while the PM2.5 Federal 24-hr standard was exceeded 71 times. There were no exceedances observed for CO, NO2, or SO2 during this four-year period.

9.2 Environmental Effects

9.2.1 Construction

Original Phase II Plan (No Action Alternative)

The Original Phase II Plan would involve excavating and grading approximately 70 acres of Murrieta Creek. Vegetation within the excavation footprint would be cleared and grubbed. Approximately, 1,100,481 cubic yards of alluvial substrate would be removed from the channel invert to lower the invert elevation by approximately 3 to 8 feet. The excavated material would be transported to the nearby landfill. There would also be substantial earthwork associated with the excavation and construction of the 270-acre detention basin upstream of Winchester Road. Furthermore, Main Street Bridge would also be replaced. Air quality calculations from the 2000 Final EIS/EIR indicate that emissions of criteria pollutants would surpass the SCAQMD daily construction threshold, but would be in compliance with General Conformity requirements.

Table 9-3. Comparison of Estimated Emissions

Pollutant	Federal de minimis construction thresholds (tons/year)	2000 Final EIS/EIR estimated emissions (tons/year)[1]	SCAQMD construction significance thresholds (lbs/day)	2000 Final EIS/EIR estimated emissions (lbs/day)[2]
Volatile organic compounds (VOC)	10	--	75	67.5
Nitrogen Dioxide (NO2)	10	--	100	679.1
Carbon monoxide (CO)	100	72.94	550	536.2
PM 10	70	64.60	150	508.9

Reference 1: 2000 Final EIS/EIR – Appendix J, Table 5.
Reference 2: 2000 Final EIS/EIR –Table 4.4-6.

Modified Phase II Plan (Preferred Alternative)

The Modified Phase II Plan would involve excavating and grading approximately 121 acres of Murrieta Creek. Vegetation within the excavation footprint would be cleared and grubbed. Approximately, 952,000 cubic yards of alluvial substrate would be removed from the channel invert to lower the invert elevation to depths ranging from 3 to 8 feet. Construction would also involve creating steeper side slopes when compared to the Original Phase II Plan. The Modified Phase II Plan would change the side slopes over most of the project area from 3:1 (using gabions) to 2:1 (using soil cement). A grouted stone drop structure would be constructed approximately 300 feet upstream of Rancho California Road. A 20 to 125 foot wide unmaintained vegetated corridor would be constructed between Rancho California Road downstream to the project terminus. The Main Street bridge would not be replaced. Accordingly, there would be no discharge of concrete for the construction of bridge piers and abutments. The Modified Phase II Plan would exclude the construction of the 270-acre detention basin upstream of Winchester Road.

Emissions were estimated using the California Emission Estimator Model (CalEEMod) Versions 2011.1.1 provided by the SCAQMD (SCAQMD, 2012) and included emission factors for years 2013 and 2014 off-road and on-road vehicle emissions factors since the Modified Phase II Plan project would span two different years, 2013 and 2014, and could take approximately 22 months to construct. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. The model quantifies direct emissions from construction and operations (including vehicle use), as well as indirect emissions, such as GHG emissions. There would be approximately 20 laborers working on the project during construction. The Murrieta Creek Phase II project construction schedule, the proposed Equipment List are located in Appendix D, and the CalEEMod generated air quality calculations and summaries are located in Appendix D of this document. The SCAQMD CEQA Air Quality Handbook Website (SCAQMD, 2012) was also referenced for air emission factors. It should be noted that the Equipment List that was used for the Murrieta Creek Phase II project CalEEMod analysis was the default Equipment list in CalEEMod, which contained a greater number of equipment proposed for Modified Phase II Plan project than the proposed Equipment List cited in Appendix D. It should also be noted that the Winter (lbs/day) emissions results were used from the CalEEMod for the SCAQMD construction and operation comparisons since the Winter emissions had slightly higher emissions for most of the criteria pollutants of concern though the Summer (lb/day) emissions results from CalEEMod were also run and included in Appendix D.

A comparison of the maximum (worse case scenario) yearly (tons/year) construction emissions and maximum (worse case scenario) daily construction emissions (lbs/day) of the Modified Phase II Plan proposed project are shown below in Table 9-4 and Table 9-5, respectively.

Table 9-4 Comparison of Federal de minimis construction thresholds (in Tons/Year) and Modified Phase II Plan maximum (worst case scenario) construction estimated emissions (Tons/Year), Years 2013 and 2014

Pollutant	Federal de minimis construction thresholds[1] (tons/year)	2013 estimated emissions[2] (tons/year)	2014 estimated emissions[2] (tons/year)
Volatile organic compounds (VOC)	10	1.16	0.57
Carbon monoxide (CO)	100	5.40	2.74
Nitrogen Dioxide (NO2)	10	9.22	3.82
Sulfur Dioxide (SO2)	100	0.01	0.01
PM 10	70	1.84	0.25
PM 2.5	100	1.18	0.25

Reference 1: 40 CFR 93.153 (USEPA. 2011); and Appendix D of this document.
Reference 2: CalEEMOD, 2012, SCAQMD, 2012; and Appendix D of this document.

As summarized in Table 9-4 above, the estimated construction emissions for the Modified Phase II Plan are below the yearly Federal *de minimis* thresholds established by the U.S. EPA for conformity analyses (U.S. EPA, 2011). Therefore, a conformity determination is not required.

As summarized in Table 9-5 below, The estimated construction emissions for the Modified Phase II Plan are below the SCAQMD construction thresholds (lbs/day) established by the SCAQMD for the SCAB (SCAQMD, 2011).

Based on the above, the estimated annual emissions associated with the construction of the Modified Phase II Plan are less than the General Conformity de minimis thresholds, and the estimated daily emissions are less than the SCAQMD construction significance thresholds. Therefore, the Modified Phase II Plan would have less than significant impact on air quality.

Table 9-5 Comparison of SCAQMD construction thresholds (in lbs/day) and Modified Phase II Plan maximum (worst case scenario) estimated emissions (lbs/day), Years 2013 and 2014

Pollutant	SCAQMD construction significance thresholds [1] (lbs/day)	2013 estimated emissions[2] (lbs/day)	2014 estimated emissions[2] (lbs/day)
Volatile organic compounds (VOC)	75	11.98	5.30
Carbon monoxide (CO)	550	54.22	23.20
Nitrogen Dioxide (NO2)	100	97.62	32.19
Sulfur Dioxide (SO2)	150	0.10	0.04
PM 10	150	22.29	2.97
PM 2.5	55	13.88	2.75

Reference 1: SCAQMD, 2011.; http://www.aqmd.gov/cega/handbook/signthres.pdf

Reference 2: CalEEMod, SCAQMD, 2012; and Appendix D of this document.

Localized significant threshold (LST) for SRA No. 26 (Temecula Valley) are summarized below in Table 9-6 for the applicable air pollutants [e.g., CO (construction and operation threshold); NO2 (construction and operation threshold); PM10 (construction threshold); PM2.5 (construction threshold), SCAQMD, 2009] and compared to the Modified Phase II Plan construction estimated emissions (lbs/day). Source Receptor Area (SRA) No. 26 (Temecula Valley), a 5 acre site, and 100 meter receptor distance from boundary of site are the criteria selected for the LST.

As summarized in Table 9-6 below, the estimated construction emissions for the Modified Phase II Plan are below the LST thresholds (lbs/day) established by the SCAQMD for SRA No. 26 (Temecula Valley) (SCAQMD, 2011). Therefore, Modified Phase II Plan impact would be less than significant on air quality.

Table 9-6 Comparison of SCAQMD localized significant thresholds (in lbs/day) and Modified Phase II Plan maximum (worst case scenario) estimated emissions (lbs/day), Years 2013 and 2014

Air Pollutant	SCAQMD Localized Significant Threshold (LST) significance thresholds [1] (lbs/day)	2013 Murrieta Creek Phase II Alternative construction estimated emissions[2] (lbs/day)	2014 Murrieta Creek Phase II Alternative construction estimated emissions[2] (lbs/day)
Volatile organic compounds (VOC)	NA	11.98	5.30
Carbon monoxide (CO)	4,282	54.22	23.20
Nitrogen Dioxide (NO2)	520	97.62	32.19
Sulfur Dioxide (SO2)	NA	0.10	0.04
PM 10	59	22.29	2.97
PM 2.5	16	13.88	2.75

Note: NA denotes "not applicable"
Reference 1: SCAQMD, 2009: http://www.aqmd.gov/cega/handbook/LST/appC.pdf.
Reference 2: CalEEMod, SCAQMD, 2012; and Appendix D of this document.

Based on the above, the estimated annual emissions associated with the construction of the Murrieta Creek Phase II Project are less than the General Conformity de minimis thresholds, are less than the estimated SCAQMD SCAB daily significance thresholds (lbs/day) for construction and operation, and are less than the SCAQMD LST significance thresholds for SRA No. 26 (Temecula Valley). Therefore, based on the above, the Murrieta Creek Phase II Project would have less than significant impact on air quality.

In comparison to the Original Phase II Plan where the emissions of criteria pollutants were above the SCAQMD threshold, emissions associated with the Modified Phase II Plan are below the SCAQMD threshold. There are a number of reasons for the reduction in emissions. First, due to the larger channel width allowed by the use of steeper 3: 1 slopes in various sections of the Phase II project reach, the volume of substrate to be excavated was reduced from 1,100,481 cubic yards to 952,000 cubic yards. Furthermore, the Original Phase II Plan evaluated air-quality impacts on the assumption that the excavated material would be transported off-site possibly for placement in a landfill. Therefore, there were additional emissions associated with on road trucks used to hold the excavated material off-site. Second, the Original Phase II Plan compressed the

construction schedule into a 15 month window. However, the Modified Phase II Plan extended the construction window over 22 months. Last, it is likely that CalEEMod, the modeling software used to estimate emissions, incorporated a newer fleet mix into its algorithm.

NEPA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

9.2.2 Operations and Maintenance

Original Phase II Plan (No Action Alternative)

Operations and maintenance activities would vary in size, scope, and intensity of air quality impacts. Larger operations such as the removal of sediment and debris from the channel would entail traffic impacts that would be similar to construction-related impacts. Smaller operations such as removal of weeds from the gabion embankment would entail little or no impacts.

In a worst-case scenario, operations and maintenance activities would entail excavation of accumulated debris and sediment from the entire 70-acre area. In such a case, air quality impacts would be similar to those for construction in the year 2013. Accordingly, worst-case air-quality emissions would likely be less than the SCAQMD significant thresholds.

Modified Phase II Plan (Preferred Alternative)

Future maintenance activities would be regularly conducted within the project area by the RCFCDWCD. Monitoring and maintenance of the restoration areas would be the responsibility of the Corps for 5 years after completion of construction. Activities that result in the discharge of dredged or fill material into waters of the United States would be subject to Section 404 of the Clean Water Act implemented by the Corps Regulatory program. As a result, general impacts associated with operations and maintenance activities are evaluated under NEPA.

The changes in the Modified Phase II Plan indicated above would entail *de minimis* changes to operations and maintenance activities associated with the Original Phase II Plan.

NEPA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

9.3 Environmental Commitments (NEPA)/Mitigation Measures (CEQA)

AQ-1 Require 6.9 grams per horsepower standard for heavy duty construction equipment on- and off-road.

AQ-2 Require injection timing retard of 2 degrees on all diesel vehicles, where applicable.

AQ-3 Install high-pressure injectors on all vehicles, where feasible.

AQ-4 Use Caterpillar pre-chamber diesel engines or equivalent, and perform proper maintenance and operation.

AQ-5 Electrify equipment, where feasible.

AQ-6 Maintain equipment in tune with manufacturers' specifications, except as otherwise stated above.

AQ-7 Restrict the idling of construction equipment to 10 minutes.

AQ-8 Install catalytic converters on gasoline-powered equipment.

AQ-9 Substitute gasoline-powered for diesel-powered, where feasible.

PM_{10} Emissions

The following PM_{10} reducing construction practices would be implemented throughout the construction period:

AQ-10 The speed limit on all unpaved roads would be 10 MPH.

AQ-11 Gravel roads would be constructed for unpaved access/egress roads, and these roads would be watered hourly.

AQ-12 All handled (i.e. loaded/unloaded) soil would be watered to 25 percent moisture, and active excavation/grading areas would be watered hourly to ensure 15 percent moisture.

AQ-13 Street sweepers would be active at each unpaved road access/egress point for soil export (on- and off-site) and each on-site unpaved road access/egress point or materials import. Three street sweepers would be cleaning the entire soil export paved road route, beginning daily operation in the morning prior to the first haul truck and ending daily operation after cleaning the roadway after the passage of the last haul truck. The

street sweepers will be wet-type “street washers” that will meet the requirements of SCAQMD Rule 1186 for PM_{10} efficient street sweepers.

AQ-14 Soil haul trucks would be covered, would have 18 inches of freeboard and would have soils on the top of the load watered, or shall be sufficiently wet to mitigate emissions.

AQ-15 Inactive storage piles would be covered.

AQ-16 All grading activities would be prohibited during periods of high wine (i.e., winds greater than 30 mph).

AQ-17 Nontoxic chemical soil stabilizers would be applied to inactive construction areas (i.e., disturbed lands within construction areas that are unused for at least 4 consecutive days), or water at least twice daily.

AQ-18 Nontoxic binders (i.e., latex acrylic copolymer) will be applied to exposed areas after cut-and –fill operations and hydroseed the areas if appropriate for the project location.

AQ-19 Wheel washers would be installed for all exiting trucks.

10.0 GREENHOUSE GASES

10.1 Affected Environment

Green House Gasses (GHGs) differ from criteria pollutants in that GHG emissions do not cause direct adverse human health effects. Rather, the direct environmental effect of GHG emissions is the increase in global temperatures or change in global climate. This, in turn, has numerous indirect effects on the environment and humans.

Some climate changes that have already been observed include shrinking glaciers, thawing permafrost, later freezing and earlier break-up of ice on rivers and lakes, a lengthened growing season, shifts in plant and animal ranges, and earlier flowering of trees. Longer-term environmental impacts of global warming may include a rise in sea level, changing weather patterns with increases in the severity of storms and droughts, changes to local and regional ecosystems with potential losses of species, and a significant reduction in the winter snow pack. Some estimates show a 30 to 90 percent reduction in snow pack in the Sierra Nevada mountain range. Current data suggest that in the next 25 years, in every season of the year, the state of California could experience unprecedented heat, longer and more extreme heat waves, greater intensity and frequency of heat waves, and longer dry periods. More specifically, the California Climate Change Center predicts that California could witness the following events:

- Temperature rises between 3 to 10.5ºF
- 6 to 20 inches or more of sea level rise
- 2 to 4 times as many heat-wave days in major urban centers
- 2 to 6 times as many heat-related deaths in major urban centers
- 1 to 1.5 times more critically dry years
- 10 to 55 percent increase in the risk of wildfires

10.2 Environmental Effects

10.2.1 Construction

Original Phase II Plan (No Action Alternative)

Evaluations of the impacts of GHGs were not required at the time of the 2000 Final EIR/EIS. Accordingly, there are no GHG data available for comparison in this SEA/EIR Addendum.

Modified Phase II Plan (Preferred Alternative)

The Modified Phase II Alternative would create temporary greenhouse gas emissions during construction. The proposed project has an expected life of 50 years. GHG emission associated with the Modified Phase II Plan would yield 894 metric tons (MT) per year in 2013, and 428 MT per year in 2014.

There are currently no NEPA numerical thresholds for evaluating whether GHG emissions entail significant impacts. However, the Council on Environmental Quality has established a 25,000 metric tons per year threshold for determining whether additional evaluation of GHGs under

NEPA is warranted. The SCAQMD's 10,000 metric tons per year threshold is utilized under CEQA to determine whether emissions of GHGs are significant.

Table 10-1. Federal and State GHG Emissions Thresholds

		Comparison to State and Federal Thresholds	
Year	GHG Emissions (metric tons/year)	NEPA Evaluation Threshold (metric tons/year)	CEQA Significant Threshold (metric tons/year)
2013	894	25,000	10,000
2014	428	25,000	10,0000

NEPA Impact Determination

No significant impact determination under NEPA is made since there are no federal thresholds for GHGs. However, the implementation of the Modified Phase II Plan would result in emissions below the 25,000 metric tons per year threshold requiring further evaluation of GHG mission.

CEQA Impact Determination

Based on the above the implementation of the Modified Phase II Plan would result in less than significant impacts.

10.2.2 Operations and Maintenance

Original Phase II Plan (No Action Alternative)

Evaluations of the impacts of GHGs were not required at the time of the 2000 Final EIR/EIS. Accordingly, there are no GHG data available for comparison in this SEA/EIR.

Modified Phase II Plan (Preferred Alternative)

Operations and maintenance activities would vary in size, scope, and intensity of air quality impacts. Larger operations such as the removal of sediment and debris from the channel would entail GHG emissions that would be similar to construction-related emissions. Smaller operations such as removal of weeds from the gabion embankment would entail little or no impacts.

The changes in the Modified Phase II Plan indicated above would entail *de minimis* changes to operations and maintenance activities associated with the Original Phase II Plan.

NEPA Impact Determination

No significant impact determination under NEPA is made since there are no federal thresholds for GHGs. However, the implementation of the Modified Phase II Plan would result in emissions below the 25,000 metric tons per year threshold requiring further evaluation of GHG mission.

CEQA Impact Determination

Based on the above the implementation of the Modified Phase II Plan would result in less than significant impacts.

10.3 Environmental Commitments (NEPA)/Mitigation Measures (CEQA)

Measures AQ-1 through AQ-9 as identified under Air Quality are proposed to minimize impacts from green house gases.

11.0 LAND USE

11.1 Affected Environment

The Phase II project reach traverses for the most part through the commercial and industrial portion of the city of Temecula. In general, land use on river left is primarily commercial and industrial from the upstream terminus, approximately 200 feet upstream of the Winchester Road Bridge to the downstream terminus, approximately 1,000 feet downstream of 1st St. On river right, the land use is primarily commercial and industrial from the upstream terminus to Rancho California Road. From Rancho California Road to the downstream terminus, land use on river right is primarily multiunit residential complexes. Land uses adjacent to lands owned by the RCFC&WCD on both river left and right are described in detail below from the upstream terminus to the downstream terminus.

Upstream Terminus (200 feet upstream of Winchester Road) to the Winchester Road Bridge

This reach is approximately 201 linear feet in length. On the river right, there is a large commercial building with large paved parking lot, and a recreational park. On the river left, there is a large commercial building with large paved parking lot, and one unpaved dirt lot.

Winchester Road Bridge to Via Montezuma Bridge

This reach is approximately 3,729 linear feet in length. On the river right, there are 72 commercial/industrial buildings with paved parking lots, and three unpaved lots. On the river left, there are 99 commercial/industrial buildings with paved parking lots, and two unpaved lots.

Via Montezuma Bridge to Rancho California Road Bridge

This reach is approximately 4,178 linear feet in length. On the river right there are 32 commercial/industrial buildings with paved parking lots, and three large-sized unpaved lots. On the river right, there are 38 commercial/industrial buildings with paved parking lots, and nine unpaved lots.

Rancho California Road Bridge to Main Street Bridge

This reach is approximately 2,750 linear feet in length. On the river right, there are 51 commercial/industrial buildings with paved parking lots; 16 residential homes; one large playing field; and six unpaved lots. On the river left, there are 44 commercial/industrial buildings with paved parking lots; 19 unpaved lots; and 29 residential homes.

Main Street Bridge 4 to Santiago Road Bridge

This reach is approximately 1,080 linear feet in length. On the river right, there are 4 commercial/industrial buildings with paved parking lots; 6 unpaved lots; and 47 multiunit residential complexes. On the river left, there are 36 commercial/industrial buildings with paved parking lots, and 28 unpaved lots.

1st Street Bridge to Downstream Terminus (1,000 feet downstream of 1st Street Bridge)

This reach is approximately 1,020 linear feet in length. On the river right, there are 9 multiunit residential homes complexes; 4 unpaved lots; and a city park. On the river left, there are 9 commercial/industrial buildings with paved parking lots, and 5 unpaved lots.

Table 11-1. Overview of Land Use

		Land Uses - River Right				Land Uses - River Left			
Location	Linear Feet (LF)	Commercial/ Industrial Buildings (units)	Multiunit Residential Complexes (units)	Parks (number)	Unpaved Lots (number)	Commercial/ Industrial Buildings (units)	Multiunit Residential Complexes (units)	Parks (number)	Unpaved Lots (number)
Upstream Terminus to Winchester Road Bridge	201 LF	1	0	1 (park)	0	1	0	0	1
Winchester Road Bridge to Via Montezuma Bridge	3,729 LF	72	0	0	3	99	0	0	2
Via Montezuma Bridge to Rancho California Road Bridge	4,178 LF	32	0	0	3	38	0	0	9
Rancho California Road Bridge to Main Street Bridge	2,750 LF	51	16	1 (field)	3	44	29	0	19
Main Street Bridge to 1st Street Bridge	1,080 LF	4	47	0	6	36	0	0	28
1st Street Bridge 5 to Downstream Terminus	1,020 LF	0	9	1 (park)	4	9	0	0	5

11.2 Environmental Effects

11.2.1 Construction

Original Phase II Plan (No Action Alternative)

The Western Riverside Council of Governments (WRCOG) submitted a comment letter on the Draft EIS/EIR regarding the consistency of the project with the Western Riverside Subregional Comprehensive Plan (SRCP) (see Part II of the Final EIS/EIR for a copy of this comment letter and the corresponding responses). As indicated in this letter, the project is consistent with the Water Resources Element, Open Space and Habitat Conservation Element of the SRCP. In

addition, the project was determined to be in conformance with SRCP policies related to Water Quality and Quality of Life. According to the WRCOG, the project is also consistent with the Southern California Association of Governments (SCAG) Regional Comprehensive Plan and Guide.

Channel Modifications

The project would be constructed on RCFC&WCD-owned lands between 200 feet upstream of Winchester Road and 1000 feet downstream of 1st Street. The proposed flood channel modifications would not change or interfere with the surrounding land uses. No existing structures would be demolished during construction or upon completion of the channel modifications.

Main Street Bridge Replacement

Replacement of the Main Street Bridge would not conflict with existing land uses in the area. The new bridge would be slightly wider and longer than the existing bridge, and it would be compatible with the surrounding uses.

Staging Areas

Construction materials and equipment would be staged and stored at RCFC&WCD-owned undeveloped lots or undeveloped lots lease from private owners for the duration of construction. Temporary storage and staging areas established in the upland may temporarily conflict with planned land uses. However, staging and storage areas would be returned to their pre-project uses upon completion of construction.

Modified Phase II Plan (Preferred Alternative)

The Modified Phase II Plan would continue to utilize the staging and storage areas identified in the Original Phase II Plan. Accordingly, there would be no changes between the Original Phase II Plan and the Modified Phase II plan.

General Plan and Policies

The project is located within the City of Temecula and therefore would be subject to the general plans and policies of the City of Temecula General Plan. The proposed project would be consistent with the applicable plans and policies of the City of Temecula.

NEPA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

11.2.2 Operations and Maintenance

Original Phase II Plan (No Action Alternative)

As identified in the 2000 Final EIS/EIR and summarized in Section 3.0, future maintenance activities would be regularly conducted within the project area by the RCFC&WCD. All operations and maintenance activities will occur within RCFC&WCD-owned lands, and would not interfere with surrounding land uses.

Operations and maintenance activities would vary in size and scope. Larger operations such as the removal of sediment and debris from the channel may require the use of staging and storage area in the upland. If needed, construction materials and equipment would be staged and stored at RCFC&WCD-owned undeveloped lots or undeveloped lots lease from private owners for the duration of construction. Temporary storage and staging areas established in the upland may temporarily conflict with planned land uses. However, staging and storage areas would be returned to their pre-project uses upon completion of construction.

Modified Phase II Plan (Preferred Alternative)

Future maintenance activities would be regularly conducted within the project area by the RCFC&WCD. Monitoring and maintenance of the restoration areas would be the responsibility of the Corps for 5 years after completion of construction. Activities that result in the discharge of dredged or fill material into waters of the United States would be subject to Section 404 of the Clean Water Act implemented by the Corps Regulatory program. As a result, general impacts associated with operations and maintenance activities are evaluated under NEPA.

The changes in the Modified Phase II Plan indicated above would entail *de minimis* changes to operations and maintenance activities associated with the Original Phase II Plan.

NEPA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

11.3 Environmental Commitments (NEPA)/Mitigation Measures (CEQA)

No environmental commitments under NEPA or mitigation measures under CEQA are proposed.

12.0 AESTHETICS

12.1 Affected Environment

The Phase II project reach traverses for the most part through the commercial and industrial portion of the city of Temecula. In general, land use on river left is primarily commercial and industrial from the upstream terminus, approximately 200 feet upstream of the Winchester Road Bridge to the downstream terminus, approximately 1,000 feet downstream of 1st St. On river right, the land use is primarily commercial and industrial from the upstream terminus to Rancho California Road. From Rancho California Road to the downstream terminus, land use on river right is primarily multiunit residential complexes. The viewscape of the project reach is described below.

The viewscape within Murrieta Creek is composed of a wide, sandy, and vegetated channel. The embankments are earthen embankment covered with vegetation. There are some areas of the embankment where concrete has been discharged from the top of slope to the channel. Debris is present in the some parts of the channel, particularly near bridges. Numerous tire tracks traverse the creek, indicating the use of vehicles. The normal water flow from the creek is relatively small compared to the entire width of the channel and the water course meanders slightly. In some locations the creek supports vegetation and wildlife.

The viewscape of the uplands adjacent to the project reach is composed of a built urban environment. Shopping centers, manufacturing facilities, parking lots, bridge crossings, and multi-unit residences are the dominant visual elements within the viewscape. The area encompasses Old Town Temecula, an area containing older historic buildings. Accordingly, many restored historic buildings and buildings constructed or renovated to blend in with the old town architectural theme, along with reproductions of period street lamps, sidewalks, and other streetscape help to create a visually amalgamated viewscape.

12.2 Environmental Effects

12.2.1 Construction

Original Phase II Plan (No Action Alternative)

There would be temporary impacts to the viewscape within the channel during construction. During construction, earthmoving equipment would be operating within the channel to widen and deepen the channel to design specifications. Portions of the work area would be devoid of vegetation for the duration of construction. Immediately, upon completion of construction a barren, soft-bottom engineered channel with gabion embankments would be the dominant visual elements within the viewscape. Because the gabions would be filled with rocks, the channel embankments would exhibit a gray hue, instead of earth tones associated with earthen embankments. Over time, vegetation would be reintegrated into the viewscape within the channel upon planting and maturation of vegetation on the vegetated corridor. With the exception of empty lots that would be used to temporarily store and stage equipment, the viewscape of the uplands adjacent to the project reach would remain unchanged.

Modified Phase II Plan (Preferred Alternative)

The Modified Phase II Plan would entail the same impacts as the Original Phase II Plan with the exception of the following changes. First, the Modified Phase II Plan would incorporate a larger vegetated corridor within the channel invert. Whereas the Original Phase II Plan would construct a vegetated corridor that would range in width from 20 to 60 feet, the range in width of the vegetated corridor in the Modified Phase II Plan would be approximately 20 to 150 feet. Therefore, there would be a slight increase in vegetation within the viewscape of the channel. Second, the gabion embankments from the Original Phase II project would be replaced with soil cement embankment in the Modified Phase II Plan. The texture and color of the soil cement embankment would more closely match the existing surrounding and have a less engineered appearance.

NEPA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

12.2.2 Operations and Maintenance

Original Phase II Plan (No Action Alternative)

Operations and maintenance activities would vary in size, scope, and intensity. Larger operations such as the removal of sediment and debris from the channel would temporarily impact the viewscape within the channel during construction. Smaller operations such as removal of weeds from the gabion embankment would entail little or no impacts. The vegetated corridor would not be subject to operations and maintenance activities. Therefore, the vegetation elements within the viewscape of the channel would remain unaffected during operations and maintenance activities.

Modified Phase II Plan (Preferred Alternative)

Future maintenance activities would be regularly conducted within the project area by the RCFCDWCD. Monitoring and maintenance of the restoration areas would be the responsibility of the Corps for 5 years after completion of construction. Activities that result in the discharge of dredged or fill material into waters of the United States would be subject to Section 404 of the Clean Water Act implemented by the Corps Regulatory program. As a result, general impacts associated with operations and maintenance activities are evaluated under NEPA.

The changes in the Modified Phase II Plan indicated above would entail *de minimis* changes to operations and maintenance activities associated with the Original Phase II Plan.

NEPA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

12.3 Environmental Commitments (NEPA)/Mitigation Measures (CEQA)

No environmental commitments under NEPA or mitigation measures under CEQA are proposed.

13.0 NOISE

13.1 Affected Environment

Existing Noise Levels

The project reach is within the vicinity of Interstate 15. Furthermore, it traverses for the most part through the commercial and industrial portion of the city of Temecula. Accordingly, the noise environment within the project area is dominated by vehicle-generated sound. Interstate 15, Rancho California Road, and Winchester Road are the major roadways contributing to the ambient noise levels. The City of Temecula's general plan projects the ambient noise throughout the project reach to be approximately between 70-75 dBA CNEL. The projected noise levels are within acceptable limits for multi-unit residential units and light industrial uses.

Sensitive Receptors

Noise sensitive uses generally include residential areas, schools, libraries, offices, hospitals, churches, hotels, motels, and outdoor recreational areas where low ambient noise levels are desirable.

The project reach traverses for the most part through the commercial and industrial portion of the city of Temecula. In general, land use on river left is primarily commercial and industrial from the upstream terminus, approximately 200 feet upstream of the Winchester Road Bridge to the downstream terminus, approximately 1,000 feet downstream of 1st St. On river right, the land use is primarily commercial and industrial from the upstream terminus to Rancho California Road. From Rancho California Road to the downstream terminus, land use on river right is primarily multiunit residential complexes. Therefore, most sensitive receptors with the exception of multi-unit residential complexes are absent from the project reach.

City Noise Ordinance

Noise limitations in the city of Temecula are found in the General Plan, adopted in 1993 and updated in 2005, as well as the Temecula Municipal Code. The Temecula noise ordinance limits construction noise whenever it is within 0.25 mile of an occupied residence as follows:

- No construction activity is to be held between the hours of 6:30 p.m. and 7:00 a.m. Monday through Friday.
- Construction is authorized on Saturday between the hours of 7:00 a.m. and 6:30 p.m.
- No construction work is to be done on Sundays and holidays unless authorized by the city.

13.2 Environmental Effects

13.2.1 Construction

Original Phase II Plan (No Action Alternative)

Typical equipment that would be used during construction would include graders, loaders, rollers, bulldozers, trucks, scrapers, pumps, and generators. Construction activities are expected to occur five days per week for 10 hour days, over a 15-month period. Noise levels associated with various types of equipment are shown in Table 13-1 below.

Table 13-1. Equipment Noise Levels

Equipment	Noise Levels at 50 feet (dBA)
Grader	85
Loader	85
Roller	75
Bulldozer	85
Truck	88
Scraper	89

References: FTA, 1995.

Noise levels are atmospherically attenuated by a factor of 6 dB per doubling of the distance. Potential noise levels at various distances are shown in Table 13-2 below.

Table 13-2. Potential Noise Levels At Various Distances

Distance from Construction Activities (ft)	Noise Levels (dBA)
50	80 - 90
100	74 – 84
200	68 – 78
400	66 – 72
800	60 – 66

Reference: USEPA, 1972.

As discussed above, the existing noise environment is dominated by vehicle-generated sound from nearby interstates, major roadways, and land uses. The projected noise levels within the vicinity of the project reach ranges from 70-75 dBA CNEL. Moreover, structures adjacent to the project reach are located approximately 100 to 200 feet away from the earthen embankments. At a distance of 100 feet, construction noise would be reduced to approximately 74-84 dBA per Table 13-2. At a distance of 200 feet, construction noise would be reduced to approximately 68-78 dBA. Structures at these distances would be exposed to noise levels elevated between 5 and 10 dBA above the ambient noise levels. Noise impacts beyond these distances would be minimal.

Modified Phase II Plan (Preferred Alternative)

The Modified Phase II Plan would entail the same noise impacts as the Original Phase II Plan.

NEPA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

13.2.2 Operations and Maintenance

Original Phase II Plan (No Action Alternative)

Operations and maintenance activities would vary in size, scope, and intensity of noise impacts. Larger operations such as the removal of sediment and debris from the channel would entail noise impacts that would not similar to construction-related noise impacts. Smaller operations such as removal of weeds from the soil cement embankment would entail little or no noise impacts.

Modified Phase II Plan (Preferred Alternative)

Future maintenance activities would be regularly conducted within the project area by the RCFCDWCD. Monitoring and maintenance of the restoration areas would be the responsibility of the Corps for 5 years after completion of construction. Activities that result in the discharge of dredged or fill material into waters of the United States would be subject to Section 404 of the Clean Water Act implemented by the Corps Regulatory program. As a result, general impacts associated with operations and maintenance activities are evaluated under NEPA.

The changes in the Modified Phase II Plan indicated above would entail *de minimis* changes to operations and maintenance activities associated with the Original Phase II Plan.

NEPA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

13.3 Environmental Commitments (NEPA)/Mitigation Measures (CEQA)

N-1 Construction or maintenance activities within 0.25 mile of residences or other noise-sensitive uses will be restricted to daytime hours. No construction or maintenance activities will be performed within 0.25 mile of noise sensitive uses on Sundays, on legal holidays, or between the hours of 6:30 p.m. and 7:00 a.m. Monday through Friday and Saturday, as per City of Temecula.

N-2 All construction and maintenance equipment will have sound-control devices that are at least as effective as those devices provided on original equipment. No equipment will have an unmuffled exhaust.

N-3 The contractor will implement appropriate additional noise mitigation measures, including, but not limited to, changing the location of stationary construction and maintenance equipment, shutting off idling equipment, rescheduling construction and maintenance activity, notifying adjacent residents in advance of construction and maintenance work, and installing acoustic barriers around construction and maintenance noise sources.

14.0 HAZARDOUS MATERIALS

14.1 Affected Environment

The project reach traverses for the most part through the commercial and industrial portion of the city of Temecula. In general, land use on river left is primarily commercial and industrial from the upstream terminus, approximately 200 feet upstream of the Winchester Road Bridge to the downstream terminus, approximately 1,000 feet downstream of 1st St. On river right, the land use is primarily commercial and industrial from the upstream terminus to Rancho California Road.

Consistent with the commercial and industrial land uses adjacent to the project reach, the 2000 Final EIS/EIR identified multiple contaminated sites most of which are located on Front Street or Diaz Road, river left (p. 3-121). Six leaking underground storage tanks were identified on properties adjoining the project reach (p. 3-121):

- Unocal Station on Rancho California Road (gasoline)
- Bianchi International on Calle Cortez (gasoline)
- C.L. Pharris Ready-mix Plant (diesel)
- Rancho California Water District on Diaz Road (diesel)
- Delta Discount Gas on Front Street (gasoline?)
- Temecula Fuel Center on Front Street (diesel)
- ARCO Station on Ynez Road (fuel)

Other sources of contamination in the area include:

- Borg Warner facility on Front Street (trichloroethylene)
- Rainbow Canyon Manufacturing (chromium-contaminated groundwater)
- Temecula Bailey Pipe and Supply on Del Rio Road

14.2 Environmental Effects

14.2.1 Construction

Original Phase II Plan (No Action Alternative)

The entire Murrieta Creek Flood Control Project is an ecosystem restoration and flood risk minimization project. The project does not entail the construction of manufacturing facilities or buried underground storage tanks.

The Original Phase II Plan would involve excavating and grading approximately 70 acres of Murrieta Creek. Vegetation within the project footprint would be cleared and grubbed. Approximately, 1,100,481 cubic yards of alluvial substrate would be removed from the channel invert to lower the invert elevation by approximately 3 to 8 feet. The contaminated sites identified above are all located in the uplands outside of RCFCDWCD-owned lands. Therefore, work within the channel and the embankments would not on earth or disturb contaminated sites in the uplands. Although no known hazardous materials waste sites would be affected by this project, the potential exists to encounter previously undocumented hazardous materials and wastes

originating from previous uses of the properties that would be affected by the project. Signs of potential contamination would include buried underground storage tanks or other containers, soil discoloration, and unusual odors. Although contaminated areas may be encountered, there is no documentation indicating that any exist in the study area. Thus, it is likely that any areas of contamination would be minor and would affect relatively small areas. However, if contamination is encountered, mitigation measures at Section 13.3 would be implemented to reduce to minimize the impact.

The potential exists for localized spills of petroleum-based products, concrete, paints, or other chemicals during construction. These spills could expose construction workers and the public to hazardous materials either directly, at the site of the spill, or indirectly, by introducing these substances into storm runoff. Implementation of water quality mitigation measures at Section 5.3 would minimize potential for the production of petroleum-based products into the channel during construction.

Modified Phase II Plan (Preferred Alternative)

The Modified Phase II Plan would entail the same potential impacts as the Original Phase II Plan.

NEPA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

14.2.2 Operations and Maintenance

Original Phase II Plan (No Action Alternative)

Potential impacts to utilities would vary with respect to the size, scope, and type of operations and maintenance activities undertaken. For example, activities requiring excavation would increase the possibility of unearthing previously unidentified contaminated sites. Discharge of riprap to protect an embankment would entail less risk of unearthing contaminated sites. Smaller operations such as removal of weeds from the soil cement embankment would entail little or no impacts.

Modified Phase II Plan (Preferred Alternative)

Future maintenance activities would be regularly conducted within the project area by the RCFCDWCD. Monitoring and maintenance of the restoration areas would be the responsibility of the Corps for 5 years after completion of construction. Activities that result in the discharge of dredged or fill material into waters of the United States would be subject to Section 404 of the Clean Water Act implemented by the Corps Regulatory program. As a result, general impacts associated with operations and maintenance activities are evaluated under NEPA.

The changes in the Modified Phase II Plan indicated above would entail *de minimis* changes to operations and maintenance activities associated with the Original Phase II Plan.

NEPA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

14.3 Environmental Commitments (NEPA)/Mitigation Measures (CEQA)

HZ-1 If a contaminated area is encountered during construction, construction would cease in the vicinity of the contaminated area. The contaminated areas shall be assessed to determine the extent and type of contamination. If necessary, the contaminated site would be remediated to minimize the potential for exposure of the public and to allow the project to safely be constructed.

15.0 UTILITIES AND PUBLIC SERVICES

15.1 Affected Environment

15.1.1 Water

The Rancho California Water District is the retail supplier of potable water to the City of Temecula serving more than 30,000 customers in the Temecula Valley area (NCT, 2002). Additional water is imported from the Metropolitan Water District of Southern California. Various water supply pipes are located within the larger Murrieta Creek study area. In addition, there are a potable water and chlorination facility on the west side of Murrieta Creek just north of the Rancho California Road bridge. Water and other utility lines are also located under north of Winchester Road, just outside the project limits.

15.1.2 Sewer

Wastewater (sewage) collection and treatment services in the project area are provided by the Eastern Municipal Water District (EMWD). Various sewer lines are located within the larger Murrieta Creek study area evaluated in the 2000 Final EIS/EIR, with some pipelines beneath or adjacent to the creekbed. In the Phase II project area, there are two existing EMWD lines: one 12-inch and one 24-inch VCP gravity sewer crossings. There is a pump station on the west side of Murrieta Creek just north of the Rancho California Street Bridge.

15.1.3 Electricity

Southern California Edison provides electricity to the City of Temecula. There are Edison power lines near Avenida Alvarado and at Main Street.

15.2 Environmental Effects

15.2.1 Construction

Original Phase II Plan (No Action Alternative)

Water

The Original Phase II Plan would involve excavating and grading approximately 70 acres of Murrieta Creek. Approximately, 1,100,481 cubic yards of alluvial substrate would be removed from the channel invert to lower the invert elevation by approximately 3 to 8 feet. The substantial excavation and grading activities could occur within the vicinity of water lines. The Corps and RCFC&WCD would implement all mitigation measures listed in Section 14.3 to ensure that there would be no disruption of water supply services during construction.

Sewer

The Original Phase II Plan would involve excavating and grading approximately 70 acres of Murrieta Creek. Approximately, 1,100,481 cubic yards of alluvial substrate would be removed from the channel invert to lower the invert elevation by approximately 3 to 8 feet. The substantial excavation and grading activities could occur within the vicinity of water lines. The

Corps and RCFC&WCD would implement all mitigation measures listed in Section 14.3 to ensure that there would be no disruption of water supply services during construction.

Modified Phase II Plan (Preferred Alternative)

The Modified Phase II Plan would involve excavating and grading approximately 121 acres of Murrieta Creek. Vegetation within the excavation footprint would be cleared and grubbed. Approximately, 952,000 cubic yards of alluvial substrate would be removed from the channel invert to lower the invert elevation to depths ranging from 3 to 8 feet. The changes associated with the Modified Phase II Plan when compared to the Original Phase II Plan are minor. The Modified Phase II Plan would lengthen the project footprint by 200 feet, resulting in a length increase of 1.6%; decrease the volume of excavation by 148,481 cubic yards, resulting in a decrease of approximately 13.5%. The Modified Phase II Plan would entail the same potential impacts as the Original Phase II Plan.

The RCFC&WCD is coordinating with Southern California Edison (SCE) on two powerlines that are in the vicinity of the Phase II project area, to determine if relocations are necessary. The RCFC&WCD would continue coordinating with SCE. The Eastern Municipal Water District (EMWD) has two gravity sewer crossings within the Phase II project area. The Corps and RCFC&WCD will continue coordination with EMWD to ensure the Modified Phase II Plan is designed to protect in place EMWD's existing lines.

NEPA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

15.2.2 Operations and Maintenance

Original Phase II Plan (No Action Alternative)

Potential impacts to utilities would vary with respect to the size, scope, and type of operations and maintenance activities undertaken. For example, activities requiring excavation would increase the possibility of unearthing or damaging buried utilities. Discharge of riprap to protect an embankment would entail less risk of damaging utilities. Smaller operations such as removal of weeds from the soil cement embankment would entail little or no impacts.

Modified Phase II Plan (Preferred Alternative)

Future maintenance activities would be regularly conducted within the project area by the RCFCDWCD. Monitoring and maintenance of the restoration areas would be the responsibility of the Corps for 5 years after completion of construction. Activities that result in the discharge of dredged or fill material into waters of the United States would be subject to Section 404 of the

Clean Water Act implemented by the Corps Regulatory program. As a result, general impacts associated with operations and maintenance activities are evaluated under NEPA.

The changes in the Modified Phase II Plan indicated above would entail *de minimis* changes to operations and maintenance activities associated with the Original Phase II Plan.

NEPA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, and with the implementation of mitigation measures from the 2000 Final EIS/EIR listed below, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

15.3 Environmental Commitments (NEPA)/Mitigation Measures (CEQA)

U-1 During the preliminary design phase of each project component, the utility service providers would be consulted to identify existing and proposed buried facilities in affected roadways and to determine which utilities require relocation and which can be avoided. If relocation is required, the appropriate utility service provider would be consulted to sequence construction activities to avoid or minimize interruptions in service. The Local Sponsor and contractor shall comply with permit conditions and such conditions shall be included in the contract specifications.

U-2 If utility service disruption is necessary, residents and businesses in the project area would be notified a minimum of two to four days prior to service disruption through local newspapers, and direct mailings to affected parties.

U-3 The contractor would be required to excavate around utilities, including hand excavation as necessary, to avoid damage and to minimize interference with safe operation and use. Hand tools must be used to expose the exact location of buried gas or electric utilities.

U-4 Prior to construction during the Plans and Specifications phase, utility locations shall be verified through field surveys.

16.0 RECREATION

16.1 Affected Environment

Existing Recreation Facilities and Opportunities

Most of Murrieta Creek lies within an artificially widened open space channel with vegetated banks and a vegetated or sand-lined bottom. The channel provides a naturalized, permanent buffer between existing and planned development on either side of the creek.

The open space and undeveloped area along the Murrieta Creek corridor provides for passive recreational pursuits. There are currently no official recreational opportunities within the creek bed itself, nor are there any plans to allow for such recreational use within the proposed channel prism. There is designated open space along the creek in the City of Temecula.

There is a small park located adjacent to Murrieta Creek. In the downstream area below 1st Street, Rotary Park is located on the western side of the creek. The park, which is associated with a teen recreation center, has a small lawn area, picnic table, barbeque, and children's play lot. Adjacent to the center is a small arena with a concrete bottom for active recreation uses such as roller hockey. South of this facility is the Temecula Community Center. A second park, Sam Hick's Monument Park, located approximately 300 feet east of the creek, southeast of Rancho California Road in Old Town Temecula, includes a children play area, picnic tables, and restroom facilities.

There are also Class 1 trails along Murrieta Creek in the Phase II area. One segment is located just downstream of Rancho California Road on the east side of the creek. The second paved trail for walking and cycling runs along the west side of the creek adjacent to Diaz Road, from Rancho California Road to Winchester Road.

Planned New Facilities and Improvements to Existing Facilities

As the population within the greater Temecula Valley continues to grow, the demand for recreational facilities will increase. This increase has not been quantified, but should be considered in the context of the regional growth patterns. New recreational facilities are generally necessitated by increased residential population. Most of the planned development adjacent to Murrieta Creek in the City of Temecula is business park/light industrial, which does not generate a need for parks and recreation areas.

Currently, there are no proposed or planned parks or recreation facilities along the Phase II area along the Murrieta Creek corridor, except for planned trails along the creek alignment (Figure 3-1a to 3-1e, Project Features). The City of Temecula Trails and Bikeway Master Plan identifies a proposed soft surface hiking and equestrian trail to connect to the existing trail along the east side of the creek between Winchester Road and Rancho California Road. A combination hard and soft surface east-west trail is also proposed east of the creek upstream of Rancho California Road, which would connect to the proposed north-south trail. A Class 2 bike lane is proposed for a segment of Winchester Road that crosses over the creek and would connect Diaz Road to Jefferson Avenue.

The County of Riverside also has a designated multi-purpose trail along the creek. The Southwest Area Community Plan Recreational Trails and Bike Paths map identifies a regional recreational trail along the entire length of Murrieta Creek. Also shown in that same alignment is a Class I bike path.

General Plan and Policies

Future recreational development and preservation of open space along Murrieta Creek will be guided in part by the general plan policies of those jurisdictions in which the creek is located. General plan policies that may be applicable to future recreational development or open space preservation are listed below.

City of Temecula. The City of Temecula General Plan Open Space/Conservation Element addresses the general need for parks, open space, and trails, without specifically referring to Murrieta Creek. One of the element's goals discusses opportunities for the City of Temecula to implement a recreation trail system concurrent with new development, road improvements, and flood control improvements (Goal 8).

16.2 Environmental Effects

16.2.1 Construction

Original Phase II Plan (No Action Alternative)

There are existing passive recreational resources located on the banks adjacent to Murrieta Creek, including pedestrian trails and bicycling paths, and two recreational parks nearby. The development of project features under the Original Phase II Plan would result in temporary impacts to existing recreational resources. The existing trails located on the west bank of the creek would be protected in place. However, access to trail segments adjacent to the creek would be temporarily restricted in areas that are adjacent to active construction operations. However, in areas where no active construction is present, access to the trails would be maintained. The project would not disrupt any planned recreational resources within the study area.

The Original Phase I Plan would provide long-term positive recreational benefits through the creation of a recreational trail. More specifically, the project would include the creation of a recreational trail along the Phase II project reach. A pedestrian/bicycle trail would be constructed along the maintenance/service road on the eastern side of Murrieta Creek from Rancho California Road to the detention basin. The proposed segment of trail downstream of Rancho California would be integrated with the existing trail. On the west side of the creek, a equestrian trail would be constructed utilizing the maintenance/service road from the upstream end of the project area to just downstream of Old Town Temecula (downstream of 1st Street). The proposed trail system would provide bicycle and pedestrian access consistent with the General Plan goals and policies of the City of Temecula.

Modified Phase II Plan (Preferred Alternative)

Because the Modified Phase II Plan also includes the development of a recreational trail (included in the Original Phase II Plan), the Modified Phase I Plan would also include a beneficial recreational amenity. Temporary impacts to recreational resources would be similar to that described under the Original Phase II Plan. As outlined above, the Modified Phase II Plan would be consistent with the General Plan goals and policies of the City of Temecula. No adverse impacts to existing recreational areas or opportunities would occur.

NEPA Impact Determination

Based on the above, implementation of changes in the Modified Phase II Plan would result in less than significant impacts. No mitigation is proposed.

CEQA Impact Determination

Based on the above, implementation of changes in the Modified Phase II Plan would result in less than significant impacts. No mitigation is proposed.

16.2.2 Operations and Maintenance

Original Phase II Plan (No Action Alternative)

Potential impacts to recreational resources from future operation and maintenance activities would be limited to temporary restricted access to segments of the trail system, where necessary, for repairs to the maintenance road, maintenance of the channel slope and bottom, or in cases where sediment removal may be required. Impacts would be less than significant.

Modified Phase II Plan (Preferred Alternative)

Potential impacts from future operation and maintenance activities would be similar to the Original Phase II Plan. Impacts would be less than significant.

NEPA Impact Determination

Operation and maintenance of the Modified Phase II Plan would result in less than significant impacts. No mitigation is proposed.

CEQA Impact Determination

Operation and maintenance of the Modified Phase II Plan would result in less than significant impacts. No mitigation is proposed.

17.0 SOCIOECONOMICS/ENVIRONMENTAL JUSTICE

17.1 Affected Environment

The Phase II project reach is wholly contained within the city of Temecula. With respect to the larger demographics of Riverside County, the city has a lower percentage of non-white minorities with the exception of Asians. The percentage of Blacks, the American Indians/Alaskan Natives, and Hispanics are lower. Therefore, the city of Temecula does not feature a disproportionately large minority population relative to Riverside County.

Table 17-1. Population Demographics

Race/Ethnic Group	City of Temecula	County of Riverside
White	70.8	81
Black	4.1	7
American Indian and Alaska Native	1.1	1.9
Asian	9.8	6.5
Native Hawaiian & Pacific Islanders	0.4	0.4
Persons reporting two or more races	5.9	3.3
Hispanic(2)	24.7	46.1
Non Hispanic white	57.2	39.1
Total Population	100,097	218,9641

With respect to income and poverty, the city has a higher median household income and a low percentage of persons below poverty level.

Table 17-2. Median Household Income

Housing Units	City of Temecula	County of Riverside
Median household income	$77,850	$57,768
Percent of persons below poverty level	8.2%	13.4%

With respect to employment, the city has a lower unemployment rate than Riverside County.

Table 17-3. Employment Rate

Employment	City of Temecula	County of Riverside
Employed	40,846	865,088
Unemployed	4,264	109,090
Percent unemployed	9.5%	12.6%
Total	45,110	974,178

With respect to housing, the city has a lower percentage of vacant housing compared to Riverside County.

Table 17-4. Housing

Housing Units	City of Temecula	County of Riverside
Occupied	29,540	666,906
Vacant	2,988	116,210
Percent Vacant	9%	15%
Total Housing	32,528	783,116

17.2 Environmental Effects

17.2.1 Construction

Original Phase II Plan (No Action Alternative)

The entire Murrieta Creek project including Phase II, would reduce the risk for periodic flooding of the adjacent built environment, and thus would benefit local and regional economy. Detailed analysis of economic benefits associated with the entire Murrieta Creek project is found in the 2000 Final EIS/EIR.

SOCIOECONOMICS

During construction, the Original Phase II Plan would provide limited, short-term, construction-related employment. Construction would require approximately 40 construction laborers. The duration of construction would be approximately 15 months. Construction work would indirectly benefit the local and regional economy through purchases of supplies and services. However, impacts would be de minimis. The work would not require additional housing for construction laborers since the project is readily within commuting distance from Los Angeles, San Bernardino, Orange, and Riverside counties. Therefore, there would be no changes to housing characteristics locally or regionally. Furthermore, the work would not entail the construction of infrastructure or utilities that would result in growth of the surrounding area, nor would the work increase capacity of existing infrastructure that would induce growth. Therefore, there would be de minimis impacts to the socioeconomic profile of the city of Temecula and Riverside County.

ENVIRONMENTAL JUSTICE

With respect to the larger demographics of Riverside County, the city has a lower percentage of non-white minorities with the exception of Asians. The percentage of Blacks, the American Indians/Alaskan Natives, and Hispanics are lower. Therefore, the city of Temecula does not feature a disproportionately large minority population relative to Riverside County. With respect to income and poverty, the city has a higher median household income and a low percentage of persons below poverty level. Therefore, the Original Phase II Plan would not disproportionately affect low-income or minority populations.

Modified Phase II Plan (Preferred Alternative)

The Modified Phase II Plan would provide limited, short-term, construction-related employment. Construction would require approximately 40 construction laborers. The duration of construction would be approximately 22 months. The Modified Phase II Plan would entail the same impacts to socioeconomics and environmental justice as the Original Phase II Plan.

NEPA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

17.2.2 Operations and Maintenance

Original Phase II Plan (No Action Alternative)

SOCIOECONOMICS

Potential short term impacts to socioeconomics would vary with respect to the size, scope, and type of operations and maintenance activities undertaken. For example, activities requiring excavation of the entire channel to restore the design depth would indirectly benefit the local and regional economy grew acquisition of supplies and services such as (i.e. equipment rentals, fuel purchases, etc.). The RCFCDWCD would be responsible for operations and maintenance. Monitoring and maintenance of the restoration areas would be the responsibility of the Corps for 5 years after completion of construction. If these activities are contracted to private entities, then there will be a direct and temporary benefit to construction-related employment. The work would not require additional housing for construction laborers since the project is readily within commuting distance from Los Angeles, San Bernardino, Orange, and Riverside counties. Therefore, there would be no changes to housing characteristics locally or regionally. Furthermore, the work would not entail the construction of infrastructure or utilities that would result in growth of the surrounding area, nor would the work increase capacity of existing infrastructure that would induce growth. Therefore, there would be de minimis impacts to the socioeconomic profile of the city of Temecula and Riverside County.

ENVIRONMENTAL JUSTICE

Potential short term impacts to the environment would vary with respect to the size, scope, and type of operations and maintenance activities undertaken. However, with respect to the larger demographics of Riverside County, the city has a lower percentage of non-white minorities with the exception of Asians. The percentage of Blacks, the American Indians/Alaskan Natives, and Hispanics are lower. Therefore, the city of Temecula does not feature a disproportionately large minority population relative to Riverside County. With respect to income and poverty, the city has a higher median household income and a low percentage of persons below poverty level. Therefore, the environmental effects associated with operation and maintenance activities would not disproportionately affect low-income or minority populations.

Modified Phase II Plan (Preferred Alternative)

Future maintenance activities would be regularly conducted within the project area by the RCFCDWCD. Monitoring and maintenance of the restoration areas would be the responsibility of the Corps for 5 years after completion of construction. Activities that result in the discharge of dredged or fill material into waters of the United States would be subject to Section 404 of the Clean Water Act implemented by the Corps Regulatory program. As a result, general impacts associated with operations and maintenance activities are evaluated under NEPA.

The changes in the Modified Phase II Plan indicated above would entail *de minimis* changes to operations and maintenance activities associated with the Original Phase II Plan.

NEPA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

17.3 Environmental Commitments (NEPA)/Mitigation Measures (CEQA)

No environmental commitments under NEPA or mitigation measures under CEQA are proposed.

18.0 GROWTH-INDUCING IMPACTS

18.1 Affected Environment

The city had a population of 100,097 in 2010. The population is expected to increase by approximately 17% between 2010 and 2015.

The Phase II project reach traverses for the most part through the commercial and industrial portion of the city of Temecula. In general, land use on river left is primarily commercial and industrial from the upstream terminus, approximately 200 feet upstream of the Winchester Road Bridge to the downstream terminus, approximately 1,000 feet downstream of 1st St. On river right, the land use is primarily commercial and industrial from the upstream terminus to Rancho California Road. From Rancho California Road to the downstream terminus, land use on river right is primarily multiunit residential complexes. Land uses adjacent to lands owned by the RCFCDWCD on both river left and right are described in detail below from the upstream terminus to the downstream terminus.

18.2 Environmental Effects

18.2.1 Construction

Original Phase II Plan (No Action Alternative)

The Original Phase II Plan would provide a 100-year flood level protection to the commercial and industrial areas immediately adjacent to the Phase II reach. The project would not increase flood protection in undeveloped areas that would induce growth. The projected 17% increase in population would occur in the eastern portion of the city that is outside of the affected flood plain.

Modified Phase II Plan (Preferred Alternative)

The Original Phase II Plan would provide a 100-year flood level protection to the commercial and industrial areas immediately adjacent to the Phase II reach. The project would not increase flood protection in undeveloped areas that would induce growth. The projected 17% increase in population would occur in the eastern portion of the city that is outside of the affected flood plain.

NEPA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

18.2.2 Operations and Maintenance

Original Phase II Plan (No Action Alternative)

Operations and maintenance activities would serve to maintain the design flood conveyance capacities of the project. The activities would not increase flood protection in undeveloped areas that would induce growth. The projected 17% increase in population would occur in the eastern portion of the city that is outside of the affected flood plain.

Modified Phase II Plan (Preferred Alternative)

Future maintenance activities would be regularly conducted within the project area by the RCFCDWCD. Monitoring and maintenance of the restoration areas would be the responsibility of the Corps for 5 years after completion of construction. Activities that result in the discharge of dredged or fill material into waters of the United States would be subject to Section 404 of the Clean Water Act implemented by the Corps Regulatory program. As a result, general impacts associated with operations and maintenance activities are evaluated under NEPA.

The changes in the Modified Phase II Plan indicated above would entail *de minimis* changes to operations and maintenance activities associated with the Original Phase II Plan.

NEPA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

CEQA Impact Determination

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

18.3 Environmental Commitments (NEPA)/Mitigation Measures (CEQA)

No environmental commitments under NEPA or mitigation measures under CEQA are proposed.

19.0 CUMULATIVE EFFECTS

19.1 Introduction

The Council of Environmental Quality (CEQ) has defined cumulative effects as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." Cumulative effects can result from individually minor, but collectively significant, actions occurring over a period of time (40 CFR 1508.7). The CEQ guidance further indicates that it is not practical to analyze cumulative effects for other than those truly meaningful environmental effects.

The CEQA guidelines define cumulative impacts similarly, stating,

> *"Cumulative impacts" refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.*
>
> *(a) The individual effects may be changes resulting from a single project or a number of separate projects.*
>
> *(b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. (CCR, Section 15355).*

Guidance from the CEQ and CEQA has been followed in the preparation of this analysis. This chapter describes the past and present activities that have contributed to current conditions within the vicinity of Murrieta Creek. This chapter also addresses present and reasonably foreseeable projects in the immediate vicinity as well as overall development trends in the area. This section would assess the cumulative effects of the proposed action for Phase II. The Phase II plans are described in detail in Section 3.0.

19.2 Past actions

Past actions in the Murrieta Creek vicinity is described in detail in the 2000 EIS/EIR. That document describes the effect of ranching operations, the 1939 and 1969 flood control projects, and urban development. Actions since the 2000 EIS/EIR include:

Regional Mall: A 700,000 square foot commercial development between Winchester, Inez, and Margarita Roads and Overland Drive.

Ynez Road Corridor: Commercial development along Ynez road between Overland Drive and Rancho California Road.

Jefferson Road Corridor: Development along Jefferson Road from Rancho California to the city limits.

West Side Business Center: Developed a predominantly industrial business park north of Winchester Road and west of Diaz Road.

Old Town Temecula: Commercial and residential (approximately 300 residential units) development south of Rancho California Road along Front Street and Pujo Street.

Rancho California Road Bridge Improvements: Widened the bridge to eight lanes of traffic by adding three turn lanes on the eastern end of the bridge.

First Street Bridge Replacement: a new bridge was constructed.

Harveston Project: constructed 1.5 million square feet of commercial development, 1,900 residential units, and an elementary school on the east side of I-15 and west of Margarita Road.

City of Murrieta Roadway Improvements: These includes
Widening Jefferson Avenue from Corning Place to Murrieta Hot Springs Road to six lanes
Construction of a freeway crossing at Nutmeg Street
General road improvements along Washington Avenue near Kalmia Street, Kalmia From Washington Avenue to Jefferson Avenue, and Nutmeg Street from Washington Avenue to Jefferson Avenue.

City of Murrieta Residential Development: The City of Murrieta has had 18 single-family residential projects within the last 10-15 years. These projects range from 19 to 1,117 units.

West1st Street Extension - Environmental Mitigation: This project created approximately 1.49 acres of wetlands along Murrieta Creek at 1st Street.

Community Theatre – Mercantile Seismic Retrofit: This project created a community theatre at the old mercantile building in downtown Temecula.

Children's Museum: This project constructed a 7,500 square foot children's museum.

Temecula Library: A full service library, approximately 34,000 square feet in area, was built on Pauba Road, just west of Fire Station #84. This project provided the community with library resources and services.

Landscaping and Sidewalk on 79S (Front Street to Pechanga Parkway): The project constructed a new sidewalk, landscaping, and irrigation along State Route 79 South between Pechanga Parkway and Old Town Front Street.

Murrieta Creek Multi Purpose Trail: This project built a 1.2-mile, 10 feet wide stretch of asphalt trail and a 0.5-mile decomposed granite path, for horse, between Winchester and Rancho California Roads. This included benches, picnic tables, and for signs that describe the native vegetation along Murrieta Creek within City limits.

Old Town Southern Gateway Landscaping: A 10,000 square foot remnant parcel west of Front Street, was be landscaped.

Old Town Community Theater: This project constructed a 20,000 square foot community theater complex and refurbished the existing Mercantile Building.

Rancho California Road Median Modifications at Town Center: This project closed two median openings on Rancho California Road in front of the Town Center, and lengthened the left turn lanes at Ynez Road, Town Center Drive, and Via Los Colinas to improve traffic circulation.

Rancho California Road Widening at Ynez Road (Add right turn lane to westbound lanes): This project added a right turn lane on westbound Rancho California Road at Ynez Road.

Rancho California Sports Park ADA Access and Shade Structure: This project constructed ADA compliant concrete walkways to ball fields, 3,4,5,7, and 8. It included the installation of two shade picnic/seating areas adjacent to the snack bar building.

Bus Bench Upgrades: New bus benches and shade structures were installed and existing ones upgraded at various locations.

I-15/ SR 79 Interchange: Modification of I-15/ SR 79 South Interchange.

Roripaugh Fire Station: a single story, three bay heavy urban fire station structure and adjoining and support facilities. This included a two above ground fuel tanks, parking lot and landscaping.

Ronald Reagan Sports Park Desilting Basin Environmental Mitigation: installed landscape and irrigation improvements on a 0.26 acre habitat creation area. Construction was completed in 2011. The area is currently being maintaining for five years.

19.3 Current Projects

Projects currently under construction include:

French Valley Parkway/Interstate 15 over-crossing and interchange improvements: Phase I – widening of southbound I-15 from Warm Springs Creek to Winchester Road off-ramp, construction of new southbound off-ramp at French Valley Parkway, and construction of the westbound portion of French Valley Parkway from the off-ramp to Jefferson Avenue.

Roripaugh Street Improvements: would improve the wet and dry utilities, sidewalks, medians and new roadway section on Butterfield Stage Road from Murrieta Hot Springs Road to Calle Chops, South Loop Road. This would also complete utility feeds to the fire station and future amenities.

Pavement Rehabilitation Program and Citywide Concrete Repairs: this would provide repairs to various damaged concrete facilities throughout the City of Temecula and repairs to Ynez road from Winchester road to Solana Way, Margarita Road from Avenida Barca to Solana Way, and Margarita Community Park Parking lot.

19.4 Reasonably Foreseeable Future Actions

It is anticipated that the Murrieta Creek watershed would continue to experience urbanization. This assessment is based on reviews of the cities of Murrieta and Temecula's General Plans. These plans show residential and commercial development within portions of the watershed. This trend would likely result in an increase in impervious surfaces within the watershed and a corresponding increase in peak storm flows and urban pollutants within Murrieta Creek. The reasonably foreseeable actions were taken of the Cities of Temecula and Murrieta's websites. These projects include:

Murrieta Creek Flood Risk Management, Ecosystem Restoration and Mitigation Phase III: The USACE proposed project would include channel improvements for flood control, detention basins, ecosystem restoration, and recreation fields.

Overland Drive Bridge: This project would extend Overland Drive to Murrieta Creek and construct a bridge at that site.

West Side Specific Plan: This is a proposed high density residential development (approximately 1,200 homes) project located west of Pujol Street. This development would be located just south of 6th Street along the west side of the creek.

Pechanga Parkway Storm Drain Improvements: construction of new wetlands for the Wolf Valley Creek Channel improvements Stage I project.

Main Street Bridge and Overland Drive Extension from Commerce Center to Diaz Road:

Main Street Bridge over Murrieta Creek (Replacement): replaces the existing Main Street Bridge over Murrieta Creek.

Western Bypass Bridge over Murrieta Creek: Construction of a new bridge over Murrieta Creek at the westerly terminus of Western Bypass and extension of Pujol Street to the new structure. Once constructed, this would serve as the southerly connection of the Western Bypass Corridor.

Old Town Gymnasium: Construction of a 9,000 square foot gymnasium adjacent to boys and Girls club on Pujol Street.

Santa Gertrudis Creek Pedestrian/Bicycle Trail Extension and Interconnect: Construction of a Class I bicycle trail that connects the existing Santa Gertrudis Creek Pedestrian/Bicycle Trail at Ynez Road to Murrieta Creek Multi-Purpose Trail at Diaz Road.

Pavement Rehabilitation Program: This project would rehabilitate portions of Winchester, Rancho California, Ynez, Margarita and Rancho Vista Roads.

French Valley Parkway/I-15 overcrossing and Interchange Improvements:

Nicolas Valley: A feasibility study is being conducted to assess the possibility of completing street and minor storm drain improvements on the unimproved portions of streets within the Nicolas Valley area.

19.5 Analysis of Cumulative Impacts

This cumulative impact analysis addresses the incremental effects of the proposed action when considered with the cumulative effects of other past, present, and reasonably foreseeable future actions.

19.5.1 Geology and Soils

The amount of grading and earthwork required for the proposed Phase II project would not contribute incrementally to a significant cumulative impact. This assessment was based on the types of other major projects anticipated to occur in the study area (primarily residential development and roadway improvements) and the effects these types of projects have on topography and geologic resources. While other projects may contribute to localized erosion or seismic related impacts, none of the flood control alternatives addressed in the EIS/EIR would contribute to these localized effects. This project would not incrementally contribute to a substantial alteration of topography nor would it result or contribute to significant impacts related to geology or soils.

19.5.2 Water Resources

The proposed Phase II Project would not result in post-construction water quality or hydrology impacts. Temporary impacts could occur during construction. The Phase II construction, as with other development projects in the study area, would be subject to laws and regulations that address water quality. Prior to construction, coverage under the General Construction Activity Storm Water Permit would be obtained and a SWPPP would be designed to eliminate or reduce pollutant discharge. Specific SWPPP provisions include requirements for identifying potential pollution sources, controlling stormwater runoff and erosion, implementing best management practices (BMPs) to prevent or reduce contaminant discharge, and conforming to applicable state and local stormwater and erosion control plans. The identification of applicable BMPs is based on site-specific characteristics but typically involves implementing and monitoring pollution control measures both during and after construction. Based on these requirements, the cumulative impact of the projected future actions in the study area would not cause a significant construction-related impact to water quality (including impacts associated with erosion and sedimentation).

The future plan of constructing a detention basin to help reduce peak flows (Phase III) would help offset the impacts of past and present development projects within the watershed. By temporarily detaining these peak flows, the riparian habitat downstream from the project area would experience flows somewhat closer to those of pre-urbanization conditions within the watershed. Therefore, significant impacts for this and future project would be less than significant.

19.5.3 Biological Resources

Implementation of the Proposed Murrieta Creek Flood Control Project Phase II has potential to contribute to cumulative biological impacts. Although the proposed project would not result in significant impacts to native habitats and species, there are potential additive effects associated

with vegetation removal and ground disturbance when combined with other projects in the vicinity. The environmental commitments provided in Section 6.0 and 20.0 of this SEA/EIR would reduce the Proposed Project's impacts to less-than-significant levels and would avoid a significant contribution to cumulative impacts on biological resources in the project vicinity. Therefore, the Proposed Project combined with other projects would not contribute to cumulative biological resource impacts. The permanent effects of the Proposed Project are site-specific and localized, and would not result in incremental cumulative impacts to biological resources through increased disturbance, removal of habitat, or degradation of habitat through traffic, increased noise, or decreased water quality. Impacts to biological resources were previously evaluated in the Original Phase II (EIS/EIR 2000). The Modified Phase II project would not result in any new or additional impacts to biological resources. Modifications incorporated into the new project design provide for an increase riparian habitat by restoring it with native species. Components of the Modified Phase II Plan would result in a long-term benefit to wildlife. With implementation of the environmental commitments, impacts of the Proposed Project would be reduced to less-than-significant levels, and effects of the Proposed Project would not be considered cumulatively significant.

19.5.5 Cultural Resources

A records and literature search was conducted for all phases of the Murrieta Creek Ecosystem and Flood Control Project. For this Phase 2 of the project, two separate cultural resources surveys were conducted. As a result, no historical or prehistoric archeological sites have been identified. Based on this information, the Corps has determined that Phase 2 will not affect historic properties. Based on Section 106 compliance requirements, resources that may be destroyed or disturbed by Federal actions (which may include some of the reasonably foreseeable actions) would contribute to our understanding of past societies. Because the Corps is in compliance with requirements of Section 106 for the Murrieta Creek Flood Control Project, the project would not incrementally contribution to cultural resource impacts would not result in a significant cumulative effect.

19.5.6 Traffic

The incremental contribution to cumulative effects for transportation related to implementation of Phase II was evaluated and determined to not contribute significantly to the cumulative effect. Phase II Modifications would not add any new or additional impacts and would not contribute significantly to the cumulative effects for transportation. The construction traffic generated by these alternatives would have a localized effect on traffic circulation; however, this effect on traffic would be relatively short term in duration.

Other projects in the area including bridge replacements and road repairs would have short-term effects on traffic including the potential to displace traffic onto other local roadways. The past, present, and current roadway improvements are designed to improve transportation therefore, the nearby projects would contribute to cumulative traffic impacts; however, cumulative impacts would be less than significant

19.5.6 Air Quality

Construction activities for the proposed project would not have air quality impacts above and beyond those determined in the Corps' 2000 EIR/EIS, where in that document the cumulative project impacts were determined to be significant in large part due to the significant project impacts. Past and present projects constructed within Murrieta Creek include Phase I that was completed by 2008. Future projects, to include Phase(s) III and IV, would include a like-for-like replacement or construction of similar structures and infrastructure within Murrieta Creek. The cumulative projects discussed above would not singly, or combined cumulatively, a significant criteria pollutants impact. The mitigation required in the 2000 EIR/EIS in Section 4.4 for Air Quality would reduce air quality impacts to the extent feasibility. Therefore, the air quality cumulative impact for the proposed project would be less than significant on air quality.

19.5.7 Land Use

The present development trend within the watershed includes the modification of open space land to urban (residential and commercial) uses, particularly in the cities of Temecula and Murrieta. The Phase II construction would not entail the conversion of open space land to urban uses and, thus, would not incrementally contribute to this land use trend. As described in Chapter 4.0, the floodplain would continue to be developed in a manner consistent with the local zoning and General Plan land use designations regardless of whether the proposed flood control project is constructed. Many of these areas adjacent to Murrieta Creek are planned to be built out, and proposed developments are consistent with surrounding nearby land uses and/or General Plan designations. Based on the factors described above, cumulative land use impacts would be less than significant.

19.5.8 Visual Resources

As a result of past actions, including the channelization of Murrieta Creek in the late 1930s, the creek would never appear in as natural a state as a creek that has not been channelized. The Phase II channel improvements would include an unmaintained vegetation bench along the length of the project. The additional phases of channel improvements, ecosystem restoration and recreational projects within Murrieta Creek have a component to restore native vegetation. Native vegetation within the creek is generally considered a positive visual amenity. These positive aspects of Phase II construction would offset the adverse esthetic impacts, including the loss of mature vegetation. Additionally, with the exception of proposed bridge projects, none of the other projects identified in this cumulative impacts analysis would contribute to the long-term loss of vegetation within the creek. The loss of vegetation associated with reasonably foreseeable bridge construction and widening projects would be nominal. Even when considered in combination with the long-term loss of vegetation associated with the proposed flood control project’s soil cement downstream and grade control structures, this change to the visual environment would not constitute a cumulatively significant esthetic impact.

19.5.8 Noise

Noise impacts associated with the Phase II project are limited to short-term construction noise. Noise impacts would be created by on-site construction activities and, to some degree, roadway noise from construction traffic. These impacts would be mitigated to less than significant levels. Due to the location and types of development anticipated near the creek, significant cumulative noise impacts are not anticipated. Although surrounding construction activities would contribute to cumulative noise impacts, the effects would be short-term and less than significant.

19.5.9 Hazardous Materials

No known hazardous materials are known to be located within the Phase II project area. The proposed project would therefore not contribute incrementally to cumulative hazardous material impacts.

19.5.10 Public Services/Utilities

Proposed land development, specifically the residential developments would contribute to the increased demand for public utilities and services. The increase in population of the various cumulative projects in combination with the proposed recreational amenities may require an increased need for police protection, and emergency medical and related services. However, the Phase II project would not incrementally contribute to this increased need.

19.5.11 Recreation

With development of the proposed Phase II project, new recreation facilities would not be provided nor would existing facilities be impacted. However, maintenance roads would be constructed along both sides of Murrieta Creek. These roads maybe used in the future to provide pedestrian/bicycle trails increasing publicly available recreation facilities. The future use of this trail combined with other past, present, and foreseeable future recreational projects in the area would result in cumulative beneficial effects to the surrounding communities.

19.5.12 Socioeconomics/Environmental Justice

The Phase II construction would not result in significant socioeconomic impacts. The reasonably foreseeable future projects described above would not be expected to contribute incrementally to these impacts. In contrast, the numerous residential development projects would increase the supply of local housing. The short-term generation of construction-related jobs would be beneficial to the local economy and would not be expected to substantially alter the area's population/housing balance. Accordingly, significant cumulative socioeconomic impacts are not anticipated.

19.5.13 Public Safety

The Phase II construction would improve public safety by providing an increased level of flood protection. In consideration of the cumulative projects in the study area (particularly

development in the Old Town Temecula area), the flood control project would be beneficial to numerous residential, commercial, and industrial uses. Potential safety hazards regarding access to the flood control channels and the multi-purpose detention basin would be mitigated to less than significant levels. None of the other past, present, or reasonably foreseeable actions would be anticipated to incrementally contribute to a significant cumulative safety impacts.

20.0 ENVIRONMENTAL COMMITMENTS

The proposed project would not result in any significant impacts to environmental resources including water quality, air quality, green house gases, biological resources, land use, aesthetics, geology and soils, recreation, noise, socioeconomics, utilities, public service, transportation, public health and safety, or cultural resources. The analysis documented in this SEA/EIR shows that implementation of the Modified Phase II Plan would not result in any additional impacts, and in some areas, be reduced compared to the Original Phase II Plan. The environmental commitments (mitigation measures) identified below have been incorporated into the project for the purpose of further minimizing environmental effects.

Water Resources

W-1 Channel construction and maintenance activities will not be conducted if bank to bank flows exist and during rain events to reduce the potential for significant impacts to water quality. The construction contractor will monitor and record weather reports for any indication of potential rain events. The contractor shall divert the low flow channel consistent with the Storm Water Pollution Prevention Plan (SWPPP) and regulatory permits to minimize working within the live channel.

W-2 During construction and maintenance activities, equipment will be in proper working condition and inspected for leaks and drips on a daily basis prior to commencement of any in-channel maintenance work.

W-3 A spill prevention and remediation plan would be developed and implemented during construction and operation and maintenance. Workers will be instructed as to it requirements. Construction supervisors and workers and maintenance personnel would be instructed to (1) be alert for indications of equipment related contamination such as stains and odors, and (2) respond immediately with appropriate actions as detailed in the spill prevention and remediation plan if indications of equipment-related contamination are noted.

W-4 During construction and maintenance activities, fuels, solvents, and lubricants would be stored in a bermed area so that potential spills and/or leaks will be contained. Soil contamination resulting from spills and/or leaks would be remediated as required by Federal and/or state law. Storage areas would be constructed so that containers would not be subjected to damage by construction and maintenance equipment.

W-5 Implementation of appropriate best management practices (BMPs) to minimize soil erosion and transport of pollutants, and train operators.

W-6 Whenever possible, confine construction work within the flood control channel to low-flow periods. All construction activities within the channel would be limited during wet weather, to include specifications for: construction material stockpiling, channel slope protection, grading, levee openings, and excavation.

W-7 Construct sediment barriers (e.g. sandbags, silt fence, temporary containment dam) downstream of each major construction operation to trap sediments.

W-8 Conduct dewatering operations behind temporary sheet pile cofferdams.

W-9 Cover and secure stockpiles of bulk granular building materials

W-10 Stabilize any areas of exposed soil, such as dirt stockpiles, dirt berms, and temporary dirt roads, with controlled amounts of sprinkled water.

W-11 At the close of each working day, sweep up any materials tracked onto the street or laying uncontained in the construction areas, and dispose of any trash accumulated in construction areas.

W-12 Contain concrete, asphalt, and masonry wastes and dispose of these wastes away from project construction sites.

W-13 Prohibit refueling and maintenance of equipment and vehicles near the flood control channel. Prohibited locations shall include all land and structures (e.g. bridges) within 50 feet of the creek.

W-14 Keep spill kits containing absorbent materials at the construction site.

W-15 Store fuels and other hazardous materials away from project drainage.

W-16 Required Opinions, Concurrences, and Permits:

- Applicable Regulatory Section 404 Permit (RCFC&WCD to obtain for operation and maintenance activities)
- Section 401 Water Quality Certification
- Section 402 National Pollution Discharge Elimination System General Construction
- A Storm Water Pollution Prevention Plan will be prepared and implemented during construction.

Biological Resources

B-1 The EIS/EIR required that a site specific revegetation plan would be developed for each phase to ensure that project related impacts have been mitigated. The Corps will submit a draft revegetation plan for Phase II to USFWS and CDFG for review at least 60 days prior to planting any plant materials (seeds or container plants) within the project area. The revegetation plan will address the acreage of habitats to be restored, the size and quantity of species to be planted, appropriate seed mixes and schedules of planting and the development of success criteria. The plan will include a 5- year maintenance and monitoring program to ensure that native plant cover is achieved, that aggressive non-native species do not out-compete the native species, and that the restoration of ecological function within the creek is successful.

B-2 Disturbance or removal of vegetation shall not exceed the limits authorized. Temporary disturbed areas shall be restored to their original condition or better. Restoration shall include the revegetation of stripped or exposed areas with native species.

B-3 To minimize construction impacts to nesting birds, vegetation removal will be scheduled to occur between August 15 and March 15 (outside of the avian nesting season).

B-3A Immediately prior to construction activities and throughout any portion of the construction period that takes place during the bird breeding season, a qualified biologist shall inspect the construction site and adjacent areas (using non-protocol surveys) to determine if any special-status species are nesting within 500 feet of the construction site. If active nests are found, the Corps biologist will coordinate with the U.S. Fish and Wildlife Service (USFWS) and/or the California Department of Fish and Game (CDFG) to determine appropriate avoidance or minimization measures.

B-3B Prior to construction activities, a qualified biologist shall conduct pre-construction training for all construction crew members. The training shall focus on required mitigation measures and conditions of regulatory agency permits and approvals. The training shall also include a summary of sensitive species and habitats potentially present within and adjacent to the proposed project site, including native southern willow scrub habitat and potential use of this habitat by least Bell's vireo.

B-4 A Corps biologist (or the environmental monitor) shall monitor construction activities to ensure compliance with environmental commitments.

B-5 To prevent impacts to southwestern pond turtles, trapping will be conducted in all suitable pools prior to any construction related activity (brush clearance, ground disturbance, construction). Trapping will be conducted by a qualified biologist and consist of at least three trapping events. Southwestern pond turtles will be transported to sections of Murrieta Creek where suitable habitat has been located outside the construction area. Trapping will be coordinated with the CDFG and USFWS to determine the appropriate methods and suitable relocation areas.

B-6 To prevent impacts to burrowing owl and red-legged frog, pre-construction surveys would be conducted for those species in suitable habitat.

B-7 With the exception of emergency repairs; mowing, sediment removal, and scheduled maintenance activities will be conducted between August 15 and March 15 (outside of the bird nesting season). Some emergency repairs may require work to occur for extended periods of time. If repair work is to be conducted during the nesting season, the work area will be surveyed for active bird nests. If active nests are identified in the work area the nests will be avoided until the end of the nesting season. A qualified biological monitor will be present during all emergency brush clearing activities within the unmaintained riparian corridor between March 15 and August 15.

B-8 Appropriate coordination/consultation will occur with resource agencies prior to conducting maintenance activities during the nesting season, and any necessary permits will be obtained.

B-9 With the exception of scheduled invasive plant removal or temporary impacts from any necessary repair work, vegetation will not be removed from the unmaintained riparian corridor or channel sideslopes as part of the scheduled maintenance plan.

B-10 If vegetation is removed from the unmaintained riparian corridor or sideslopes as a result of emergency repairs, the site will be stabilized and revegetated with a native seed mix and select container plantings to ensure the replacement of riparian trees. Revegetation plantings will be of sufficient quantity to ensure the rapid establishment of vegetation. Replacement plantings of riparian trees will not be required if the vegetation was removed as a result of natural scouring.

Cultural Resources

C-1 A qualified archeologist will monitor project ground disturbing activities. The purpose will be to observe subsurface deposits for buried historic or prehistoric resources. If previously unknown resources are uncovered, construction in the area of the find will be temporarily halted. The find would be then be evaluated for the National Register of Historic Places (NRHP). If it were determined to be eligible for the NRHP, the Corps would consult with the SHPO on treatment of the remains in accordance with 36 CFR 800.13.

Traffic

T-1 A road improvement plan would be prepared during the final design stage of the project, and implemented during the construction phase. The plan would identify road segments, bridges, and culverts that need to be improved and turnout locations that need to be constructed to accommodate project construction, maintenance, and operational activities. The plan would also include measures for identifying any damage to existing roadways caused by construction vehicles. These damages would be repaired following completion of the project.

T-2 A traffic control plan would be prepared during the final design stage of the project, and implemented during the construction phase. The plan would address and outline appropriate vehicular speeds in construction areas; travel routes, detours, bridge closures, or lane/road closures; flag-person requirements; appropriate signage and safety reflectors; coordination with local city agencies/departments and Caltrans for appropriate notification to the public; any utility relocation requirements; the location of staging areas; safety procedures to reduce hazards to motorists, bicyclists and pedestrians; approach to ensuring access to businesses and residences; and emergency information. The traffic control plan would be reviewed by appropriate entities, including the City of Temecula. The final version of the plan would be submitted to all appropriate entities.

Air Quality

AQ-1 Require 6.9 grams per horsepower standard for heavy duty construction equipment on- and off-road.

AQ-2 Require injection timing retard of 2 degrees on all diesel vehicles, where applicable.

AQ-3 Install high-pressure injectors on all vehicles, where feasible.

AQ-4 Use Caterpillar pre-chamber diesel engines or equivalent, and perform proper maintenance and operation.

AQ-5 Electrify equipment, where feasible.

AQ-6 Maintain equipment in tune with manufacturers' specifications, except as otherwise stated above.

AQ-7 Restrict the idling of construction equipment to 10 minutes.

AQ-8 Install catalytic converters on gasoline-powered equipment.

AQ-9 Substitute gasoline-powered for diesel-powered, where feasible.

PM_{10} Emissions

The following PM_{10} reducing construction practices would be implemented throughout the construction period:

AQ-10 The speed limit on all unpaved roads would be 10 MPH.

AQ-11 Gravel roads would be constructed for unpaved access/egress roads, and these roads would be watered hourly.

AQ-12 All handled (i.e. loaded/unloaded) soil would be watered to 25 percent moisture, and active excavation/grading areas would be watered hourly to ensure 15 percent moisture.

AQ-13 Street sweepers would be active at each unpaved road access/egress point for soil export (on- and off-site) and each on-site unpaved road access/egress point or materials import. Three street sweepers would be cleaning the entire soil export paved road route, beginning daily operation in the morning prior to the first haul truck and ending daily operation after cleaning the roadway after the passage of the last haul truck. The street sweepers will be wet-type "street washers" that will meet the requirements of SCAQMD Rule 1186 for PM_{10} efficient street sweepers.

AQ-14 Soil haul trucks would be covered, would have 18 inches of freeboard and would have soils on the top of the load watered, or shall be sufficiently wet to mitigate emissions.

AQ-15 Inactive storage piles would be covered.

AQ-16 All grading activities would be prohibited during periods of high wine (i.e., winds greater than 30 mph).

AQ-17 Nontoxic chemical soil stabilizers would be applied to inactive construction areas (i.e., disturbed lands within construction areas that are unused for at least 4 consecutive days), or water at least twice daily.

AQ-18 Nontoxic binders (i.e., latex acrylic copolymer) will be applied to exposed areas after cut-and –fill operations and hydroseed the areas if appropriate for the project location.

AQ-19 Wheel washers would be installed for all exiting trucks.

Noise

N-1 Construction or maintenance activities within 0.25 mile of residences or other noise-sensitive uses will be restricted to daytime hours. No construction or maintenance activities will be performed within 0.25 mile of noise sensitive uses on Sundays, on legal holidays, or between the hours of 6:30 p.m. and 7:00 a.m. Monday through Friday and Saturday, as per City of Temecula.

N-2 All construction and maintenance equipment will have sound-control devices that are at least as effective as those devices provided on original equipment. No equipment will have an unmuffled exhaust.

N-3 The contractor will implement appropriate additional noise mitigation measures, including, but not limited to, changing the location of stationary construction and maintenance equipment, shutting off idling equipment, rescheduling construction and maintenance activity, notifying adjacent residents in advance of construction and maintenance work, and installing acoustic barriers around construction and maintenance noise sources.

Hazardous Materials

HZ-1 If a contaminated area is encountered during construction, construction would cease in the vicinity of the contaminated area. The contaminated areas shall be assessed to determine the extent and type of contamination. If necessary, the contaminated site would be remediated to minimize the potential for exposure of the public and to allow the project to safely be constructed.

Utilities and Public Services

U-1 During the preliminary design phase of each project component, the utility service providers would be consulted to identify existing and proposed buried facilities in

affected roadways and to determine which utilities require relocation and which can be avoided. If relocation is required, the appropriate utility service provider would be consulted to sequence construction activities to avoid or minimize interruptions in service. The Local Sponsor and contractor shall comply with permit conditions and such conditions shall be included in the contract specifications.

U-2 If utility service disruption is necessary, residents and businesses in the project area would be notified a minimum of two to four days prior to service disruption through local newspapers, and direct mailings to affected parties.

U-3 The contractor would be required to excavate around utilities, including hand excavation as necessary, to avoid damage and to minimize interference with safe operation and use. Hand tools must be used to expose the exact location of buried gas or electric utilities.

U-4 Prior to construction during the Plans and Specifications phase, utility locations shall be verified through field surveys.

21.0 COMPLIANCE AND COORDINATION

The proposed project action has been developed in accordance with the requirements of the environmental statutes and regulations outlined below.

FEDERAL

National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq)

NEPA is the nation's primary charter for protection of the environment. It establishes national environmental policy which provides a framework for Federal agencies to minimize environmental damage and requires Federal agencies to evaluate the potential environmental impacts of their proposed actions. NEPA requires that agencies of the Federal Government shall implement an environmental impact analysis program in order to evaluate "major federal actions significantly affecting the quality of the human environment." A "major federal action" may include projects financed, assisted, conducted, regulated, or approved by a Federal agency. Under NEPA, a Federal agency must prepare an Environmental Assessment (EA) or Environmental Impact Statement (EIS) describing the environmental effects of any proposed action that may have a significant impact on the environment. The EA or EIS must identify measures necessary to avoid or minimize adverse impacts resulting from the proposed action. NEPA specifically allows the integration of Federal and state environmental evaluations into a single, joint document (40 C.F.R. § 1506.2).

This Environmental Assessment (EA) has been prepared in accordance with the requirements of NEPA of 1969 (42 USC 43221, as amended) and the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500-1508).

Procedures for Implementing NEPA, Engineering Regulation (ER) 200-2-2, published at Title 33 CFR part 230, March 1988. This regulation provides guidance for implementation of the procedural provisions of the National Environmental Policy Act (NEPA) for the Civil Works Program of the Corps. It supplements the CEQ regulations in accordance with those regulations. Wherever the guidance in this regulation is unclear or not specific, the reader is referred to the CEQ regulations. This regulation is applicable to all Corps responsibility for preparing and processing environmental documents in support of civil works functions. This EA has been prepared in accordance with this regulation.

Planning Guidance Notebook, ER-1105-2-100, April 2000, as amended. The Planning Guidance Notebook, provides guidance for conducting Civil Works planning studies and related programs by the Corps. Guidance provided in this regulation has been followed in the preparation of this document.

Clean Water Act of 1972 (33 USC 1251 et seq.)

The Clean Water Act (CWA) was passed to restore and maintain chemical, physical, and biological integrity of the Nation's waters. Specific sections of the CWA control the discharge of pollutants and wastes into aquatic and marine environments. Under Section 404, the Corps

issues permits for discharge of dredge or fill materials into waters of the U.S. including wetlands and other special aquatic sites. A Section 401 water quality certification or waiver from the RWQCB is also necessary for issuance of a Corps permit. Additional water quality permitting requirements may include compliance with the Section 402 National Pollution Discharge Elimination System (NPDES) General Construction Permit for Storm Water Discharges Associated with Construction Activity (including the development of a Storm Water Pollution Prevention Plan [SWPPP]) issued by the State Water Resources Control Board (SWRCB) for projects that would disturb 1 or more acres (0.4 ha).

This SEA/EIR is prepared in compliance with the Section 404 of the Clean Water Act. Environmental commitments are included in the SEA/EIR to minimize impacts to waters of the United States. Coordination has been initiated with Corps Regulatory Division as well as RWQCB. The Corps does not issue itself a permit for civil works projects. Therefore, a Section 404(b)(1) analysis is prepared and included in Appendix C in compliance with Section 404 of the CWA. For future maintenance activities, the RCFC&WCD would obtain an appropriate Section 404 permit from the Corps Regulatory Division. The Corps and RCFC&WCD received a Section 401 Water Quality Certificate from the RWQCB on August 15, 2003 for construction and operation and maintenance of the overall flood control project. The Corps and RCFC&WCD will continue to coordinate with the RWQCB and the Corps Regulatory Division on the proposed Modified Phase II Plan.

Endangered Species Act of 1973 (16 USC 1531 et seq.)

The Endangered Species Act (ESA) protects threatened and endangered species by prohibiting federal actions that would jeopardize continued existence of such species or result in destruction or adverse modification of any critical habitat of such species. Section 7 of the Act requires consultation regarding protection of such species be conducted with the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) prior to project implementation. During the planning process, the USFWS and the NMFS evaluate potential impacts of all aspects of the project on threatened or endangered species. Their findings are contained in letters that provide an opinion on whether a project would jeopardize the continued existence of endangered species or modify critical habitat. If a jeopardy opinion is issued, the resource agency would provide reasonable and prudent alternatives, if any, that would avoid jeopardy. A non-jeopardy opinion may be accompanied by reasonable and prudent measures to minimize incidental take caused by the project.

The least Bell's vireo, listed as endangered under the ESA, was detected within the Phase II project area. The Corps will initiate formal consultation under Section 7 of the ESA with the USFWS. An evaluation of potential effects to the least Bell's vireo as well as other listed species is described in Section 6.0 of this SEA/EIR. Avoidance and minimization measures are also outlined in this document to avoid and minimize potential effects to listed species. Prior to construction, a biological opinion would be obtained by the Corps in compliance with Section 7 of the ESA.

Fish and Wildlife Coordination Act, as Amended

The Proposed Project is in compliance with the Fish and Wildlife Coordination Act. Coordination with the USFWS, CDFG and other agencies for the Murrieta Creek Flood Control, Environmental Restoration, and Recreation Project was initiated during development of the original project and documented in the September 2000 Final Feasibility Report and EIS/EIR. A Coordination Act Report was prepared for the Murrieta Creek Flood Control Project (July 2000). This document is included in the 2000 Final EIS/EIR as appendix E, and the recommendations continue to be carried forward during implementation of each Phase, including the proposed Phase II of the Murrieta Creek Flood Control Project.

In recent years, numerous meetings have occurred between USFWS, CDFG, other resource agencies, local sponsors, and the Corps to discuss the various proposed Phases including Phase II. Discussions included potential impacts to, mitigation for, and minimization and avoidance measures for nesting birds covered under the MBTA, species covered under the Federal ESA and the California ESA (such as the least Bell's vireo and Southwestern pond turtle), and wildlife movement issues. This SEA/EIR will be sent to USFWS, CDFG, and other resource agencies for review and to facilitate further coordination efforts. There is no change in compliance from the 2000 Final EIS/EIR.

Clean Air Act of 1969 (42USC7401 et seq.); CAA Amendments of 1990 (PL101-549)

Air quality regulations were first promulgated with the Clean Air Act (CAA). The CAA is intended to protect the Nation's air quality by regulating emissions of air pollutants. Section 118 of the CAA requires that all Federal agencies engaged in activities that may result in the discharge of air pollutants comply with state and local air pollution control requirements. Section 176 of the CAA prohibits federal agencies from engaging in any activity that does not conform to an approved State Implementation Plan.

The CAA established the National Ambient Air Quality Standards (NAAQS) and delegated enforcement of air pollution control to the states. In California, the Air Resources Board (ARB) has been designated as the state agency responsible for regulating air pollution sources at the state level. The ARB, in turn, has delegated the responsibility of regulating stationary emission sources to local air pollution control or management districts that, for the proposed project, is the South Coast Air Quality Management District (SCAQMD).

The CAA states that all applicable federal and state ambient air quality standards must be maintained during the operation of any emission source. The CAA also delegates to each state the authority to establish their own air quality rules and regulations. State adopted rules and regulations must be at least as stringent as the mandated federal requirements. In states where the NAAQS are exceeded, the CAA requires preparation of a State Implementation Plan (SIP) that identifies how the state would meet standards within timeframes mandated by the CAA.

The 1990 CAA established new nonattainment classifications, new emission control requirements, and new compliance dates for areas presently in nonattainment of the NAAQS, based on the design day value. The design day value is the fourth highest pollutant concentration recorded in a 3-year period. The requirements and compliance dates for reaching attainment are based on the nonattainment classification.

One of the requirements established by the 1990 CAA was an emission reduction amount, which is used to judge how progress toward attainment of the ozone standards is measured. The 1990 CAA requires areas in nonattainment of the NAAQS for ozone to reduce basin wide VOC emissions by 15 percent for the first 6 years and by an average 3 percent per year thereafter until attainment is reached. Control measures must be identified in the SIP, which facilitates reduction in emissions and show progress toward attainment of ozone standards.

The 1990 CAA states that a federal agency cannot support an activity in any way unless it determines the activity would conform to the most recent EPA-approved SIP. This means that Federally supported or funded activities would not: (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any standard; or (3) delay the timely attainment of any standard or any required interim emission reductions or other milestones in any area. In accordance with Section 176 of the 1990 CAA, the EPA promulgated the final conformity rule for general Federal actions in the November 30, 1993 *Federal Register*.

Project emissions are not expected to exceed "de minimis" levels established as a criteria for a finding of conformity. Therefore, the project is consistent with the SIP and meets the requirements of Section 176(c). Construction and operation and maintenance activities are expected to result in emissions which are all below SCAQMD's as well as Federal threshold major source thresholds. None of the pollutant exceeds State or Federal thresholds. Therefore, the project is in compliance with the CAA.

National Historic Preservation Act of 1966 (16 USC 470 et seq.)

A records and literature search was conducted for all phases of the Murrieta Creek Ecosystem and Flood Control Project. For this Phase 2 of the project, two separate cultural resources surveys were conducted. As a result, no historical or prehistoric archeological sites have been identified. Based on this information, the Corps has determined that Phase 2 will not affect historic properties. In accordance with section 106 of the Act (36 CFR 800), a letter dated August 27, 2007 was sent to the California State Historic Preservation Officer transmitting our determination. In a letter dated October 16, 2008 the SHPO concurred with the Corps' determination. A copy of the Corps and SHPO correspondence is located in Appendix E.

Executive Order 11990, Protection of Wetlands

In developing alternatives, the Corps considered the effects of the Proposed Project on the survival and quality of wetlands. Projects are to "avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative." The proposed project evaluated in this SEA/EIR is a modified plan of the original authorized project, initially evaluated in the 2000 EIS/EIR for the overall flood control project. As described in the 2000 EIS/EIR, the project will have an effect on wetlands; however, no feasible alternative is available to avoid these areas. The proposed Modified Phase II Plan incorporates the design of a wider unmaintained riparian corridor, which is a benefit compared to

the Original Phase II Plan. With implementation of the Modified Phase II Plan, regular maintenance (i.e., mowing) of the channel bottom by the RCFC&WCD would be lessen in area compared with existing conditions. Mitigation measures developed in the 2000 Final EIS/EIR and this SEA/EIR for the Murrieta Creek Flood Control Project have been formulated to reduce impacts to wetlands. The project, therefore, is in compliance with this Executive Order.

Executive Order 11988, Floodplain Management, May 24, 1977

Signed May 24, 1977, this order requires that government agencies, in carrying out their responsibilities, provide leadership and take action to restore and preserve the natural and beneficial values served by floodplains. Before proposing, conducting, supporting or allowing an action in the floodplain, each agency is to determine if planned activities will affect the floodplain and evaluate the potential effects of the intended action on its functions. In addition, agencies shall avoid locating development in a floodplain to avoid adverse effects in the floodplains. The eight-step process outlined in ER 1165-2-26, para. 8, General Procedures was followed. The purpose of the proposed project is to reduce the risk of flooding through the Cities of Temecula and Murrieta in Riverside County by the construction and maintenance of flood control improvements, restoration areas, and recreational features. To address the purpose of the project (reducing the risk of flooding), selection of the proposed project location within the floodplain is required. Section 3 of this SEA/EIR and Section 2 of the EIS/EIR provides details of the alternative formulation process. The proposed action complies with state and local flood plain protection standards. No adverse impacts to the flood plain are anticipated from the Proposed Action. The proposed action does not induce floodplain development or increase risks to public safety beyond those identified for the Original Phase II Plan. The proposed action minimizes potential harm within the flood plain as there are no non-floodable structures in any element of the proposed project. Environmental commitments are proposed to minimize effects to the floodplain. The proposed project is in compliance with this Executive Order.

Executive Order 13112 – Invasive Species

EO 13112 requires federal agencies to prevent the introduction of invasive species; provide for their control; and minimize the economic, ecological, and human health effects that invasive species cause. The environmental protection standard specifications direct the contractor to implement measures to prevent the spread of invasive species. Mitigation measures developed in the 2000 Final EIS/EIR and this SEA/EIR have been formulated to reduce impacts from invasive species.

Executive Order 12898, Environmental Justice Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, February 11, 1994

Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority and Low-Income Populations) was signed on February 11, 1994. This order was intended to direct Federal agencies "To make achieving environmental justice part of its mission by identifying and addressing... disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the [U.S.]..." No minority or low-income communities would be disproportionately affected by

implementation of the Proposed Action. The Proposed Action is in compliance with the Executive Order.

Executive Order 12088, Federal Compliance with Pollution Control Standards

Federal Agencies are responsible for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution with respect to Federal facilities and activities under control of the agency. To ensure responsible prevention, control, and abatement of potential environmental pollution associated with project activities, the environmental commitments listed in Sections 5.1 and 5. 4 would be integrated into the proposed project activities. The proposed project would be consistent with this Order.

Executive Order (EO) 11514, Protection and Enhancement of Environmental Quality, amended by Executive Order 11991, Relating to Protection and Enhancement of Environmental Quality

This EO mandates that the Federal government provide leadership in protecting and enhancing the quality of the nation's environment to sustain and enrich human life. Federal agencies must initiate measures needed to direct their policies, plans and programs so as to meet national environmental goals. Corps regulations advocate early NEPA preparation and require impact statements to be concise, clear, and supported by evidence that agencies have made the necessary analyses. This SEA/EIR has been prepared in compliance with NEPA, ER 200-2-2 (Procedures for Implementing NEPA), and CEQA, in coordination with resource agencies. The proposed project is consistent with Order.

Migratory Bird Treaty Act

The MBTA prohibits persons, except as permitted by regulations, "to pursue, take, or kill…any migratory bird, or any part, nest, or egg of any such bird, included in the terms of conventions" with certain other countries (16 USC 703). Direct and indirect acts are prohibited under this definition, although harassment and habitat modification are not included unless they result in the direct loss of birds, nests, or eggs. The current list of species protected by the MBTA includes several hundred species and essentially includes all native birds. Mitigation measures developed in this document and in the 2000 Final EIS/EIR have been formulated to reduce impacts on migratory birds.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act prohibits the "take," possession, sale, purchase, barter, offer to sell, purchase, or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit (16 U.S. Code [USC] 668(a); 50 CFR 22). The Proposed Project is in compliance. The Proposed Project modification would not affect bald or golden eagles.

STATE

Compliance with state and local laws and regulations are addressed below for CEQA purposes.

California Environmental Quality Act (CEQA) (Public Resources Code 22,000 et seq.)

CEQA establishes requirements and procedures for state and local agency review of the environmental effects of projects proposed within their jurisdictions. It further requires that agencies, when feasible, avoid or reduce the significant environmental impacts of their decisions. CEQA requires the preparation of an Initial Study (IS) to determine whether a Negative Declaration or Environmental Impact Report should be prepared by a state or local agency for projects that may significantly impact the environment. In some cases, a joint document is prepared to comply with both NEPA and CEQA for projects that are cost-shared by Federal and non-Federal agencies. This document (SEA/EIR) meets the goals, policies, and requirements of CEQA. Information and analysis to meet CEQA requirements are included within this SEA/EIR for each resource.

Guidelines for the Implementation of the California Environmental Quality Act (Section 15000 et seq. of the California Public Resources Code). The CEQA Guidelines stipulate that a public agency shall prepare or have prepared a proposed negative declaration or mitigated negative declaration for a project subject to CEQA when: (a) The initial study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or (b) The initial study identifies potentially significant effects, but: (1) Revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and (2) There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.

In accordance with the provisions of CEQA, reasonable alternatives to the Proposed Action have been considered during the planning process and potential environmental effects have been included in the evaluation of the project. An EIR has been prepared to address the proposed design modifications to the Phase II Plan. The procedural requirements set forth in the Guidelines for Implementation of the California Environmental Quality Act have been followed.

The CEQA requires state and local agencies to disclose and consider the environmental impacts of their actions. It further requires that agencies, when feasible, avoid or reduce the significant environmental impacts of the implementation of their action. A detailed impact analysis of applicable environmental resources is located in Sections 4.0 through 19.0 of this document. Environmental Commitments are outlined in Section 20.0. Appendix A contains a copy of the Notice of Preparation for the EIR. Therefore, this document meets the goal, policies, and requirements of CEQA.

California Endangered Species Act of 1984 (Fish and Game Code 2050- 2116)

Provides for the protection of rare, threatened, and endangered plants and animals, as recognized by the Department of Fish and Game, and prohibits the unauthorized taking of such species. As a responsible agency, the California Department of Fish and Game (CDFG) has regulatory

authority over state-listed endangered and threatened species. State agencies are required to consult with the Department of Fish and Game on actions that may affect listed or candidate species.

Since the Proposed Action may affect species that are listed as threatened or endangered under both the state and Federal Endangered Species Acts and, since the project is subject to CEQA review and Federal review pursuant to NEPA, the Corps and RCFC&WCD shall continue to coordinate with CDFG. The state legislature encourages cooperative and simultaneous findings between state and Federal agencies. Further, the General Counsel for the CDFG has issued a memorandum to CDFG regional managers and division chiefs clarifying the CESA consultation process wherein, if a Federal Biological Opinion has been prepared for a species, the CDFG must use this Biological Opinion in lieu of its own findings unless it is inconsistent with CESA. CDFG Code Section 2095 authorizes participation in Federal consultation and adoption of a Federal Biological Opinion. By adopting the Federal Biological Opinion, the CDFG need not issue a taking permit per Section 2081 of the state Code. If the Biological Opinion is consistent with CESA, the CDFG will complete a 2095 form in finalizing the adoption of the Biological Opinion.

The Corps and RCFC&WCD will continue coordination with CDFG to ensure compliance with the CESA.

California Fish and Game Code Section 1600 et seq (Streambed Alteration Agreement)

Under Chapter 6 of the California Fish and Game Code, CDFG is responsible for protecting and conserving the state's fish and wildlife resources. Sections 1600 et seq. of the Code define the responsibilities of CDFG, and the requirement for public and private applicants to obtain an agreement to divert, obstruct, or change the natural flow or bed, channel, or bank of any river, stream, or lake designated by CDFG in which there is at any time an existing fish or wildlife resource or from which those resources derive benefit, or will use material from the streambeds designated by the department.

Federal agencies are exempt from Section 1601, but the RCFC&WCD is a participant in the project. The RCFC&WCD have obtained a Streambed Alteration Agreement (SAA#6-2003-089) from CDFG for construction activities for the Phase I construction of the Murrieta Creek Flood Control Project. The local sponsor will request an amendment or a new SAA for the proposed project from CDFG for construction and operation and maintenance of Phase II of the Murrieta Creek Flood Control Project. The Proposed Action will comply with the Code.

Porter-Cologne Water Quality Control Act of 1967 (Water Code Section 13000 et seq.)

The Porter-Cologne Water Quality Control Act of 1967, Water Code Section 13000 et seq., requires the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) to adopt water quality criteria to protect state waters. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. The Porter-Cologne Water Quality Control Act also requires the SWRCB and the nine RWQCBs to ensure the protection of water quality through the

regulation of waste discharges to land. Such discharges are regulated under Title 23, California Code of Regulations, Chapter 9, Division 3. These regulations require that the RWQCB issue a Waste Discharge Requirement regarding the discharge of waste (soil) into surface waters resulting from land disturbance. The Waste Discharge Requirement regarding the protection of water quality by appropriate design, sizing, and construction of erosion and sediment controls is covered under the California Water Code, Sections 13260 -13269. Murrieta Creek, which lies within the San Diego Region 9 RWQCB, is subject to the policies set forth in the San Diego RWQCB or Basin Plan. The Corps and RCFC&WCD has been in coordination with the RWQCB. A CWA Section 401 Water Quality Certification (WQC) was issued to the Corps and RCFC&WCD for the overall flood control project on August 15, 2003. The Corps and RCFC&WCD will continue coordination with the RWQCB.

California Hazardous Waste Control Law (HWCL)

Although individual states may implement hazardous waste programs under RCRA with USEPA approval, California has not yet received this USEPA approval. The California Hazardous Waste Control Law (HWCL) is administered, instead, by the California Environmental Protection Agency (CALEPA) to regulate hazardous wastes. This law provides for the minimization, management, storage, transport, treatment, and disposal of hazardous wastes. While the HWCL is generally more stringent than RCRA, both the state and Federal laws will apply in California until the USEPA approves the California program.

The HWCL lists approximately 790 chemicals and about 300 common materials that may be hazardous; establishes criteria for identifying, packaging and labeling hazardous wastes; prescribes applicable management controls; establishes permit requirements for treatment, storage, disposal and transportation; and identifies selected wastes that cannot be disposed of in landfills. Conformance with this law would only be engaged if unforeseen waste is found within the area of the Proposed Action in the future.

Cal/OSHA

The California Occupational Safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings. Implementation of the proposed action will be in compliance with this act.

LOCAL

Western Riverside County Multiple Species Habitat Conservation Plan

On June 17, 2003, the Riverside County Board of Supervisors adopted the Western Riverside County Multiple Species Habitat Conservation Plan (WRC-MSHCP). The WRC-MSHCP is a comprehensive, multi-jurisdictional plan that has as its goal the creation of a 500,000-acre conservation area that protects and manages habitat for 146 covered species. As the Corps of Engineers is not a participating agency to the WRC-MSHCP it is exempt from WRC-MSHCP

policies. However, the Corps will consult with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Federal Endangered Species Act and be subject to separate take coverage for LBV. The Section 7 incidental take statement will also be used to obtain a State consistency determination under Section 2080.1 of the California Endangered Species Act (CESA). An analysis has been prepared (Appendix G) to determine whether the Modified Phase II Plan would result in impacts to the assembly of the Conservation Area identified in Section 3 of the WRC-MSHCP. The proposed project would be in compliance with the goals of the WRC-MSHCP.

COORDINATION

As part of the overall Murrieta Creek Flood Control Project efforts, the Proposed Project (Phase II) the Corps and RCFC&WCD is in coordination with numerous agencies, organizations, and individuals, including the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), State Office of Historic Preservation, Regional Water Quality Control Board (RWQCB), and local cities and counties. The Draft SEA/EIR of the Proposed Project will be distributed to several public agencies and interested parties for review and comments. The Murrieta Creek Flood Control Project has been fully coordinated with resource agencies and interested parties since 1998. Summaries of past coordination, consultation and permitting are included in the 2000 Final EIS/EIR for the Murrieta Creek Flood Control Project. Recent coordination has occurred on October 15, 2012 to discuss the features of the Modified Phase II Plan and to discuss applicable permit requirements.

22.0 CONCLUSION/CEQA MANDATORY FINDINGS OF SIGNIFICANCE

This joint draft SEA/EIR has been prepared in compliance with NEPA and CEQA guidelines. This draft SEA/EIR evaluated the environmental effects of the proposed Modified Phase II Plan. Potential adverse effects to the following resources were evaluated in detail: recreation, biological resources including special status species, air quality, climate change, green house gases, water resources, transportation, aesthetics, noise, geology and soils, cultural resources, public safety, recreation, utilities and hazardous materials. Minimization measures would be implemented to avoid an adverse effect on water quality and threatened and endangered species.

Results of the analysis in the SEA/EIR, 2000 EIS/EIR, field visits, and coordination with other agencies indicate that the Modified Phase II Plan would meet the purpose and need of the project in reducing the risk of flooding while providing for restoration and recreation features. The proposed Modified Phase II Plan (Alternative 2) would be similar to the Original Phase II Plan (Alternative 1, No Action Alternative) in degree to both short-term and long-term effects on the environment, and would not result in significant long-term effects on the environment. Short-term effects would either be less than significant or mitigated to less than significance using BMPs and other mitigation measures. Alternative 2 has been identified as the preferred alternative.

Based on this evaluation, the proposed project meets the definition of a Finding of No Significant Impact (FONSI) as described in 40 CFR 1508.13. A FONSI may be prepared when an action would not have a significant effect on the human environment and for which an environmental impact statement would not be prepared. Therefore, a draft FONSI has been prepared and accompanies this draft EA.

The local sponsor, the RCFC&WCD, has evaluated this project under CEQA guidelines. The RCFC&WCD has determined that the project would have no significant impacts on the environment.

23.0 LIST OF PREPARERS

This EA was prepared by:

Erin Hardison, Preparer, Biological Sciences Environmental Manager, Corps
Steve Dibble, Preparer, Archaeologist, Corps
Tiffany Bostwick, Preparer, Biologist, Corps
Gail Campos, Preparer, Biologist, Corps
Kirk Brus, Preparer, Environmental Coordinator, Corps
Naeem Siddiqui, Preparer, Biologist, Corps

This EA was reviewed by:

Hayley Lovan, Reviewer, Chief, Ecosystem Planning Section, Corps
Ken Wong, Reviewer, Chief, Regional Planning Section, Corps
Randy Sheppeard, Reviewer, RCFC&WCD

24.0 DISTRIBUTION LIST

Corps of Engineers, Los Angeles District
Regulatory Division
Riverside Field Office
1451 Research Park Drive, Suite 100
Riverside, CA 92507-2154
Attn: Ms. Peggy Bartels

U.S. Fish and Wildlife Service
Palm Springs Fish & Wildlife Office
777 E. Tahquitz Canyon Way, Suite 208
Palm Springs, California 92262
Attn: Ms. Karin Cleary-Rose

Caltrans District 8
464 W. 4th Street (MS 619)
San Bernardino CA 92401

California Department of Fish and Game
Streambed Alteration Team
3602 Inland Empire Blvd., Suite C-220
Ontario, CA 91764-4913

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765
Attn: Ian MacMillan

Southern California Association of Governments
818 West Seventh Street, 12th Floor
Los Angeles, CA 90017-3435
Attn: Intergovernmental Review

Western Riverside Council of Governments
4080 Lemon Street, 3rd Floor
Riverside, CA 92501

Riverside County Planning Department
4080 Lemon Street
Riverside, CA 92501

Temecula Valley Unified School District
31350 Rancho Vista Road
Temecula, CA 92592

Mr. Darren Bradford
Regional Water Quality Board
San Diego Region
9174 Sky Park Court, Suite 100, San Diego,
California 92123-4353

State of California
Governor's Office of Planning and Research
State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

Rancho California Water District
42135 Winchester Road
Temecula, CA 92590

Helen Stratton
Eastern Municipal Water District
P.O. Box 8300
Perris, CA 92572-8300

Riverside County Transportation Department
4080 Lemon Street
Riverside, CA 92501

Mr. Greg Butler
City of Temecula
41000 Main Street
Temecula, California 92590

Mr. Pat Thomas
City of Murrieta
One Town Square, Murrieta, CA 92562

Ms. Cynthia Kinser
City of Murrieta
One Town Square, Murrieta, CA 92562

Mr. Peter Brillinger
Verizon Communications
150 South Juanita Street
Hemet, CA 92543-4385

Mr. Steven Waters
Time Warner Cable
560 S Promenade Ave. Ste 102
Corona, CA 92879

Southern California Edison
Planning Supervisor
26100 Menifee Road
Romoland, CA 92585

Mr. Frank Kalinowski
Southern California Gas Company
1981 W. Lugonia Avenue
Redlands, CA 92374

Mr. Charles Landry
Western Riverside County
Regional Conservation Authority
Riverside Centre Building
3403 10th Street, Suite 320
Riverside, CA 92501

Western Riverside Council of Governments
4080 Lemon Street, 3rd Floor. MS1032
Riverside, CA 92501-3609

Ms. Anna Hoover
Pechanga Band of Luiseno Mission Indians
P. O. Box 2183
Temecula, CA 92593

California Department of Fish and Game
3602 Inland Empire Blvd., Suite C-220
Ontario, CA 91764-4913
Attn: Mr. Jeff Brandt

Temecula Public Library
30600 Pauba Rd.
Temecula, CA 92592

25.0 REFERENCES

Atwood, J.L. 1990 Status review of the California gnatcatcher (*Polioptila californica*). Manomet Bird Observatory, Manomet, Massachusetts. 79 pp.

Brinson, M.M. 1993. A Hydrogeomorphic Classification of Wetlands. Technical Report WRP-DE-4. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS.

Brinson, M.M., F.R. Hauer, L.C. Lee, W.L. Nutter, R.D. Rheinhardt, R.D. Smith, and D. Whigham. 1995. A Guidebook for Application of Hydrogeomorphic Assessments to Riverine Wetlands. Technical Report WRP-DE-11. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS.

CIWMB (California Integrated Waste Management Board). 2002. "Riverside Cities Exceed 50 Percent Waste Diversion". Website: www.ciwmb.ca.gov/Pressroom/2002/March/014.htm.

Dudek and Associates. 2000 Murrieta Creek Wetland Delineation Letter Report. Prepared for by Riverside County Flood Control and Water Conservation District. July.

Hickman, J. C. (ed.). 1993. The Jepson Manual: Higher Plants of California. University of California Press. Berkeley, CA.

EDR (Environmental Data Resources, Inc.). 2003. EDR Radius Map Report and Aerial Photography for Murrieta Creek Phase I, First Street to Gaging Station, Temecula, CA 92590. Inquiry Number: 0975517.1s. May 13, 2003.

EMWD (Eastern Municipal water District). 2003. "EMWD Insights: Temecula Valley Regional Water Reclamation Facility." Accessed May 2003.

Jennings, M.R. and M.P. Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. Report prepared for the California Department of Fish and Game, Region 2. Rancho Cordova, California.

Lee, L.C., M.C. Rains, J.A. Mason, and J.W. Kleindl. 1997. Peer Review Draft Guidebook to the Hydrogeomorphic Functional Assessment of Riverine Waters/Wetlands in the Santa Margarita Watershed. U.S. Environmental Protection Agency, Seattle, WA.

RCFC&WCD (Riverside County Flood Control and Water Conservation District). 2009. Report of Waste Discharge, Santa Margarita River Region, Riverside County. 2009.

____. 2003. Accessed May 2003. Website: www.co.riverside.ca.us/depts/flood/MChistory.asp.

RCOE (Riverside County Office of Education) 2003. Riverside County Education Snapshot, Riverside County Demographic Data, School Enrollment 2001-02. Accessed May 2003.

Redak, R.A, M.A. Blua, and J.C. Burger. 1997 Historical and potential distribution of the Quino checkerspot butterfly (*Euphydryas editha* quino, Lepidoptera: Nymphalidae) in southern California. Prepared for U.S. Department of the Navy, Southwest Division, Naval Facilities Engineering Command. May

SCEC (Southern California Earthquake Center). 1999. Earthquake Information Services, www.scec.org. Information downloaded January 14.

Skinner, M.W. and B.M. Pavlik. 1994. (Rev. March 2002). California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California. California Native Plant Society Special Publication No. 1 (5th. Ed.). Sacramento, CA.

SWRCB (State Water Resources Control Board). 2012. Website access October 2012. http://www.swrcb.ca.gov/

Temecula (City of Temecula). 2012. Accessed October 2012. Website: www.cityoftemecula.org.

_____. 2005. Temecula General Plan, updated.

USACE (U.S. Army Corps of Engineers). 2003. Murrieta Creek Flood Control/Environmental Restoration and Recreation Project Final Supplemental Environmental Assessment and Environmental Impact Report Addendum for Phase I Modifications. September.

_____. 1999. Geotechnical Appendix for the Murrieta Creek Feasibility Study. July.

_____. 1999a. Murrieta Creek Baseline Conditions Report. Prepared for the U.S. Army Corps of Engineers, Los Angeles District. February.

_____. 1999b. Murrieta Creek Flood Control Project, Riverside County, California, Baseline Conditions and Preliminary Alternatives Report (F3). March.

_____. 1999c. *Murrieta Creek, California Floodplain Maintenance Plan, Section 22 Planning Assistance to State Program*. Prepared by the U.S. Army Corps of Engineers, Los Angeles District, South Pacific Division for Riverside County Flood Control and Water Conservation District, Riverside, California. April.

_____. 1998a. Geotechnical Appendix for the Murrieta Creek, Flood Control Study, Feasibility F-3 Phase. December.

_____. 1998b. *Fish and Wildlife Baseline Conditions Report on Biological Resources at Murrieta Creek.*

_____. 1992. *Delineation of Wetlands of the Murrieta Creek Flood Control Project Riverside County, California*.

USDA (U.S. Department of Agriculture). 1971. Soil Survey, Western Riverside Area, California. Prepared by the U.S. Department of Agriculture, Soil Conservation Service. November.

Western Riverside County Regional Conservation Authority (RCA). 2003. Western Riverside County Multiple Species Habitat Conservation Plan (WRC-MSHCP). http://www.rctlma.org/mshcp/volume1/index.html.

Zeiner, D. C., Laudenslayer, W. F., Jr., and Mayer, K. E., and M. White (eds.). 1990b. California's Wildlife: Volume II1: Mammals. California Statewide

APPENDIX A

CEQA NOTICE OF PREPARATION

NOTICE OF PREPARATION

Date: October 4, 2012

To: NOP Distribution List

Subject: Notice of Preparation of a Supplemental Environmental Assessment/ Supplemental Environmental Impact Report for the Murrieta Creek Phase 2 Project (SCH Number 2000071051)

Lead Agency: Riverside County Flood Control and Water Conservation District

Project Title: Murrieta Creek Phase 2 Project

This Notice of Preparation (NOP) is to notify agencies and interested parties that the Riverside County Flood Control and Water Conservation District (District) as the Lead Agency is beginning preparation of a Supplemental Environmental Assessment (SEA)/ Supplemental Environmental Impact Report (SEIR) pursuant to the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) for the proposed Murrieta Creek Phase 2 Project.

The District is soliciting the views of interested persons and agencies as to the scope and content of the environmental resources and topics to be studied in the SEA/SEIR. In accordance with CEQA, agencies are requested to review this NOP and provide comments on environmental issues related to the statutory responsibilities of the agency. The SEA/SEIR will be used by the District, and any CEQA responsible agencies, when considering approvals of the Murrieta Creek Phase 2 Project.

Project Description: The U.S. Army Corps of Engineers (Corps) proposes to construct various improvements to provide flood control, a multi-purpose trail, and higher quality riparian habitat along the existing Murrieta Creek channel within the location described below. The project will increase the channel capacity by excavating a wider and deeper channel section. Riprap and soil cement are proposed to protect the banks from erosion. The project will also include the establishment of a riparian corridor to provide higher quality native habitat for wildlife species. The Corps is the federal lead agency and will construct the project. The District owns the channel right of way, will provide funding, and will operate and maintain the project. Refer to attached figures.

Project Location: The project is located in the city of Temecula in southwesterly Riverside County, within the existing Murrieta Creek channel from a point approximately 1,000 linear feet south of 1st Street to approximately Winchester Road . The project is located within the USGS 7.5' Temecula and Murrieta quadrangle maps in extrapolated Sections 2, 11-12 of Township 8 South, Range 3 West, and Sections 34-35 of Township 7 South, Range 3 West, San Bernardino Base & Meridian. Refer to attached figures.

Environmental Documents: The Corps and District will jointly prepare the necessary NEPA and CEQA documents to address the Phase 2 Project. The entire Murrieta Creek Project was addressed in a previously adopted EIS/EIR (September 2000) (SCH Number 2000071051). Since that time, new information has become available, including the Western Riverside County Multiple-Species Habitat Conservation Plan (WRC-MSHCP) and the presence of the Federally and State Endangered least Bell's

vireo. The SEA/SEIR document will also address any changes to the Phase 2 Project since the 2000 EIS/EIR.

The Corps and District are currently seeking information from agencies and individuals who are potentially affected by the proposed project or who have knowledge about resources in the project area. Information received in response to the Notice of Preparation will be considered in determining the scope and content of the detailed environmental analysis that will be presented in the SEA/SEIR. Agencies will need to use the SEA/SEIR when considering approvals of the project.

Environmental Factors Potentially Affected: The purpose of the SEA/SEIR is to evaluate and disclose the potential short- and long-term environmental consequences of the proposed Phase 2 project. The SEA/SEIR will address the potential for the project to cause direct and indirect impacts to environmental resources. The document will primarily address new information and new potentially significant impacts that were not addressed in the original EIS/EIR and are specific to the Phase 2 project. Based on the project description and the Lead Agency's understanding of the environmental issues associated with the proposed project, the following topics have been tentatively identified to be analyzed in detail in the SEA/SEIR:

- Biological Resources (including threatened and endangered species)
- Air Quality
- Traffic

The environmental factors listed below will be re-evaluated and updated where necessary:

- Cultural Resources
- Physical Environment
- Water Quality
- Noise
- Land Use and Recreation
- Aesthetics
- Utilities
- Socioeconomics

Response to Notice of Preparation: In accordance with CEQA, the Notice of Preparation provides information on the above referenced project and provides an opportunity to submit comments on potential environmental effects that should be considered in the SEA/SEIR. Please send written comments to the mailing address below:

Mr. Arturo Diaz, Senior Civil Engineer
Riverside County Flood Control and Water Conservation District
1995 Market Street
Riverside, CA 92501

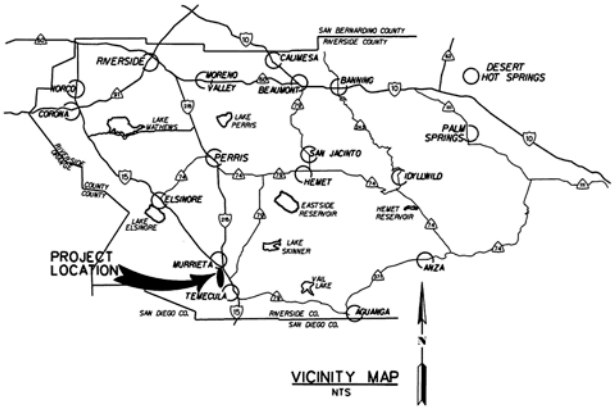
Telephone: (951) 955-1233
Fax: (951) 788-9965
Email: aadiaz@rcflood.org

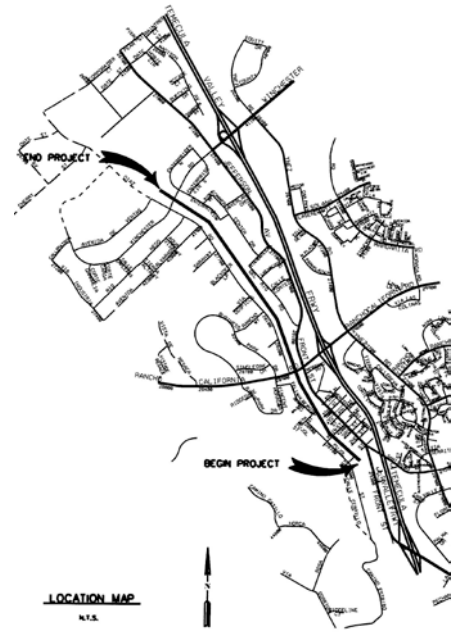
Due to the time limits mandated by State CEQA Guidelines Section 15082, responses must be sent to the District at the earliest possible date but **no later than** 5:00 p.m. on November 5, 2012.

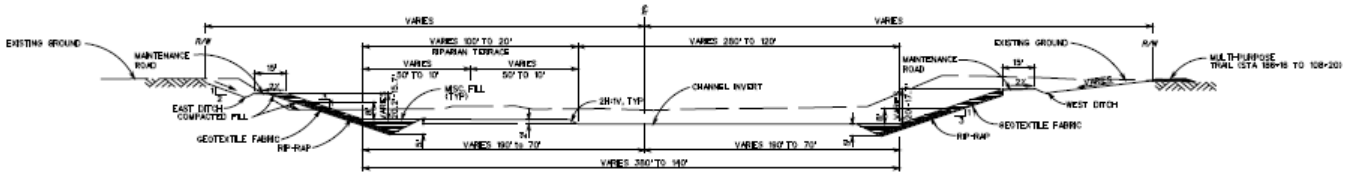
MURRIETA CREEK PHASE 2

7-8-00021

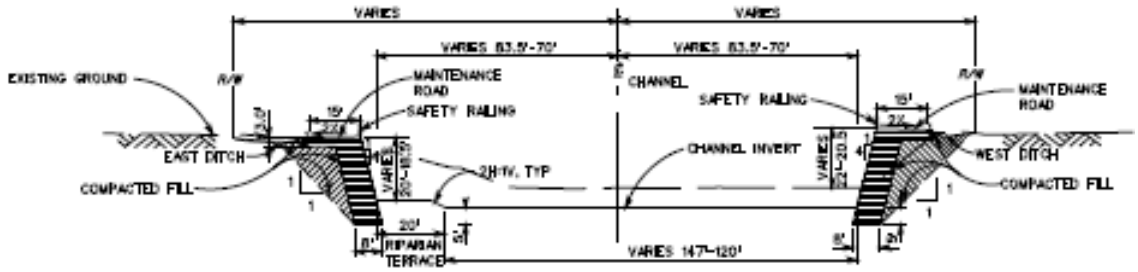
October 2012







TYPICAL SECTION WITH RIP-RAP SLOPE PROTECTION



TYPICAL SECTION WITH SOIL CEMENT SLOPE PROTECTION

CEQA Notice Mailing List – Murrieta Creek Phase 2

Ms. Peggy Bartels
Corps of Engineers, Los Angeles District
Regulatory Division
Riverside Field Office
1451 Research Park Drive, Suite 100
Riverside, CA 92507-2154

Ms. Karin Cleary-Rose
U.S. Fish and Wildlife Service
Palm Springs Fish & Wildlife Office
777 E. Tahquitz Canyon Way, Suite 208
Palm Springs, California 92262

Caltrans District 8
464 W. 4th Street (MS 619)
San Bernardino CA 92401

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Southern California Association of Governments
818 West Seventh Street, 12th Floor
Los Angeles, CA 90017-3435
Attn: Intergovernmental Review

Western Riverside Council of Governments
4080 Lemon Street, 3rd Floor
Riverside, CA 92501

Riverside County Planning Department
4080 Lemon Street
Riverside, CA 92501

Temecula Valley Unified School District
31350 Rancho Vista Road
Temecula, CA 92592

Mr. Darren Bradford
Regional Water Quality Board
San Diego Region
9174 Sky Park Court, Suite 100, San Diego,
California 92123-4353

State of California
Governor's Office of Planning and Research
State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

Mr. Matt Stone, General Manager
Rancho California Water District
42135 Winchester Road
Temecula, CA 92590

Mr. Severino Mendoza
Eastern Municipal Water District
P.O. Box 8300
Perris, CA 92572-8300

Riverside County Transportation Department
4080 Lemon Street
Riverside, CA 92501

Mr. Greg Butler
City of Temecula
41000 Main Street
Temecula, California 92590

Mr. Pat Thomas
City of Murrieta
One Town Square, Murrieta, CA 92562

Ms. Cynthia Kinser
City of Murrieta
One Town Square, Murrieta, CA 92562

Mr. Peter Brillinger
Verizon Communications
150 South Juanita Street
Hemet, CA 92543-4385

Mr. Steven Waters
Time Warner Cable
560 S Promenade Ave. Ste 102
Corona, CA 92879

Southern California Edison
Planning Supervisor
26100 Menifee Road
Romoland, CA 92585

Mr. Frank Kalinowski
Southern California Gas Company
1981 W. Lugonia Avenue
Redlands, CA 92374

Mr. Charles Landry
Western Riverside County
Regional Conservation Authority
Riverside Centre Building
3403 10th Street, Suite 320
Riverside, CA 92501

Ms. Anna Hoover
Pechanga Band of Luiseno Mission Indians
P. O. Box 2183
Temecula, CA 92593

Mr. Juan Lopez-Torres
California Department of Fish and Game
3602 Inland Empire Blvd., Suite C-220
Ontario, CA 91764-4913

Posted at:

Riverside County Clerk-Recorder
2720 Gateway Drive
Riverside, CA 92502-0751

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • www.aqmd.gov

October 30, 2012

Arturo Diaz, Senior Civil Engineer
Riverside County Flood Control and Water Conservation District
1995 Market Street
Riverside CA 92501

Notice of Preparation of a CEQA Document for the
Murrieta Creek Phase 2 Project

The South Coast Air Quality Management District (SCAQMD) appreciates the opportunity to comment on the above-mentioned document. The SCAQMD's comments are recommendations regarding the analysis of potential air quality impacts from the proposed project that should be included in the draft CEQA document. Please send the SCAQMD a copy of the Draft EIR upon its completion. Note that copies of the Draft EIR that are submitted to the State Clearinghouse are not forwarded to the SCAQMD. Please forward a copy of the Draft EIR directly to SCAQMD at the address in our letterhead. **In addition, please send with the draft EIR all appendices or technical documents related to the air quality and greenhouse gas analyses and electronic versions of all air quality modeling and health risk assessment files. These include original emission calculation spreadsheets and modeling files (not Adobe PDF files). Without all files and supporting air quality documentation, the SCAQMD will be unable to complete its review of the air quality analysis in a timely manner. Any delays in providing all supporting air quality documentation will require additional time for review beyond the end of the comment period.**

Air Quality Analysis

The SCAQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. The SCAQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from the SCAQMD's Subscription Services Department by calling (909) 396-3720. The lead agency may wish to consider using land use emissions estimating software such as the recently released CalEEMod. This model is available on the SCAQMD Website at: http://www.aqmd.gov/ceqa/models.html.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, that is, sources that generate or attract vehicular trips should be included in the analysis.

The SCAQMD has developed a methodology for calculating PM2.5 emissions from construction and operational activities and processes. In connection with developing PM2.5 calculation methodologies, the SCAQMD has also developed both regional and localized significance thresholds. The SCAQMD requests that the lead agency quantify PM2.5 emissions and compare the results to the recommended PM2.5 significance thresholds. Guidance for calculating PM2.5 emissions and PM2.5 significance thresholds can be found at the following internet address: http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html.

In addition to analyzing regional air quality impacts the SCAQMD recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LST's can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the proposed project, it is recommended that the lead agency perform a localized significance analysis by either using the LSTs developed by the SCAQMD or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at http://www.aqmd.gov/ceqa/handbook/LST/LST.html.

In the event that the proposed project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the lead agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis") can be found on the SCAQMD's CEQA web pages at the following internet address: http://www.aqmd.gov/ceqa/handbook/mobile_toxic/mobile_toxic.html. An analysis of all toxic air contaminant impacts due to the decommissioning or use of equipment potentially generating such air pollutants should also be included.

Mitigation Measures

In the event that the project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize or eliminate significant adverse air quality impacts. To assist the Lead Agency with identifying possible mitigation measures for the project, please refer to Chapter 11 of the SCAQMD CEQA Air Quality Handbook for sample air quality mitigation measures. Additional mitigation measures can be found on the SCAQMD's CEQA web pages at the following internet address: www.aqmd.gov/ceqa/handbook/mitigation/MM_intro.html Additionally, SCAQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook contain numerous measures for controlling construction-related emissions that should be considered for use as CEQA mitigation if not otherwise required. Other measures to reduce air quality impacts from land use projects can be found in the SCAQMD's Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. This document can be found at the following internet address: http://www.aqmd.gov/prdas/aqguide/aqguide.html. In addition, guidance on siting incompatible land uses can be found in the California Air Resources Board's Air Quality and Land Use Handbook: A Community Perspective, which can be found at the following internet address: http://www.arb.ca.gov/ch/handbook.pdf. CARB's Land Use Handbook is a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. Pursuant to state CEQA Guidelines §15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed.

Data Sources

SCAQMD rules and relevant air quality reports and data are available by calling the SCAQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available via the SCAQMD's World Wide Web Homepage (http://www.aqmd.gov).

The SCAQMD staff is available to work with the Lead Agency to ensure that project-related emissions are accurately identified, categorized, and evaluated. If you have any questions regarding this letter, please call Ian MacMillan, Program Supervisor, CEQA Section, at (909) 396-3244.

Sincerely,

Ian MacMillan
Program Supervisor, CEQA Inter-Governmental Review
Planning, Rule Development & Area Sources

IM
RVC121009-05
Control Number

State of California -The Natural Resources Agency
DEPARTMENT OF FISH AND GAME
1416 9th Street
Sacramento, CA 95814
http://www.dfg.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

November 5, 2012

Arturo Diaz
Riverside County Flood Control and
Water Conservation District
1995 Market Street
Riverside, CA 92501

Re: Notice of Preparation for the Draft Environmental Impact Report for the Murrieta Creek Phase 2 Project, City of Murrieta, State Clearinghouse (SCH) No. 2000071051

Dear Mr. Diaz:

The Department of Fish and Game (Department) appreciates this opportunity to comment on the Notice of Preparation for the Draft Environmental Impact Report for the Murrieta Creek Phase 2 Project, City of Murrieta, SCH No. 2000071051. The Department is responding as a Trustee Agency for fish and wildlife resources [Fish and Game Code sections 711.7 and 1802 and the California Environmental Quality Act Guidelines (CEQA) section 15386] and as a Responsible Agency regarding any discretionary actions (CEQA Guidelines section 15381), such as a Lake and Streambed Alteration Agreement (California Fish and Game Code Sections 1600 *et seq.*) and/or a California Endangered Species Act (CESA) Permit for Incidental Take of Endangered, Threatened, and/or Candidate species (Fish and Game Code Sections 2080 and 2080.1).

Project Description

The United States Army Corps of Engineers (ACOE) proposes to construct flood control improvements, a multi-purpose trail and riparian habitat along the existing Murrieta Creek Channel. Channel capacity will be increased by widening and deepening the channel. The creek sides will consist of rip-rap and soil cement. The ACOE will construct the project, while the County will provide funding and will operate and maintain the channel. The Project site is located in the City of Temecula from a point approximately 1,000 lineal feet south of 1st Street to approximately Winchester Road. The ACOE and Riverside County Flood Control and Water Conservation District (RCFCWCD) will jointly prepare the National Environmental Policy Act (NEPA) and CEQA documents.

Multiple Species Habitat Conservation Plan (MSHCP)

The Department is responsible for ensuring appropriate conservation of fish and wildlife resources, including rare, threatened, and endangered plant and animal species, pursuant to the CESA, and administers the Natural Community Conservation Planning Program (NCCP Program). On June 22, 2004, the Department issued NCCP approval and take Authorization for the Western Riverside County MSHCP per Section 3800 *et seq.* of the Fish and Game Code. The MSHCP establishes a multiple species conservation program to minimize and mitigate habitat loss and the incidental take of covered species in association with activities covered under the

permit. In order to be considered a covered activity, Permittees must demonstrate that proposed actions are consistent with the MSHCP and its associated Implementing Agreement.

The RCFCWCD is the joint lead agency with the ACOE and is signatory to the Implementing Agreement of the MSHCP. The proposed Project occurs within Subunit 1 of the Southwest Area Plan of the MSHCP and is subject to the provisions and policies of the MSHCP. The project is also located in the Lake Mathews/Lake Skinner Management Unit that includes Murrieta Hot Springs, Murrieta Creek, and Pechanga Creek. The Project does contain criteria cells.

The biological issues for Subunit 1 include the following:

1. Maintain habitat connectivity within Murrieta Creek from the confluence of Temecula Creek to Cold Creek and from Lower Warm Springs Creek and Murrieta Creek for wildlife movement and conservation of wetland species;
2. Maintain linkage area for bobcat;
3. Maintain the area of Murrieta Creek at the confluence of Pechanga Creek, Temecula Creek and Santa Margarita River for mountain lion linkage, and,
4. Maintain habitat for arroyo chub, California red-legged frog and western pond turtle within Murrieta Creek and Cole Creek.

Department Concerns

The DEIR should include an analysis of the potential and direct effects of the Project on the fish and wildlife resources noted above. The Project should also discuss the importance of the project to the Temecula Creek-Murrieta Creek-Santa Margarita River confluence and how this project potentially impacts the flow of biological resources to and between these areas.

In addition to the recommended measures later in this letter, the Department has concerns regarding this Project and the content of the EIR:

1. Provide a thorough analysis of the wildlife corridor issues (west to east and south to north), the potential impact of the Project on connectivity, and mitigation measures to offset those impacts;
2. Provide a thorough analysis of the potential mountain lion corridor, the Project's potential impact and mitigation measures to offset those impacts;
3. Maintain habitat for arroyo chub, California red-legged frog and western pond turtle;
4. Include biological assessments, surveys, Determination of Biologically Equivalent or Superior Preservation, and avoidance and minimization measures to riparian resources;
4. Provide a detailed impact assessment, mitigation measures to offset Project impacts and a funding mechanism for the habitat maintenance and monitoring plan;
5. Provide several alternatives for proposals to mitigate for the loss of riparian resources and, show how these mitigation measures conform to the MSHCP Reserve and biological objectives;
6. Provide a discussion of the entire Project including Phase 1 and any future development associated with this Project; and
7. Provide a cumulative impact analysis of this and other projects in this area of Murrieta Creek and its adjacent tributaries.

Potential Biological Impacts

The target species for Subunit 1 of the Southwest Area Plan include: California red-legged frog, Cooper's hawk, least Bell's vireo, southwest willow flycatcher, tree swallow, White-tailed kite, yellow warbler, arroyo chub, bobcat, mountain lion and western pond turtle.

Species that require additional survey needs and procedures in the Project area include: heart-leaved pitcher sage, prostrate navarretia, and burrowing owl. The Project is not located within the Narrow Endemic Plant Species Survey Area. Other Resource protection polices that apply to the Project are: Urban/Wildlands Interface (Section 6.1.4 of the MSHCP), and Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools (Section 6.1.2).

Compliance with approved habitat plans, such as the MSHCP, is discussed in CEQA Section 15125(d) of the Guidelines. The implementation of CEQA requires that an environmental impact report (EIR) discuss any inconsistencies between a proposed project and applicable general plans and regional plans, including habitat conservation plans and natural community conservation plans (NCCP).

The Department is concerned about the continuing loss of jurisdictional waters of the State and the encroachment of development into areas with native habitat values. The CEQA document should contain sufficient, specific, and current biological information on the existing habitat and species at the Project site; measures to minimize and avoid sensitive biological resources; and mitigation measures to offset the loss of native flora and fauna and State waters. If the Project site contains Federally- or State-listed species, the CEQA document should include measures to avoid and minimize impacts to these species as well as mitigation measures to compensate for the loss of biological resources. The CEQA document should not defer impact analysis and mitigation measures to future regulatory discretionary actions, such as a Lake or Streambed Alteration Agreement.

This particular Project has the potential to have significant environmental impacts on sensitive flora and fauna resources. Therefore, the CEQA document should include an alternatives analysis which focuses on environmental resources and ways to avoid or minimize impacts to those resources.

To enable Department staff to adequately review and comment on the proposed Project, we suggest that updated biological studies be conducted prior to any environmental or discretionary approvals. The following information should be included in any focused biological report or supplemental environmental report:

1. Please provide a summary of the structure, purpose and obligations of the Lead Agency under the MSHCP and an analysis of the Project in relation to the Area Plan and Criteria Cell biological goals and objectives.

    a. Reserve Assembly. The Project is located within the MSHCP Criteria Area and is subject to the conservation requirements for reserve assembly. A discussion of the applicable Area Plan and whether the Project includes Criteria Cells should be addressed. Documents processed through the Resource

Conservation Agency (RCA) of the MSHCP should be included in the CEQA document.

b. Goals and Objectives. A discussion of the Area Plan biological goals and objectives for species and habitats and an analysis of the Project's species and habitats in relation to those goals and objectives.

c. MSHCP Policies. A discussion of the applicability of MSHCP policies and procedures, including: the (MSHCP Section 6.3.2); Fuels Management (MSHCP Section 6.4), and the Guidelines Pertaining to the Urban Wildlands Interface (MSHCP Section 6.1.4).

d. Special Survey Areas. A discussion of what the survey requirements are of the Project site and the results of general and focused surveys. Surveys should be conducted within one year of submittal of the CEQA document. Survey requirements and results should be included in the CEQA document.

e. Biological Resources. A list of the biological resources found on the site and an analysis of how the Project implementation would impact those resources.

f. Mitigation Measures. A list of proposed mitigation measures required by the MSHCP to offset Project impacts, including payment of fees or other measures.

2. Please provide a complete assessment of the flora and fauna within and adjacent to the Project area, with particular emphasis upon identifying endangered, threatened, and locally unique species and sensitive habitats.

a. A thorough assessment of rare plants and rare natural communities, following the Department's November 2009 guidance for Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. The guidance document can be found at the following link: http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/Protocols_for_Surveying_and_Evaluating_Impacts.pdf

b. A thorough assessment of sensitive fish, wildlife, reptile, and amphibian species. Seasonal variations in use of the Project area should also be considered. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with the Department and the U.S. Fish and Wildlife Service.

c. The Department's California Natural Diversity Data Base in Sacramento should be contacted at (916) 327-5960 to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the California Fish and Game Code.

3. Please provide a thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts.

species. Department studies have shown that these efforts are experimental in nature and largely unsuccessful.

5. A CESA Permit must be obtained if there are impacts to State or Federal listed species and the applicant chooses not to process the Project through the Resource Conservation Agency of the MSHCP.

   a. If the Project has the potential to result in "take" of species of plants or animals listed under CESA, either during construction or over the life of the Project. CESA Permits are issued to conserve, protect, enhance, and restore State-listed threatened or endangered species and their habitats. Early consultation is encouraged, as significant modification to the proposed Project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the California Fish and Game Code, effective January 1998, require that the Department issue a separate CEQA document for the issuance of a CESA permit unless the Project CEQA document addresses all Project impacts to listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of a CESA permit. For these reasons, the following information is requested:

   b. Biological mitigation, monitoring,and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA Permit.

   c. A Department-approved Mitigation Agreement and Mitigation Plan are required for plants listed as rare under the Native Plant Protection Act.

6. Although the proposed Project is within the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) and could be subject to Section 6.1.2, Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools, a Lake and Streambed Alteration Agreement Notification is still required by the Department for any activity that will change the bed, channel, or bank (which may include associated riparian resources) of a river or stream or use material from a streambed. The Department's criteria for determining the presence of jurisdictional waters are generally more comprehensive than the MSHCP criteria in Section 6.1.2. The CEQA document should include a jurisdictional delineation if there are impacts to riparian vegetation or State waters.

   The Department opposes the elimination of watercourses and/or their channelization or conversion to subsurface drains. All wetlands and watercourses, whether intermittent or perennial, must be retained or mitigated for and provided with substantial setbacks which preserve the riparian and aquatic values and maintain their value to on-site and off-site wildlife populations.

   a. Under Section 1600 *et seq.* of the California Fish and Game Code, the Department requires the Project applicant to notify the Department of any activity that will divert, obstruct or change the natural flow or the bed, channel or bank (which includes associated riparian resources) of a river, stream or lake, or use material from a streambed prior to the applicant's commencement of the activity. Streams include, but are not limited to, intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams, and watercourses with

subsurface flow. The Department's issuance of a Lake and Streambed Alteration Agreement for a project that is subject to CEQA will require CEQA compliance actions by the Department as a responsible agency. The Department, as a responsible agency under CEQA, may consider the local jurisdiction's (lead agency) Negative Declaration or Environmental Impact Report for the Project. However, if the CEQA document does not fully identify potential impacts to lakes, streams, and associated resources (including, but not limited to riparian and alluvial fan sage scrub habitat) and provide adequate avoidance, mitigation, monitoring, and reporting commitments, additional CEQA documentation will be required prior to execution (signing) of the Streambed Alteration Agreement. In order to avoid delays or repetition of the CEQA process, potential impacts to a lake or stream, as well as avoidance and mitigation measures need to be discussed within this CEQA document. The Department recommends the following measures to avoid subsequent CEQA documentation and project delays:

(i) Incorporate all information regarding impacts to lakes, streams and associated habitat within the DEIR. Information that should be included within this document includes: (a) a delineation of lakes, streams, and associated habitat that will be directly or indirectly impacted by the proposed Project; (b) details on the biological resources (flora and fauna) associated with the lakes and/or streams; (c) identification of the presence or absence of sensitive plants, animals, or natural communities; (d) a discussion of environmental alternatives; (e) a discussion of avoidance measures to reduce Project impacts, (f) a discussion of potential mitigation measures required to reduce the Project impacts to a level of insignificance; and (g) an analysis of impacts to habitat caused by a change in the flow of water across the site. The applicant and lead agency should keep in mind that the State also has a policy of no net loss of wetlands.

(ii) The Department recommends that the Project applicant and/or lead agency consult with the Department to discuss potential Project impacts and avoidance and mitigation measures. Early consultation with the Department is recommended since modification of the proposed Project may be required to avoid or reduce impacts to fish and wildlife resources. To obtain a Streambed Alteration Agreement Notification package, please visit our website at: http://www.dfg.ca.gov/habcon/1600.html.

Thank you for this opportunity to comment. Please contact Robin Maloney-Rames at (909) 980-3818, if you have any questions regarding this letter.

Sincerely,

Jeff Brandt
Senior Environmental Scientist

EASTERN MUNICIPAL WATER DISTRICT
SINCE 1950

November 5, 2012

Mr. Arturo Diaz Senior Civil Engineer
Riverside County Flood Control and Water Conservation District
1995 Market Street
Riverside, CA 92501

SUBJECT: Murrieta Creek Phase 2 Project
Notice of Preparation (NOP) of a
Supplemental Environmental Assessment /
Supplemental Environmental Impact Report

Dear Mr. Diaz:

Thank you for the opportunity to review the Notice of Preparation (NOP) for the above referenced project. The project proposes to construct various improvements to provide flood control, a multi-purpose trail, and higher quality riparian habitat along the existing Murrieta Creek Channel; from a point approximately 1,000 lineal feet south of 1st Street to approximately Winchester Road. The project will increase the channel capacity by excavating a wider and deeper channel section. Riprap and soil cement are proposed to protect the banks from erosion. Eastern Municipal Water District (EMWD) offers the following comments.

The U.S. Army Corps of Engineers (USACE) shall protect-in-place EMWD's existing 12-inch and 24-inch VCP gravity sewer crossings during its creek improvements. In past meetings between EMWD and USACE, USACE staff determined that a grade control structure could be positioned in the vicinity of these crossings to protect them from erosive forces. In those meetings, it was agreed by USACE staff that additional measures would be taken to protect the pipelines for loads exerted by heavy equipment during construction efforts. USACE's Contractor shall submit to EMWD the chosen measures to protect the pipelines for review and approval.

Again, EMWD appreciates the opportunity to comment on this project. Please forward the Draft Environmental Impact Report to the attention of Helen Stratton at the mailing address shown below. If you have questions concerning these comments, please feel free to contact Helen Stratton at 951 928-3777, Ext. 4545, or Armando Arroyo at Ext. 4480.

Sincerely,

Jayne Joy
Director of Environmental and Regulatory Compliance

Mailing Address: Post Office Box 8300 Perris, CA 92572-8300 Telephone: (951) 928-3777 Fax: (951) 928-6177
Location: 2270 Trumble Road Perris, CA 92570 Internet : www.emwd.org

PECHANGA CULTURAL RESOURCES
Temecula Band of Luiseño Mission Indians

Post Office. Box 2183 • Temecula, CA 92593
Telephone (951) 308-9295 • Fax (951) 506-9491

November 5, 2012

VIA E-MAIL and USPS

Mr. Arturo Diaz
Senior Civil Engineer
Riverside County Flood Control and Water Conservation District
1995 Market Street
Riverside, CA 92501

Re: Pechanga Tribe Comments on the Notice of Preparation of a Supplemental Assessment/Supplemental Environmental Impact Report for the Murrieta Creek Phase 2 Project (SCH Number 2000071051)

Dear Mr. Diaz:

This comment letter is written on behalf of the Pechanga Band of Luiseño Indians (hereinafter, "the Tribe"), a federally recognized Indian tribe and sovereign government. The Tribe formally requests, pursuant to Public Resources Code §21092.2, to be notified and involved in the entire CEQA, NEPA and Section 106 environmental review process for the duration of the above referenced project (the "Project"). Please add the Tribe to your distribution list(s) for public notices and circulation of all documents, including environmental review documents, archeological reports, and all documents pertaining to this Project. The Tribe further requests to be directly notified of all public hearings and scheduled approvals concerning this Project. Please also incorporate these comments into the record of approval for this Project.

The Tribe submits these comments concerning the Project's potential impacts to cultural resources in conjunction with the environmental review of the Project and to assist the District in developing appropriate avoidance and preservation standards for the Pechanga Cultural resources that the Project may be impacting.

The Pechanga Tribe informs the District that the Project area is within the Luiseño Ancestral Origin Landscape Area which includes Luiseño place names, *tóota yixélval* (rock art, pictographs, and petroglyphs), Village Complexes, a TCP, sacred places and other tangible and intangible tribal heritage resources. Please understand that the above information may not be exhaustive of all the cultural resources that may be impacted by this Project. Based upon our oral tradition, ethnographic studies and historic documents, the Origin Landscape is one of the most sacred areas to the Tribe and is presently included in the Sacred Lands File with the State Native

American Heritage Commission and is considered by the Tribe to be eligible for both the California and National Registers of Historic Places.

Given the geographical area within which the Project lies, and the Project's proximity to recorded and known archaeological and cultural resources, the Project's impacts must be carefully considered and the Tribe consulted with as soon as possible concerning such impacts. At this time, the Tribe is opposed to any direct, indirect and cumulative impacts this Project may have to tribal heritage resources.

THE DISTRICT AND ARMY CORPS OF ENGINEERS MUST INCLUDE INVOLVEMENT OF AND CONSULTATION WITH THE PECHANGA TRIBE IN ITS ENVIRONMENTAL REVIEW PROCESS

It has been the intent of the Federal Government[1] and the State of California[2] that Indian tribes be consulted with regard to issues which impact cultural and spiritual resources, as well as other governmental concerns. The responsibility to consult with Indian tribes stems from the unique government-to-government relationship between the United States and Indian tribes. This arises when tribal interests are affected by the actions of governmental agencies and departments. In this case, it is undisputed that the project lies within the Pechanga Tribe's traditional territory. Therefore, in order to comply with CEQA, NEPA, Section 106 and other applicable Federal and California law, it is imperative that the District and the Corps consult with the Tribe in order to guarantee an adequate knowledge base for an appropriate evaluation of the Project effects, as well as generating adequate mitigation measures.

As this Project has a Federal nexus, Section 106 consultation with the Tribe is mandatory. The requirements of Section 106 of the NHPA, set forth in 36 CFR Part 800, clearly requires consultation with Indian tribes, regardless of the location of the project (36 CFR 800.2(c)). The regulations go on to state that the agency official *shall* ensure that consultation provides an Indian tribe "a reasonable opportunity to identify its concerns about historic properties, advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance, articulate its views on the undertaking's effects on such properties, and participate in the resolution of adverse effects." Id. Further, consultation must occur early in the planning process in order to "identify and discuss relevant preservation issues and resolve concerns about the confidentiality of information on historic properties." Id.

Delegation of these obligations cannot be made except where there is a clear statutory basis for a Federal agency delegation of its legal responsibility to a non-Federal party (ACHP Guidelines). Preparing and entering a Programmatic Agreement between the Federal agency and

[1]See e.g., Executive Memorandum of April 29, 1994 on Government-to-Government Relations with Native American Tribal Governments, Executive Order of November 6, 2000 on Consultation and Coordination with Indian Tribal Governments, Executive Memorandum of September 23, 2004 on Government-to-Government Relationships with Tribal Governments, and Executive Memorandum of November 5, 2009 on Tribal Consultation.
[2] See California Public Resource Code §5097.9 et seq.; California Government Code §§65351, 65352.3 and 65352.4

a non-Federal agency with major decision-making responsibilities, such as Caltrans, is one such authorized delegation (36 CFR 800.14(b)).

PECHANGA CULTURAL AFFILIATION TO PROJECT AREA AND REQUESTED INVOLVEMENT

The Pechanga Tribe asserts that the Project area is part of Luiseño, and therefore the Tribe's, aboriginal territory as evidenced by the existence of Luiseño place names, *tóota yixélval* (rock art, pictographs, and petroglyphs), Village Complexes, a TCP, sacred places and other tangible and intangible tribal heritage resources. This culturally sensitive area is directly affiliated with the Pechanga Band of Luiseño Indians because of the Tribe's cultural ties to this area, knowledge of the cultural resources in this area, proximity to the Pechanga Reservation as well as extensive history of working on Projects in the Temecula region. During our consultation and in subsequent comment letters, we will provide more specific, confidential information on the resources located on and near this Project.

The Tribe requests to be involved and participate with the District and the Corps in assuring that an adequate environmental assessment is completed, and in developing appropriate avoidance measures for impacts to cultural resources. This includes early and continued consultation with the District and the Corps, participation in cultural resources surveys and a thorough review of Project documents. The Tribe further believes that the SEA/SEIR and any other NEPA documents should address auditory and visual impacts of the Project, cumulative impacts related to cultural resources and the TCP as well as any potential growth-related or long-term impacts that may occur as a result of the improvements.

At this time we are requesting project specific information on archaeological and biological resources, development plans, noise, geotechnical and any other relevant surveys or studies as well as a copy of the original EA/EIR as we do not have enough information to provide specific details. As additional Project information becomes available and through consultations between the Tribe, the District and the Corps, the Tribe may offer specific avoidance or mitigation measures. Further discussions with the District and the Corps should occur in a confidential setting regarding this culturally important and sensitive landscape.

The Tribe reserves the right to fully participate in the environmental review process, as well as to provide further comment on the Project's impacts to tribal cultural resources and potential mitigation, including avoidance, for such impacts. Further, the Tribe reserves the right to participate in the regulatory process and provide comment on issues pertaining to the regulatory process and Project approval.

The Pechanga Tribe looks forward to working together with the District and the Corps in protecting the invaluable Pechanga cultural resources found in the Project area, as well as working together to further identify the tangible and intangible cultural resources within this Project area. Please contact me at 951-770-8104 or ahoover@pechanga-nsn.gov once you have

had a chance to review these comments so that we can schedule a meeting and begin consultations. Thank you.

Sincerely,

Anna Hoover
Cultural Analyst

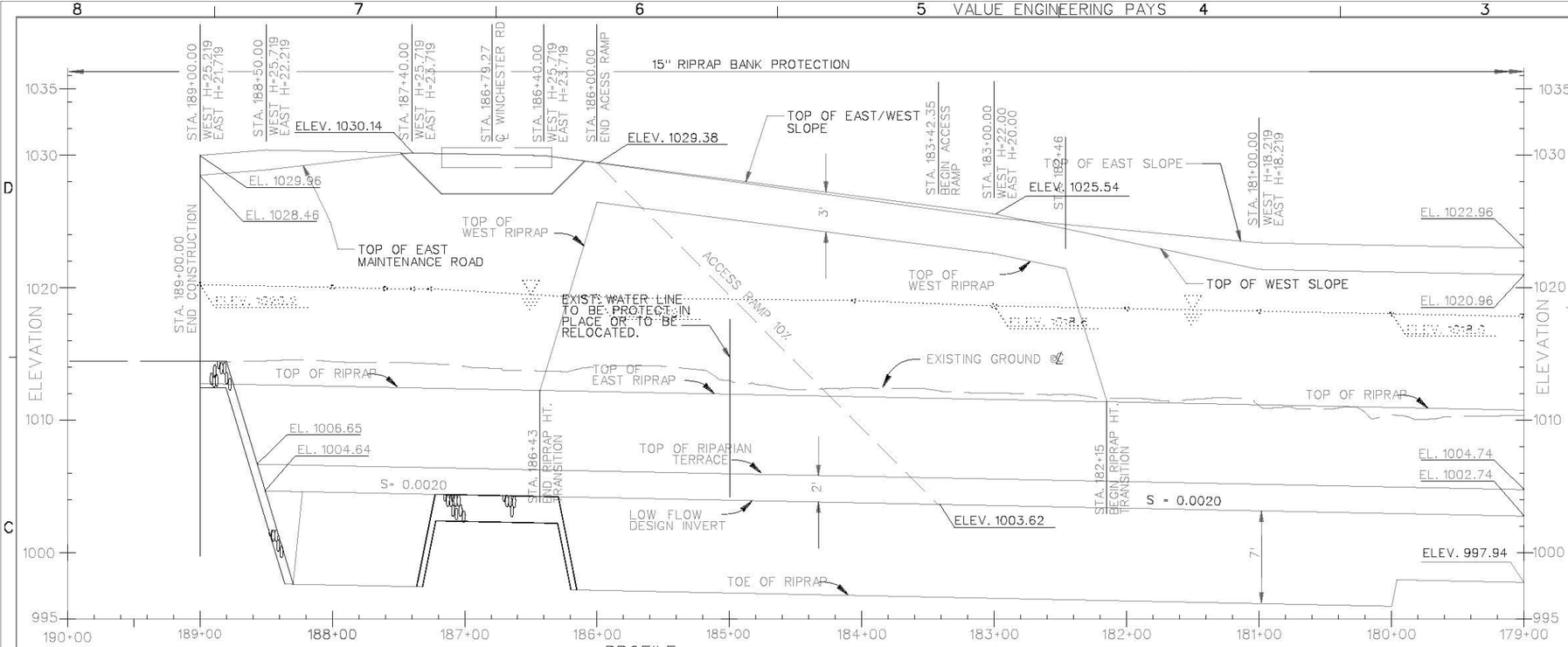
Cc Pechanga Office of the General Counsel

APPENDIX B

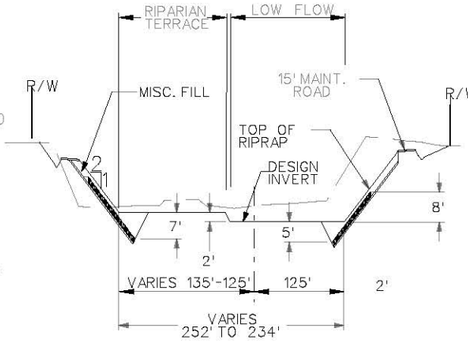
DRAFT DESIGN PLATES

VALUE ENGINEERING PAYS

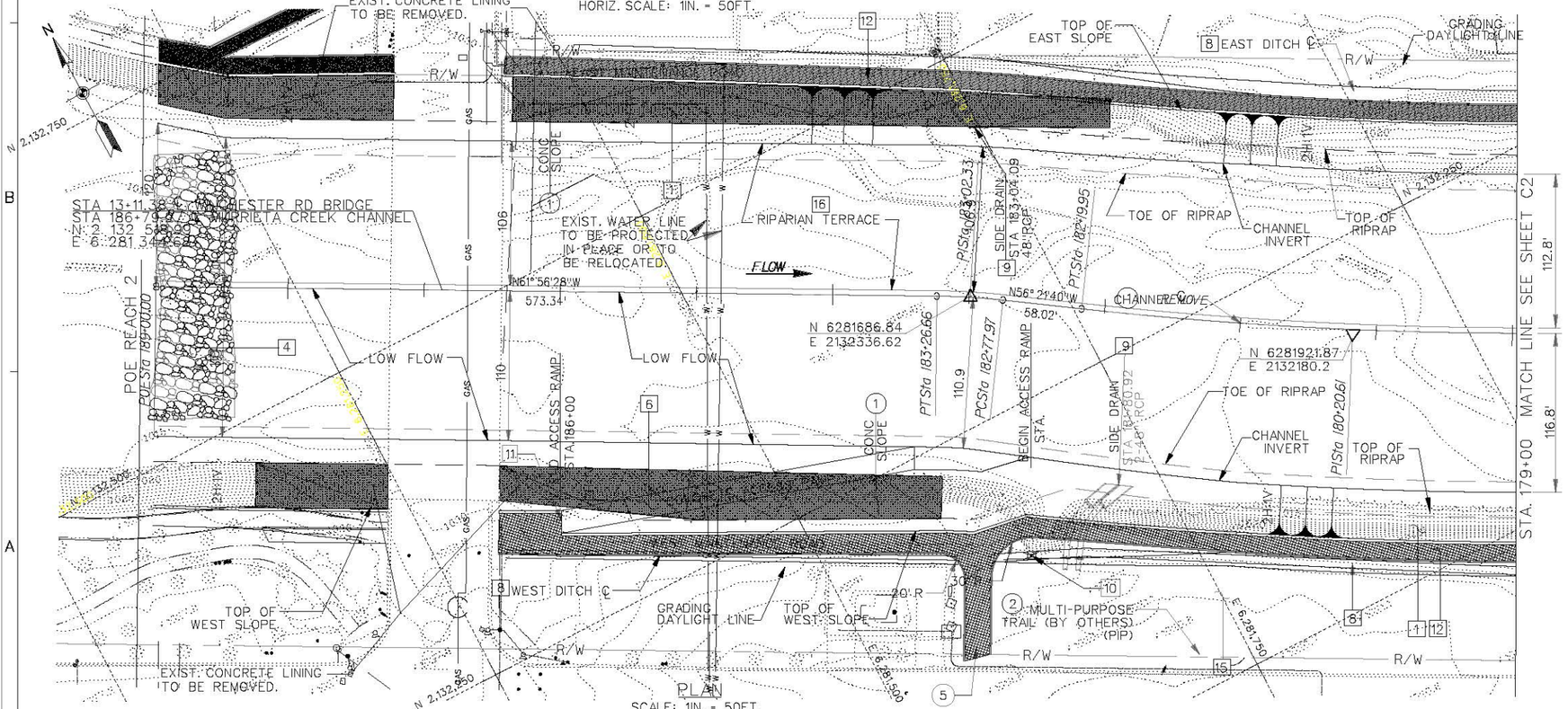
SAFETY PAYS



PROFILE
VERT. SCALE: 1IN. = 5FT.
HORIZ. SCALE: 1IN. = 50FT.



TYPICAL CROSS SECTION
N.T.S.



LEGEND

1. REMOVE
2. PROTECT IN PLACE
5. JOIN EXISTING WORK

CONSTRUCTION NOTES

1. CONSTRUCT CHANNEL SECTION WITH RIPRAP SLOPE PROTECTION. SEE SHEET XX FOR TYP. SECTIONS.
4. CONSTRUCT END PROTECTION, SEE SHEET C34 FOR DETAILS.
6. CONSTRUCT RAMP TO INVERT, SEE SHEET C38 FOR DETAILS.
8. CONSTRUCT V-DITCH, SEE SHEETS C42 AND C52 FOR DITCH PLAN AND PROFILES.
9. CONSTRUCT SIDE DRAIN FEATURE, SEE SHEETS S2-S5 FOR DETAILS.
10. CONSTRUCT DROP INLET.
11. INSTALL PIPE GATE, SEE SHEET C38.
12. CONSTRUCT MAINTENANCE ROAD- DECOMPOSED GRANITE SURFACING ON WEST SIDE, ASPHALT PAVING ON EAST ASIDE.
15. INSTALL ESTHETIC TREATMENT AND IRRIGATION SYSTEM. SEE SHEETS X-X FOR DETAILS.
16. MITIGATION PLANTING AND HYDROSEEDING.

REFERENCE NOTE:

1. FOR CROSS SECTIONS, SEE SHEET C15 & C16.

CHANNEL ℄ CURVE DATA.		
PI. STATION	183+02.33	180+20.61
△=	5° 34'49"	7° 37'31"
R=	500'	3,000'
L=	48.70'	399.26'
T=	24.37'	199.92'

GRAPHIC SCALE
50 25 0 50 100FT
SCALE: 1"= 50'

5 2.5 0 5 10FT
SCALE: 1"= 5'

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

SANTA MARGARITA RIVER WATERSHED,
RIVERSIDE COUNTY, CALIFORNIA
MURRIETA CREEK - PHASE 2
PLAN & PROFILE
STA 189+00 TO 179+00

DESIGNED BY: J.G.R.
DRAWN BY: J.G.R.
CHECKED BY: S.H.V
FILE NAME: C1.DGN

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY:
ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

DISTRICT FILE NO. 226/???
SPEC. NO. W912PL-??-B-????

Scale: AS SHOWN
SHEET
C1

Plot Date: 30-NOV-2012

VALUE ENGINEERING PAYS

SAFETY! PAYS

15" RIPRAP BANK PROTECTION

EL. 1022.96 — TOP OF EAST SLOPE — ELEV. 1022.18 — EL. 1021.76 — TOP OF EAST SLOPE

EL. 1020.96 — TOP OF WEST SLOPE — TOP OF WEST SLOPE — EL. 1018.76

TOP OF RIP RAP — TOP OF EAST RIPRAP

℄ EXISTING GROUND — TOP OF RIPRAP — TOP OF RIPRAP (EAST & WEST)

EL. 1004.74 — EL. 1002.74 — TOP OF RIPARIAN TERRACE — EL. 1002.54 — EL. 1000.54

S = 0.0020 — LOW FLOW DESIGN INVERT — TOE OF RIPRAP — EL. 997.94 — ELEV. 995.51

OVERLAND BRIDGE (BY OTHERS) STA. 173+08.11 ℄

STA. 170+00.00 WEST H-18.219 EAST H-18.219

STA. 168+00.00

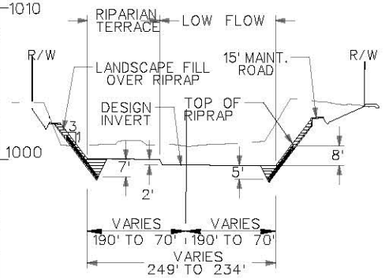
STA. 168+50 END RIPRAP TRANSITION

ELEVATION

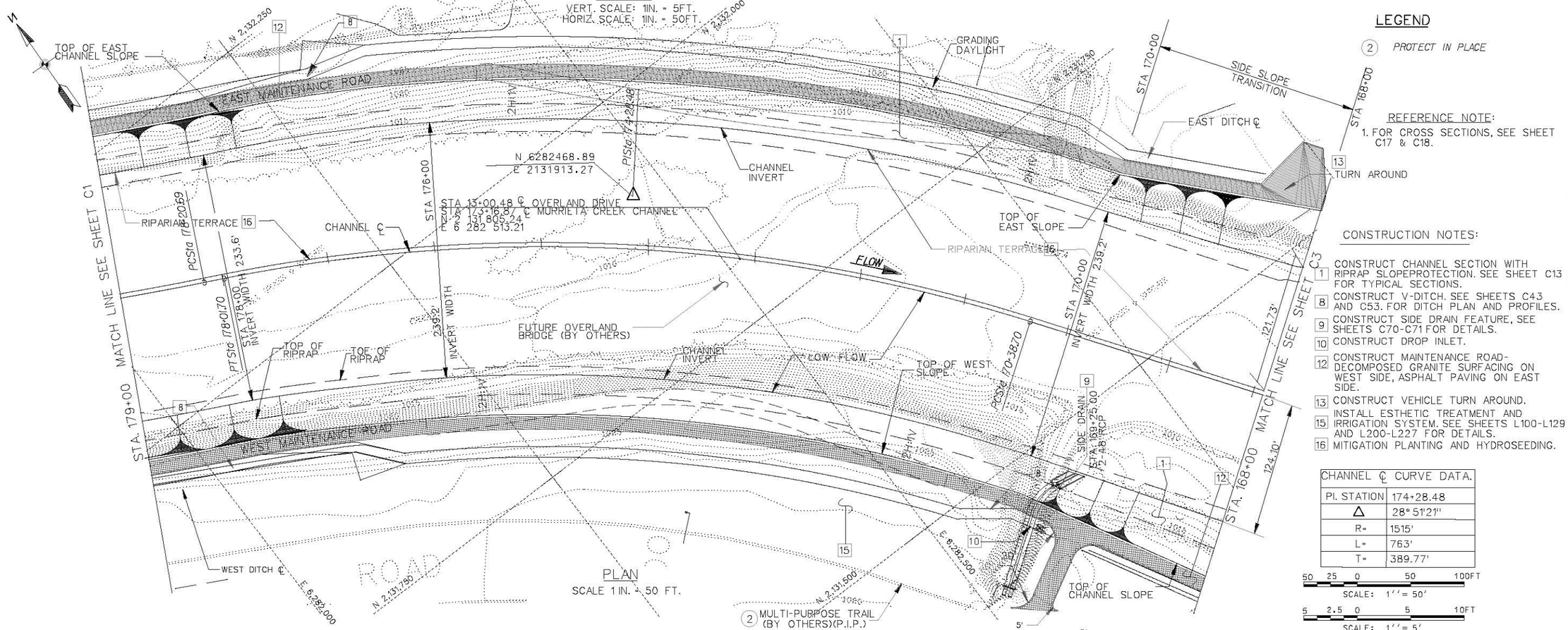
179+00 178+00 177+00 176+00 175+00 174+00 173+00 172+00 171+00 170+00 169+00 168+00

PROFILE

VERT. SCALE: 1IN. = 5FT.
HORIZ. SCALE: 1IN. = 50FT.



TYPICAL CROSS SECTION
N.T.S.



PLAN
SCALE 1 IN. = 50 FT.

LEGEND

(2) *PROTECT IN PLACE*

CONSTRUCTION NOTES:

1. CONSTRUCT CHANNEL SECTION WITH RIPRAP SLOPEPROTECTION. SEE SHEET C13 FOR TYPICAL SECTIONS.
8. CONSTRUCT V-DITCH. SEE SHEETS C43 AND C53. FOR DITCH PLAN AND PROFILES.
9. CONSTRUCT SIDE DRAIN FEATURE, SEE SHEETS C70-C71 FOR DETAILS.
10. CONSTRUCT DROP INLET.
12. CONSTRUCT MAINTENANCE ROAD-DECOMPOSED GRANITE SURFACING ON WEST SIDE, ASPHALT PAVING ON EAST SIDE.
13. CONSTRUCT VEHICLE TURN AROUND.
15. INSTALL ESTHETIC TREATMENT AND IRRIGATION SYSTEM. SEE SHEETS L100-L129 AND L200-L227 FOR DETAILS.
16. MITIGATION PLANTING AND HYDROSEEDING.

CHANNEL ℄ CURVE DATA.	
PI. STATION	174+28.48
△	28° 51'21"
R=	1515'
L=	763'
T=	389.77'

50 25 0 50 100FT
SCALE: 1'' = 50'

5 2.5 0 5 10FT
SCALE: 1'' = 5'

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

SANTA MARGARITA RIVER WATERSHED,
RIVERSIDE COUNTY, CALIFORNIA

MURRIETA CREEK - PHASE 2

PLAN AND PROFILE
STA. 179+00 TO STA. 168+00

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY:
ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

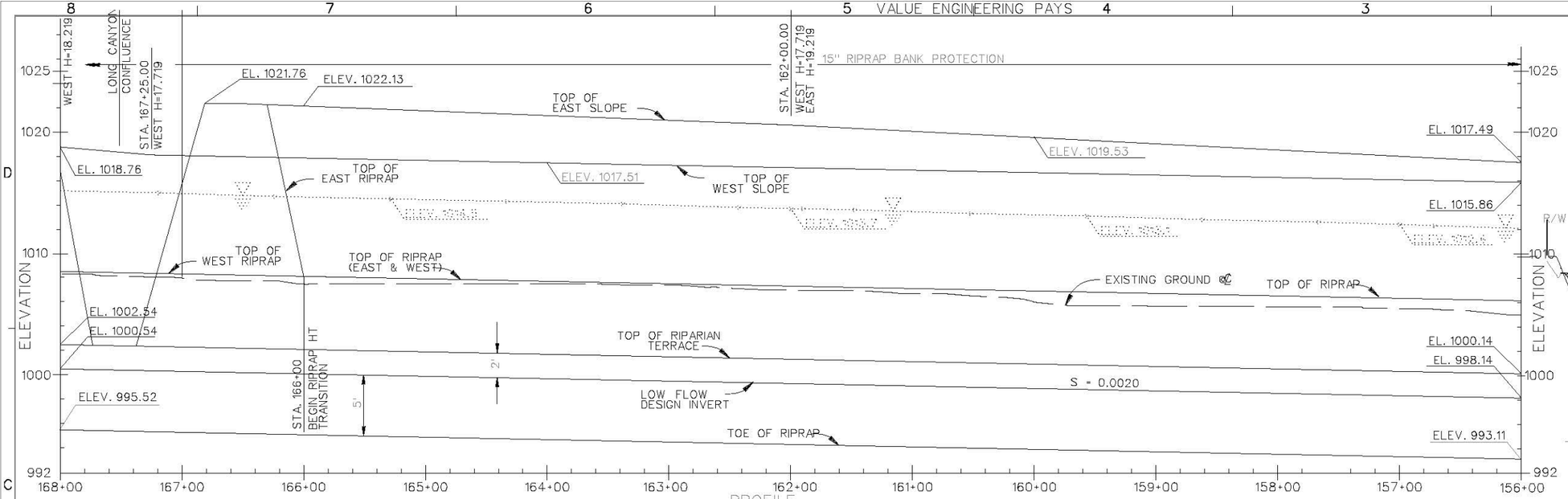
DESIGNED BY: J.G.R.
DRAWN BY: J.G.R.
CHECKED BY: S.H.V.
FILE NAME: C2.DGN
SPEC. NO. W912PL-??-B-????
DISTRICT FILE NO. 226/

Scale: AS SHOWN
SHEET
C2

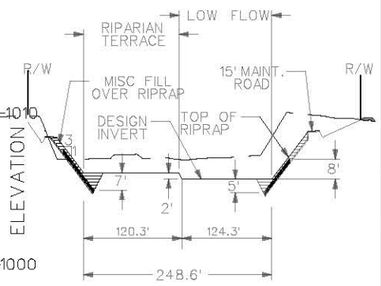
Plot Date: 30-NOV-2012

VALUE ENGINEERING PAYS

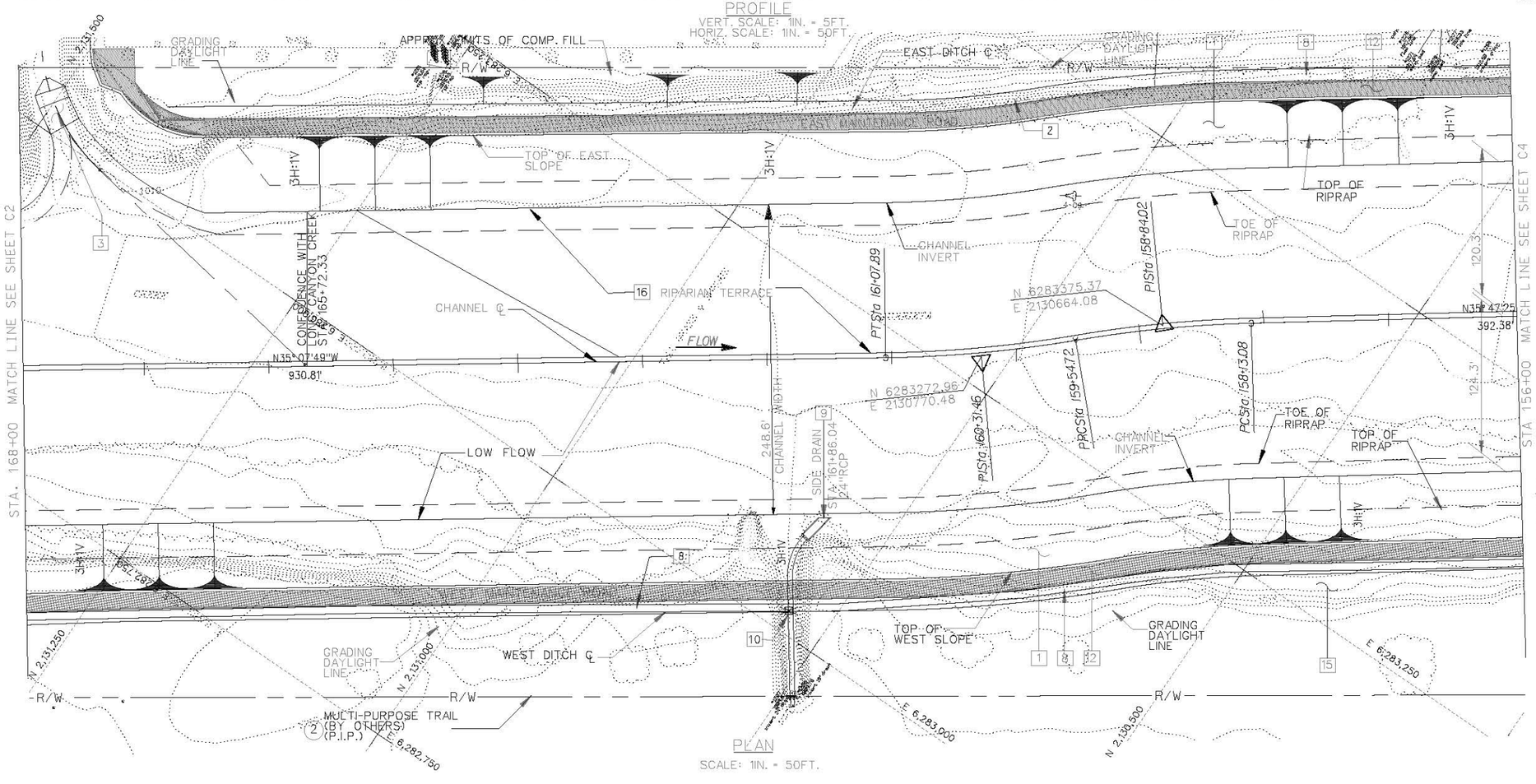
SAFETY PAYS



PROFILE
VERT. SCALE: 1IN. = 5FT.
HORIZ. SCALE: 1IN. = 50FT.



TYPICAL CROSS SECTION
N.T.S.



PLAN
SCALE: 1IN. = 50FT.

LEGEND

(2) *PROTECT IN PLACE*

CONSTRUCTION NOTES:

1. CONSTRUCT CHANNEL SECTION WITH RIPRAP SLOPE PROTECTION. SEE SHEET C13 FOR TYPICAL SECTIONS.
3. CONSTRUCT GROUTED STONE STABILIZER. SEE SHEET XX FOR DETAILS.
8. CONSTRUCT V-DITCH. SEE SHEET XX FOR DETAILS.
9. CONSTRUCT SIDE DRAIN FEATURE, SEE SHEETS C70-C71 FOR DETAILS.
10. CONSTRUCT DROP INLET.
12. CONSTRUCT MAINTENANCE ROAD-DECOMPOSED GRANITE SURFACING ON WEST SIDE, ASPHALT PAVING ON EAST SIDE.
15. INSTALL ESTHETIC TREATMENT AND IRRIGATION SYSTEM. SEE SHEETS L100-L129 AND L200-L227 FOR DETAILS.
16. MITTIGATION PLANTING AND HYDROSEEDING.

REFERENCE NOTE:

1. FOR CROSS SECTIONS, SEE SHEET C18 & C19.
2. FOR CONFLUENCE PLAN, SEE SHEET C32.

CHANNEL ℄ CURVE DATA.		
PI. STATION	158+84.02	160+31.46
△	8° 06'57"	8° 46'32"
R=	1000'	1000'
L=	141.65'	153.16'
T=	70.94'	76.73'

GRAPHIC SCALE
50 25 0 50 100FT
SCALE: 1"= 50'
5 2.5 0 5 10FT
SCALE: 1"= 5'

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

SANTA MARGARITA RIVER WATERSHED, RIVERSIDE COUNTY, CALIFORNIA
MURRIETA CREEK - PHASE 2
PLAN AND PROFILE
STA. 168+00 TO STA. 156+00

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY: ARTHUR Y. JUNG, PE, CHIEF, DESIGN BRANCH

DESIGNED BY: J.G.R. | DRAWN BY: J.G.R. | CHECKED BY: S.H.V. | FILE NAME: C3.DGN

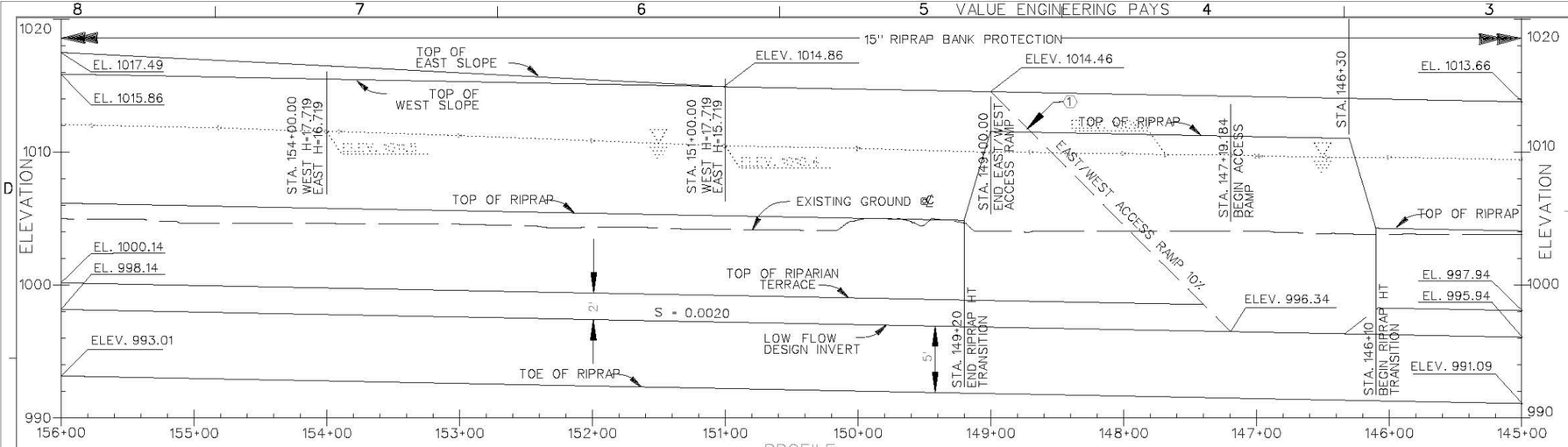
DISTRICT FILE NO. 226/ | SPEC. NO. W912PL-??-B-????

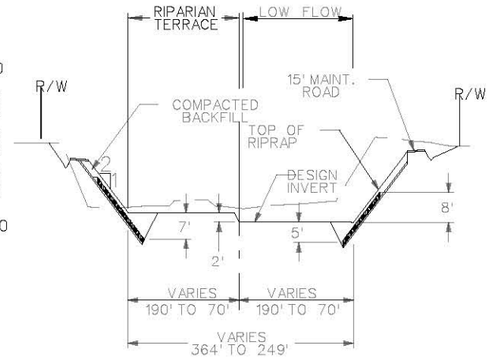
Scale: AS SHOWN

SHEET C3

Plot Date: 30-NOV-2012

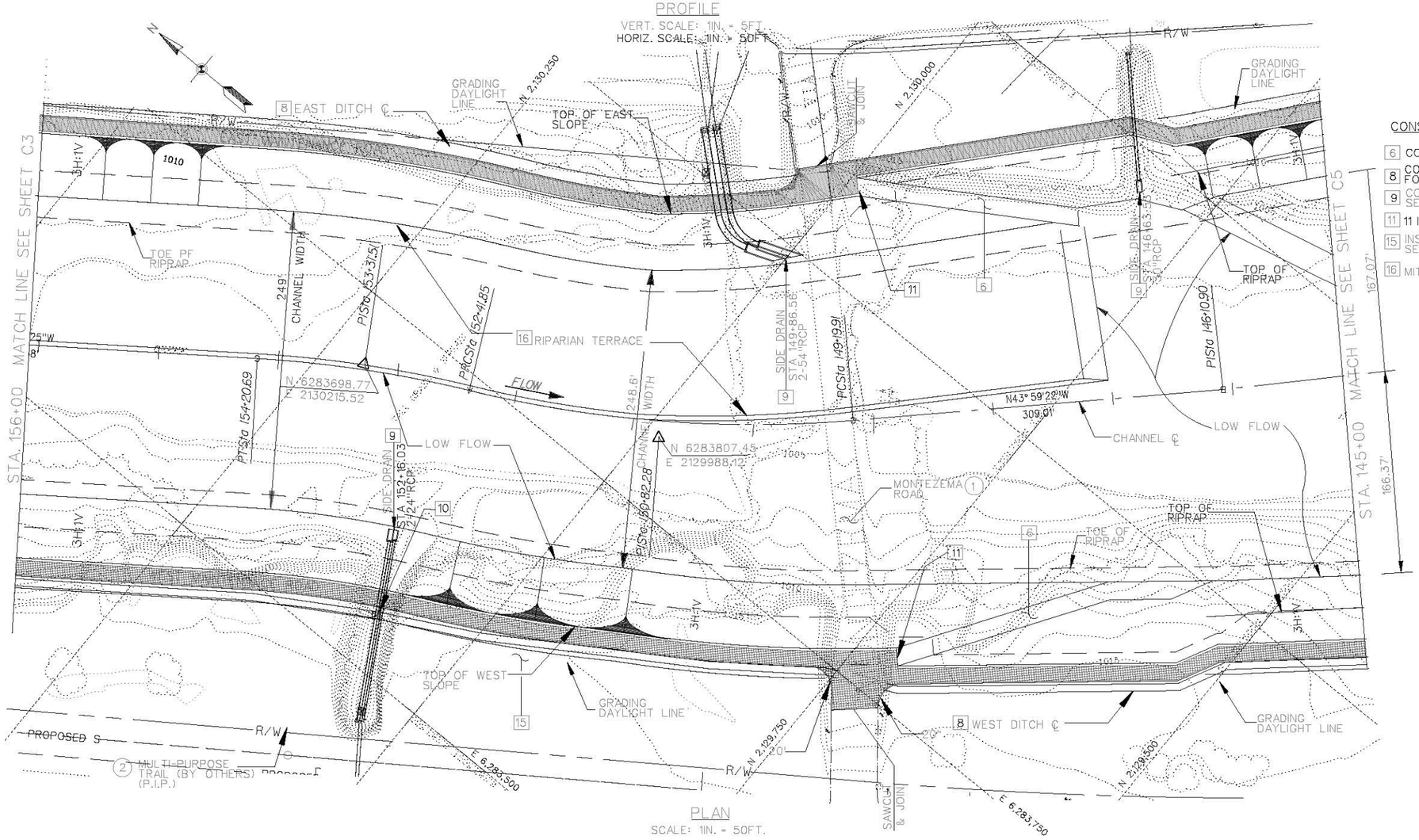
8 7 6 5 VALUE ENGINEERING PAYS 4 3 2 1





TYPICAL CROSS SECTION
N.T.S.

PROFILE
VERT. SCALE: 1IN. = 5FT.
HORIZ. SCALE: 1IN. = 50FT.



PLAN
SCALE: 1IN. = 50FT.

LEGEND

(1) *REMOVE*
(2) *PROTECT IN PLACE*

CONSTRUCTION NOTES:

6 CONSTRUCT RAMP TO INVERT. SEE SHEET C39 FOR DETAILS.
8 CONSTRUCT V-DITCH. SEE SHEETS X-X FOR DITCH PLAN AND PROFILES.
9 CONSTRUCT SIDE DRAIN FEATURE. SEE SHEETS C70-C71 FOR DETAILS.
11 11 INSTALL PIPE GATE. SEE SHEET C38.
15 INSTALL ESTHETIC TREATMENT AND IRRIGATION SYSTEM. SEE SHEETS L100-L129 AND L200-L227 FOR DETAILS.
16 MITTIGATION PLANTING AND HYDROSEEDING.

REFERENCE NOTE:

1. FOR CROSS SECTIONS, SEE SHEET C20 & C21..

CHANNEL ℄ CURVE DATA.		
PI. STATION	153+31..51	150+82.28
△	10° 14' 49"	18° 26' 46"
R=	1000'	1000'
L=	178.84'	321.95'
T=	89.66'	162.38'

GRAPHIC SCALE
50 25 0 50 100FT
SCALE: 1"= 50'
5 2.5 0 5 10FT
SCALE: 1"= 5'

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

SANTA MARGARITA RIVER WATERSHED, RIVERSIDE COUNTY, CALIFORNIA
MURRIETA CREEK - PHASE 2
PLAN AND PROFILE
STA. 156+00 TO 145+00

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY: ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

DESIGNED BY: J.G.R.
DRAWN BY: J.G.R.
CHECKED BY: S.H.V.
FILE NAME: C4.DGN
SPEC. NO. W912PL-??-B-????
DISTRICT FILE NO. 226/
Scale: AS SHOWN
SHEET C4

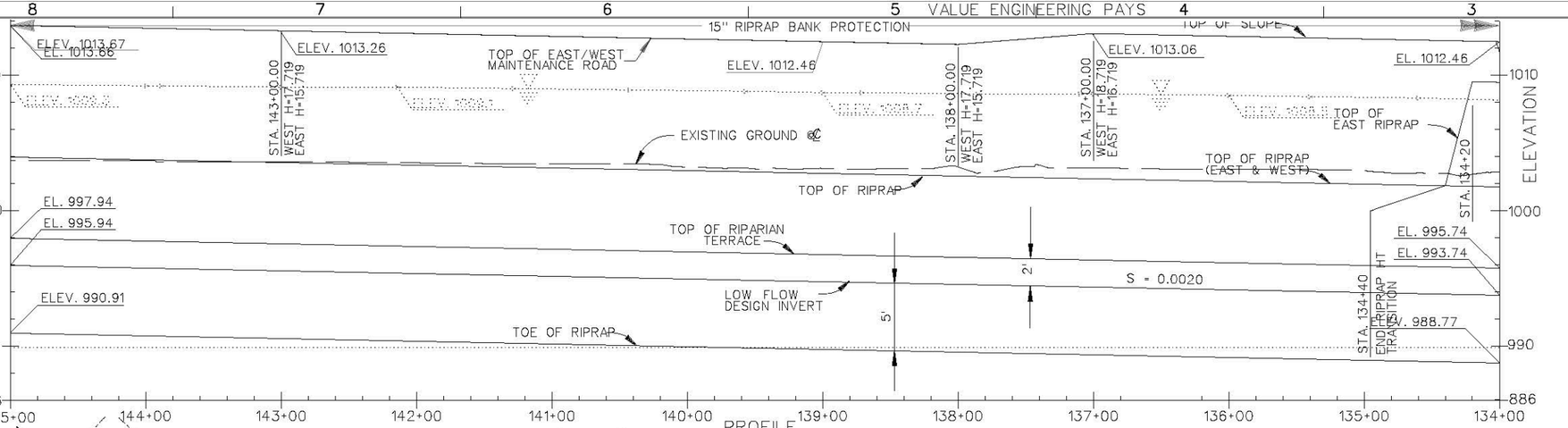
Plot Date: 30-NOV-2012

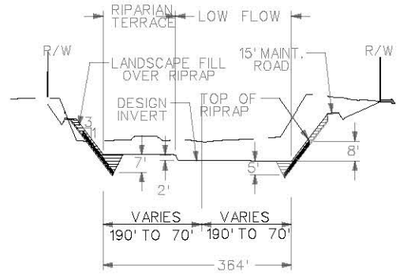
8 7 6 5 SAFETY! PAYS 4 3 2 1

VALUE ENGINEERING PAYS

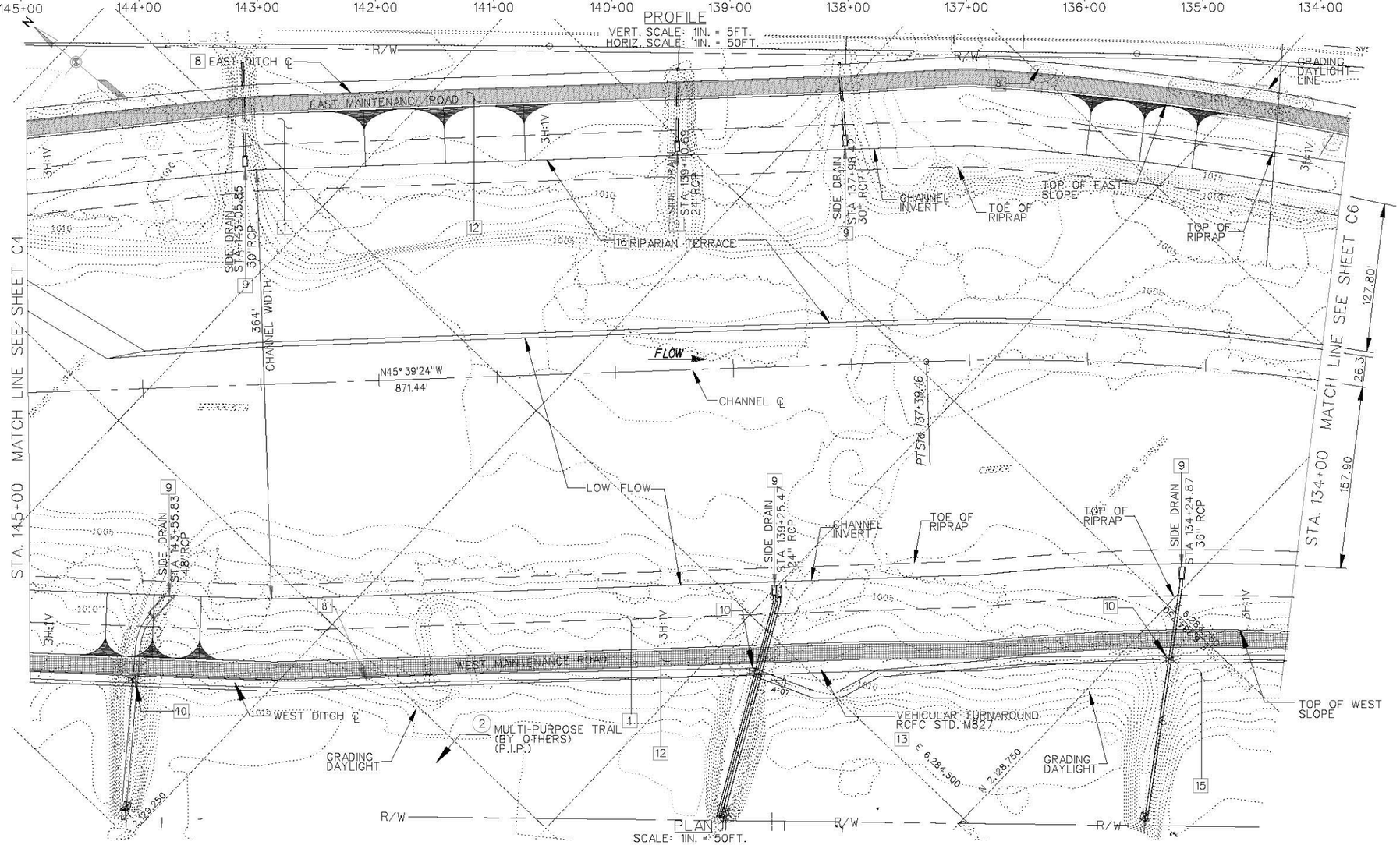
SAFETY PAYS

PROFILE
VERT. SCALE: 1IN. = 5FT.
HORIZ. SCALE: 1IN. = 50FT.





TYPICAL CROSS SECTION
N.T.S.



LEGEND

(2) *PROTECT IN PLACE*

CONSTRUCTION NOTES:

1. CONSTRUCT CHANNEL SECTION WITH RIPRAP SLOPE PROTECTION. SEE SHEET C13 FOR TYPICAL SECTIONS.
8. CONSTRUCT V- DITCH. SEE SHEETS XX FOR DITCH PLAN AND PROFILE.
9. CONSTRUCT SIDE DRAIN FEATURE, SEE SHEETS C70-C71 FOR DETAILS.
10. CONSTRUCT DROP INLET, SEE SHEET S6-S10.
12. CONSTRUCT MAINTENANCE ROAD-DECOMPOSED GRANITE SURFACING ON WEST SIDE, ASPHALT PAVING ON EAST SIDE, SEE SHEET C13 & C14.
13. CONSTRUCT VEHICLE TURN AROUND.
15. INSTALL ESTHETIC TREATMENT AND IRRIGATION SYSTEM. SEE SHEETS L100-L129 AND L200-L227 FOR DETAILS.
16. MITIGATION PLANTING AND HYDROSEEDING.

REFERENCE NOTE:

1. FOR CROSS SECTIONS, SEE SHEET C21 & C22.

GRAPHIC SCALE
50 25 0 50 100FT
SCALE: 1"= 50'
5 2.5 0 5 10FT
SCALE: 1"= 5'

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

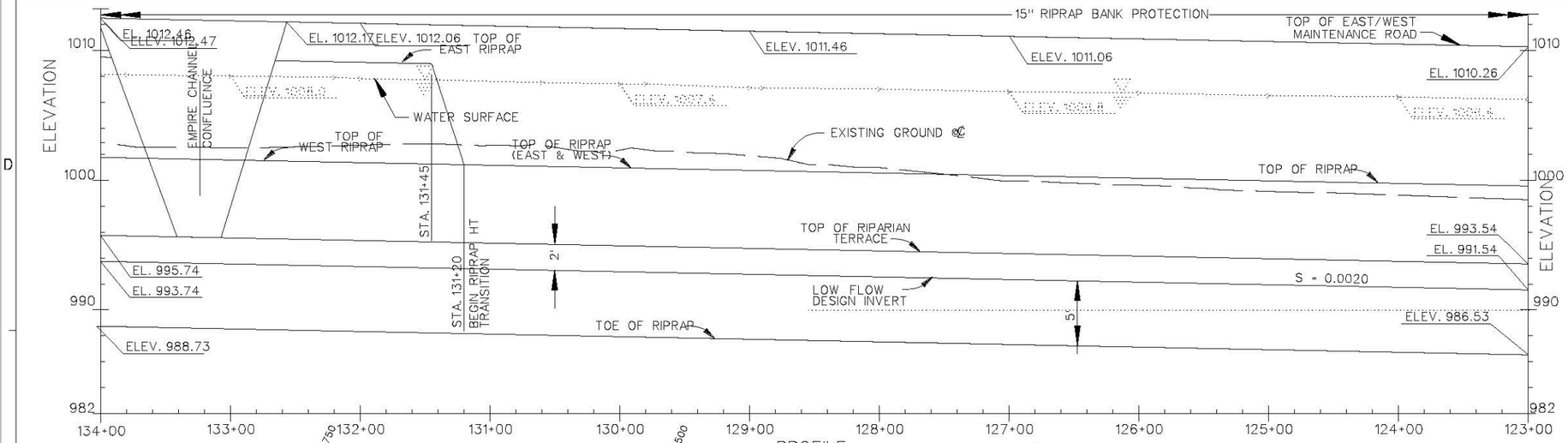
SANTA MARGARITA RIVER WATERSHED,
RIVERSIDE COUNTY, CALIFORNIA
MURRIETA CREEK - PHASE 2
PLAN AND PROFILE
STA. 145+00 TO STA. 134+00

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

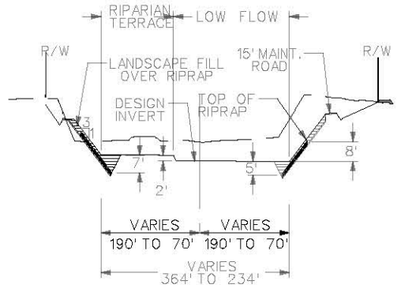
SUBMITTED BY:
ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

DESIGNED BY: J.G.R.
DRAWN BY: J.G.R.
CHECKED BY: S.H.V.
FILE NAME: C5.DGN
DISTRICT FILE NO. 226/
SPEC. NO. W912PL-??-B-????
Scale: AS SHOWN
SHEET C5

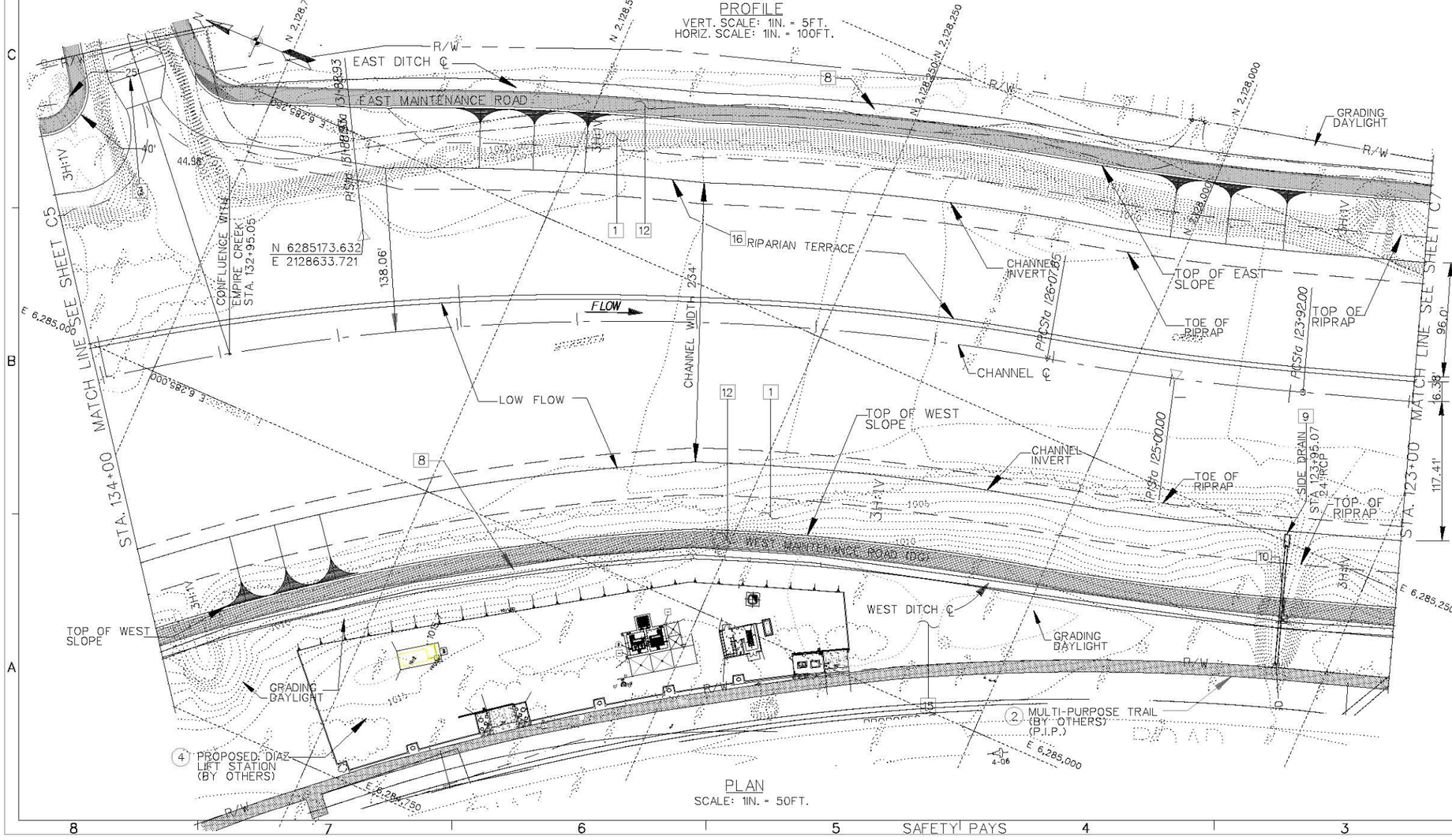
Plot Date: 30-NOV-2012



PROFILE
VERT. SCALE: 1IN. = 5FT.
HORIZ. SCALE: 1IN. = 100FT.



TYPICAL CROSS SECTION
N.T.S.



PLAN
SCALE: 1IN. = 50FT.

LEGEND

(2) PROTECT IN PLACE

(4) CONSTRUCTED BY OTHERS

CONSTRUCTION NOTES:

1. CONSTRUCT CHANNEL SECTION WITH RIPRAP SLOPE PROTECTION. SEE SHEET C13 FOR TYPICAL SECTIONS.
3. CONSTRUCT GROUTED STONE STABILIZER. SE SHEET XX FOR DETAILS.
8. CONSTRUCT V- DITCH. SEE SHEETS XX FOR DITCH PLAN AND PROFILE.
9. CONSTRUCT SIDE DRAIN FEATURE, SEE SHEET C70-C71 FOR DETAILS.
10. CONSTRUCT DROP INLET.
12. CONSTRUCT MAINTENANCE ROAD-DECOMPOSED GRANITE SURFACING ON WEST SIDE ASPHALT PAVING ON EAST SIDE.

REFERENCE NOTE:

1. FOR CROSS SECTIONS, SEE SHEET C22 & C23.
2. FOR CONFLUENCE WITH EMPIRE CREEK PLAN, SEE SHEET C33.

CHANNEL ℄ CURVE DATA.		
PI. STATION	131+88.93	125+00.00
△	32° 05'50"	5° 15'20"
R=	2,020'	2353.1'
L=	1131.61'	215.77'
T=	581.08'	108.00'

GRAPHIC SCALE
50 25 0 50 100FT
SCALE: 1"= 50'
5 2.5 0 5 10FT
SCALE: 1"= 5'

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

SANTA MARGARITA RIVER WATERSHED,
RIVERSIDE COUNTY, CALIFORNIA
MURRIETA CREEK - PHASE 2
PLAN AND PROFILE
STA. 134+00 TO STA. 123+00

DESIGNED BY: J.G.R.
DRAWN BY: J.G.R.
CHECKED BY: S.H.V.
FILE NAME: C6.DGN

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY:
ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

SPEC. NO. W912PL-??-B-????

DISTRICT FILE NO. 226/

Scale:
SHEET
C6

Plot Date: 30-NOV-2012

VALUE ENGINEERING PAYS

SAFETY! PAYS

15' RIPRAP BANK PROTECTION
TOP OF EAST/WEST CHANNEL SLOPE
ELEV. 1008.98
EL. 1010.26
ELEV. 1009.66
TOP OF EAST RIPRAP
ELEV. 1009.54
EL. 1009.14
TOP OF WEST RIPRAP
TOP OF RIPRAP
EXISTING GROUND
EAST ACCESS RAMP 10:1
STA. 116+60.00 END EAST ACCESS RAMP
STA. 114+68.98 BEGIN EAST ACCESS RAMP
STA. 113+50.00 WEST H=18.719 EAST H=16.719 BEGIN RIPRAP HT TRANSITION
STA. 113+00.00 WEST H=20.00 EAST H=18.00
STA. 113+8
STA. 112+70 END RIPRAP HT TRANSITION CALIFORNIA EAST SIDE RIPRAP
EL. 993.54
EL. 991.54
TOP OF RIPARIAN TERRACE
S = 0.0020
LOW FLOW DESIGN INVERT
ELEV. 986.54
5'
2'
HT
STA. 116+90 END RIPRAP HT TRANSITION
ELEV. 999.87
TOE OF RIPRAP
TO BE REMOVED, RELOCATED, OR PROTECT IN PLACE.
SEWER
EL. 991.14
EL. 989.14
ELEV. 984.14
ELEVATION
1010
1000
990
980
123+00 122+00 121+00 120+00 119+00 118+00 117+00 116+00 115+00 114+00 113+00 112+00 111+00

PROFILE
VERT. SCALE: 1IN. = 5FT.
HORIZ. SCALE: 1IN. = 50FT.

RIPARIAN TERRACE
LOW FLOW
R/W
LANDSCAPE FILL OVER RIPRAP
15' MAINT. ROAD
DESIGN INVERT
TOP OF RIPRAP
3H:1V
7'
2'
5'
8'
VARIES 190' TO 70'
VARIES 190' TO 70'
VARIES 250' TO 205'

TYPICAL CROSS SECTION
N.T.S.

STA 123+00 MATCH LINE SEE SHEET C6
STA 111+00 MATCH LINE SEE SHEET C8
FRONT
N 2,127,750
N 2,127,500
N 2,127,250
N 2,127,000
N 2,126,750
EAST DITCH ℄
EAST MAINTENANCE ROAD
R/W
TOP OF SLOPE
VEHICULAR TURNAROUND RCFC STD. M827
SIDE DRAIN STA 122+60.54 48" RCP
SIDE DRAIN STA 117+16.07 48" RCP
STA 116+60.00
CHANNEL INVERT
TOE OF RIPRAP
TOP OF RIPRAP
16 RIPARIAN TERRACE
CHANNEL ℄
N18° 48'54"W 1703.61'
CHANNEL WIDTH 234'
FLOW
STA 114+68.98
STA 113+60.43
STA 113+04.99
61.19'
48.44'
115.14'
SIDE DRAIN STA 120+39.36 36" RCP
LOW FLOW
WEST DITCH ℄
CHANNEL INVERT
TOP OF RIPRAP
TOE OF RIPRAP
PIPE
GRADING DAYLIGHT
TOP OF WEST SLOPE
20'
MULTI-PURPOSE TRAIL (BY OTHERS) (P.I.P.)
EXISTING FACILITY CAN BE SEEN FROM GOOGLR MAP.
EXISTING FACILITY CAN BE SEEN FROM GOOGLR MAP.
E 6,285,250
PLAN
SCALE:1IN.= 50FT.

DRAFT

LEGEND

(2) PROTECT IN PLACE

CONSTRUCTION NOTES:

1. CONSTRUCT CHANNEL SECTION WITH RIPRAP SLOPE PROTECTION. SEE SHEET C13 FOR TYP. DETAILS.
3. CONSTRUCT GROUTED STONE STABILIZER. SEE SHEET XX FOR DETAILS.
6. CONSTRUCT RAMP TO INVERT. SEE SHEET C40 FOR DETAILS.
8. CONSTRUCT V-DITCH. SEE SHEETS XX FOR DITCH PLAN AND PROFILES.
9. CONSTRUCT SIDE DRAIN FEATURE, SEE SHEETS C70-C71 FOR DETAILS.
10. CONSTRUCT DROP INLET, SEE SHEET S6-S10.
11. INSTALL PIPE GATE. SEE SHEET C38.
12. CONSTRUCT MAINTENANCE ROAD-DECOMPOSED GRANITE SURFACING ON WEST SIDE, ASPHALT PAVING ON EAST SIDE, SEE SHEET C13-C14.
15. INSTALL ESTHETIC TREATMENT AND IRRIGATION SYSTEM. SEE SHEETS XX FOR DETAILS.
16. MITTIGATION PLANTING AND HYDROSEEDING.

REFERENCE NOTE:

1. FOR CROSS SECTION, SEE SHEET C24 & C25.

GRAPHIC SCALE
50 25 0 50 100FT
SCALE: 1"= 50'
5 2.5 0 5 10FT
SCALE: 1"= 5'

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

SANTA MARGARITA RIVER WATERSHED, RIVERSIDE COUNTY, CALIFFORNIA
MURRIETA CREEK - PHASE 2
PLAN AND PROFILE
STA. 123+00 TO STA. 111+00

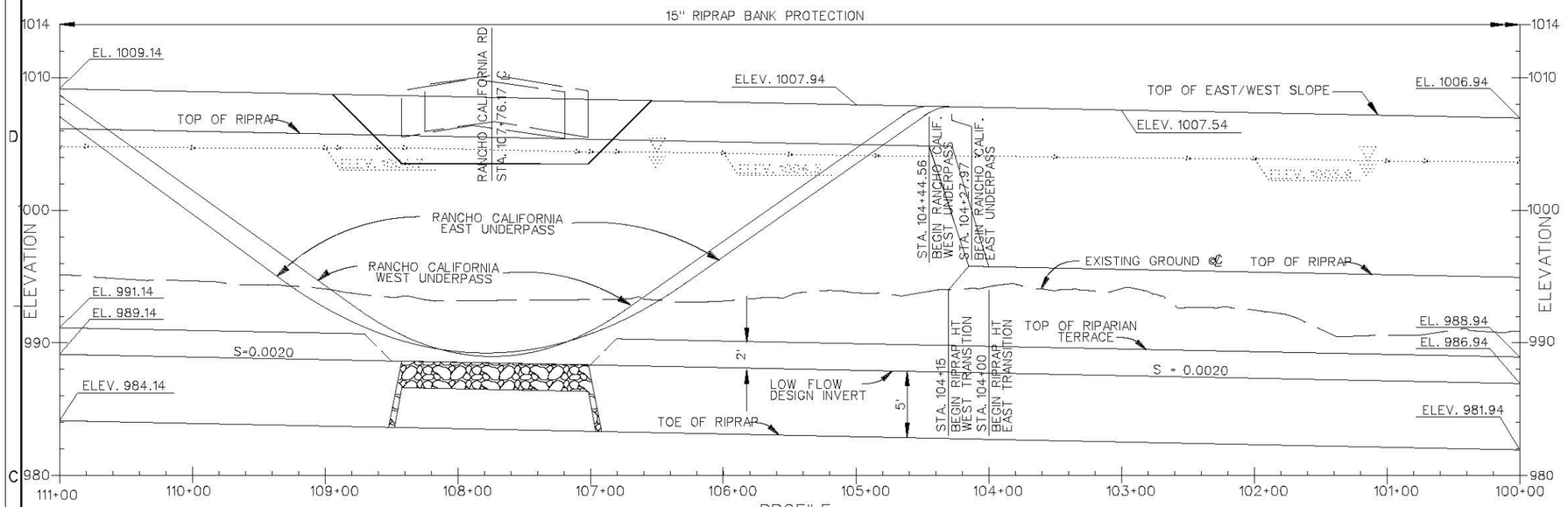
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: J.G.R.
DRAWN BY: J.G.R.
CHECKED BY: S.H.V.
SUBMITTED BY: ARTHUR Y. JUNG, PE CHIEF, DESIGN BRANCH
FILE NAME: C7.DGN
SPEC. NO. W912PL-??-R-????
DISTRICT FILE NO. 2267
Scale:AS SHOWN
SHEET C7

Plot Date: $date$

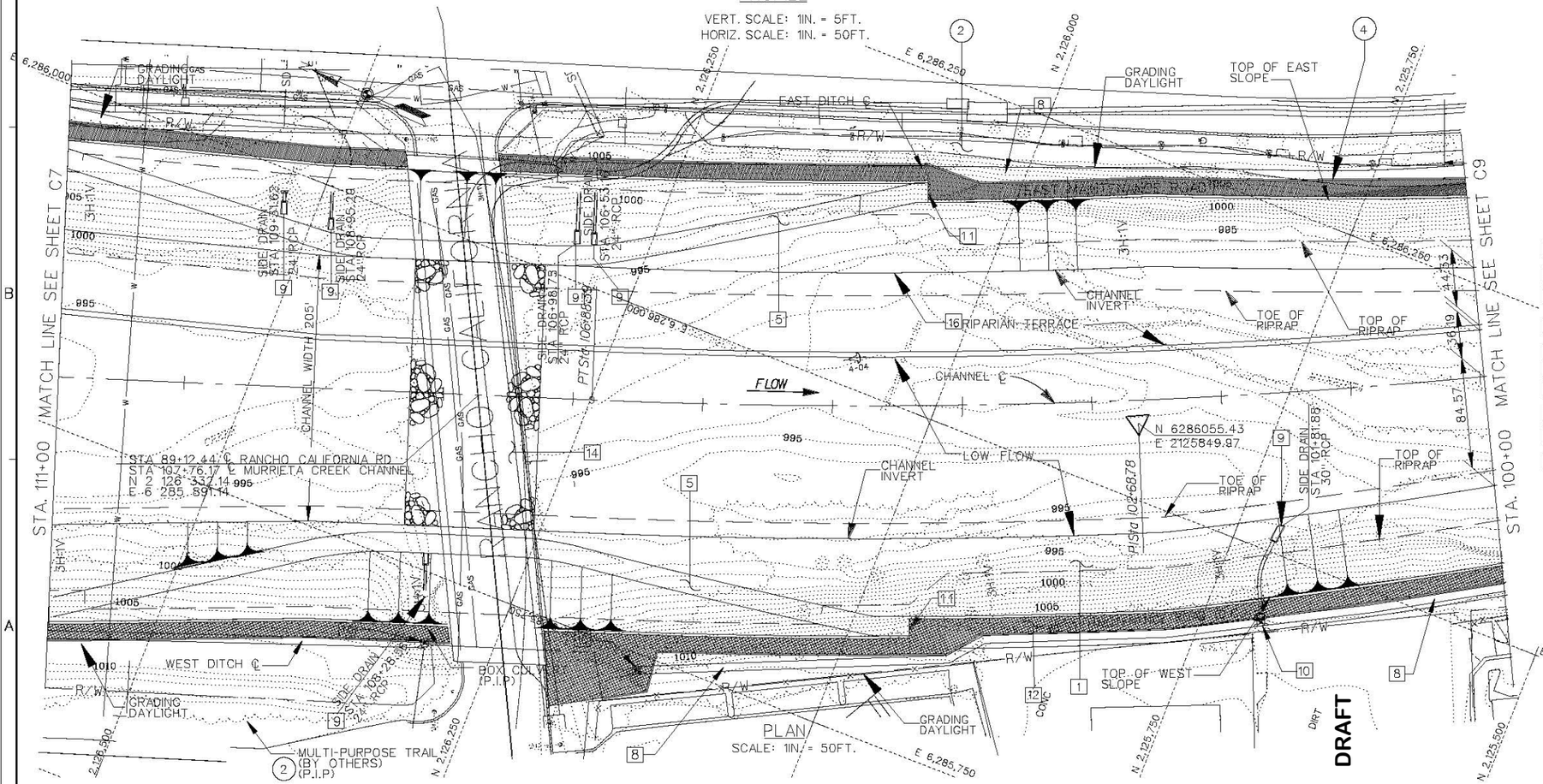
VALUE ENGINEERING PAYS

SAFETY! PAYS



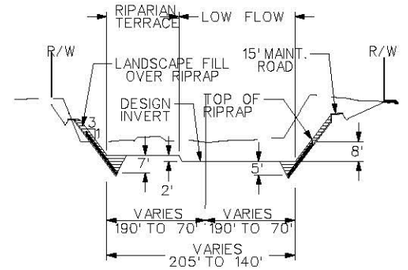
PROFILE

VERT. SCALE: 1IN. = 5FT.
HORIZ. SCALE: 1IN. = 50FT.



PLAN
SCALE: 1IN. = 50FT.

DRAFT



TYPICAL CROSS SECTION
N.T.S.

LEGEND

(2) PROTECT IN PLACE

(4) CONSTRUCTED BY OTHERS

CONSTRUCTION NOTES:

1. CONSTRUCT CHANNEL SECTION WITH RIPRAP SLOPE PROTECTION. SEE SHEET C13 FOR TYPICAL DETAILS.
5. CONSTRUCT ACCESS ROAD UNDERPASSING. SEE SHEET C35 FOR DETAILS.
8. CONSTRUCT V-DITCH. SEE SHEETS XX FOR DITCH PLAN AND PROFILES.
9. CONSTRUCT SIDE DRAIN FEATURE. SEE SHEETS C70-C71 FOR DETAILS.
10. CONSTRUCT DROP INLET.
11. INSTALL PIPE GATE. SEE SHEET C38.
12. CONSTRUCT MAINTENANCE ROAD-DECOMPOSED GRANITE SURFACING ON WEST SIDE, ASPHALT PAVING ON EAST SIDE.
14. CONSTRUCT INVERT PROTECTION BLANKET. SEE DETAILS ON SHEET X.
15. INSTALL ESTHETIC TREATMENT AND IRRIGATION SYSTEM. SEE SHEETS XX FOR DETAILS.
16. MITIGATION PLANTING AND HYDROSEEDING.

REFERENCE NOTE:

1. FOR CROSS SECTIONS, SEE SHEET C?.

CHANNEL ℄ CURVE DATA.	
PI. STATION	102+68.78
△	9° 38'23"
R=	5,000'
L=	841.22'
T=	421.61'

GRAPHIC SCALE

50 25 0 50 100FT
SCALE: 1"= 50'

5 2.5 0 5 10FT
SCALE: 1"= 5'

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

SANTA MARGARITA RIVER WATERSHED,
RIVERSIDE COUNTY, CALIFORNIA

MURRIETA CREEK - PHASE 2

PLAN AND PROFILE
STA. 111+00 TO STA. 100+00

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY:
ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

DESIGNED BY: J.G.R.
DRAWN BY: J.G.R.
CHECKED BY: S.H.V.

DISTRICT FILE NO. 226/???

SPEC. NO. W912PL-??-B-????

FILE NAME: C8.DGN

Scale: AS SHOWN

SHEET
C8

Plot Date: $$date$

VALUE ENGINEERING PAYS

SAFETY PAYS

15" RIP-RAP BANK PROTECTION

SIDE SLOPE TRANSITION

SOIL CEMENT BANK PROTECTION

STA. 98+00.00 WEST H=20.00 EAST H=18.00

STA. 97+00.000 END PIPE SAFETY RAILINGS

STA. 95+00.00 WEST H=20.500 EAST H=18.500

STA. 90+20.00 END ACCESS RAMP WEST SIDE

STA. 89+00.00

TOP OF EAST/WEST CHANNEL SLOPE

EL. 1006.94

ELEV. 1006.54

ELEV. 1006.44

ELEV. 1005.48

EL. 1005.24

ELEV. 993.37

ACCESS RAMP 10:1

TOP OF RIPRAP

RIPRAP

SOIL CEMENT

EXISTING GROUND

EL. 988.94

EL. 986.94

EL. 986.74

EL. 984.74

TOP OF RIPARIAN TERRACE

S = 0.0020

LOW FLOW DESIGN INVERT

ELEV. 981.94

TOE OF RIPRAP

TOE OF SOIL CEMENT SLOPE

ELEV. 979.74

95+00

ELEVATION

1020
1010
1000
990
980
976

100+00 99+00 98+00 97+00 96+00 95+00 94+00 93+00 92+00 91+00 90+00 89+00

PROFILE

VERT. SCALE: 1IN. = 5FT.
HORIZ. SCALE: 1IN. = 50FT.

C CHANNEL

RIPARIAN TERRACE

LOW FLOW

R/W

15' MAINT. ROAD

VARIES 20'-18.51'

SOIL CEMENT

COMPACTED FILL

1:1

1:4

7'

5'

VARIES 83.5' TO 70'

VARIES 167' TO 140'

TYPICAL CROSS SECTION

N.T.S.

RIPARIAN TERRACE

LOW FLOW

LANDSCAPE FILL OVER RIPRAP

DESIGN INVERT

TOP OF RIPRAP

3:1

8'

2'

VARIES 190' TO 70'

VARIES 140' TO 167'

TYPICAL CROSS SECTION

N.T.S.

LEGEND

(2) PROTECT IN PLACE.

CONSTRUCTION NOTES:

1. CONSTRUCT CHANNEL SECTION WITH SLOPE PROTECTION. SEE SHEET C13 FOR TYPICAL SECTIONS.
2. CONSTRUCT CHANNEL SECTION WITH SOIL CEMENT EMBANKMENT. SEE SHEET XX FOR TYPICAL SECTIONS.
7. POST AND CABLE FENCE, SEE SHEET M1 FOR DETAILS.
8. CONSTRUCT V-DITCH. SEE SHEETS XX FOR DITCH PLAN AND PROFILES.
9. CONSTRUCT SIDE DRAIN FEATURE, SEE SHEETS C70-C71 FOR DETAILS.
10. CONSTRUCT DROP INLET, SEE SHEET S6-S10.
11. INSTALL PIPE GATE. SEE SHEET C38.
12. CONSTRUCT MAINTENANCE ROAD- DECOMPOSED GRANITE SURFACING ON WEST SIDE, ASPHALT PAVING ON EAST SIDE, SEE SHEET C13-C14.
13. CONSTRUCT VEHICLE TURN AROUND.
16. MITIGATION PLANTING AND HYDROSEEDING.

REFERENCE NOTE:

1. FOR CROSS SECTIONS, SEE SHEET C26, C27 AND C28.

CHANNEL ℄ CURVE DATA.		
PI. STATION	95+28.19	89+59.49
△	16° 54'15"	21° 22'41"
R=	1,500'	1,350'
L=	442.55'	503.71'
T=	222.9'	254.82'

GRAPHIC SCALE

50 25 0 50 100FT
SCALE: 1"= 50'

5 2.5 0 5 10FT
SCALE: 1"= 5'

PLAN
SCALE: 1IN. = 50FT.

STA. 100+00 MATCH LINE SEE SHEET C8

STA. 89+00 MATCH LINE SEE SHEET C10

EXISTING DIRT TRAIL (P.I.P.)

EXISTING CATCH BASIN (P.I.P.)

SIDE SLOPE TRANSITION

TOP OF WEST SLOPE

TOP OF EAST SLOPE

EAST DITCH ℄

WEST DITCH ℄

CHANNEL ℄

CHANNEL INVERT

RIPARIAN TERRACE

SHORING

SIDE DRAIN

END WEST SHORING STA 94+86

BEGIN SHORING STA 91+00

VEHICULAR TURNAROUND RCFC STD. M827

N 6286818.69
E 2124792.23

N6286409.84
E 2125196.00

FLOW

LOW FLOW

N28° 27'17"W 99.33'

N45° 21'32"W 96.91'

PCSta 98+47.17

PTSta 97+47.84

PCSta 96+28.19

PTSta 95+76.68

PCSta 93+05.68

PTSta 92+08.38

PCSta 92+26.94

PTSta 91+60.44

49.32'

31.16'

84'

3:1H:1V

1:1H:1V

R/W

ASPH

SANTA MARGARITA RIVER WATERSHED,
RIVERSIDE COUNTY, CALIFORNIA

MURRIETA CREEK - PHASE 2

PLAN AND PROFILE
STA. 100+00 TO STA. 89+00

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY:

ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

DISTRICT FILE NO. 2267

SPEC. NO. W912PL-??-B-????

DESIGNED BY: J.G.R.
DRAWN BY: J.G.R.
CHECKED BY: S.H.V.

FILE NAME: C9.DGN

C09.DGN

Scale: AS SHOWN

SHEET
C9

Plot Date: 30-NOV-2012

SOIL CEMENT BANK PROTECTION

WEST H=20.500 EAST H=18.500 | STA. 88+10.82 BEGIN ACCESS RAMP WEST SIDE | STA. 88+00.00 WEST H=21.500 EAST H=19.500 | STA. 84+00.00 WEST H=21.500 EAST H=19.500 | STA. 83+00.000 WEST H=21.500 EAST H=19.500 | STA. 82+00.00 WEST H=22.00 EAST H=20.00 | STA. 80+10.500 MAIN ST. BRIDGE ℄

TOP OF EAST/WEST CHANNEL SLOPE

ELEV. 1006.04 | EL. 1005.24 | ELEV. 1005.44 STA 85+00 | ELEV. 1005.32 | EL. 1005.18 STA 81+60.00 | EL. 1005.03 STA 79+57.14 | EL. 1004.79 | ELEV. 1004.275

ACCESS RAMP 10% | 5' RAMP 10%

EL. 986.74 | EL. 984.74 | ELEV. 984.56 | ELEV. 979.74

GRADE BREAK STA 83+00.00 Elev 983.54

EXISTING GROUND ℄

TOP OF RIPARIAN TERRACE

S = 0.0020 | S = 0.0015

LOW FLOW DESIGN INVERT

EL. 984.74 | EL. 982.79 | ELEV. 977.79 TOP OF SOIL CEMENT SLOPE

5' | 2'

ELEVATION 1010 1000 990 980 976

89+00 88+00 87+00 86+00 85+00 84+00 83+00 82+00 81+00 80+00 79+00 78+00

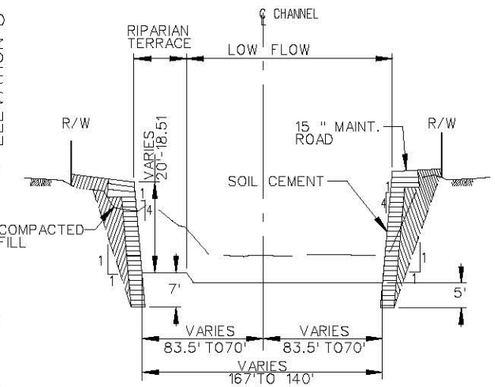
PROFILE

VERT. SCALE: 1IN. = 5FT.
HORIZ. SCALE: 1IN. = 50FT.

LEGEND

(2) PROTECT IN PLACE

(5) JOIN EXISTING WORK.



TYPICAL CROSS SECTION

N.T.S.

E 6,287,000 | N 2,124,750 | E 6,287,250 | N 2,124,500 | N 2,124,250 | N 2,124,000 | E 6,286,750

SIDE DRAIN STA 87+54.22 24" RCP | SIDE DRAIN STA 86+83.86 60" RCP | SIDE DRAIN STA 86+52.60 60" RCP | SIDE DRAIN STA 84+10.09 24" RCP | SIDE DRAIN STA 82+17.00 24" RCP | SIDE DRAIN STA 81+21.37 24" RCP

BEGIN EAST SHORING STA 84+40 | BEGIN EAST SHORING STA 81+80 | END WEST SHORING STA 81+20

EAST MAINTENANCE ROAD | 15' CLEAR OF ANY VEGETATION | R/W | RIPARIAN TERRACE | CHANNEL ℄ | TOP OF EAST SLOPE | CHANNEL INVERT | EXISTING LIGHTS AND POWER POLES (P.I.P.) | TOP OF WEST SLOPE | WEST MAINTENANCE ROAD

MATCH LINE SEE SHEET C9 STA. 89+00

STA 86+83.86 ℄ MAIN STREET
STA 80+10.58 ℄ MURRIETA CREEK CHANNEL
N 2 123 977.76
E 6 287 300.66

N 6286961.92
E 2124470.25

N31° 18'55"W 343.71'

FLOW

CHANNEL DESIGN INVERT

LOW FLOW

EXIST. RIPRAP LINING TO BE REMOVED

N 6287197.90
E 2124082.37

MAIN ST. BRIDGE IMPROVEMENTS (BY OTHERS)

N44° 29'57"W 126.23'

N 6287397.27
E 2123879.49

MATCH LINE SEE SHEET C8 STA. 78+00

PLAN

SCALE: 1IN. = 50FT.

CONSTRUCTION NOTES:

2 CONSTRUCT CHANNEL SECTION WITH SOIL CEMENT EMBANKMENT. SEE SHEET XX FOR TYPICAL SECTIONS.

6 CONSTRUCT RAMP TO INVERT. SEE SHEET C41 FOR DETAILS.

7 INSTALL POST AND CABLE FENCE, SEE SHEET M1 FOR DETAIL.

8 CONSTRUCT V-DITCH. SEE SHEETS XX FOR DITCH PLAN AND PROFILES.

9 CONSTRUCT SIDE DRAIN FEATURE. SEE SHEETS C70-C71 FOR DETAILS.

12 CONSTRUCT MAINTENANCE ROAD-DECOMPOSED GRANITE SURFACING ON WEST SIDE, ASPHALT PAVING ON EAST SIDE.

16 MITIGATION PLANTING AND HYDROSEEDING.

NOTE:

1. INSTALL POST AND CABLE FENCE ATOP CHANNEL WALL (BOTH SIDES) AT STA 59+00 TO 97+00.

REFERENCE NOTE:

1. FOR CROSS SECTIONS, SEE SHEET C28 AND C29.

CHANNEL ℄ CURVE DATA.			
PI. STATION	86+07.27	81+53.65	78+70.14
△	7° 20'05"	13° 11'00"	12° 46'47"
R=	1,000'	400'	1,000'
L=	128.01'	92.04'	223.05'
T=	64.09.9'	46.22	111.99'

GRAPHIC SCALE

50 25 0 50 100FT
SCALE: 1"= 50'

5 2.5 0 5 10FT
SCALE: 1"= 5'

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

SANTA MARGARITA RIVER WATERSHED,
RIVERSIDE COUNTY, CALIFORNIA

MURRIETA CREEK - PHASE 2

PLAN AND PROFILE
STA. 89+00 TO STA. 78+00

DESIGNED BY: J.G.R. | DRAWN BY: J.G.R. | CHECKED BY: S.H.V. | FILE NAME: C10.DGN

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY: ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

DISTRICT FILE NO. 226/ | SPEC. NO. W912PL-??-B-????

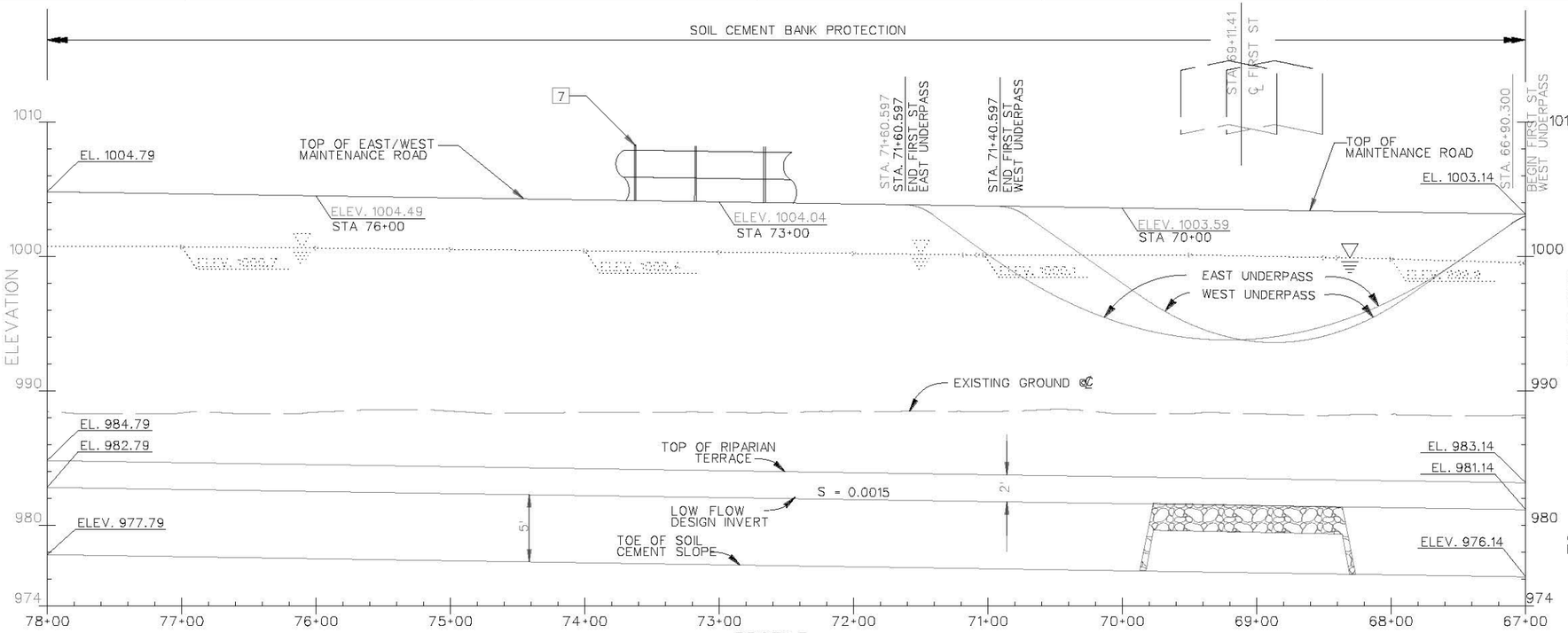
Scale: AS SHOWN

SHEET C10

Plot Date: 30-NOV-2012

VALUE ENGINEERING PAYS

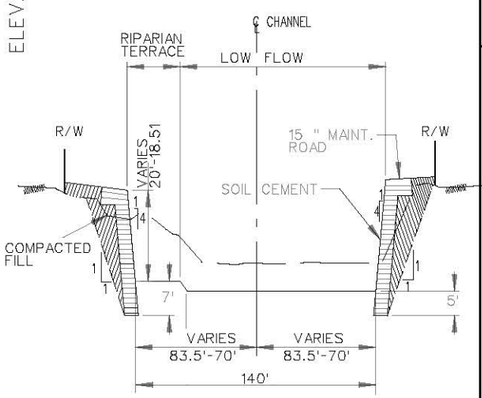
SAFETY PAYS



PROFILE

VERT. SCALE: 1IN. = 5FT.
HORIZ. SCALE: 1IN. = 50FT.

NOTE:
1. INSTALL POST AND CABLE FENCE ATOP CHANNEL WALL (BOTH SIDE) AT STA 59+00 TO 97+00



TYPICAL CROSS SECTION

N.T.S.

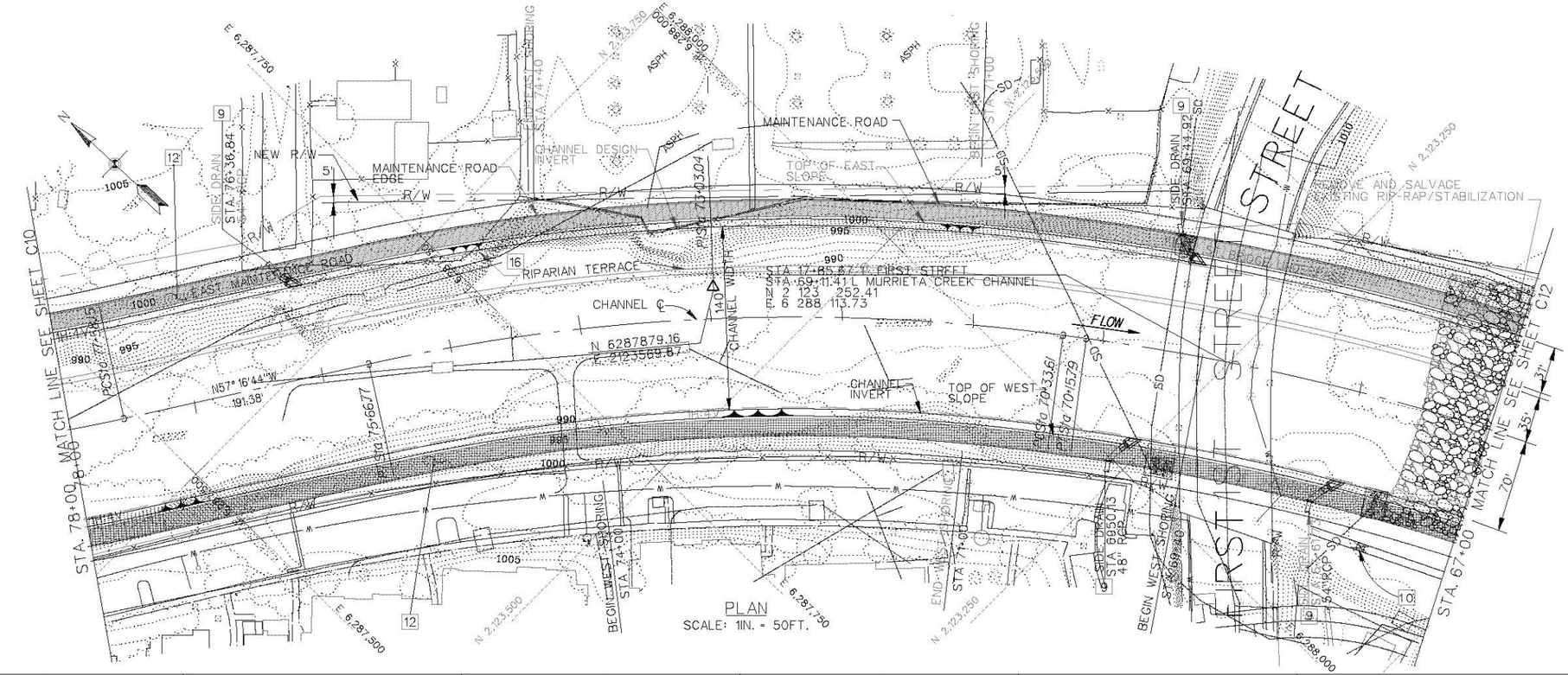
CONSTRUCTION NOTES:

7 INSTALL POST AND CABLE FENCE, SEE SHEET M1 FOR DETAIL.
9 CONSTRUCT SIDE DRAIN FEATURE, SEE SHEETS C70-C71 FOR DETAILS.
10 CONSTRUCT DROP INLET, SEE SHEET S6-S10.
12 CONSTRUCT MAINTENANCE ROAD-DECOMPOSED SURFACING ON WEST SIDE, ASPHALT PAVING ON EAST SIDE, SEE SHEET C13-C14.
16 MITIGATION PLANTING AND HYDROSEEDING.

REFERENCE NOTE:

1. FOR CROSS SECTIONS, SEE SHEET C29 & C30.

CHANNEL ℄ CURVE DATA.	
PI. STATION	73+03.04
△	20° 21'55"
R=	1,500'
L=	533.16'
T=	269.42'



PLAN

SCALE: 1IN. = 50FT.

GRAPHIC SCALE

50 25 0 50 100FT
SCALE: 1"= 50'

5 2.5 0 5 10FT
SCALE: 1"= 5'

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

SANTA MARGARITA RIVER WATERSHED, RIVERSIDE COUNTY, CALIFORNIA

MURRIETA CREEK - PHASE 2

PLAN AND PROFILE
STA. 78+00 TO STA. 67+00

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY:
ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

DESIGNED BY: J.G.R.
DRAWN BY: J.G.R.
CHECKED BY: S.H.V

DISTRICT FILE NO. 2261

SPEC. NO. W912PL-??-B-????

FILE NAME: C11.DGN

Scale: AS SHOWN

SHEET
C11

C11.DGN

Plot Date: 30-NOV-2012

SOIL CEMENT BANK PROTECTION

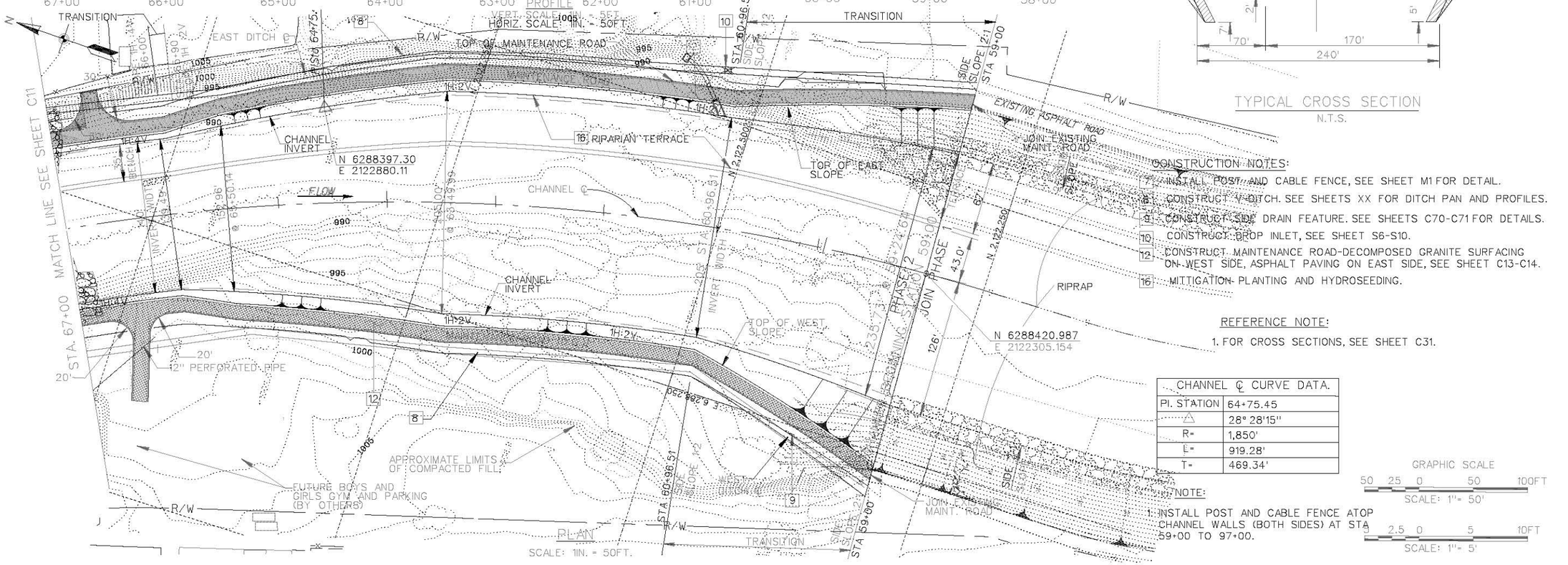
STA. 66+90.300 BEGIN FIRST ST WEST UNDERPASS
STA. 66+89.360 BEGIN FIRST ST EAST UNDERPASS
STA. 65+50.00 WEST H=22.00 EAST H=20.00
STA. 63+50.00 WEST H=22.500 EAST H=20.500
STA. 61+00.00 WEST H=22.500 EAST H=20.500
STA. 59+00.00 WEST H=28.00 EAST H=21.00

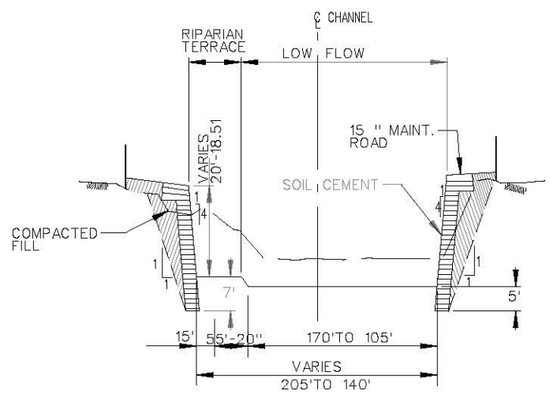
TOP OF EAST/WEST CHANNEL SLOPE
TOP OF WEST SLOPE
TOP OF EAST SLOPE
TOP OF SOIL CEMENT SLOPE
TOP OF RIPARIAN TERRACE
LOW FLOW DESIGN INVERT
TOE OF SOIL CEMENT SLOPE

EL. 1003.14
ELEV. 1002.91
ELEV. 1003.11
ELEV. 1002.73
EL. 1007.94
EL. 1002.94
EXISTING GROUND ℄
ELEV. 987.0
EL. 983.14
EL. 981.14
EL. 981.94
EL. 979.94
PVI 59+00.00 Elev 979.94
S = 0.0015
ELEV. 976.14
ELEV. 974.94

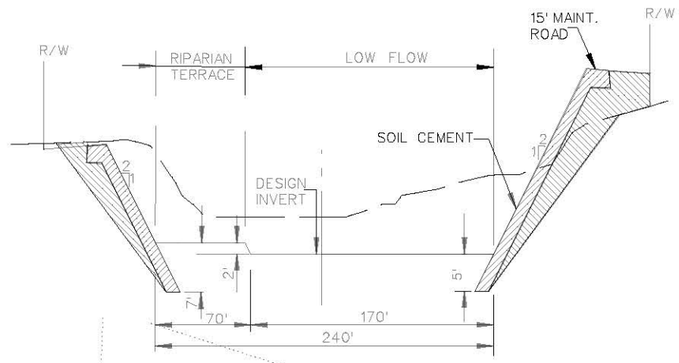
ELEVATION
1020 1010 1000 990 980 973
67+00 66+00 65+00 64+00 63+00 62+00 61+00 60+00 59+00 58+00

PROFILE
VERT. SCALE: 1IN. = 5FT.
HORIZ. SCALE: 1IN. = 50FT.





TYPICAL CROSS SECTION
N.T.S.



TYPICAL CROSS SECTION
N.T.S.

CONSTRUCTION NOTES:

7 INSTALL POST AND CABLE FENCE, SEE SHEET M1 FOR DETAIL.
8 CONSTRUCT V-DITCH. SEE SHEETS XX FOR DITCH PAN AND PROFILES.
9 CONSTRUCT SIDE DRAIN FEATURE. SEE SHEETS C70-C71 FOR DETAILS.
10 CONSTRUCT DROP INLET, SEE SHEET S6-S10.
12 CONSTRUCT MAINTENANCE ROAD-DECOMPOSED GRANITE SURFACING ON WEST SIDE, ASPHALT PAVING ON EAST SIDE, SEE SHEET C13-C14.
16 MITTIGATION PLANTING AND HYDROSEEDING.

REFERENCE NOTE:

1. FOR CROSS SECTIONS, SEE SHEET C31.

CHANNEL ℄ CURVE DATA.	
PI. STATION	64+75.45
△	28° 28'15"
R=	1,850'
L=	919.28'
T=	469.34'

NOTE:

1. INSTALL POST AND CABLE FENCE ATOP CHANNEL WALLS (BOTH SIDES) AT STA 59+00 TO 97+00.

GRAPHIC SCALE
50 25 0 50 100FT
SCALE: 1"= 50'
5 2.5 0 5 10FT
SCALE: 1"= 5'

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

SANTA MARGARITA RIVER WATERSHED, RIVERSIDE COUNTY, CALIFFORNIA
MURRIETA CREEK - PHASE 2

PLAN AND PROFILE
STA. 67+00 TO STA. 59+00

DESIGNED BY: J.G.R.	DRAWN BY: J.G.R.	CHECKED BY: S.H.V.	FILE NAME: C12.DGN

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY: ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

DISTRICT FILE NO. 226/ SPEC. NO. W912PL-??-B-????

Scale: AS SHOWN
SHEET C12

Plot Date: 30-NOV-2012

APPENDIX C

404(b)(1) Analysis

SECTION 404(b)(1) SUPPLEMENTAL EVALUATION

1.0 Section 404(b)(1) Regulatory Background

Section 404 of the Clean Water Act (CWA) authorizes the U.S Army Corps of Engineers (USACE) to issue permits for the discharge of dredged or fill materials into waters of the United States (waters of the U.S.), including wetlands (33 United States Code [U.S.C.] 1344). Waters of the U.S., defined at 33 Code of Federal Regulations (C.F.R). Part 328, include coastal and inland waters, lakes, rivers, and streams, including adjacent wetlands and tributaries. The U.S. Environmental Protection Agency (USEPA) Section 404(b)(1) Guidelines (40 Code of Federal Regulations [CFR] 230 et seq.) are the substantive environmental criteria used by the USACE to evaluate permit applications. Under these guidelines, an analysis of practicable alternatives is the primary tool used to determine whether a proposed discharge can be authorized. The Section 404(b)(1) Guidelines prohibit discharges of dredged or fill material into waters of the U.S. if a practicable alternative to the proposed discharge exists that would have less adverse impacts on the aquatic ecosystem, including wetlands, as long as the alternative does not have other significant adverse environmental impacts (40 C.F.R. Part 230[a]). An alternative is considered practicable if it is available and capable of being implemented after considering cost, existing technology, and logistics in light of overall project purpose (40 C.F.R. Part 230[a][2]). The Section 404(b)(1) Guidelines suggest a sequential approach to project planning that considers mitigation measures only after the project proponent shows no practicable alternatives are available to achieve the overall project purpose with less environmental impacts. Once it is determined that no practicable alternatives are available, the guidelines then require that appropriate and practicable steps be taken to minimize potential adverse effects on the aquatic ecosystem (40 C.F.R. Part 230.10[d]). Such steps may include actions controlling discharge location, material to be discharged, the fate of material after discharge or method of dispersion, and actions related to technology, plant and animal populations, or human use (40 C.F.R. Parts 230.70-230.77).

Beyond the requirement for demonstrating that no practicable alternatives to the proposed discharge exist, the Section 404(b)(1) Guidelines also require the USACE to compile findings related to the environmental impacts of discharge of dredged or fill material. The USACE must make findings concerning the anticipated changes caused by the discharge to the physical and chemical substrate and to the biological and human use characteristics of the discharge site.

These guidelines also indicate that the level of effort associated with the preparation of the alternatives analysis be commensurate with the significance of the impact and/or discharge activity (40 C.F.R. Part 230.6(b)). The following draft section 404(b)(1) alternatives analysis shows that discharges into waters of the U.S. associated with all of the alternatives, including the proposed Project, are relatively minor and, with the exception of the No Federal Action Alternative, all of the alternatives would result in similar and insignificant discharges of fill material in waters of the U.S. Based on the detailed analysis in the Final EIS/EIR, neither the proposed Project nor any of the alternatives that involve in-water discharges would result in significant adverse effects to the aquatic ecosystem.

2.0 Basic and Overall Project Purpose

Basic Project Purpose

The basic project purpose comprises the fundamental, essential, or irreducible purpose of the proposed project, and is used by the USACE to determine whether the applicant's project is water-dependent. The Section 404(b)(1) Guidelines state that if an activity associated with the discharge proposed for a water body does not require access or proximity to, or siting within, water to fulfill its basic purpose, the activity is not water-dependent.

The Basic Project Purpose is water conveyance and riparian ecosystem restoration.

Overall Project Purpose

The overall project purpose serves as the basis for the USACE's section 404(b)(1) alternatives analysis and is determined by further defining the basic project purpose in a manner that more specifically describes the applicant's goals and accounts for logistical considerations for the project, and which allows a reasonable range of alternatives to be analyzed. It is critical that the overall project purpose be defined to provide for a meaningful evaluation of alternatives. It should not be so narrowly defined as to give undue deference to the applicant's wishes, thereby unreasonably limiting the consideration of alternatives. Conversely, it should not be so broadly defined as to render the evaluation unreasonable and meaningless.

The overall project purpose is to provide a 100-year level of flood protection to flood prone areas within the city of Temecula.

3.0 Alternatives Considered

The 2000 Final EIS/EIR considered six alternatives. The six alternatives entailed combinations of structural and nonstructural measures to minimize flooding and provide a high functioning riparian environment within Murrieta Creek. The 404(b)(1) evaluation conducted in association with the 2000 Final EIS/EIR determined that Alternative 6 was the least environmentally damaging practicable alternative. Alternative 6 entailed is a three-phase project. Construction of Phase I is complete. During the design of Phase II, a number of design changes and modifications were made. Because Alternative 6, including the Original Phase II Plan was deemed to be the LEDPA, this supplemental 404(b)(1) evaluation characterizes the differences between the Original Phase II Plan, and the Modified Phase II Plan with respect to their respective impacts to the aquatic ecosystem associated with the discharge of fill in waters of the United States.

4.0 Environmental Effects of Alternatives on Aquatic Resources

4.1 Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C)

Substrate

Original Phase II Plan (No Action Alternative)

The Original Phase II Plan would discharge approximately 100,000 cubic yards of riprap within the gabion embankment. The Phase II project reach is approximately 70 acres in size. In some sections of the project reach, the embankments would be constructed towards the uplands thus increasing the acreage of waters of the United States; in other sections the embankments would be constructed within waters of United States, thus decreasing the acreage of waters of United States. Concrete and riprap to be discharged for the construction of two 50-foot-long by 225-foot-long drop structures would permanently impact approximately 0.5 acre a waters of United States. Additionally, there would be concrete discharged for bridge piers and abutments for the replacement of the Main Street Bridge. Permanent impacts to waters of the United States are estimated to be less than 0.2 acre. Earthen fill would be discharged to construct an approximately 20 to 60 foot wide terrace to support the vegetation corridor. Therefore, the discharge of non-earthen fill material would permanently impact approximately 0.7 acre of waters of United States.

Modified Phase II Plan (Preferred Alternative)

The Modified Phase II Plan would discharge approximately 100,000 cubic yards of soil cement and riprap for the soil cement embankment. In particular, approximately 68,650 cubic yards of soil cement, and 35,109 cubic yards of riprap would be discharged. Approximately 90% of the fulfillment would be composed of native alluvium from the excavated channel. The Phase II project reach is approximately 70 acres in size. However, the soil cement structure would minimally encroach onto water of the United States since the banks and a portion of the uplands would be excavated and removed for the installation of the embankments. In some sections of the project reach, the embankments would be constructed towards the uplands thus increasing the acreage of waters of the United States; in other sections the embankments would be constructed within waters of United States, thus decreasing the acreage of waters of United States. Concrete and riprap to be discharged for the construction of two 50-foot-long by 225-foot-long grade control structures would permanently impact approximately 0.5 acre a waters of United States. In addition, earthen fill associated with the consumption of five access ramps would be discharged into the channel. The acreage of impacts associated with the access ramps is approximately 2 acres. Earthen fill would be discharged to construct an approximately 20 to 125 foot wide terrace to support the vegetation corridor. Fherefore, the discharge of non-earthen fill material would permanently impact approximately 0.7 acre of waters of United States. Therefore, the amount of earthen fill discharged under the Modified Phase II Plan would increase due to the construction of a wider terrace for the vegetated corridor and construction of five access ramps. The amount of non-earthen fill discharged under the Modified Phase II Plan would remain unchanged.

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

Suspended Particulates and Turbidity

Original Phase II Plan (No Action Alternative)

The Original Phase II Plan would involve substantial grading and excavation over 70 acres to widen and deepen the channel. In addition, the earthen embankments would need to be excavated for the installation of embankments. As a result, there would be a number of earth moving equipment working within the channel invert. Furthermore, there would be a number of on road dump trucks accessing the worksite to transport excess fill material off-site. As a result,

there would be substantial disturbance to substrate during construction that could impact water quality. However, all construction and maintenance activities will not be conducted from December 1 through February 28 in order to avoid winter rains and to correspondingly reduce the potential for water quality impacts. Furthermore, work areas would be isolated from active flows to prevent or minimize turbidity during construction. There would be a temporary increase in turbidity when initial water flows across disturbed areas introduce unconsolidated or loose topsoil into the water column. However, since most of the substrate is alluvial, sand and gravel are expected to quickly settle out of the water column. Moreover, all terms and conditions of the 401Water Quality Certification would be implemented.

Modified Phase II Plan (Preferred Alternative)

The acreage of channel invert that would be disturbed would be slightly larger since the length of the channel being modified would be extended by approximately 200 feet. Due to the steeper 2:1 slopes allowed by the use of soil cement embankment, the channel would be slightly wider, and therefore the volume of material excavated from the channel would be less. In particular, Modified Phase II Plan would decrease the volume of excavation by 148,481 cubic yards, resulting in a decrease of approximately 13.5% when compared to the Original Phase II Plan. Though there are minor differences between the Modified Phase II Plan and the Original Phase II Plan, potential impacts to turbidity would likely remain the same. Modified Phase II Plan would involve substantial grading and excavation to widen and deepen the channel. In addition, the earthen embankments would need to be excavated for the installation of gabion/riprap embankments. As a result, there will be a number of earth moving equipment working within the channel invert. Furthermore, there would be a number of on road dump trucks accessing the worksite to transport excess fill material off-site. As a result, there would be substantial disturbance to substrate during construction that could impact water quality. However, all construction and maintenance activities will not be conducted from December 1 through February 28 in order to avoid winter rains and to correspondingly reduce the potential for water quality impacts. Furthermore, work areas would be isolated from active flows to prevent or minimize turbidity during construction. There would be a temporary increase in turbidity when initial water flows across disturbed areas introduce unconsolidated or loose topsoil into the water column. However, since most of the substrate is alluvial, sand and gravel are expected to quickly settle out of the water column. The use of earth moving equipment within the channel could impact water quality by introducing oils and solvents to the work area.
However, the implementation of best management practices listed below would minimize the potential for accidental releases and spills. Moreover, all terms and conditions of the 401Water Quality Certification would be implemented.

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

Contaminants

Original Phase II Plan (No Action Alternative)

The Original Phase II Plan would discharge approximately 100,000 cubic yards of riprap within the gabion embankment. The Phase II project reach is approximately 70 acres in size. In some sections of the project reach, the embankments would be constructed towards the uplands thus increasing the acreage of waters of the United States; in other sections the embankments would be constructed within waters of United States, thus decreasing the acreage of waters of United

States. Concrete and riprap to be discharged for the construction of two 50-foot-long by 225-foot-long drop structures would permanently impact approximately 0.5 acre a waters of United States. Additionally, there would be concrete discharged for bridge piers and abutments for the replacement of the Main Street Bridge. Permanent impacts to waters of the United States are estimated to be less than 0.2 acre. Earthen fill would be discharged to construct an approximately 20 to 60 foot wide terrace to support the vegetation corridor. Therefore, the discharge of non-earthen fill material would permanently impact approximately 0.7 acre of waters of United States. With the exception of concrete, fill material would be composed of native alluvium and rocks. Furthermore, all material to be discharged within waters of United States are chemically inert and would not introduce contaminants into the water column.

Modified Phase II Plan (Preferred Alternative)

The Modified Phase II Plan would discharge approximately 100,000 cubic yards of soil cement and riprap for the soil cement embankment. In particular, approximately 68,650 cubic yards of soil cement, and 35,109 cubic yards of riprap would be discharged. Approximately 90% of the fulfillment would be composed of native alluvium from the excavated channel. The Phase II project reach is approximately 70 acres in size. However, the soil cement structure would minimally encroach onto water of the United States since the banks and a portion of the uplands would be excavated and removed for the installation of the embankments. In some sections of the project reach, the embankments would be constructed towards the uplands thus increasing the acreage of waters of the United States; in other sections the embankments would be constructed within waters of United States, thus decreasing the acreage of waters of United States. Concrete and riprap to be discharged for the construction of two 50-foot-long by 225-foot-long grade control structures would permanently impact approximately 0.5 acre a waters of United States. In addition, earthen fill associated with the consumption of five access ramps would be discharged into the channel. The acreage of impacts associated with the access ramps is approximately 2 acres. Earthen fill would be discharged to construct an approximately 20 to 125 foot wide terrace to support the vegetation corridor. Fherefore, the discharge of non-earthen fill material would permanently impact approximately 0.7 acre of waters of United States. Therefore, the amount of earthen fill discharged under the Modified Phase II Plan would increase due to the construction of a wider terrace for the vegetated corridor and construction of five access ramps. The amount of non-earthen fill discharged under the Modified Phase II Plan would remain unchanged. With the exception of concrete, fill material would be composed of native alluvium and rocks. Furthermore, all material to be discharged within waters of United States are chemically inert and would not introduce contaminants into the water column. Based on above, there will be less insignificant next to contaminants within the water column.

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

Water

Original Phase II Plan (No Action Alternative)

The Original Phase II Plan would involve substantial grading and excavation over 70 acres to widen and deepen the channel. In addition, the earthen embankments would need to be excavated for the installation of embankments. As a result, there would be a number of earth moving equipment working within the channel invert. Furthermore, there would be a number of on road dump trucks accessing the worksite to transport excess fill material off-site. As a result,

there would be substantial disturbance to substrate during construction that could impact water quality. However, all construction and maintenance activities will not be conducted from December 1 through February 28 in order to avoid winter rains and to correspondingly reduce the potential for water quality impacts. Furthermore, work areas would be isolated from active flows to prevent or minimize turbidity during construction. There would be a temporary increase in turbidity when initial water flows across disturbed areas introduce unconsolidated or loose topsoil into the water column. However, since most of the substrate is alluvial, sand and gravel are expected to quickly settle out of the water column. With the exception of concrete, fill material would be composed of native alluvium and rocks. Furthermore, all material to be discharged within waters of United States are chemically inert and would not introduce contaminants into the water column. The use of earth moving equipment within the channel could impact water quality by introducing oils and solvents to the work area. However, the implementation of best management practices listed below would minimize the potential for accidental releases and spills. Moreover, all terms and conditions of the 401Water Quality Certification would be implemented.

Modified Phase II Plan (Preferred Alternative)

The acreage of channel invert that would be disturbed would be slightly larger since the length of the channel being modified would be extended by approximately 200 feet. Due to the steeper 2:1 slopes allowed by the use of soil cement embankment, the channel would be slightly wider, and therefore the volume of material excavated from the channel would be less. In particular, Modified Phase II Plan would decrease the volume of excavation by 148,481 cubic yards, resulting in a decrease of approximately 13.5% when compared to the Original Phase II Plan. Though there are minor differences between the Modified Phase II Plan and the Original Phase II Plan, potential impacts to turbidity would likely remain the same. Modified Phase II Plan would involve substantial grading and excavation to widen and deepen the channel. In addition, the earthen embankments would need to be excavated for the installation of gabion/riprap embankments. As a result, there will be a number of earth moving equipment working within the channel invert. Furthermore, there would be a number of on road dump trucks accessing the worksite to transport excess fill material off-site. As a result, there would be substantial disturbance to substrate during construction that could impact water quality. However, all construction and maintenance activities will not be conducted from December 1 through February 28 in order to avoid winter rains and to correspondingly reduce the potential for water quality impacts. Furthermore, work areas would be isolated from active flows to prevent or minimize turbidity during construction. There would be a temporary increase in turbidity when initial water flows across disturbed areas introduce unconsolidated or loose topsoil into the water column. However, since most of the substrate is alluvium, sand and gravel are expected to quickly settle out of the water column. With the exception of concrete, fill material would be composed of native alluvium and rocks. Furthermore, all material to be discharged within waters of United States are chemically inert and would not introduce contaminants into the water column. The use of earth moving equipment within the channel could impact water quality by introducing oils and solvents to the work area. However, the implementation of best management practices listed below would minimize the potential for accidental releases and spills. Moreover, all terms and conditions of the 401Water Quality Certification would be implemented. With the exception of the temporary increase in turbidity subsequent to construction, there would be no long-term impacts to water quality parameters such as temperature, salinity, density, hydrogen ion concentration (pH), and levels of dissolved oxygen.

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

Current patterns and water circulation

Original Phase II Plan (No Action Alternative)

The Original Phase II Plan would entail the construction of soil cement embankments along the Phase II reach. Creek flows would be temporarily be diverted around project area. Thus, there would be temporary changes to current pattern during construction. Subsequent to the completion of construction, pre-project current patterns and water circulation would be restored. Because the structures would be located along the banks of the channel, current patterns and water circulation would remain largely unaffected. The replacement of a vegetated earthen embankment with an engineered embankment would initially reduce the channel roughness at the water-embankment interface. However, upon reestablishment of the vegetation on the embankments, the pre-project water-embankment interactions would be restored.

Modified Phase II Plan (Preferred Alternative)

The Original Phase II Plan would entail the construction of soil cement embankments along the Phase II reach. Creek flows would be temporarily be diverted around project area. Thus, there would be temporary changes to current pattern during construction. Subsequent to the completion of construction, pre-project current patterns and water circulation would be restored. Because the structures would be located along the banks of the channel, current patterns and water circulation would remain largely unaffected. The replacement of a vegetated earthen embankment with an engineered embankment would initially reduce the channel roughness at the water-embankment interface. However, upon reestablishment of the vegetation on the embankments, the pre-project water-embankment interactions would be restored. The grade control structures would cause temporary pooling of water and structure. However, as sedimentation behind the grade control structure raises elevation of invert to grade, pooling would be eliminated. The presence of five access ramps in the channel would change the current patterns within the immediate vicinity of the structures. However, the overall current patterns of the Phase II reach would remain largely unaffected. Overall, water within the Phase II project reach would continue to maintain its pre-project current patterns.

Based on the above, the implementation of changes in the Modified Phase II Plan would result in less than significant impacts compared to impacts associated with the Original Phase II Plan.

Normal water fluctuations

Murrieta Creek is an ephemeral waterway that is not subject to tidal fluctuations. The discharges of fill would entail construction of embankments, grade control structures, and access ramps within the waterway. The structures would not change the ephemeral flow regime of the water body. Therefore, the discharge of fill would not impact normal water fluctuations.

4.2 Potential Impacts on Biological Characteristics of the Aquatic Ecosystem (Subpart D)

Threatened and endangered species

Original Phase II Plan (No Action Alternative)

Four federally or state listed threatened or endangered wildlife species have moderate to high potential to occur or are present within the Phase II project area. These include least Bell's vireo (*Vireo bellii pusillus*) (Federally Endangered, State Endangered), coastal California gnatcatcher (*Polioptila californica californica*) (Federally Threatened), southwestern willow flycatcher (*Empidonax traillii extimus*) (Federally Endangered, State Endangered), and Swainson's hawk (*Buteo swainsoni*) (State Threatened). Of these species, the least Bell's vireo (LBVI) has been observed in the project area. The coastal California gnatcatcher (CAGN) has been observed foraging downstream of the project area, and critical habitat occurs west of the project area ranging from 0.15 to 1.15 miles away.

Construction activities associated with the proposed project would directly and indirectly affect LBVI, nest sites, and occupied habitat in the Phase II project area. This disturbance would be caused primarily by removal of vegetation in the project area, as well as construction and drilling equipment, pile driving, and haul trucks and other vehicles that would be frequently driving through and around the project area. The increased level of noise and activity may displace some individuals and prevent them from nesting, or attempted nests may be abandoned. However, construction activity will be temporary and this project would not jeopardize the species as a whole or even the entire regional population.

Construction activities would result in temporary, direct loss of 21.6 acres and permanent loss of 2.6 acres of riparian habitat that may be used for nesting and foraging. Timing of vegetation removal activities outside the breeding season would prevent impacts to active nests, loss of eggs, and impacts to reproductive rates.

Construction of activities may result in indirect effects to LBVI, including increased levels of light and noise, accumulation of dust, and the introduction of non-native invasives. Increased noise levels may impact vocalizations and potential active nests in any adjacent habitat, which may temporarily depress breeding in the immediate vicinity of the project. Displacement of birds from the project area may also result in increased competition as they seek mates and resources in adjacent territories.

Timing of construction activities outside the breeding season and the use of qualified biological monitors would minimize impacts to nesting birds. During construction, additional suitable habitat would be available on the Phase I mitigation's riparian terrace. Habitat is also present just downstream of the Phase I site and further downstream near the confluence with Temecula Creek, where LBVI have been detected during recent protocol surveys.

Furthermore, the proposed project would mitigate impacts by restoring an approximately 24 acre unmaintained riparian terrace that would provide higher quality habitat after construction. This terrace would be planted and weeded after construction to allow for establishment of native riparian habitat. Based on established mitigation at the Phase I site, it is expected that suitable LBVI habitat would be available in Phase II within 5 years after construction.

The Corps is coordinating with the USWFS and CDFG to ensure that the proposed mitigation measures and environmental commitments discussed in this SEA/EIR addendum will adequately avoid or minimize project related impacts to LBVI. The Corps will formally consult with the

USFWS under Section 7 of the Endangered Species Act (ESA) to ensure that any adverse effects do not jeopardize the species.

Modified Phase II Plan (Preferred Alternative)

The Modified Phase II Plan would entail similar interests to threatened and endangered species as the Original Phase II Plan.

Based on above, the implementation of mitigation measures identified in the environmental assessment, and implementation of the terms and conditions identified in the Section 7 consultation process with the US Fish and Wildlife Service, the changes in the Modified Phase II Plan would entail less than significant impacts to threatened and endangered species.

Fish, crustaceans, mollusks, and other aquatic organisms in the food web

Murrieta Creek is an ephemeral waterway that is not subject to tidal fluctuations. Aquatic organisms associated with the Marine and the environment such as crustaceans and mollusks are not present within the project reach. Furthermore, due to its ephemeral flow regime, no fish are present within the waterway. Based on the above, there will be no impacts to fish, crustaceans, and other aquatic organisms.

Other wildlife

Original Phase II Plan (No Action Alternative)

The Modified Phase II Plan would entail earthwork over approximately 70 acres of the channel invert associated with the widening and deepening of the channel. The primary impacts of the proposed project on wildlife species are the disruption of habitat and the temporary displacement of wildlife. Other elements of the proposed project that could potentially affect wildlife and wildlife habitat, include construction-related noise disturbance, disruption of movement, and potential wildlife mortality (for any individuals that do not or cannot evacuate the construction zone).

Short-term effects of construction on wildlife resources would result from wildlife avoidance of the immediate construction zone. Noise and other disturbances caused by heavy equipment and construction crews may cause wildlife to move away from the construction zone.
Vegetation clearing and soil excavation could result in the mortality of individual small reptiles/mammals. Species with limited mobility or that occupy burrows within the construction zones could be crushed during clearing and grading activities. Riparian vegetation provides necessary foraging, shelter, and nesting habitat for many bird species. The project area contains suitable foraging and nesting habitat for both resident and migratory birds. Ground-disturbing activities have the potential to disturb vegetation utilized by wildlife, including nesting birds. Construction noise could also disrupt breeding birds by interfering with their ability to hear vocalizations when seeking mates, establishing territories, or warning of predators. Excessive noise and human presence could also cause some individuals to abandon their nests.
With the exception of a few non-native birds, such as European starling, any active nest is fully protected against take pursuant to the Migratory Bird Treaty Act (MBTA) and relevant U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) codes. With the incorporation of mitigation measures identified in the environmental assessment, impacts to wildlife would be less than significant.

Modified Phase II Plan (Preferred Alternative)

The Modified Phase II Plan would entail similar interests to threatened and endangered species as the Original Phase II Plan.

Based on above, the implementation of mitigation measures identified in the environmental assessment, and implementation of the terms and conditions identified in the Section 7 consultation process with the US Fish and Wildlife Service, the changes in the Modified Phase II Plan would entail less than significant impacts to other wildlife.

4.3 Potential Impacts on Special Aquatic Sites (Subpart E)

Sanctuaries and refuges

The Phase II project reach is not located within sanctuaries or refuges designated under state or federal laws. Therefore, there would be no impacts to sanctuaries or refuges.

Wetlands

Original Phase II Plan (No Action Alternative)

Implementation of the proposed project would temporarily impact approximately 66.96 acres of native riparian and marsh vegetation and open channel. To minimize and compensate for the effects of the proposed project on jurisdictional waters, the Corps would implement mitigation measures which requires the restoration of disturbed areas at the conclusion of construction. To restore lost functions, the Corps would restore degraded vegetation communities present in the project area, including 41.11 acres of marsh and open channel habitats, and establish 24.62 acres of riparian terrace habitat and 20.40 acres of coastal sage scrub within the proposed project limits. Adherence to the identified mitigation measures would reduce impacts to less than significant levels. With the incorporation of compensatory mitigation measures identified above, and in the environmental assessment, impacts to wetlands would be less than significant.

Modified Phase II Plan (Preferred Alternative)

The Modified Phase II Plan would entail similar impacts to threatened and endangered species as the Original Phase II Plan.

Based on above, the implementation of mitigation measures identified in the environmental assessment, and implementation of the terms and conditions identified in the Section 7 consultation process with the US Fish and Wildlife Service, the changes in the Modified Phase II Plan would entail less than significant impacts to wetlands.

Riffle and pool complexes

Murrieta Creek is not perennial, meandering waterway. Instead, it is an ephemeral, linear waterway. Furthermore, the channel is disturbed from past operations and maintenance activities. Therefore, large, natural riffle and pool complexes are absent from the project area. Within Murrieta Creek, fresh water marshlands are located in certain areas along the width of the channel that contain small pools forming in areas where cobble and vegetation have resulted in the development of small natural weirs. However, Murrieta Creek is an ephemeral water body. Therefore there is no resident fish population within the Phase II project area that could benefit

from riffle and pool complexes. Based on the above, there would be no impacts to riffle and pool complexes.

4.4 Potential Effects on Human Use Characteristics (Subpart F)

Municipal and Private Water Supplies

Original Phase II Plan (No Action Alternative)

Various water supply pipes are located within the larger Murrieta Creek study area. In addition, there are a potable water and chlorination facility on the west side of Murrieta Creek just north of the Rancho California Road bridge. Water and other utility lines are also located under north of Winchester Road, just outside the project limits. There are no private wells within the invert of the Phase II reach.

The Original Phase II Plan would involve excavating and grading approximately 70 acres of Murrieta Creek. Approximately, 1,100,481 cubic yards of alluvial substrate would be removed from the channel invert to lower the invert elevation by approximately 3 to 8 feet. The substantial excavation and grading activities could occur within the vicinity of water lines. The Corps and RCFCWCD would implement all mitigation measures listed in the EA to ensure that there would be no disruption of water supply services during construction.

Modified Phase II Plan (Preferred Alternative)

The Modified Phase II Plan would entail similar impacts as the Original Phase II Plan. Therefore, the changes in the Modified Phase II Plan would entail less than significant impacts to municipal and private water supplies.

Recreational and commercial fisheries

Murrieta Creek is an ephemeral water body with no resident fish population. There are no recreational or commercial fisheries in Murrieta Creek. Therefore, there would be no impacts to recreational or commercial fisheries.

Water-Related Recreation

Murrieta Creek is an ephemeral water body. There are no official recreational opportunities within the creek itself, nor are there any plans to allow for such recreational use. Therefore, there would be no impacts to water-related recreation.

Aesthetics

Original Phase II Plan (No Action Alternative)

The viewscape within Murrieta Creek is composed of a wide, sandy, and vegetated channel. The embankments are earthen embankment covered with vegetation. There are some areas of the embankment where concrete has been discharged from the top of slope to the channel. Debris is present in the some parts of the channel, particularly near bridges. Numerous tire tracks traverse the creek, indicating the use of vehicles. The normal water flow from the creek is relatively small compared to the entire width of the channel and the water course meanders slightly. In some locations the creek supports vegetation and wildlife.

There would be temporary impacts to the viewscape within the channel during construction. Prior to earthmoving activities within the channel, vegetation within the project footprint would be cleared. During construction, earthmoving equipment would be operating within the channel to widen and deepen the channel to design specifications. Therefore, the work area would be devoid of vegetation for the duration of construction. Upon completion of construction a barren, soft-bottom engineered channel with gabion embankments would be the dominant visual elements within the viewscape. Because the gabions would be filled with rocks, the channel embankments would exhibit a gray hue, instead of earth tones associated with earthen embankments. Over time, vegetation would be reintegrated into the viewscape within the channel upon planting and maturation of vegetation on the vegetated corridor.

Modified Phase II Plan (Preferred Alternative)

The Modified Phase II Plan would entail the same impacts as the Original Phase II Plan with the exception of the following changes. First, the Modified Phase II Plan would incorporate a larger vegetated corridor within the channel invert. Whereas the Original Phase II Plan would construct a vegetated corridor that would range in width from 20 to 60 feet, the range in width of the vegetated corridor in the Modified Phase II Plan would be approximately 20 to 125 feet. Therefore, there would be a slight increase in vegetation within the viewscape of the channel. Second, the gabion embankments from the Original Phase II project would be replaced with soil cement embankment in the Modified Phase II Plan. The texture and color of the soil cement embankment would more closely match the existing surrounding and have a less engineered appearance.

The Modified Phase II Plan would entail similar impacts as the Original Phase II Plan. Therefore, the changes in the Modified Phase II Plan would entail less than significant impacts to municipal and private water supplies.

Parks, national and historical monuments, national seashores, wilderness areas, research sites.

The Phase II reach is adjacent to two parks. Rotary Park, a small neighborhood park is located north of Winchester Street and adjacent to the western side of Murrieta Creek. Sam Hick Monument Park is located south of Winchester Street and adjacent to the eastern side of Murrieta Creek. These parks would be affected by construction. Therefore, there would be no impacts on parks.

There are no national and historical monuments, national seashores, wilderness areas, research sites, and similar sites designated under state or federal laws located within the vicinity of the Phase II reach. Therefore, there would no impacts to these resources.

APPENDIX D

Air Quality Emission Calculations

Murrieta Creek Phase II

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	1	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	10	**Precipitation Freq (Days)**	31		

1.3 User Entered Comments

Project Characteristics - Murrieta Creek Phase II is a flood control project located in the the City of Temecula, in southwestern Riverside County, California

Land Use - Murrieta Creek Phase II is a flood control project, and is defined as industrial land use type. The project area (worse case scenario) is 120 acres. There is no population living within the construction project area.

Construction Phase - Construction work to occur in years 2013 and 2014 with approx. under two years to complete. The operational year is 2015. Phases includes Demo., Site Prep., Grading, Construction, and Paving. Since Murrieta Creek Phase II project is a flood control project, there are no buildings being built; therefore, no requirement for Architectural Coating phase.

Grading - Grading would cover 120 acres, the total (worse case scenario) construction project area.

Vehicle Trips - Operational and Maintenance (O&M) work using vehicle equipment/machinery (i.e., one dump truck with 20 cy capacity per load and one dozer with bucket/trawler] would occur once a week throughout the year annually post project construction completion with sediment removal in Murrieta Creek to the invert to maintain project (free of sediment build-up).

Energy Use -

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	11.98	97.62	54.22	0.10	18.34	4.60	22.29	9.93	4.60	13.88	0.00	11,086.97	0.00	1.07	0.00	11,109.51
2014	5.30	32.19	23.20	0.04	0.23	2.74	2.97	0.00	2.74	2.75	0.00	4,040.61	0.00	0.48	0.00	4,050.65
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	11.98	97.62	54.22	0.10	18.08	4.60	22.02	9.93	4.60	13.88	0.00	11,086.97	0.00	1.07	0.00	11,109.51
2014	5.30	32.19	23.20	0.04	0.01	2.74	2.75	0.00	2.74	2.75	0.00	4,040.61	0.00	0.48	0.00	4,050.65
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.50		0.00		0.50
Total	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.50**		**0.00**	**0.00**	**0.50**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.50		0.00		0.50
Total	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.50**		**0.00**	**0.00**	**0.50**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Demolition - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	8.86	70.71	42.55	0.07		3.50	3.50		3.50	3.50		7,510.81		0.80		7,527.57
Total	**8.86**	**70.71**	**42.55**	**0.07**		**3.50**	**3.50**		**3.50**	**3.50**		**7,510.81**		**0.80**		**7,527.57**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.11	1.03	0.00	0.23	0.01	0.24	0.00	0.01	0.01		172.73		0.01		172.95
Total	**0.10**	**0.11**	**1.03**	**0.00**	**0.23**	**0.01**	**0.24**	**0.00**	**0.01**	**0.01**		**172.73**		**0.01**		**172.95**

3.2 Demolition - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	8.86	70.71	42.55	0.07		3.50	3.50		3.50	3.50	0.00	7,510.81		0.80		7,527.57
Total	**8.86**	**70.71**	**42.55**	**0.07**		**3.50**	**3.50**		**3.50**	**3.50**	**0.00**	**7,510.81**		**0.80**		**7,527.57**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.11	1.03	0.00	0.01	0.01	0.02	0.00	0.01	0.01		172.73		0.01		172.95
Total	**0.10**	**0.11**	**1.03**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**		**172.73**		**0.01**		**172.95**

3.3 Site Preparation - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.07	0.00	18.07	9.93	0.00	9.93						0.00
Off-Road	9.90	79.99	45.35	0.07		3.93	3.93		3.93	3.93		7,997.69		0.89		8,016.38
Total	**9.90**	**79.99**	**45.35**	**0.07**	**18.07**	**3.93**	**22.00**	**9.93**	**3.93**	**13.86**		**7,997.69**		**0.89**		**8,016.38**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.12	0.13	1.24	0.00	0.28	0.01	0.29	0.00	0.01	0.01		207.28		0.01		207.54
Total	**0.12**	**0.13**	**1.24**	**0.00**	**0.28**	**0.01**	**0.29**	**0.00**	**0.01**	**0.01**		**207.28**		**0.01**		**207.54**

3.3 Site Preparation - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.07	0.00	18.07	9.93	0.00	9.93						0.00
Off-Road	9.90	79.99	45.35	0.07		3.93	3.93		3.93	3.93	0.00	7,997.69		0.89		8,016.38
Total	**9.90**	**79.99**	**45.35**	**0.07**	**18.07**	**3.93**	**22.00**	**9.93**	**3.93**	**13.86**	**0.00**	**7,997.69**		**0.89**		**8,016.38**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.12	0.13	1.24	0.00	0.01	0.01	0.02	0.00	0.01	0.01		207.28		0.01		207.54
Total	**0.12**	**0.13**	**1.24**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**		**207.28**		**0.01**		**207.54**

3.4 Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.91	0.00	8.91	3.31	0.00	3.31						0.00
Off-Road	11.85	97.47	52.85	0.10		4.59	4.59		4.59	4.59		10,856.66		1.06		10,878.90
Total	**11.85**	**97.47**	**52.85**	**0.10**	**8.91**	**4.59**	**13.50**	**3.31**	**4.59**	**7.90**		**10,856.66**		**1.06**		**10,878.90**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.13	0.15	1.38	0.00	0.31	0.01	0.32	0.00	0.01	0.01		230.31		0.01		230.60
Total	**0.13**	**0.15**	**1.38**	**0.00**	**0.31**	**0.01**	**0.32**	**0.00**	**0.01**	**0.01**		**230.31**		**0.01**		**230.60**

3.4 Grading - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.91	0.00	8.91	3.31	0.00	3.31						0.00
Off-Road	11.85	97.47	52.85	0.10		4.59	4.59		4.59	4.59	0.00	10,856.66		1.06		10,878.90
Total	**11.85**	**97.47**	**52.85**	**0.10**	**8.91**	**4.59**	**13.50**	**3.31**	**4.59**	**7.90**	**0.00**	**10,856.66**		**1.06**		**10,878.90**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.13	0.15	1.38	0.00	0.01	0.01	0.02	0.00	0.01	0.01		230.31		0.01		230.60
Total	**0.13**	**0.15**	**1.38**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**		**230.31**		**0.01**		**230.60**

3.5 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.17	34.66	23.45	0.04		2.28	2.28		2.28	2.28		4,040.62		0.46		4,050.31
Total	**5.17**	**34.66**	**23.45**	**0.04**		**2.28**	**2.28**		**2.28**	**2.28**		**4,040.62**		**0.46**		**4,050.31**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

3.5 Building Construction - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.17	34.66	23.45	0.04		2.28	2.28		2.28	2.28	0.00	4,040.62		0.46		4,050.31
Total	**5.17**	**34.66**	**23.45**	**0.04**		**2.28**	**2.28**		**2.28**	**2.28**	**0.00**	**4,040.62**		**0.46**		**4,050.31**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

3.5 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02		4,040.61		0.42		4,049.51
Total	**4.74**	**32.06**	**23.20**	**0.04**		**2.02**	**2.02**		**2.02**	**2.02**		**4,040.61**		**0.42**		**4,049.51**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

3.5 Building Construction - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02	0.00	4,040.61		0.42		4,049.51
Total	**4.74**	**32.06**	**23.20**	**0.04**		**2.02**	**2.02**		**2.02**	**2.02**	**0.00**	**4,040.61**		**0.42**		**4,049.51**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

3.6 Paving - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74		2,917.65		0.47		2,927.48
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**5.20**	**32.09**	**20.70**	**0.03**		**2.74**	**2.74**		**2.74**	**2.74**		**2,917.65**		**0.47**		**2,927.48**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.10	0.95	0.00	0.23	0.01	0.24	0.00	0.01	0.01		169.66		0.01		169.86
Total	**0.09**	**0.10**	**0.95**	**0.00**	**0.23**	**0.01**	**0.24**	**0.00**	**0.01**	**0.01**		**169.66**		**0.01**		**169.86**

3.6 Paving - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74	0.00	2,917.65		0.47		2,927.48
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**5.20**	**32.09**	**20.70**	**0.03**		**2.74**	**2.74**		**2.74**	**2.74**	**0.00**	**2,917.65**		**0.47**		**2,927.48**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.10	0.95	0.00	0.01	0.01	0.02	0.00	0.01	0.01		169.66		0.01		169.86
Total	**0.09**	**0.10**	**0.95**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**		**169.66**		**0.01**		**169.86**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.50		0.00		0.50
Unmitigated	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.50		0.00		0.50
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	2.00	0.00	0.00		
Total	2.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
User Defined Industrial	8.90	13.30	7.40	0.00	100.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Murrieta Creek Phase II

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	1	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	10	**Precipitation Freq (Days)**	31		

1.3 User Entered Comments

Project Characteristics - Murrieta Creek Phase II is a flood control project located in the the City of Temecula, in southwestern Riverside County, California

Land Use - Murrieta Creek Phase II is a flood control project, and is defined as industrial land use type. The project area (worse case scenario) is 120 acres. There is no population living within the construction project area.

Construction Phase - Construction work to occur in years 2013 and 2014 with approx. under two years to complete. The operational year is 2015. Phases includes Demo., Site Prep., Grading, Construction, and Paving. Since Murrieta Creek Phase II project is a flood control project, there are no buildings being built; therefore, no requirement for Architectural Coating phase.

Grading - Grading would cover 120 acres, the total (worse case scenario) construction project area.

Vehicle Trips - Operational and Maintenance (O&M) work using vehicle equipment/machinery (i.e., one dump truck with 20 cy capacity per load and one dozer with bucket/trawler] would occur once a week throughout the year annually post project construction completion with sediment removal in Murrieta Creek to the invert to maintain project (free of sediment build-up).

Energy Use -

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	11.98	97.60	54.33	0.10	18.34	4.60	22.29	9.93	4.60	13.88	0.00	11,108.78	0.00	1.07	0.00	11,131.33
2014	5.29	32.18	23.20	0.04	0.23	2.74	2.97	0.00	2.74	2.75	0.00	4,040.61	0.00	0.48	0.00	4,050.66
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	11.98	97.60	54.33	0.10	18.08	4.60	22.02	9.93	4.60	13.88	0.00	11,108.78	0.00	1.07	0.00	11,131.33
2014	5.29	32.18	23.20	0.04	0.01	2.74	2.75	0.00	2.74	2.75	0.00	4,040.61	0.00	0.48	0.00	4,050.66
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.52		0.00		0.52
Total	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.52**		**0.00**	**0.00**	**0.52**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.52		0.00		0.52
Total	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.52**		**0.00**	**0.00**	**0.52**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Demolition - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	8.86	70.71	42.55	0.07		3.50	3.50		3.50	3.50		7,510.81		0.80		7,527.57
Total	**8.86**	**70.71**	**42.55**	**0.07**		**3.50**	**3.50**		**3.50**	**3.50**		**7,510.81**		**0.80**		**7,527.57**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.10	1.12	0.00	0.23	0.01	0.24	0.00	0.01	0.01		189.09		0.01		189.32
Total	**0.09**	**0.10**	**1.12**	**0.00**	**0.23**	**0.01**	**0.24**	**0.00**	**0.01**	**0.01**		**189.09**		**0.01**		**189.32**

3.2 Demolition - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	8.86	70.71	42.55	0.07		3.50	3.50		3.50	3.50	0.00	7,510.81		0.80		7,527.57
Total	**8.86**	**70.71**	**42.55**	**0.07**		**3.50**	**3.50**		**3.50**	**3.50**	**0.00**	**7,510.81**		**0.80**		**7,527.57**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.10	1.12	0.00	0.01	0.01	0.02	0.00	0.01	0.01		189.09		0.01		189.32
Total	**0.09**	**0.10**	**1.12**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**		**189.09**		**0.01**		**189.32**

3.3 Site Preparation - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.07	0.00	18.07	9.93	0.00	9.93						0.00
Off-Road	9.90	79.99	45.35	0.07		3.93	3.93		3.93	3.93		7,997.69		0.89		8,016.38
Total	**9.90**	**79.99**	**45.35**	**0.07**	**18.07**	**3.93**	**22.00**	**9.93**	**3.93**	**13.86**		**7,997.69**		**0.89**		**8,016.38**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.11	0.11	1.34	0.00	0.28	0.01	0.29	0.00	0.01	0.01		226.91		0.01		227.19
Total	**0.11**	**0.11**	**1.34**	**0.00**	**0.28**	**0.01**	**0.29**	**0.00**	**0.01**	**0.01**		**226.91**		**0.01**		**227.19**

3.3 Site Preparation - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.07	0.00	18.07	9.93	0.00	9.93						0.00
Off-Road	9.90	79.99	45.35	0.07		3.93	3.93		3.93	3.93	0.00	7,997.69		0.89		8,016.38
Total	**9.90**	**79.99**	**45.35**	**0.07**	**18.07**	**3.93**	**22.00**	**9.93**	**3.93**	**13.86**	**0.00**	**7,997.69**		**0.89**		**8,016.38**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.11	0.11	1.34	0.00	0.01	0.01	0.02	0.00	0.01	0.01		226.91		0.01		227.19
Total	**0.11**	**0.11**	**1.34**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**		**226.91**		**0.01**		**227.19**

3.4 Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.91	0.00	8.91	3.31	0.00	3.31						0.00
Off-Road	11.85	97.47	52.85	0.10		4.59	4.59		4.59	4.59		10,856.66		1.06		10,878.90
Total	**11.85**	**97.47**	**52.85**	**0.10**	**8.91**	**4.59**	**13.50**	**3.31**	**4.59**	**7.90**		**10,856.66**		**1.06**		**10,878.90**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.13	0.13	1.49	0.00	0.31	0.01	0.32	0.00	0.01	0.01		252.12		0.01		252.43
Total	**0.13**	**0.13**	**1.49**	**0.00**	**0.31**	**0.01**	**0.32**	**0.00**	**0.01**	**0.01**		**252.12**		**0.01**		**252.43**

3.4 Grading - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.91	0.00	8.91	3.31	0.00	3.31						0.00
Off-Road	11.85	97.47	52.85	0.10		4.59	4.59		4.59	4.59	0.00	10,856.66		1.06		10,878.90
Total	**11.85**	**97.47**	**52.85**	**0.10**	**8.91**	**4.59**	**13.50**	**3.31**	**4.59**	**7.90**	**0.00**	**10,856.66**		**1.06**		**10,878.90**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.13	0.13	1.49	0.00	0.01	0.01	0.02	0.00	0.01	0.01		252.12		0.01		252.43
Total	**0.13**	**0.13**	**1.49**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**		**252.12**		**0.01**		**252.43**

3.5 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.17	34.66	23.45	0.04		2.28	2.28		2.28	2.28		4,040.62		0.46		4,050.31
Total	**5.17**	**34.66**	**23.45**	**0.04**		**2.28**	**2.28**		**2.28**	**2.28**		**4,040.62**		**0.46**		**4,050.31**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

3.5 Building Construction - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.17	34.66	23.45	0.04		2.28	2.28		2.28	2.28	0.00	4,040.62		0.46		4,050.31
Total	**5.17**	**34.66**	**23.45**	**0.04**		**2.28**	**2.28**		**2.28**	**2.28**	**0.00**	**4,040.62**		**0.46**		**4,050.31**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

3.5 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02		4,040.61		0.42		4,049.51
Total	**4.74**	**32.06**	**23.20**	**0.04**		**2.02**	**2.02**		**2.02**	**2.02**		**4,040.61**		**0.42**		**4,049.51**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

3.5 Building Construction - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02	0.00	4,040.61		0.42		4,049.51
Total	**4.74**	**32.06**	**23.20**	**0.04**		**2.02**	**2.02**		**2.02**	**2.02**	**0.00**	**4,040.61**		**0.42**		**4,049.51**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

3.6 Paving - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74		2,917.65		0.47		2,927.48
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**5.20**	**32.09**	**20.70**	**0.03**		**2.74**	**2.74**		**2.74**	**2.74**		**2,917.65**		**0.47**		**2,927.48**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.09	1.03	0.00	0.23	0.01	0.24	0.00	0.01	0.01		185.76		0.01		185.98
Total	**0.09**	**0.09**	**1.03**	**0.00**	**0.23**	**0.01**	**0.24**	**0.00**	**0.01**	**0.01**		**185.76**		**0.01**		**185.98**

3.6 Paving - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74	0.00	2,917.65		0.47		2,927.48
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**5.20**	**32.09**	**20.70**	**0.03**		**2.74**	**2.74**		**2.74**	**2.74**	**0.00**	**2,917.65**		**0.47**		**2,927.48**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.09	1.03	0.00	0.01	0.01	0.02	0.00	0.01	0.01		185.76		0.01		185.98
Total	**0.09**	**0.09**	**1.03**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**		**185.76**		**0.01**		**185.98**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.52		0.00		0.52
Unmitigated	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.52		0.00		0.52
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	2.00	0.00	0.00		
Total	2.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
User Defined Industrial	8.90	13.30	7.40	0.00	100.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Murrieta Creek Phase II

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	1	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	10	**Precipitation Freq (Days)**	31		

1.3 User Entered Comments

Project Characteristics - Murrieta Creek Phase II is a flood control project located in the the City of Temecula, in southwestern Riverside County, California

Land Use - Murrieta Creek Phase II is a flood control project, and is defined as industrial land use type. The project area (worse case scenario) is 120 acres. There is no population living within the construction project area.

Construction Phase - Construction work to occur in years 2013 and 2014 with approx. under two years to complete. The operational year is 2015. Phases includes Demo., Site Prep., Grading, Construction, and Paving. Since Murrieta Creek Phase II project is a flood control project, there are no buildings being built; therefore, no requirement for Architectural Coating phase.

Grading - Grading would cover 120 acres, the total (worse case scenario) construction project area.

Vehicle Trips - Operational and Maintenance (O&M) work using vehicle equipment/machinery (i.e., one dump truck with 20 cy capacity per load and one dozer with bucket/trawler] would occur once a week throughout the year annually post project construction completion with sediment removal in Murrieta Creek to the invert to maintain project (free of sediment build-up).

Energy Use -

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	1.16	9.22	5.40	0.01	1.41	0.46	1.86	0.73	0.46	1.19	0.00	892.36	892.36	0.09	0.00	894.35
2014	0.57	3.82	2.74	0.01	0.00	0.25	0.25	0.00	0.25	0.25	0.00	427.48	427.48	0.05	0.00	428.45
Total	**1.73**	**13.04**	**8.14**	**0.02**	**1.41**	**0.71**	**2.11**	**0.73**	**0.71**	**1.44**	**0.00**	**1,319.84**	**1,319.84**	**0.14**	**0.00**	**1,322.80**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	1.16	9.22	5.40	0.01	1.38	0.46	1.84	0.73	0.46	1.19	0.00	892.36	892.36	0.09	0.00	894.35
2014	0.57	3.82	2.74	0.01	0.00	0.25	0.25	0.00	0.25	0.25	0.00	427.48	427.48	0.05	0.00	428.45
Total	**1.73**	**13.04**	**8.14**	**0.02**	**1.38**	**0.71**	**2.09**	**0.73**	**0.71**	**1.44**	**0.00**	**1,319.84**	**1,319.84**	**0.14**	**0.00**	**1,322.80**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.06
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.06**	**0.00**	**0.00**	**0.06**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.06
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.06**	**0.00**	**0.00**	**0.06**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Demolition - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.18	1.45	0.87	0.00		0.07	0.07		0.07	0.07	0.00	139.64	139.64	0.01	0.00	139.95
Total	**0.18**	**1.45**	**0.87**	**0.00**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**139.64**	**139.64**	**0.01**	**0.00**	**139.95**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30	3.30	0.00	0.00	3.31
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.30**	**3.30**	**0.00**	**0.00**	**3.31**

3.2 Demolition - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.18	1.45	0.87	0.00		0.07	0.07		0.07	0.07	0.00	139.64	139.64	0.01	0.00	139.95
Total	**0.18**	**1.45**	**0.87**	**0.00**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**139.64**	**139.64**	**0.01**	**0.00**	**139.95**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30	3.30	0.00	0.00	3.31
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.30**	**3.30**	**0.00**	**0.00**	**3.31**

3.3 Site Preparation - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.18	0.00	1.18	0.65	0.00	0.65	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.65	5.24	2.97	0.00		0.26	0.26		0.26	0.26	0.00	475.10	475.10	0.05	0.00	476.21
Total	**0.65**	**5.24**	**2.97**	**0.00**	**1.18**	**0.26**	**1.44**	**0.65**	**0.26**	**0.91**	**0.00**	**475.10**	**475.10**	**0.05**	**0.00**	**476.21**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.08	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	12.66	12.66	0.00	0.00	12.68
Total	**0.01**	**0.01**	**0.08**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**12.66**	**12.66**	**0.00**	**0.00**	**12.68**

3.3 Site Preparation - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.18	0.00	1.18	0.65	0.00	0.65	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.65	5.24	2.97	0.00		0.26	0.26		0.26	0.26	0.00	475.10	475.10	0.05	0.00	476.21
Total	**0.65**	**5.24**	**2.97**	**0.00**	**1.18**	**0.26**	**1.44**	**0.65**	**0.26**	**0.91**	**0.00**	**475.10**	**475.10**	**0.05**	**0.00**	**476.21**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.66	12.66	0.00	0.00	12.68
Total	**0.01**	**0.01**	**0.08**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**12.66**	**12.66**	**0.00**	**0.00**	**12.68**

3.4 Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.20	0.00	0.20	0.08	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.26	2.14	1.16	0.00		0.10	0.10		0.10	0.10	0.00	216.62	216.62	0.02	0.00	217.06
Total	**0.26**	**2.14**	**1.16**	**0.00**	**0.20**	**0.10**	**0.30**	**0.08**	**0.10**	**0.18**	**0.00**	**216.62**	**216.62**	**0.02**	**0.00**	**217.06**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	4.73	4.73	0.00	0.00	4.73
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**4.73**	**4.73**	**0.00**	**0.00**	**4.73**

3.4 Grading - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.20	0.00	0.20	0.08	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.26	2.14	1.16	0.00		0.10	0.10		0.10	0.10	0.00	216.62	216.62	0.02	0.00	217.06
Total	**0.26**	**2.14**	**1.16**	**0.00**	**0.20**	**0.10**	**0.30**	**0.08**	**0.10**	**0.18**	**0.00**	**216.62**	**216.62**	**0.02**	**0.00**	**217.06**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.73	4.73	0.00	0.00	4.73
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.73**	**4.73**	**0.00**	**0.00**	**4.73**

3.5 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.06	0.38	0.26	0.00		0.03	0.03		0.03	0.03	0.00	40.31	40.31	0.00	0.00	40.41
Total	**0.06**	**0.38**	**0.26**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**40.31**	**40.31**	**0.00**	**0.00**	**40.41**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.5 Building Construction - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.06	0.38	0.26	0.00		0.03	0.03		0.03	0.03	0.00	40.31	40.31	0.00	0.00	40.41
Total	**0.06**	**0.38**	**0.26**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**40.31**	**40.31**	**0.00**	**0.00**	**40.41**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.5 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.52	3.49	2.53	0.00		0.22	0.22		0.22	0.22	0.00	399.44	399.44	0.04	0.00	400.32
Total	**0.52**	**3.49**	**2.53**	**0.00**		**0.22**	**0.22**		**0.22**	**0.22**	**0.00**	**399.44**	**399.44**	**0.04**	**0.00**	**400.32**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.5 Building Construction - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.52	3.49	2.53	0.00		0.22	0.22		0.22	0.22	0.00	399.44	399.44	0.04	0.00	400.32
Total	**0.52**	**3.49**	**2.53**	**0.00**		**0.22**	**0.22**		**0.22**	**0.22**	**0.00**	**399.44**	**399.44**	**0.04**	**0.00**	**400.32**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.6 Paving - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.05	0.32	0.21	0.00		0.03	0.03		0.03	0.03	0.00	26.46	26.46	0.00	0.00	26.55
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.05**	**0.32**	**0.21**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**26.46**	**26.46**	**0.00**	**0.00**	**26.55**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.58	1.58	0.00	0.00	1.58
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.58**	**1.58**	**0.00**	**0.00**	**1.58**

3.6 Paving - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.05	0.32	0.21	0.00		0.03	0.03		0.03	0.03	0.00	26.46	26.46	0.00	0.00	26.55
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.05**	**0.32**	**0.21**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**26.46**	**26.46**	**0.00**	**0.00**	**26.55**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.58	1.58	0.00	0.00	1.58
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.58**	**1.58**	**0.00**	**0.00**	**1.58**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.06
Unmitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.06
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	2.00	0.00	0.00		
Total	2.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
User Defined Industrial	8.90	13.30	7.40	0.00	100.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						0.00	0.00	0.00	0.00

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

9.0 Vegetation

APPENDIX E

Letters and Correspondence

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT CORPS OF ENGINEERS
P.O. BOX 532711
LOS ANGELES, CALIFORNIA 90053-2325

REPLY TO
ATTENTION OF

November 29, 2012

Office of the Chief
Planning Division

Karin Cleary-Rose
Inland Division Chief
U.S. Fish and Wildlife Service
777 East Tahquitz Canyon Way, Suite 208
Palm Springs, California 92220

Dear Ms. Cleary-Rose:

The U.S. Army Corps of Engineers, Los Angeles District (Corps) requests initiation of formal consultation with the U.S. Fish and Wildlife Service (USFWS), pursuant to Section 7 of the Endangered Species Act of 1973, as amended, for the construction and operation and maintenance of Phase II of the Murrieta Creek Flood Control, Environmental Restoration and Recreation Project, Temecula, Riverside County, California. The enclosed Draft Supplemental Environmental Assessment (SEA)/Environmental Impact Report (EIR), which serves as the Biological Assessment (BA), is provided for your review and determination.

The project was originally documented in the September 2000 Final Environmental Impact Statement (EIS)/Environmental Impact Report (EIR). This Draft SEA/EIR provides impact analyses for the modified project, which is not substantially different from the original plan (2000). Modifications and refinements from the Original Phase II Plan (2000 EIS/EIR) include use of soil cement in areas with a slope less than 2:1 and use of buried riprap in areas with a 2:1 and 3:1; construction of maintenance roads and access ramps; and establishment of an unmaintained riparian terrace/corridor ranging between 20 feet and 125 feet in width. Vegetation clearing for the proposed project is scheduled to begin in February 2013, and construction is expected to continue for approximately 12 to 18 months.

The Corps coordinated with the USFWS during development of the 2000 EIS/EIR and the USFWS provided two Planning Aid Reports and a Coordination Act Report. Surveys completed in August 2000 determined that there were no federally endangered or threatened species within the project area at that time.

Due to the recent presence of nesting least Bell's vireo (*Vireo bellii pusillus*) on Murrieta Creek, as documented in protocol surveys, and the temporary removal of nesting habitat as part of the proposed project, the Corps has determined that the proposed project may adversely affect least Bell's vireo. The Corps has determined that

the proposed project would not affect the southwestern willow flycatcher (*Empidonax traillii extimus*), coastal California gnatcatcher (*Polioptila californica californica*), or California red-legged frog (*Rana draytonii*).

The Corps met with Mr. Jon Avery of USFWS on site on October 15, 2012 to solicit input for the proposed project. The project has been designed to ensure no permanent net loss of suitable nesting habitat, and to minimize impacts to vireo and other native species.

The enclosed SEA/EIR includes a project description; detailed analysis of biological resources and discussion of effects to listed species; a description of direct, indirect, and cumulative effects; and conservation measures. The Corps is accepting public comments on the Draft SEA/EIR through January 16, 2013.

We look forward to continued cooperative efforts during the formal consultation. The Corps requests a meeting with your office within a few weeks of receipt of the Draft SEA/EIR to further discuss the project details. If you have any questions regarding the project, please contact the Project Environmental Coordinators, Ms. Tiffany Bostwick at (213) 452-3845 or Ms. Erin Jones at (213) 300-9723.

Sincerely,

Josephine R. Axt, Ph.D.
Chief, Planning Division

Enclosure

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
P.O BOX 532711
LOS ANGELES, CALIFORNIA 90053-2325

August 27, 2007

REPLY TO
ATTENTION OF:

Office of the Chief
Environmental Resources Branch

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer
Office of Historic Preservation
P.O. Box 942896
Sacramento, California 94296-0001

Dear Mr. Donaldson:

This letter is in regard to the Murrieta Creek Flood Control and Ecosystem Restoration Project, Riverside County, California (COE030530A). The purpose of this letter is to request your concurrence with our determinations of National Register of Historic Places (NRHP) eligibility, and effect determinations for Phase II of the project. In accordance with 36 CFR 800.4(b), we are continuing to proceed in a phased approach to the compliance process. A total of four phases are proposed (enclosure 1).

Phase I was coordinated with your office in 2003 and was constructed (enclosure 2). Phase II, the subject of this letter, consists of channel widening and bank stabilization from the end of Phase I near First Street in the city of Temecula, upstream to Winchester Road. This phase is just a continuation of Phase 1. Project Design is similar in design and construction. The area of potential effects (APE) includes all areas within the construction right-of-way (enclosure 3).

An archaeological records and literature search, and field survey of 11 miles of Murrieta Creek was previously conducted by the Riverside County Flood Control and Water Conservation District. Jones and Stokes, Inc. conducted that survey in 1992 for a proposed flood control project that was not implemented (enclosure 4). The area they surveyed in 1992 overlaps the area of potential effects (APE) for the current project. In addition, the Corps conducted an updated archeological field survey to confirm the results of the 1992 survey (enclosure 5). In addition to the re-survey, and in accordance with your request as a result of coordination for Phase I, we have produced a geoarchaeological investigation of all phases of the project (enclosure 6). Our survey confirmed the lack of visible historic and prehistoric archaeological sites.

In the Phase II APE there are four bridges crossing over Murrieta Creek; First Street, Main Street, Rancho California and Winchester Road. Except for the Main Street Bridge these bridges are all less than 50 years of age, are not of exceptional importance and we have determined them to not be NRHP eligible. Main Street Bridge was built in 1945. This bridge will be replaced by the City of Temecula independent of the Corps Federal project. In any event, Caltrans evaluated the bridge and determined it to not be National Register eligible.

The geoarchaeological report by SRI evaluated the potential for subsurface remains along all reaches of the project. For all of Phase II there has been previous disturbance to a depth of up to 4 meters from various factors such as cultivation and development (page 51). Generally, SRI evaluated the actual APE to be mostly low to very low with some small isolated areas described as moderate to high. For Phase II, monitoring of construction will occur as it did for Phase I.

We have been in consultation with the Pechanga on this project since the Beginning. They assisted with monitoring of Phase I construction. No comments have been received on Phase II.

Based on the above considerations, the Corps has determined that the proposed Phase II of the Murrieta Creek Flood Control project will not have an affect on NRHP properties.

Phase III and IV of the project are still being developed. Measures proposed for these phases include levees, basins, channel widening, and ecosystem restoration. For the remaining phases of the project, we will re-survey each reach to ensure that all areas of the APE are inventoried and all sites are evaluated for the NRHP. At this time, we anticipate that the only prehistoric site potentially affected by future phases is prehistoric site CA-RIV-1085. These project phases will be coordinated as they are funded for design and construction.

Please review the enclosed information. In accordance with 36 CFR 800.3(g) we are requesting an expedited consultation for this phase of the project. Accordingly, we would appreciate a response within thirty days of your receipt of this letter. If you have any further questions on this project please call Mr. Stephen Dibble, Senior Archeologist, at (213) 452-3849. He may also be reached by E-mail at david.s.dibble@usace.army.mil.

Sincerely,

Ruth Bajza Villalobos
Chief, Planning Division

Enclosures

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

October 20, 2008

In Reply Refer To: COE030530A

Josephine R. Axt, PhD
Chief, Planning Division
Department of the Army
Los Angeles District, Corps of Engineers
P.O. Box 532711
Los Angeles, California 90053-2325

Re: Phase II Murrieta Creek Flood Control and Ecosystem Restoration Project, Los Angeles County, California.

Dear Dr. Axt:

Thank you for continuing consultation with me regarding the proposed Murrieta Creek Flood Control and Ecosystem Restoration Project. The U.S. Army Corps of Engineers (COE), Los Angeles District, is seeking my comments on the effects that the subject undertaking will have on historic properties, pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act (NHPA).

Previously in this consultation (SHPO letter of October 16, 2008) I requested that you provide additional information regarding whether it would be necessary to modify, constrain, or condition the proposed constructions activities of this undertaking to avoid heritage resources located near, but not within, the Area of Potential Effects (APE). I also requested that you elaborate on the COE's position that no additional identification efforts were needed in the locations that were identified in the geoarchaeological study (Onken, Cato, and Stoll: 2006) as being of high sensitivity for buried archaeological deposits.

At this time, in your letter of October 6, 2008, you have replied to my first request with your explanation that no impacts or effects are anticipated outside of the tightly defined APE as determined by the COE, and thus no measures to address those potential effects were necessary. Regarding the second concern that I had stated, you have replied that the proposed vertical APE of this undertaking should not exceed the depth to which soils in the APE have been previously disturbed and that monitoring of the of project construction will be completed, as was done for Phase I of this undertaking. After reviewing your additional information regarding this undertaking, I have no objection to your finding of No Historic Properties Affected for this undertaking.

Be advised that under certain circumstances, such as unanticipated discovery or a change in project description, the COE may have additional future responsibilities for this undertaking under 36 CFR Part 800. Thank you for seeking my comments and for considering historic properties in planning your project. If you require further information, please contact William Soule, Associate State Archeologist at phone 916-654-4614 or email wsoule@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

APPENDIX F

Mitigation, Monitoring, and Reporting Matrix

Mitigation Monitoring and Reporting Program

Measure Environmental Commitments		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
W-1	Channel construction and maintenance activities will not be conducted if bank to bank flows exist and during rain events to reduce the potential for significant impacts to water quality. The construction contractor will monitor and record weather reports for any indication of potential rain events. The contractor shall divert the low flow channel consistent with the Storm Water Pollution Prevention Plan (SWPPP) and regulatory permits to minimize working within the live channel.	Contractor	Approval of final plans/specification; contract oversight	Corps; RCFC&WCD
W-2	During construction and maintenance activities, equipment will be in proper working condition and inspected for leaks and drips on a daily basis prior to commencement of any in-channel maintenance work.	Contractor	Approval of final plans/ specification; contract oversight	Corps; RCFC&WCD
W-3	A spill prevention and remediation plan would be developed and implemented during construction and operation and maintenance. Workers will be instructed as to it requirements. Construction supervisors and workers and maintenance personnel would be instructed to (1) be alert for indications of equipment related contamination such as stains and odors, and (2) respond immediately with appropriate actions as detailed in the spill prevention and remediation plan if indications of equipment-related contamination are noted.	Contractor	Approval of final plans/ specification; contract oversight	Corps; RCFC&WCD
W-4	During construction and maintenance activities, fuels, solvents, and lubricants would be stored in a bermed area so that potential spills and/or leaks will be contained. Soil contamination resulting from spills and/or leaks would be remediated as required by Federal and/or state law. Storage areas would be constructed so that containers would not be subjected to damage by construction and maintenance equipment.	Contractor	Approval of final plans/ specification; contract oversight	Corps; RCFC&WCD

Measure Environmental Commitments		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
W-5	Implementation of appropriate best management practices (BMPs) to minimize soil erosion and transport of pollutants, and train operators.	Contractor	Approval of final plans/ specification; contract oversight	Corps; RCFC&WCD
W-6	Whenever possible, confine construction work within the flood control channel to low-flow periods. All construction activities within the channel would be limited during wet weather, to include specifications for: construction material stockpiling, channel slope protection, grading, levee openings, and excavation.	Contractor, Corps	Approval of final plans/ specification	Corps; RCFC&WCD
W-7	Construct sediment barriers (e.g. sandbags, silt fence, temporary containment dam) downstream of each major construction operation to trap sediments.	Contractor	Approval of final plans/ specification; contract oversight	Corps; RCFC&WCD
W-8	Conduct dewatering operations behind temporary sheet pile cofferdams.	Contractor	Approval of final plans/ specification; contract oversight	Corps; RCFC&WCD
W-9	Cover and secure stockpiles of bulk granular building materials	Contractor	Approval of final plans/ specification; contract oversight	Corps; RCFC&WCD
W-10	Stabilize any areas of exposed soil, such as dirt stockpiles, dirt berms, and temporary dirt roads, with controlled amounts of sprinkled water.	Contractor	Approval of final plans/ specification; contract oversight	Corps; RCFC&WCD
W-11	At the close of each working day, sweep up any materials tracked onto the street or laying uncontained in the construction areas, and dispose of any trash accumulated in construction areas.	Contractor	Approval of final plans/ specification; contract oversight	Corps; RCFC&WCD
W-12	Contain concrete, asphalt, and masonry wastes and dispose of these wastes away from project construction sites.	Contractor	Approval of final plans/ specification; contract oversight	Corps; RCFC&WCD
W-13	Prohibit refueling and maintenance of equipment and vehicles near the flood control channel. Prohibited locations shall include all land and structures (e.g. bridges) within 50 feet of the creek.	Contractor	Approval of final plans/ specification; contract oversight	Corps; RCFC&WCD
W-14	Keep spill kits containing absorbent materials at the construction site.	Contractor	Approval of final	Corps; RCFC&WCD

Measure Environmental Commitments	Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
		plans/ specification; contract oversight	
W-15 Store fuels and other hazardous materials away from project drainage.	Contractor	Approval of final plans/ specification; contract oversight	Corps; RCFC&WCD
W-16 Required Opinions, Concurrences, and Permits: • Applicable Regulatory Section 404 Permit (RCFCWCD to obtain for operation and maintenance activities) • Section 401 Water Quality Certification • Section 402 National Pollution Discharge Elimination System General Construction • A Storm Water Pollution Prevention Plan will be prepared and implemented during construction.	Contractor, Corps, RCFC&WCD	Issuance of applicable permits; approval of final plans/ specification; contract oversight	Corps; RCFC&WCD, RWQCB
B-1 The EIS/EIR required that a site specific revegetation plan would be developed for each phase to ensure that project related impacts have been mitigated. The Corps will submit a draft revegetation plan for Phase II to USFWS and CDFG for review at least 60 days prior to planting any plant materials (seeds or container plants) within the project area. The revegetation plan will address the acreage of habitats to be restored, the size and quantity of species to be planted, appropriate seed mixes and schedules of planting and the development of success criteria. The plan will include a 5- year maintenance and monitoring program to ensure that native plant cover is achieved, that aggressive non-native species do not out-compete the native species, and that the restoration of ecological function within the creek is successful.	Corps	Completion of final revegetation plan	CDFG; USFWS
B-2 Disturbance or removal of vegetation shall not exceed the limits authorized. Temporary disturbed areas shall be restored to their original condition or better. Restoration shall include the revegetation of stripped or exposed areas with native species.	Contractor	Approval of final plans/ specification; contract oversight	Corps; RCFC&WCD

Measure Environmental Commitments		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
B-3	To minimize construction impacts to nesting birds, vegetation removal will be scheduled to occur between August 15 and March 15 (outside of the avian nesting season).	Contractor	Approval of final plans/ specification; contract oversight	Corps; RCFC&WCD
B-3A	Immediately prior to construction activities and throughout any portion of the construction period that takes place during the bird breeding season, a qualified biologist shall inspect the construction site and adjacent areas (using non-protocol surveys) to determine if any special-status species are nesting within 500 feet of the construction site. If active nests are found, the Corps biologist will coordinate with the U.S. Fish and Wildlife Service (USFWS) and/or the California Department of Fish and Game (CDFG) to determine appropriate avoidance or minimization measures.	Contractor; Corps	Approval of final plans/ specification; contract oversight	Corps; RCFC&WCD; USFWS; CDFG
B-3B	Prior to construction activities, a qualified biologist shall conduct pre-construction training for all construction crew members. The training shall focus on required mitigation measures and conditions of regulatory agency permits and approvals. The training shall also include a summary of sensitive species and habitats potentially present within and adjacent to the proposed project site, including native southern willow scrub habitat and potential use of this habitat by least Bell's vireo.	Contractor; Corps	Approval of final plans/ specification; contract oversight	Corps; RCFC&WCD
B-4	A Corps biologist (or the environmental monitor) shall monitor construction activities to ensure compliance with environmental commitments.	Corps	Approval of final plans/ specification; contract oversight	Corps, RCFC&WCD
B-5	To prevent impacts to southwestern pond turtles, trapping will be conducted in all suitable pools prior to any construction related activity (brush clearance, ground disturbance, construction). Trapping will be conducted by a qualified biologist and consist of at least three trapping events. Southwestern pond turtles will be transported to sections of Murrieta Creek where suitable habitat has been located outside the construction area. Trapping will be coordinated	Contractor; Corps	Approval of final plans/ specification; contract oversight	Corps; RCFC&WCD; USFWS; CDFG

Measure Environmental Commitments		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
	with the CDFG and USFWS to determine the appropriate methods and suitable relocation areas.			
B-6	To prevent impacts to burrowing owl and red-legged frog, pre-construction surveys would be conducted for those species in suitable habitat.	Corps; Contractor	Final survey report	Corps; RCFC&WCD
B-7	With the exception of emergency repairs; mowing, sediment removal, and scheduled maintenance activities will be conducted between August 15 and March 15 (outside of the bird nesting season). Some emergency repairs may require work to occur for extended periods of time. If repair work is to be conducted during the nesting season, the work area will be surveyed for active bird nests. If active nests are identified in the work area the nests will be avoided until the end of the nesting season. A qualified biological monitor will be present during all emergency brush clearing activities within the unmaintained riparian corridor between March 15 and August 15.	Contractor; RCFC&WCD	Operation and Maintenance Manual	Corps; RCFC&WCD
B-8	Appropriate coordination/consultation will occur with resource agencies prior to conducting maintenance activities during the nesting season, and any necessary permits will be obtained.	Contractor; RCFC&WCD	Operation and Maintenance Manual	Corps; RCFC&WCD
B-9	With the exception of scheduled invasive plant removal or temporary impacts from any necessary repair work, vegetation will not be removed from the unmaintained riparian corridor or channel sideslopes as part of the scheduled maintenance plan.	Contractor; Corps; RCFC&WCD	Approval of final plans/ specification; Operation and Maintenance Manual	Corps; RCFC&WCD
B-10	If vegetation is removed from the unmaintained riparian corridor or sideslopes as a result of emergency repairs, the site will be stabilized and revegetated with a native seed mix and select container plantings to ensure the replacement of riparian trees. Revegetation plantings will be of sufficient quantity to ensure the rapid establishment of vegetation. Replacement plantings of riparian trees will not be required if the vegetation was removed as a result of natural	Contractor; Corps; RCFC&WCD	Approval of final plans/ specification; Operation and Maintenance Manual	Corps; RCFC&WCD

Measure Environmental Commitments		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
	scouring.			
C-1	A qualified archeologist will monitor project ground disturbing activities. The purpose will be to observe subsurface deposits for buried historic or prehistoric resources. If previously unknown resources are uncovered, construction in the area of the find will be temporarily halted. The find would be then be evaluated for the National Register of Historic Places (NRHP). If it were determined to be eligible for the NRHP, the Corps would consult with the SHPO on treatment of the remains in accordance with 36 CFR 800.13.	Corps	Approval of final plans/ specification	Corps; RCFC&WCD; SHPO
T-1	A road improvement plan would be prepared during the final design stage of the project, and implemented during the construction phase. The plan would identify road segments, bridges, and culverts that need to be improved and turnout locations that need to be constructed to accommodate project construction, maintenance, and operational activities. The plan would also include measures for identifying any damage to existing roadways caused by construction vehicles. These damages would be repaired following completion of the project.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
T-2	A traffic control plan would be prepared during the final design stage of the project, and implemented during the construction phase. The plan would address and outline appropriate vehicular speeds in construction areas; travel routes, detours, bridge closures, or lane/road closures; flag-person requirements; appropriate signage and safety reflectors; coordination with local city agencies/departments and Caltrans for appropriate notification to the public; any utility relocation requirements; the location of staging areas; safety procedures to reduce hazards to motorists, bicyclists and pedestrians; approach to ensuring access to businesses and residences; and emergency information. The traffic control plan would be reviewed by appropriate entities, including the City of Temecula. The final version of the plan would be submitted to all	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD

Measure Environmental Commitments		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
	appropriate entities.			
AQ-1	Require 6.9 grams per horsepower standard for heavy duty construction equipment on- and off-road.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
AQ-2	Require injection timing retard of 2 degrees on all diesel vehicles, where applicable.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
AQ-3	Install high-pressure injectors on all vehicles, where feasible.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
AQ-4	Use Caterpillar pre-chamber diesel engines or equivalent, and perform proper maintenance and operation.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
AQ-5	Electrify equipment, where feasible.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
AQ-6	Maintain equipment in tune with manufacturers' specifications, except as otherwise stated above.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
AQ-7	Restrict the idling of construction equipment to 10 minutes.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
AQ-8	Install catalytic converters on gasoline-powered equipment.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
AQ-9	Substitute gasoline-powered for diesel-powered, where feasible.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
AQ-10	The speed limit on all unpaved roads would be 10 MPH.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
AQ-11	Gravel roads would be constructed for unpaved access/egress roads, and these roads would be watered hourly.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
AQ-12	All handled (i.e. loaded/unloaded) soil would be watered to 25 percent moisture, and active excavation/grading areas would be watered hourly to	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD

Measure Environmental Commitments		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
	ensure 15 percent moisture.			
AQ-13	Street sweepers would be active at each unpaved road access/egress point for soil export (on- and off-site) and each on-site unpaved road access/egress point or materials import. Three street sweepers would be cleaning the entire soil export paved road route, beginning daily operation in the morning prior to the first haul truck and ending daily operation after cleaning the roadway after the passage of the last haul truck. The street sweepers will be wet-type "street washers" that will meet the requirements of SCAQMD Rule 1186 for PM_{10} efficient street sweepers.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
AQ-14	Soil haul trucks would be covered, would have 18 inches of freeboard and would have soils on the top of the load watered, or shall be sufficiently wet to mitigate emissions.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
AQ-15	Inactive storage piles would be covered.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
AQ-16	All grading activities would be prohibited during periods of high wine (i.e., winds greater than 30 mph).	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
AQ-17	Nontoxic chemical soil stabilizers would be applied to inactive construction areas (i.e., disturbed lands within construction areas that are unused for at least 4 consecutive days), or water at least twice daily.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
AQ-18	Nontoxic binders (i.e., latex acrylic copolymer) will be applied to exposed areas after cut-and –fill operations and hydroseed the areas if appropriate for the project location.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
AQ-19	Wheel washers would be installed for all exiting trucks.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD

Measure Environmental Commitments		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
N-1	Construction or maintenance activities within 0.25 mile of residences or other noise-sensitive uses will be restricted to daytime hours. No construction or maintenance activities will be performed within 0.25 mile of noise sensitive uses on Sundays, on legal holidays, or between the hours of 6:30 p.m. and 7:00 a.m. Monday through Friday and Saturday, as per City of Temecula.	Contractor	Approval of final plans/ specification; Operation and Maintenance Manual	Corps; RCFC&WCD
N-2	All construction and maintenance equipment will have sound-control devices that are at least as effective as those devices provided on original equipment. No equipment will have an unmuffled exhaust.	Contractor	Approval of final plans/ specification; Operation and Maintenance Manual	Corps; RCFC&WCD
N-3	The contractor will implement appropriate additional noise mitigation measures, including, but not limited to, changing the location of stationary construction and maintenance equipment, shutting off idling equipment, rescheduling construction and maintenance activity, notifying adjacent residents in advance of construction and maintenance work, and installing acoustic barriers around construction and maintenance noise sources.	Contractor	Approval of final plans/ specification; Operation and Maintenance Manual	Corps; RCFC&WCD
HZ-1	If a contaminated area is encountered during construction, construction would cease in the vicinity of the contaminated area. The contaminated areas shall be assessed to determine the extent and type of contamination. If necessary, the contaminated site would be remediated to minimize the potential for exposure of the public and to allow the project to safely be constructed.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
U-1	During the preliminary design phase of each project component, the utility service providers would be consulted to identify existing and proposed buried facilities in affected roadways and to determine which utilities require relocation and which can be avoided. If relocation is required, the appropriate utility service provider would be consulted to sequence construction activities to avoid or minimize interruptions in service. The Local Sponsor and contractor shall comply with permit conditions and such conditions shall be	Corps; RCFC&WCD	Approval of final plans/ specification	Corps; RCFC&WCD

Measure Environmental Commitments		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
	included in the contract specifications.			
U-2	If utility service disruption is necessary, residents and businesses in the project area would be notified a minimum of two to four days prior to service disruption through local newspapers, and direct mailings to affected parties.	Corps; RCFC&WCD	Approval of final plans/ specification	Corps; RCFC&WCD
U-3	The contractor would be required to excavate around utilities, including hand excavation as necessary, to avoid damage and to minimize interference with safe operation and use. Hand tools must be used to expose the exact location of buried gas or electric utilities.	Contractor	Approval of final plans/ specification	Corps; RCFC&WCD
U-4	Prior to construction during the Plans and Specifications phase, utility locations shall be verified through field surveys.	Corps; RCFC&WCD	Approval of final plans/ specification	Corps; RCFC&WCD

APPENDIX G

Multiple Species Habitat Conservation Plan Analysis

Would the project

Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

> **Less than Significant Impact.** On June 17, 2003, the Riverside County Board of Supervisors adopted the Western Riverside County Multiple Species Habitat Conservation Plan (WRC-MSHCP). The WRC-MSHCP is a comprehensive, multi-jurisdictional plan that has as its goal the creation of a 500,000-acre conservation area that protects and manages habitat for 146 covered species. As the Corps of Engineers is not a participating agency to the WRC-MSHCP it is exempt from WRC-MSHCP policies. However, the Corps will consult with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Federal Endangered Species Act and be subject to separate take coverage for LBV. The Section 7 incidental take statement will also be used to obtain a State consistency determination under Section 2080.1 of the California Endangered Species Act (CESA).
>
> The purpose of this analysis is to determine whether the Modified Phase II Plan would result in impacts to the assembly of the Conservation Area identified in Section 3 of the WRC-MSHCP. Guidance on assembly of the WRC-MSHCP Conservation Area is provided on three geographic levels: Cores and Linkages, Area Plan Subunits, and Cells. Each geographic level has its own criteria and species survey requirements. For example, each Area Plan Subunit has its own list of Planning Species and Biological issues and Considerations that are important to Reserve Assembly. Each Cell has criteria that identifies applicable Cores and Linkages and describes the focus of desired conservation in that particular Cell or Cell Group.

Cores and Linkages Considerations

As shown on Figure 1, the proposed Modified Phase II Plan is located along Proposed Constrained Linkage 13. As described in the WRC-MSHCP, a Constrained Linkage is a constricted connection expected to provide for movement of identified Planning Species between Core Areas, where options for assembly of the connection are limited due to existing patterns of use. Proposed Constrained Linkage 13 connects Proposed Linkage 10 toward the south to Existing Core F (Santa Rosa Plateau Ecological Reserve) in the north.

The Planning Species for Proposed Constrained Linkage 13 include riparian habitat associated Cooper's hawk, yellow warbler, southwestern willow flycatcher, tree swallow, least Bell's vireo, and western pond turtle. The WRC-MSHCP describes Proposed Constrained Linkage 13 as being constrained along most of its length by existing urban development and agricultural use and planned land use surrounding the Linkage. Care must be taken to maintain high quality riparian habitat within the Linkage and along the edges for species such as yellow warbler and least Bell's vireo, which have key populations located in or along the creek.

Analysis of the Modified Phase II Plan's effect on Cores and Linkages

The proposed Modified Phase II Plan design includes the creation and subsequent preservation of a riparian terrace that generally varies from 20-150 feet wide where no mowing would be conducted. The proposed riparian terrace will provide high quality riparian vegetation as envisioned for Constrained Linkage 13. The western pond turtle and arroyo chub have primarily been documented in lower Murrieta Creek downstream from the Phase II project area. Nonetheless, the Modified Phase II Plan will provide greater opportunity for the western pond turtle to utilize the riparian and aquatic areas within the proposed channel. Thus, the Modified Phase II Plan is not expected to conflict with the Proposed Constrained Linkage 13.

Area Plan and Subunit Considerations

An Area Plan is a community planning area defined in the County of Riverside General Plan and provides the organizational framework for the criteria-based WRC-MSHCP. Area Plans are further broken down into Subunits for which biological issues and considerations and target acreages have been specified. As shown on Figure 2, the Modified Phase II Plan is located within Subunit 1-Murrieta Creek of the WRC-MSHCP Southwest Area Plan. The Planning Species for the Murrieta Creek Subunit include California red-legged frog, Cooper's hawk, least Bell's vireo, southwest willow flycatcher, tree swallow, white-tailed kite, yellow warbler, arroyo chub, bobcat, mountain lion, and western pond turtle. The WRC-MSHCP Biological Issues and Considerations for Subunit 1-Murrieta Creek specific to the Modified Phase II Plan reach include the following:

- Maintain habitat connectivity within Murrieta Creek from the confluence of Temecula Creek to Cole Creek for wildlife movement and conservation of wetland species.
- Maintain habitat connectivity between Murrieta Creek and Lower Warm Springs Creek to facilitate wildlife movement and conserve wetland species.
- Maintain Habitat for arroyo chub and western pond turtle within Murrieta Creek.

Analysis of the Modified Phase II Plan's effect on Subunit 1-Murrieta Creek

The target acreage range for WRC-MSHCP Additional Reserve Lands within the entire Murrieta Creek Subunit from approximately Temecula Creek to the Santa Rosa Plateau is 640-1465 acres. The Modified Phase II Plan's right of way encompasses about 130 acres, of which about 24.6 acres would consist of a riparian terrace where mowing will not occur. About 41 acres of the channel bottom would consist of similar habitat to the existing condition (e.g. freshwater marsh, and riparian scrub) and would provide seasonal benefit to species. Except for the soil cement sideslopes through the extremely constrained reach in Old Town Temecula, the sideslopes will be vegetated with native plants. All told, the Modified Phase II Plan will provide about 86 acres of native habitat within the project footprint. Post construction maintenance and monitoring will ensure that the habitat and linkage functions are permanently preserved. Thus, the project is not expected to conflict with the Murrieta Creek Subunit conservation area goals and would contribute toward the subunit Biological Issues and Considerations.

Criteria Cells Considerations

As shown on Figure 3, the Modified Phase II Plan area is located within Criteria Cell Nos. 6783, 6890, 6891, 7021, 7078, and 7079 which describe areas within and adjacent to Murrieta Creek to be conserved. Conservation within these cells is intended to contribute toward the assembly of the previously described Proposed Constrained Linkage 13. Modified Phase II Plan is also located in Criteria Cell 7166. Conservation within Criteria Cell 7166 is intended to contribute to both Proposed Linkage 13 and hillside areas providing chaparral habitat.

Analysis of Modified Phase II Plan's effect on Cell conservation goals

Table 1 below lists the Criteria Cells, the approximate Criteria Cell Conservation Range, and the amount of conservation to be provided by the project. With the exception of the soil cement sideslopes and access roads, the Modified Phase II Plan right of way is proposed to be vegetated and managed to provide native vegetation and habitat as described in Proposed Constrained Linkage 13.

Table 1

WRC-MSHCP Criteria Cell Number	Range of Total Cell area to be Conserved (approximate)	Conservation provided by Phase II
6783	5%	12%
6890	10-20%	11%
6891	15-25%	18%
7021	20-30%	19%
7078	15-25%	12%
7079	5-15%	4%
7166	35-45%	13%

Conservation within Criteria Cell numbers 7021, 7078, and 7079, have been maximized given that they are located along the most constrained reach of Murrieta Creek as it transitions into and through Old Town Temecula.

The Modified Phase II Plan appears to provide the least amount of conservation area compared to the Conservation Range in Criteria Cell # 7166 (13%). However, as mentioned above, the description of Criteria Cell # 7166 includes conserving chaparral habitat and connecting to chaparral habitat to the west. Thus, a large portion of the total 35-45% conservation area for Cell 7166 would consist of areas outside of Murrieta Creek and its riparian habitat.

Overall, the Modified Phase II Plan is expected to contribute a significant portion of the Cell conservation area goals and provide natural habitat for native plants and animals.

Other WRC-MSHCP Considerations

Urban/Wildlands Interface Requirements

The WRC-MSHCP addresses the potential indirect impacts associated with development projects located adjacent to areas described for conservation. These indirect impacts could result from drainage, toxics, lighting, noise, invasives, and grading caused by urban development. The proposed Modified Phase II Plan includes a trail as part of the design but it would not cause any of the indirect impacts. The Modified Phase II Plan is located within areas described for WRC-MSHCP conservation as well as being located immediately upstream of such areas and is adjacent to existing urban development. However, as described in the water quality and biological resources sections of the SEA/EIR, the indirect impacts to the conservation areas will be less than significant.

Construction Guidelines and Standard Best Management Practices

The Modified Phase II Plan will be designed and constructed to be compliant with applicable requirements listed in Section 7.5.3 and Appendix C of the WRC-MSHCP or equivalent measures, which addresses Best Management Practices (BMPs) used to minimize impacts to habitats and species.

Public/Quasi-Public Lands

Public/Quasi-Public Lands (PQP) are a subset of the WRC-MSHCP Conservation Area lands known to be in public/private ownership and expected to be managed for the benefit of Covered

Species. Within the Modified Phase II Plan there are approximately 2.4 acres of reconciled PQP Lands located at the confluence of Murrieta Creek and Santa Gertrudis Creek.

As the channel is excavated, the sideslopes are reconstructed and a riparian terrace is created there will be a temporary loss of riparian vegetation. Following construction, the channel would be revegetated with native plants and maintained in the same manner as it is today. Therefore, the PQP land would still contribute to Reserve Assembly, and replacement PQP acreage is not required.

Conclusion

Based on the above analysis, the Modified Phase II Plan will not conflict with the conservation goals of the WRC-MSHCP. The Modified Phase II Plan will contribute to the WRC-MSHCP's overall goal of improving the conservation status of covered species by maintaining the hydrology and connectivity and enhancing the natural habitat for covered species. Moreover, the Regional Conservation Authority has expressed interest in collaborating with local sponsors to develop a long-term conservation management strategy and, subject to future talks, might manage the conservation area themselves.

WRC-MSHCP Schematic Cores and Linkages Map

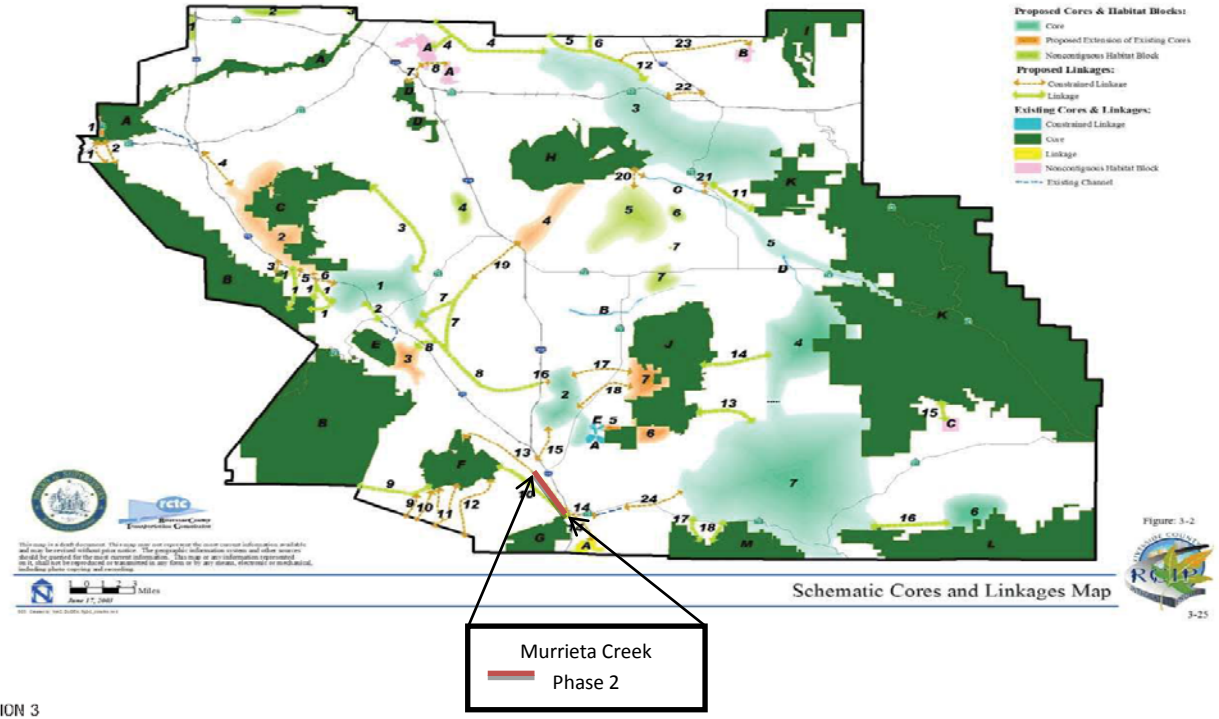
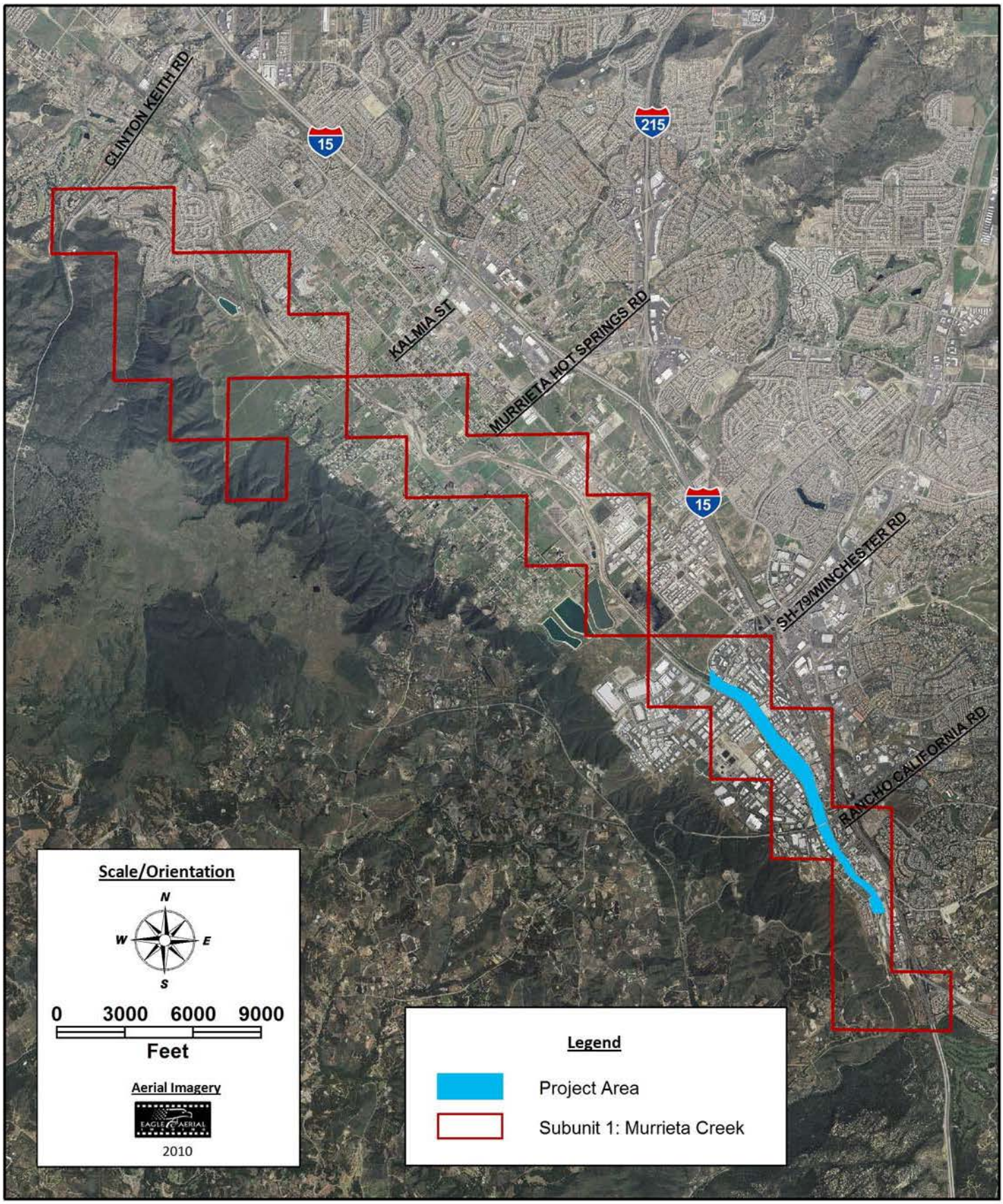


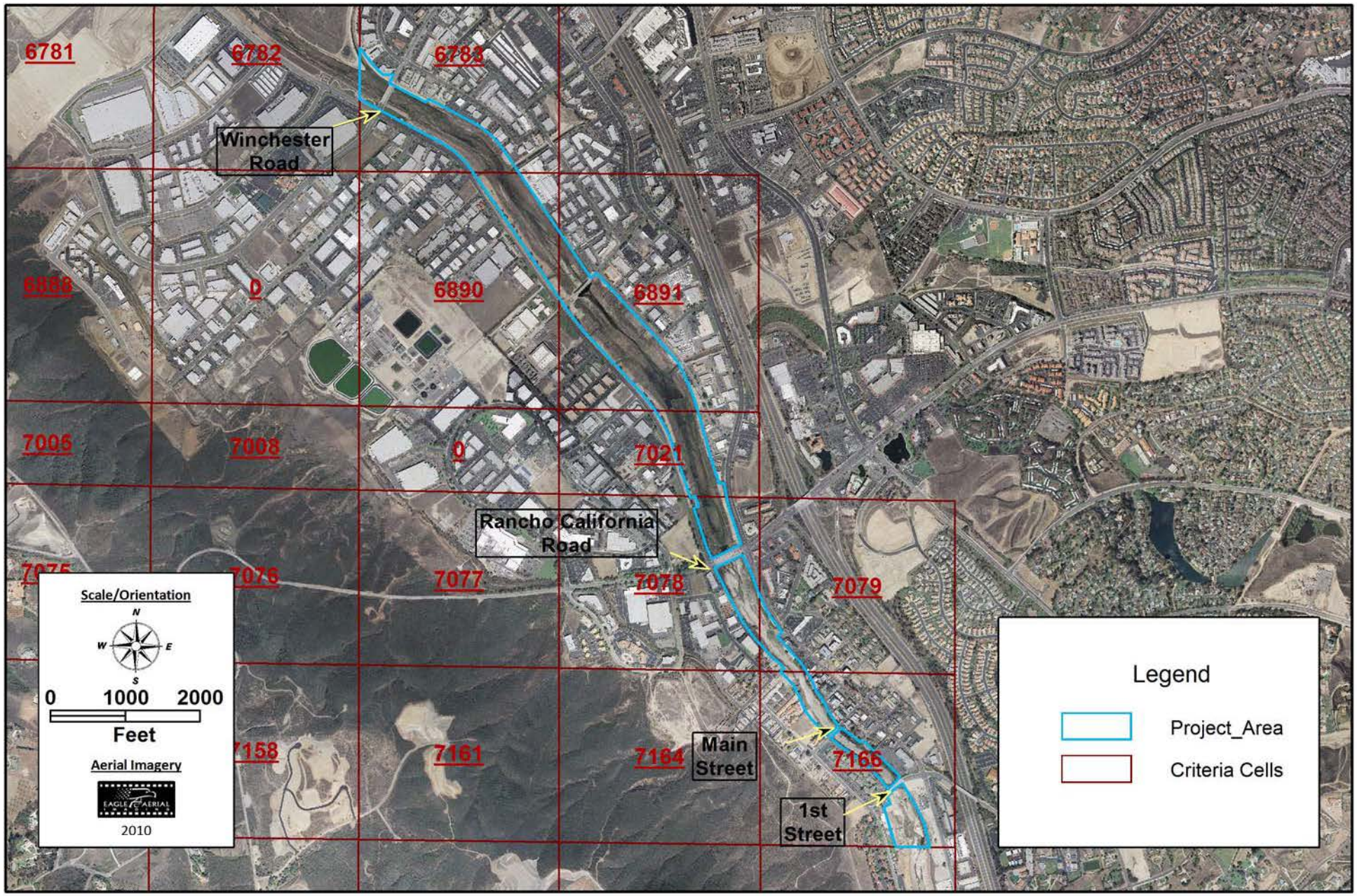
Figure # 1



RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

Murrieta Creek Phase 2 Project
Project No. 7-0-00021

Figure # 2
WRC-MSHCP
Southwest Area Plan
Subunit 1: Murrieta Creek



RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

Murrieta Creek Phase 2 Project
Project No. 7-0-00021

Figure # 3
MSHCP Criteria Cell Map