

Santa Paula Creek Flood Control Project Supplemental Environmental Assessment



March 2012

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Prepared for:



**US Army Corps
of Engineers®**

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SECTION 1 – INTRODUCTION

This Draft Supplemental Environmental Assessment/Addendum (referenced as SEA in this environmental report) documents less than significant modifications to the June 1995 Final Environmental Impact Statement/Environmental Impact Report (1995 EIS/EIR) and subsequent Environmental Assessments (as described in Section 1.3 below) for the Santa Paula Creek Flood Control Project located in unincorporated Ventura County and the City of Santa Paula, California. The Proposed Action consists of repairs to the fish ladder weirs and clarification of operations and maintenance (O&M) measures for the Project, including a refinement to the allowable sediment profile and design invert for the existing flood risk management channel (FRMC). The Project was constructed by the U.S. Army Corps of Engineers (Corps). O&M responsibilities will be transferred to the Local Sponsor, the Ventura County Watershed Protection District (VCWPD), upon Notice of Completion. The currently proposed modifications and repairs to the subject facility and clarification of the final O&M Manual (Appendix A) are the subject of this SEA.

Federal funding would be utilized for the Proposed Action. As per Council on Environmental Quality (CEQ) regulations Sec. 1501.2 and 1501.3, when Federal funding and/or land is involved, the Federal lead agency should prepare an environmental document to comply with National Environmental Policy Act (NEPA). This document is prepared in compliance with NEPA [42 U.S.C. §§ 4321 et seq.], in conformance with the CEQ regulations [40 C.F.R. §§ 1500 et seq.], and guidance specified in Engineer Regulation (ER)-200-2-2 Procedures for Implementing NEPA. However, state agencies may use this document to issue required permits; therefore, it is also prepared in compliance with California Environmental Quality Act (CEQA). An Addendum to the 1995 EIR has been prepared for the Proposed Action and is included as Appendix B to this document.

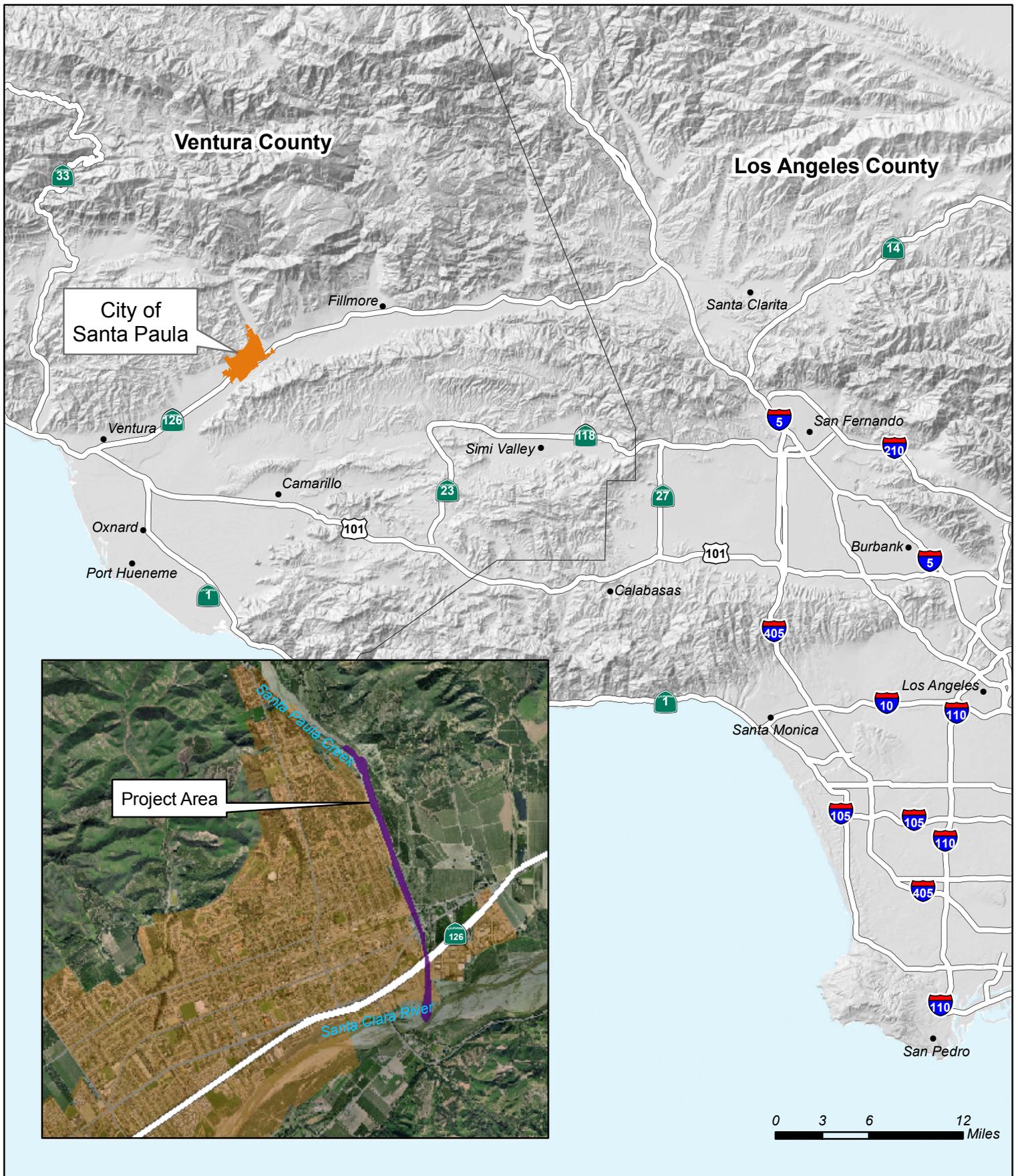
1.1 Location

The Project area is located along the main stem of Santa Paula Creek in unincorporated Ventura County and the City of Santa Paula, California (see Figure 1-1). The Project area consists of the Project inlet, the main FRMC which extends approximately 1.65 miles (2.7 kilometers) from the inlet downstream to the confluence of Santa Paula Creek and Santa Clara River; and the approach channel, an approximately 500-foot (152-meter) reach of creek and creek bed extending upstream from the inlet (see Figure 1-2).

The FRMC configuration is trapezoidal with a bottom width that ranges from approximately 50 to 210 feet (15 to 64 meters) and a depth of approximately 10 to 40 feet (3 to almost 12 meters). The channel bed is largely composed of earthen material while the side slopes are grouted riprap. The area between the grouted side slopes is considered the channel.

The design invert for the Project is lower than the original creek bottom; therefore, a grouted stone inlet structure was constructed for grade stabilization between the lowered channel and the upstream natural channel. The inlet includes a concrete pool and weir fish ladder to address the increase in channel slope associated with the inlet relative to its upstream and downstream slopes. The fish ladder is slightly offset from the centerline of the channel, closer to the right bank.

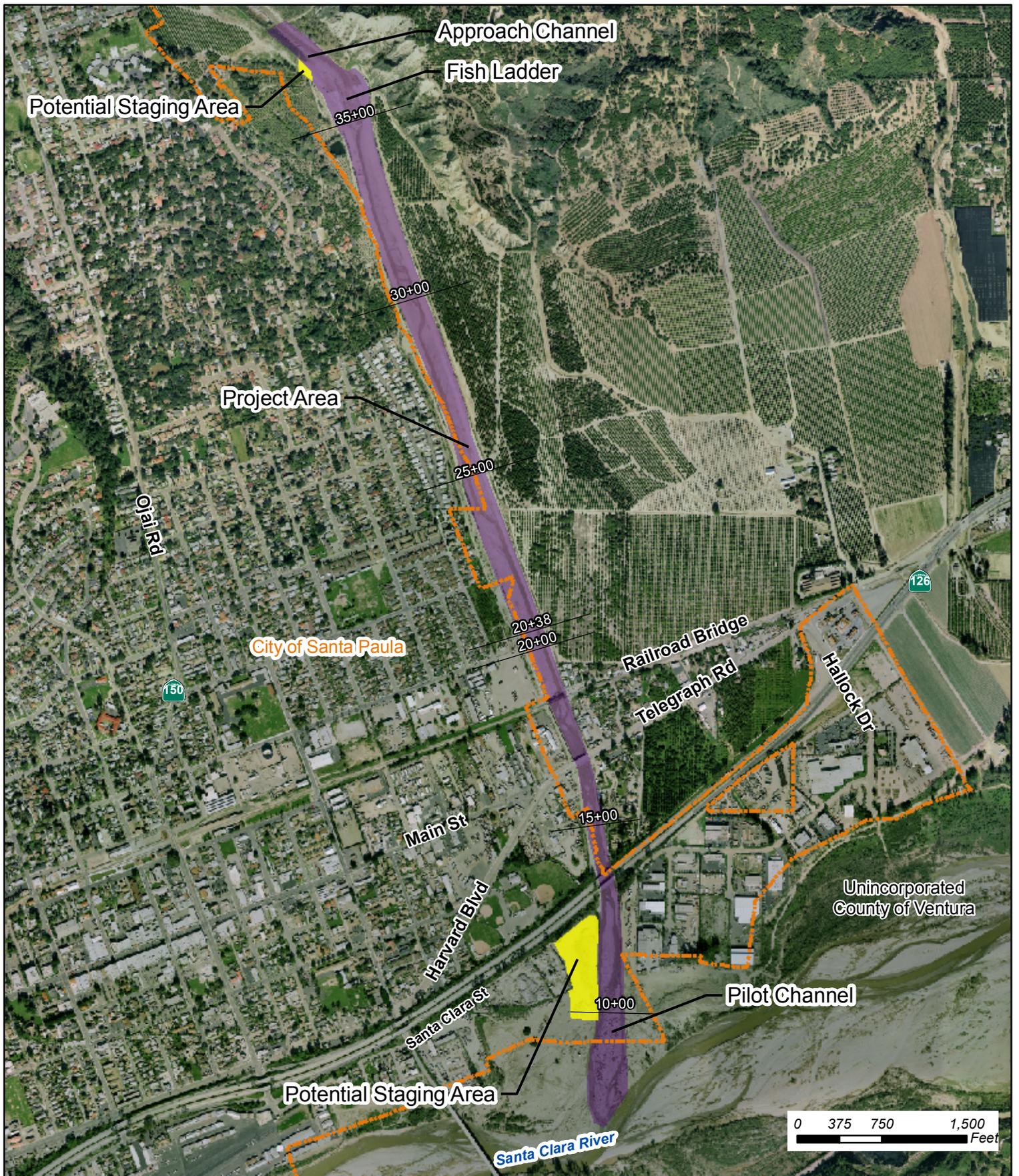
The construction staging area is located along the western bank of the creek, north of the Santa Clara River/Santa Paula Creek confluence within the City of Santa Paula. Other staging areas may include turnout areas along the access roads. The staging area north of the confluence and potential staging area at the turnout near the fish ladder are shown on Figure 1-2.



Basemap Source: U.S. Geological Survey, Hillshade, 30 Meter Resolution, 2004
 U.S. Census Bureau, Geography Division, 2010



Figure 1-1
 Regional Context
 Santa Paula Creek Supplemental EA



Source: HDR | CDM, 2011



Figure 1-2
Project Area

Santa Paula Creek Supplemental EA

1.2 Study Authority

The Proposed Action is authorized under Act of Congress, Public Law 858, Eightieth Congress, approved June 30, 1948, as described in the post authorization change approved by the Chief of Engineers, April 12, 1973, and General Reevaluation Report (GRR) approved by the Assistant Secretary of the Army (Civil Works) on April 30, 1996.

1.3 Previously Prepared Documents

The following is a brief history of previous environmental documents that have been prepared for the Santa Paula Creek Flood Control Project. The documents are on file at the Corps, Los Angeles District office and are incorporated by reference herein.

Environmental Impact Statement/ Environmental Impact Report (EIS/EIR) (May 1995) – The Corps and VCWPD prepared a Final EIS/EIR for the construction of the Santa Paula Creek Flood Control Project addressed in the GRR. The Record of Decision (ROD) was signed on May 3, 1996. The Final EIS/EIR addressed impacts related to removal of the former 1,800 feet of concrete-lined (Phase I) channel in the lower portion of the Project, modifications to the creek channel for sediment storage and flood conveyance; modification of the Southern Pacific Transportation Company Railroad Bridge; construction of the fish ladder (design was modified in 2000); outlet stabilization; channel conditions upstream of the Project inlet; the equipment/staging stockpiling areas; haul routes; and future O&M of the channel and fish ladder.

SEA (June 1996) – This SEA was prepared to analyze impacts related to the modification of the mitigation plan, changes associated with the Phase I channel construction, new sources of stone for construction of the slope protection, and aesthetic treatment of the sideslopes grout for the entire project (Phase I & Phase II).

SEA (April 1997) – This SEA was prepared to address impacts associated with changes in the Phase I construction design, change in one mitigation option (the removal of giant reed [*Arundo donax*] along Santa Paula Creek within Steckel Park), and identify a secondary staging area.

Administrative EA (August 1997) – This EA was prepared to address impacts related to the removal and abatement of the asbestos cement pipe located at the creek bed.

Administrative EA (November 1997) – This EA was prepared to address environmental impacts related to transportation of rocks for the sideslopes protection for the Phase I project.

Record of Environmental Consideration/Categorical Exclusion (REC/CX) (March 1999) – This REC/CX addressed the contractor's need for additional land to use as administrative work space during construction of the Project.

SEA (October 2000) – This SEA was prepared in October 2000 to address a redesign of the fish ladder, obtaining rocks for on-site or off-site for bank stabilization, and specifications for post-debris excavation of the low flow channel. A Finding of No Significant Impact (FONSI) was signed on October 25, 2000.

Administrative EA (November 2000) – This EA was prepared in November 2000 to address impacts related to placement of approximately 162,000 cubic feet (4,587 cubic meters) of excavated material from the Phase II area of the Project along the eroded west embankment of Santa Paula Creek upstream of Stewart's Crossing.

REC/CX (June 2001) – This REC/CX allowed for the use of additional land at the upper end of the Project area as a staging area and a haul route to transport construction related material between an upstream rock source and the inlet.

REC/CX (October 2003) – This REC/CX addressed the construction of reinforced grouted rock weirs (invert stabilizers) across a portion of the width of the channel in two areas where scour created waterfalls and hydraulic conditions were considered unfavorable to upstream migrating steelhead trout.

SEA (August 2009) – This SEA was prepared in August 2009 to address restoring the capacity in the FRMC by removing sediment from within the Project reach, including removal of sediment near and within the fish ladder. This action is referred to as the sediment removal project.

REC/CX (May 2010) – This REC/CX provided documentation of miscellaneous repairs that were completed including the maintenance road and drainage ditches, adding additional aggregate base course, placement of river run rock mulch outside of the channel, installation of safety railing along the top of bank in areas, and adding concrete overpour sections at three locations on the maintenance road.

1.4 Coordination with Resource Agencies

Collaboration with resource agencies has been critical throughout implementation of the Project, including, but not limited to, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), and Los Angeles Regional Water Quality Control Board (RWQCB).

1.4.1 National Marine Fisheries Service

An informal consultation between the Corps and the NMFS began in 1997, when the Southern California Evolutionarily Significant Unit (ESU) of steelhead (*Oncorhynchus mykiss*) was listed as endangered under the Federal Endangered Species Act (ESA). The Corps had begun construction of the current alignment of the FRMC in 1997, including removal of the cement lined channel, improvement of the channel (in two phases), modification of the Southern Pacific Railroad Bridge for increased flow conveyance capacity, construction of a fish passage structure at the inlet, and inlet and outlet stabilization.

In July 1999, while reviewing VCWPD's Section 404 permit for future O&M of the of the Phase I portion of the Project, NMFS expressed concern over the design of the fish ladder for the Project. (The initial construction of the Phase I portion of the Project was completed in October 1998. The Corps was attempting to turn future O&M responsibilities over to the VCWPD as per the agreements in the GRR.) Due to concerns raised informally by NMFS, the Corps began informal reinitiation of Section 7 Consultation of the ESA with NMFS, in an attempt to resolve concerns that NMFS now had with the original design of the fish ladder. The Corps had several meetings with NMFS and CDFG to identify and receive input into the re-design of the original fish ladder concept for the Project. The design that was implemented and currently exists on-site was chosen by a consensus of the resource agencies, including NMFS and CDFG, as the best re-design that would, by comparison to other alternatives, have the best likelihood of functioning hydraulically and yet be maintained with a minimal amount of effort and at a reasonable expense and have the least impact on the movement of native fish. Further details of this coordination are available in Appendix A of the Corp's 2000 SEA.

The Corps requested reinitiation of Section 7 consultation with NMFS on April 17, 2000, and submitted the SEA as the Biological Assessment. The Corps received a Final Biological Opinion (BO) for the redesigned fish ladder from NMFS in September 2000 (Appendix C). The existing fish ladder was completed in 2002.

In 2003, scour from a storm event created hydraulic conditions unfavorable to upstream migrating steelhead below the fish ladder inlet. After close coordination with NMFS and CDFG, the Corps proposed to construct and install boulder weirs across the full width of the channel in the identified problem areas to elevate downstream pool levels to facilitate upstream passage of steelhead.

In 2009, the Corps received additional Federal funding to remove sediment from the Project area. The Corps reinitiated consultation with NMFS for this sediment removal project. Following NMFS' review of

the administrative record and subsequent communications with the Corps, the Corps proposed additional conservation measures and monitoring elements to incorporate as part of the Project to reduce impacts to critical habitat. The Corps committed to complete additional sediment analyses and to work with NMFS to ensure that the fish ladder conveyed fish passage to mitigate impacts to southern California steelhead. The Corps agreed to prepare and initiate a monitoring program to analyze the performance of the designed low flow channel following sediment removal actions to clear the weir pools. In September 2009, NMFS issued a letter amending the original 2000 BO that identified conservation measures and monitoring elements required to implement the sediment removal (Appendix C).

The sediment removal began in October 2009 and was completed January 2010, removing approximately 300,000 cubic yards of material from the FRMC. A Monitoring and Mitigation Plan was developed and implemented in 2010 consistent with the Reasonable and Prudent Measures (RPM), Terms and Conditions, and environmental commitments of the 2009 BO amendment.

The Corps began correspondence with the NMFS and CDFG to evaluate the existing fish ladder in 2009. Several meetings and letters were conducted and written, respectively, between December 2009 and March 2010 with NMFS, CDFG, USFWS, VCWPD, and the Corps and its contractors, HDR/CDM Joint Venture, to discuss potential repairs to the fish ladder that was constructed in 2002. NMFS submitted a letter to the Corps, dated January 25, 2010, with an attached Technical Memorandum (January 14, 2010) with the purpose of summarizing their overall understanding of fish passage alternatives being evaluated and the data needs/analyses that would be necessary to develop, compare, and assess preliminary conceptual designs.

The Corps considered NMFS concerns and commissioned further study to evaluate the existing fish ladder relative to other fish passage facility designs. Updated analysis is presented in the Corps' April 9, 2010 document titled, *Santa Paula Creek Flood Control Project Phase II: Alternatives Evaluation and Conceptual Design for Fish Passage Improvement at the Santa Paula Creek Flood Control Channel Inlet (Field Change Report)*. This document compares potential fish ladder designs, including the existing fish ladder, and their expected performance to design parameters published by NMFS and CDFG. Further analysis on sedimentation and hydraulics and hydrology were also conducted and are documented in the *Hydrology, Hydraulics, and Sedimentation Appendix (HHS Appendix) of the Design Documentation Report (DDR)* (USACE 2012). The Corps evaluated all of the information presented in the Field Change Report, the information obtained during the meetings of 2009 and 2010, the HHS Appendix, monitoring reports, and past documents as well as the current and foreseeable funding climate. After careful evaluation of potential fish ladder design alternatives the Corps determined the existing fish ladder is capable of functioning as well, or better overall, than any of the other alternatives that were being proposed as described in greater detail in the Biological Assessment prepared for the Proposed Action (Appendix D). The Corps presented this position to NMFS on February 14, 2012 to discuss the proposed action detailed in this SEA. Coordination with NMFS is currently ongoing relative to the Proposed Action.

1.4.2 U.S. Fish and Wildlife Service

During the 2009 sediment removal activities, the USFWS expressed concern that the least Bell's vireo (*Vireo bellii pusillus*) (LBV) may be present within the Project area. The Corps conducted protocol surveys in June and July 2009, and no LBV were found during these surveys. The Corps performed coordination with the USFWS. The Corps would coordinate with USFWS during construction of the Proposed Action. The Corps would implement Environmental Commitments, detailed in Section 5 of this document, to ensure there are no effects to Federally listed species, such as the LBV and nesting birds that fall under the jurisdiction of the Migratory Bird Treaty Act (MBTA), as a result of the Proposed Action.

1.4.3 California Department of Fish and Game

Extensive coordination has also occurred with CDFG for the Project related to a Streambed Alteration Agreement (SAA) and steelhead. In 2009, the CDFG, South Coast Region, Region 5, issued a SAA to the VCWPD for the 2009 sediment removal project. Federal agencies are exempt from the SAA. VCWPD would coordinate with CDFG to determine if the existing SAA could be amended to include the Proposed

Action or if a new SAA would be required. Conditions identified in the SAA would be followed during implementation of the Proposed Action and the Corps would coordinate with CDFG during construction.

1.4.4 Los Angeles Regional Water Quality Control Board

A 401 Water Quality Certification (WQC) (dated September 11, 1996, Case File Number 96-094) was obtained from the RWQCB for construction of the Project and future O&M activities (Appendix E). That WQC has expired. The Corps would coordinate and submit a request letter and an application to the RCWQCB with the draft SEA (Appendix E).

1.4.5 State Historic Preservation Officer

No cultural resources listed on or eligible for the National Register of Historic Places (NRHP) are present within the area of potential effects. The environment and setting for the Proposed Action has been completely disturbed by prior construction, sediment transport, and flooding events to such a degree that no significant cultural resources could have survived. Therefore, in accordance with 36 CFR 800.3(a)(1), the Proposed Action does not have the potential to cause effects. Monitoring by an archaeologist meeting, at a minimum, the standards of the Secretary of the Interior would occur during any ground disturbing activities.

In the unlikely event that cultural resources are uncovered during construction, work in that immediate area would be required to stop until the procedures outlined in 36 CFR 800.13 are complied with. In the case of cultural resources being found during construction coordination with the California State Historic Preservation Officer (SHPO) would be undertaken.

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SECTION 2 - PROPOSED PROJECT

2.1 Setting and Project Features

The Santa Paula Creek watershed is an approximately 45 square mile (116.5 square kilometer) sub-basin of the Santa Clara River watershed. Santa Paula Creek is approximately 15.5 stream miles (24.9 kilometers) in length and is tributary to the Santa Clara River. Santa Paula Creek is characterized by rugged, steeply-sloped terrain at the headwaters, situated in the Topa Topa Mountains of the Western Transverse Range. It is a natural channel that flows through steep gradient, narrow bedrock canyons in the upper reaches of the watershed, with channel gradients exceeding 6 percent and characterized by large boulders and cobbles. The lower watershed is characterized by narrow reaches cutting through bedrock, and wide reaches dominated by cobbles and alluvial deposits, with channel gradients ranging from 1.5 percent to 2.5 percent. The Project, which provides flood risk management functions to the adjacent residents, is located in the lower reach of the creek and extends from approximately 500 feet upstream of the fish ladder and Project inlet, downstream to the creek's confluence with the Santa Clara River south of State Route 126 (Highway 126).

Adjacent land uses include industrial areas, commercial and residential uses, agricultural land and open space. Industrial and commercial uses are concentrated near the lower reaches, near Highway 126 and Telegraph Road, although there is some residential use to east upstream of Highway 126. Upstream of the railroad bridge are primarily residential uses to the west (including the Oaks Mobile Estates Trailer Park) and agricultural uses to the east. North of the Oaks Mobile Estates Trailer Park are agricultural uses to the west and east of the creek. At the fish ladder, to the west is an orchard and the residential development of Stewart Ranch (west of the orchard). To the east of the fish ladder are orchards and the toe of Topa Topa Peak that is covered with natural vegetation with small areas of bare ground. The creek is crossed by the Highway 126 Bridge, the railroad bridge, and Telegraph Road.

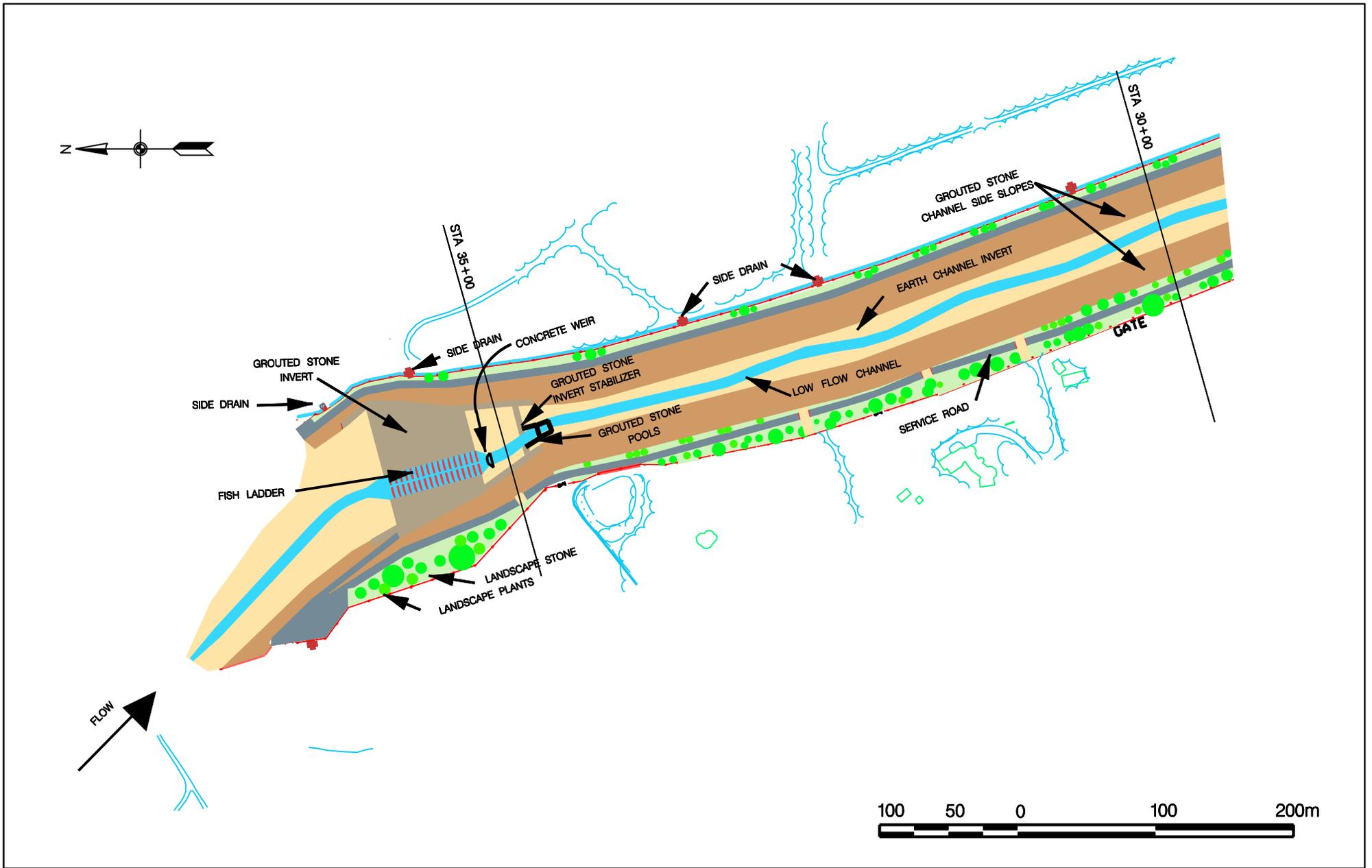
A low flow channel runs the length of the entire Project from the upper portion of the fish ladder to the confluence with the Santa Clara River (see Figure 2-1). The low flow channel is composed of natural substrate and functions as a migratory corridor for steelhead. Additional stretches of the creek within the Project area associated with fish passage include the approximately 500-foot stretch of creek located upstream of the fish ladder, known as the approach channel (a maintained section of natural substrate that helps to maintain hydraulic connectivity and consequent fish passage at the upstream entrance to the fish ladder), and the pilot channel, which is located at the downstream end of the Project from downstream of the existing invert stabilizer (Station 10+00) to the confluence with the Santa Clara River (see Figure 1-2).

Riparian and aquatic vegetation within the Project area is regularly cleared out from high flows, becoming re-established during low flows. Emergent wetland vegetation is limited to few clumps of cattail found intermittently throughout the Project area, with immature riparian vegetation dominated by willows and mulefat along the channel banks. Aquatic habitat within the Project area is generally composed of bed substrate characterized by cobble and thick, soft mud; periods of high turbidity and high water temperatures and little vegetation.



Figure 2-1: Low Flow Channel Looking Downstream of the Highway 126 Bridge (Photo taken in June 2010)

The fish ladder is located within the FRMC inlet (see Figure 2-2). The FRMC inlet is comprised of grouted stone across the majority of the channel. The fish ladder is slightly offset from the centerline of the channel, closer to the right bank and is comprised of a series of 16 concrete pools and 17 notched weirs with steel cladding as shown in Figure 2-3 and Figure 2-4. Two grade stabilizers were constructed downstream of the fish ladder to address local scour after initial Project construction was completed as shown in Figure 2-5. An approach channel extends approximately 500 feet (152 meters) upstream of the fish ladder (see Figure 2-5).



Source: US Army Corps of Engineers, 2004



US Army Corps of Engineers

Figure 2-2
Project Inlet

Santa Paula Creek Supplemental EA



Figure 2-3: Aerial Photograph of Fish Ladder and Approach Channel Looking Upstream (Photo taken in September 2002)



Figure 2-4: Photograph of Fish Ladder Pools, Weirs and Weir Notches, and Grouted Stone Looking Downstream (Photo taken in March 2003)



Figure 2-5: Photograph of Fish Ladder and Grade Stabilizer Looking Upstream (Photo taken in February 2004)

2.2 Background

Stream flow along Santa Paula Creek is generally perennial, especially in the upper reaches. During the winter months, high-intensity rainfall, in combination with the effects of impervious soil types, sparse vegetation, and steep channel gradients, results in rapidly increasing stream flow and intense debris and sediment-laden floods. As a result, the Santa Paula Creek watershed has a long history of flooding problems that can be traced as far back as initial settlement of the area in the 1800s. Most major floods were a result of several storms occurring within a short period of time. Debris buildup and sediment aggradation from one storm would reduce the capacity of the channel, and subsequent storm events and corresponding high flows would allow the creek to break out of the channel.

To address flooding concerns, the original flood risk management project was authorized in 1973 in three major phases (Phases 1, 2, and 3). Only Phase 1 of the original authorized project was constructed, which occurred in 1974 and consisted of 1,790 feet (545.6 meters) of concrete channel at the downstream end of the creek. The 1995 GRR (USACE 1995) presented a recommended plan to replace the deteriorated FRMC Phase 1 facilities. Construction to incorporate the recommended improvements occurred in three phases (Reach 1 [downstream of Highway 126], Reach 2 [Highway 126 to the railroad bridge], and Reach 3 [upstream of the railroad bridge including the fish ladder]) from 1997 to 2002. The FRMC was designed to provide flood risk reduction for a design discharge of 28,000 cubic feet per second (cfs), as documented in the GRR. The channel design included an excavated channel bottom, an allowable sediment accumulation profile, and a design sediment accumulation profile. The Project was expected to require sediment removal every three years, on average. Cleanout would be anticipated when 120,000 to 350,000 cubic yards (cy) (91,750 to 229,400 cubic meters) of sediment had aggraded within the FRMC and triggered if the allowable sediment profile was exceeded. Original channel design anticipated that sediment would accumulate at greater rates in the upstream end of Reach 3 and become gradually less towards the downstream end of Reach 1. In late 2009 and early 2010, the Corps removed approximately 300,000 cy (229,400 cubic meters) of material from the FRMC. This sediment removal action was largely needed as a result of sediments that were deposited from a flood series which had a

peak flow of 27,500 cfs in the winter of 2004 – 2005 (the largest flow event on record for Santa Paula Creek, and nearly the design event for the Project [28,000 cfs]). Sediment volumes deposited during this storm event were similar to those anticipated during original channel design. However, during the FRMC period of operation it was found that the actual pattern of deposition had greater sediment depths at the downstream end of Reach 1 and gradually decreased towards the upstream end of Reach 3.

The fish ladder was constructed in 2002 as part of the inlet stabilization (i.e., grade control to prevent headcutting and incision) for the FRMC. The headcutting that was occurring prior to construction of the inlet stabilization was producing waterfalls that would have inhibited the ability for steelhead to migrate upstream to historic spawning areas. A fish ladder was included in the inlet to facilitate steelhead migration and to mitigate for the increase in channel slope associated with the inlet relative to the slope upstream and downstream of it. Since its construction, the foundation and base of the weirs have remained structurally intact even after being subjected to what was essentially the design flow event during the winter of 2004 – 2005. The metal cladding and corner protection along the tops of the weirs were damaged, which exposed the concrete tops of the weirs to chipping and erosion. However, overall the structural integrity of the weirs and pools was unaffected.

Following the 2004 – 2005 storm events, sediment removal work was conducted in portions of the Project to restore the channel's capacity. Sediment was also removed from the fish ladder and minor repairs were done to the fish ladder. These minor repairs included removing detached pieces of iron cladding designed to protect the edges of the weirs, removing exposed concrete reinforcement, and trimming and smoothing of the weir edges. Following the cleanout and minor repairs, the fish ladder was returned to a condition where it was capable of functioning as designed for fish passage. However, as shown in Figure 2-6, the steel cladding of the weirs was not replaced and the existing condition of the weir top exposed concrete remains subject to erosion and damage from storm events that mobilize and transport large grained sediment.



Figure 2-6: Existing Weir Damage (Photo taken in December 2009)

2.3 Purpose and Need

The purpose of the Proposed Action is to: (1) ensure the provision of flood up to 28,000 cfs to the City of Santa Paula as evaluated in the GRR by identifying and implementing measures that address the key lessons learned since the initial construction of the Project; (2) repair the fish ladder weirs to ensure the facility can continue to facilitate migration of steelhead through the Project area and to reduce the frequency of maintenance to the fish ladder weirs; and (3) refine O&M measures to better document proper O&M procedures.

2.4 Objectives

The objectives of the Proposed Action were developed through collaboration with the Corps and the VCWPD to meet the purpose and need described above. Project objectives include:

- Develop a revised maximum allowable sediment deposition accumulation profile to convey a 28,000 cfs flood event, based on the original design discharge in Santa Paula Creek and an approximate 3-year cleanout frequency as identified in the GRR;
- Provide an additional buffer so that scour does not undermine the toe of the grouted stone channel side slopes, with proper O&M actions;
- Round and cap the fish ladder weir tops to make them more durable during events that mobilize and transport large bedload;
- Refine and clarify inspection and O&M of the Project to ensure it provides flood risk reduction and fish passage functions.

2.5 Alternatives

The Corps has examined past prepared documents including but not limited to the Final EIS/EIR (1995), Final EA (2000), Sediment Removal Project SEA (2009), 2000 BO, and 2009 BO amendment in developing the alternatives and to ensure that the Proposed Action is within the footprint as identified in the past environmental documents and applicable permits, specifically in the 2000 BO. After the analysis, it was determined that there are three alternatives that would be evaluated in this SEA/Addendum, as presented below. The Proposed Action is consistent with the Final EIS/EIR (1995), Final SEA (2000), Sediment Removal Project SEA (2009), Final BO (2000) and amended BO (2009).

2.5.1 *Alternative A: No Action Alternative*

The Corps is required to consider the option of “No Action” as one of the alternatives in order to comply with the requirements of NEPA. Under the No Action Alternative, which is synonymous with the “Without Project Condition,” there would be no additional modification to the Project. All changes that have occurred from the time of completion of the GRR to date would be documented. The fish ladder weirs would not be repaired and the design invert and allowable sediment profile would not be altered. As currently occurs, O&M would take place when funding is granted by congressional action. The O&M would be guided by the existing draft O&M Manual.

2.5.2 *Alternative B: Finalization and Implementation of the O&M Manual*

Alternative B consists of finalization and implementation of the Operation, Maintenance, Repair Replacement and Rehabilitation Manual (O&M Manual). The O&M Manual would establish a new sediment profile and design invert as a non-structural means to address scour occurring within the FRMC. The O&M Manual and new sediment profile and design invert are discussed in greater detail below.

2.5.2.1 *O&M Manual*

O&M is required to maintain the Project's flood risk management capabilities and to maintain the design channel capacity. O&M activities include, but are not limited to, routine monitoring and inspections, routine repair and maintenance of all Project components, emergency repairs and maintenance resulting from storm damage, and routine sediment removal and regrading to maintain flood risk management capabilities and fish passage. After the Project is turned over to the VCWPD, the O&M activities would be accomplished by the VCWPD for the life of the Project, as guided by the O&M Manual.

The O&M Manual is designed to guide the O&M of the Project to keep the flood risk management system and its components, including fish passage capabilities, operable. It identifies specific inspection and monitoring criteria, maintenance needs and requirements, and emergency flood operations required before, during, and after heavy storms. The O&M Manual also presents permit requirements, reporting procedures, and environmental commitments to which maintenance and repairs must adhere.

Prior to turning the Project over to the VCWPD, the O&M Manual would be finalized by the Corps to incorporate the new sediment profile and design invert and the Environmental Commitments identified in this SEA. The Corps would deliver the final O&M Manual to VCWPD. The Corps retains the right to enforce the terms of the Local Cooperation Agreement of 1973, as amended, to which VCWPD is a party. The Agreement states that VCWPD shall "operate, maintain, repair, replace, and rehabilitate the entire Project or the functional portion of the Project." The VCWPD would be required to follow all environmental conditions identified in this SEA, the Final EIS/EIR (1995), subsequent SEAs, and all applicable current and future permits, including BO(s) issued by NMFS, SAA(s), and WQC(s).

Inspections and Maintenance

Under the O&M Manual, the VCWPD would be required to inspect each component of the Project to determine if any deviations have occurred from the design criteria and whether the deviations are substantial enough to require maintenance. Specific inspection criteria are identified for the following Project components to ensure proper functioning: earth channel invert, grouted stone invert, fish ladder and approach channel, low flow channel, grouted stone invert stabilizers, grouted stone channel side slopes, pilot channel, levees, concrete channel walls, abutments, and piers, side drains, fencing, service roads, and landscaping.

Inspections would occur immediately prior to the beginning of the flood season, immediately following each major high water period, and otherwise at intervals not exceeding 90 days. Features associated with fish passage (i.e., fish ladder, low flow channel, and approach channel) would be inspected periodically, to ensure that fish passage is available, including inspections following storms producing flows of 500 cfs or more, and low flow inspections (mid-April to mid-July). Inspections would be documented per reporting protocols identified in the O&M Manual.

If deviations from the "as-built" condition are noted during inspections, the O&M Manual specifies that the VCWPD superintendent shall determine whether the deviations are substantial enough to require maintenance, and should maintenance be required, the timing of when this would take place (i.e., serious deviations may require maintenance as soon as practicable while less serious deviations may not need to be addressed immediately.) Maintenance activities would occur outside of the steelhead migratory season, or in coordination with the necessary resource agencies, including NMFS and CDFG. Monitoring and relevant conditions determined during consultation between NMFS and the Corps would determine when and where maintenance would be necessary during the steelhead migratory season.

In-channel maintenance activities such as sediment removal and re-grading may require diversion and control of water to protect construction from flood flows and to protect water quality from construction activities during the low flow period. A temporary water diversion plan would be developed and followed throughout the construction period. Plans for water diversion would be reviewed by the Corps' environmental staff or the VCWPD as applicable to ensure that it has been developed per specifications identified. Conditions identified in permits for the Project, including BO(s), SAA(s) and WQC(s), would be

followed, and all activities related to water diversion would be monitored by a qualified biologist to minimize or avoid impacts to steelhead and to minimize impacts to water quality.

Emergency Operations

Emergency flood operations consist of (1) monitoring the Project conditions during heavy storms; (2) mobilization actions required to prevent damage or failure of Project features; and (3) alerting the public of possible flooding. The emergency operation program identified in the O&M Manual presents actions for four phases (pre-stormflow, initial stormflow, final stormflow, and post-stormflow) when the flow in Santa Paula Creek is expected to equal or exceed 5,000 cfs. The actions include mobilizing appropriate VCWPD O&M staff to patrol the Project, conducting continuous patrols to monitor and document potential problems, and establishing communications capabilities between the patrol and the superintendent that are routinely checked for proper working order. As part of post-stormflow actions, the Project would be rapidly and completely inspected and any appropriate temporary or permanent repairs initiated.

The timing of emergency maintenance/repair activities would be guided by post-storm monitoring results and would not start until flows had receded to a rate where it is safe for equipment and crews to conduct their necessary tasks (typically less than 500 cfs). VCWPD and/or the Corps would coordinate with resource agencies, including NMFS and CDFG, prior to conducting any such activities, and measures would be implemented to minimize impacts to any steelhead present. Qualified biologists would be required to oversee and monitor emergency maintenance activities to ensure potential effects to steelhead and critical habitat are avoided or minimized to the maximum extent practicable. Flows and environmental conditions permitting, qualified biologists would likely install block netting upstream and downstream of the work area to prevent potential interactions between construction equipment and steelhead or any other fish or aquatic organism that may be present. Should water diversion be required, procedures identified in VCWPD's existing Water Diversion Guide would be followed.

O&M Timing

As discussed previously, regular O&M activities, such as routine maintenance and Project-wide sediment removal, would occur outside of the steelhead migratory season, as defined by the BO (June 30 to November 1), or in coordination with the necessary resource agencies, including NMFS and CDFG. Emergency maintenance activities would occur as deemed safe and necessary based on stream flows and environmental conditions. Work performed outside of the in-channel work window would be coordinated with resource agencies to minimize potential impacts to steelhead that may be present in the channel.

The length of time required for O&M activities would vary depending on the extent of actions being performed (i.e., routine monitoring and repairs, including annual removal of sediment from fish ladder pools may occur over the course of one week, while major repair or sediment removal activities could occur over multiple months.) Sediment removal throughout the entire FRMC is the reasonably foreseeable most intensive O&M activity that is likely to occur. Project-wide sediment removal would occur every three years on average over a period of approximately four to six months. The sediment removal could involve removal of up to 335,000 cubic yards following a design storm event; however typically this amount would be less depending on the amount of sediment deposition that has occurred between sediment removal actions.

O&M Equipment and Workers

As with duration of O&M activities, the type and amount of construction equipment and workers required would vary depending on the work being performed. For example, monitoring activities may entail one or two workers and on-road vehicle(s), while construction/repairs may require multiple construction vehicles/equipment such as hydraulic excavators, bulldozers, loaders, and haul trucks, and construction workers such as equipment operators, foremen, truck drivers, laborers, grademen, and flagmen.

Staging Area

A staging area for O&M activities is located at the downstream end of the FRMC near the Santa Clara River/Santa Paula Creek confluence (see Figure 1-2). The staging area would be used to stage equipment for construction/repairs, materials, and stockpile excavated material as necessary. The approximately four-acre site is located in the City of Santa Paula, within the VCWPD right-of-way on the west bank. Staging areas are also available along the top of bank near the access ramp to the fish ladder and turnout areas along the access roads.

Haul Roads & Disposal Sites

Access to the Project is provided by access roads located along both banks of Santa Paula Creek. Access to the channel upstream of Telegraph Road is available from Telegraph Road at the west side of the Santa Paula Creek Bridge. Access to the channel between Telegraph Road and Highway 126 is available through a gate on the right bank (looking downstream) on the south side of Telegraph Road. Access to the channel downstream of Highway 126 is located at the end of Santa Clara Road.

To access the staging area from Telegraph Road, the construction crew would travel west on Telegraph Road, turn south on 12th Street, pass under Highway 126 and head east on Santa Clara Street until the road ends.

Waste material would be hauled off-site for re-use or disposal at the Toland Road Landfill. The Toland Road Landfill is approximately 5 miles (8 kilometers) east of Santa Paula Creek at the north end of Toland Road. This landfill would require an approximately 10-mile (16-kilometer) round trip (depending if the construction crew is loading from the staging area or from the creek), heading east on Telegraph Road, east on Highway 126 to Toland Road, then north to the landfill.

Environmental Protection Requirements

The O&M Manual requires that O&M activities comply with conditions/measures identified in all Federal, state or local resource agencies permits and agreements (specifically, BO[s], SAA[s], and WQC[s]), and Federal, state, and local regulations pertaining to the environment. Additionally, the O&M Manual includes specific provisions designed to minimize water, air, and noise pollution (Appendix VI). All of these Environmental Protection Requirements are included as Environmental Commitments in this SEA. Any new terms or conditions deemed necessary by NMFS would also be incorporated into the O&M Manual and followed by VCWPD upon Project turnover.

2.5.2.2 *New Design Invert and Allowable Sediment Profile*

To address changes that have occurred from the time of completion of the GRR, the O&M Manual identifies a new allowable sediment profile for the FRMC and new design invert in the upstream reach between station 20+38 near the railroad bridge and the downstream end of the fish ladder (see Figure 1-2). The allowable sediment profile represents the maximum volume (and height) of sediment that can accumulate above the design invert to meet the flood risk management parameters for the FRMC. The design invert profile defines the elevation of the channel invert throughout the Project after sediment removal is complete.

The revised allowable sediment accumulation profile was established above the new design invert in the upstream reach and above the as-built channel bottom in the downstream reach. When sediment deposition reaches the allowable sediment accumulation point anywhere in the channel, cleanout of the entire channel to the new design invert would be required.

The new upstream design invert raises the bottom elevation higher than the as-built channel bottom to increase protection against scour at the toe of the grouted stone channel side slopes. Except for isolated locations, the scour depth is at the toe of grouted stone, typically 5 feet (1.5 meters) below the constructed channel invert. The new design invert is set at a critical threshold so that the elevation is high

enough to protect the toe of revetment from long-term scour, which will not occur with normal O&M, but at a level that would not increase sediment deposition and corresponding channel capacity downstream. The new design invert allows for better sediment transport and provides additional scour protection. Sediment removal, would continue to be required to maintain the design channel capacity consistent with the new sediment profile and design invert. The frequency needed for channel maintenance and sediment removal is not expected to increase from current conditions. Sediment removal from the channel is still expected to be necessary on the order of three years, on average.

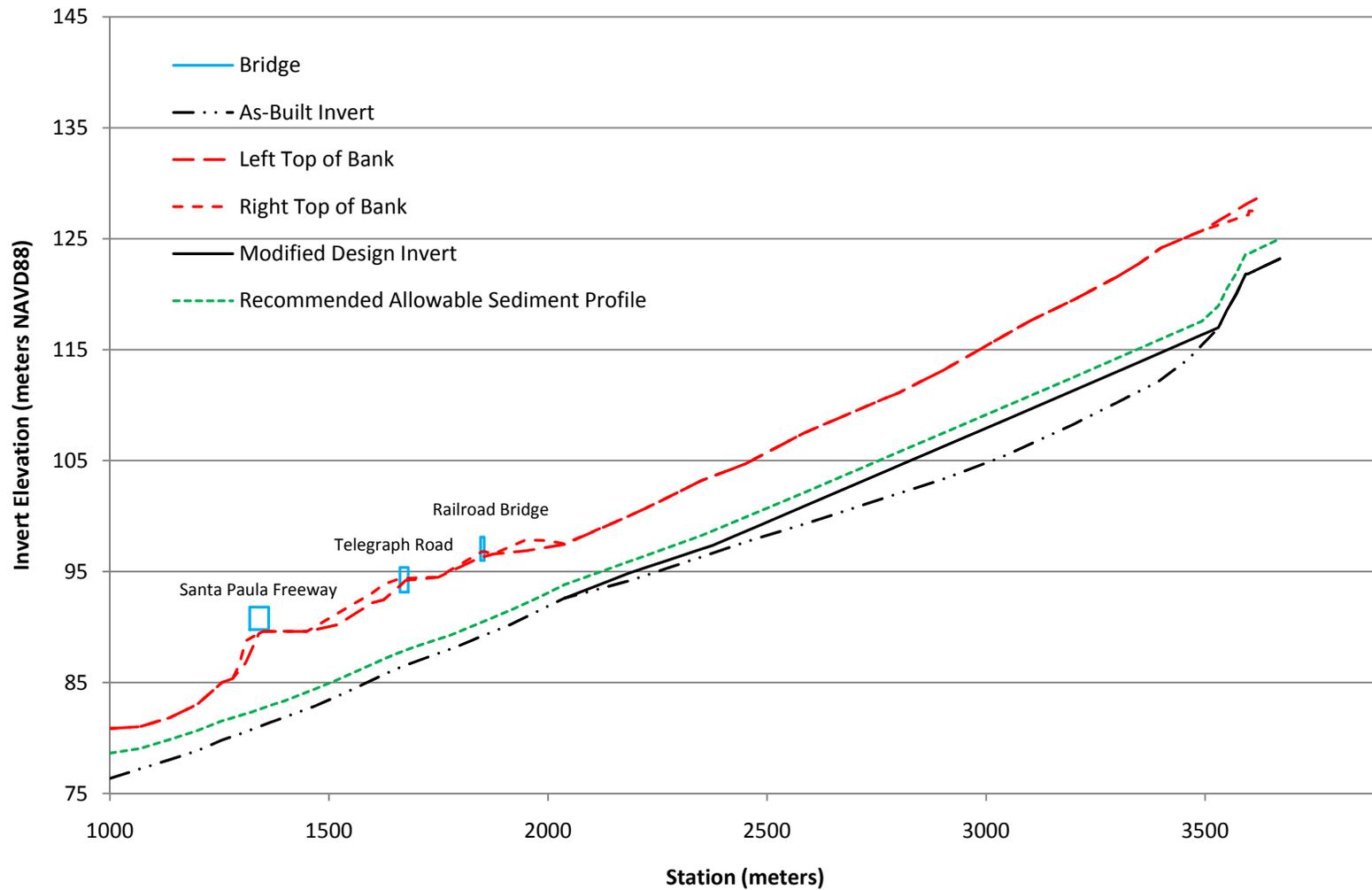
HEC-6T software was used to model sediment transport in Santa Paula Creek to produce the new design invert and the proposed allowable sediment profile. Table 2-1 presents the proposed allowable depth of sediment above the constructed channel invert and above the new design invert throughout the Project reach. These depths represent the proposed amount of sediment allowed to accumulate on top of either the as-built invert or the new design invert. Figure 2-7 provides a graphical representation of these depths, illustrated as a profile down the Project reach. The new design invert is illustrated as the solid black line upstream of station 20+38, and the allowable sediment profile is illustrated as a dashed green line. The constructed channel invert is illustrated as the dashed black line.

Table 2-1: Allowable Sediment Accumulation Profile

Station (meters [m])	Allowable Sediment Depth above Constructed Channel Invert (m)	Allowable Sediment Depth above New Design Channel Invert (m)	Station (m)	Allowable Sediment Depth above Constructed Channel Invert (ft)	Allowable Sediment Depth above New Design Channel Invert (ft)
10+00	2.3	2.3	10+00	7.5	7.5
11+37	1.8	1.8	11+37	6.0	6.0
12+25	1.8	1.8	12+25	5.9	5.9
13+25	1.6	1.6	13+25	5.2	5.2
14+25	1.5	1.5	14+25	4.9	4.9
15+25	1.5	1.5	15+25	4.9	4.9
16+25	1.4	1.4	16+25	4.6	4.6
17+25	1.3	1.3	17+25	4.4	4.4
18+25	1.3	1.3	18+25	4.2	4.2
18+53	1.2	1.2	18+53	4.1	4.1
18+82	1.3	1.3	18+82	4.2	4.2
20+38	1.2	1.2	20+38	4.0	4.0
21+89	1.7	1.2	21+89	5.7	4.0
23+75	2.0	1.2	23+75	6.6	4.0
24+51	2.3	1.2	24+51	7.4	4.0
25+85	2.9	1.2	25+85	9.4	4.0
27+45	3.5	1.2	27+45	11.4	4.0
27+68	3.6	1.2	27+68	11.7	4.0
30+39	4.4	1.2	30+39	14.5	4.0
31+92	4.2	1.2	31+92	13.9	4.0
33+96	3.7	1.2	33+96	12.1	4.0
34+38	3.2	1.2	34+38	10.5	4.0
35+15	2.1	1.6	35+15	6.8	5.4
35+92	0	0	35+92	0	0

Note: Variations in conversions from meters to feet can be attributed to rounding.

Santa Paula Creek Modeled Maximum Allowable Sediment Accumulation Profile



Source: HDR, 2011



Figure 2-7
Recommended Allowable Sediment Profile
Santa Paula Creek Supplemental EA

2.5.3 *Alternative C: Implementation of the Finalized O&M Manual and Fish Ladder Repair (Preferred Alternative)*

Alternative C addresses minor repairs to the weirs of the fish ladder that sustained some damage in the design event that occurred during the winter of 2004 – 2005. This alternative would also include finalization and implementation of the O&M Manual with the new channel design invert and allowable sediment profile as described under Alternative B above. The repairs to the fish ladder are described below.

The proposed repairs to the fish ladder consist of saw-cutting portions of the weirs, creating a rounded edge on the weir tops, and encapsulating the weir tops with steel plating to improve durability against debris and bedload impact. Figure 2-8 shows a typical section of a recapped weir crest. The weir crest caps would consist of fabricated steel and would be composed of an adjoining front plate and a more rounded, continuous crest plate leaving no concrete exposed along the crest. The steel plate and capping would be fabricated off-site before being transported to the site and affixed to the reshaped weir crests with embedded dowels and epoxy.

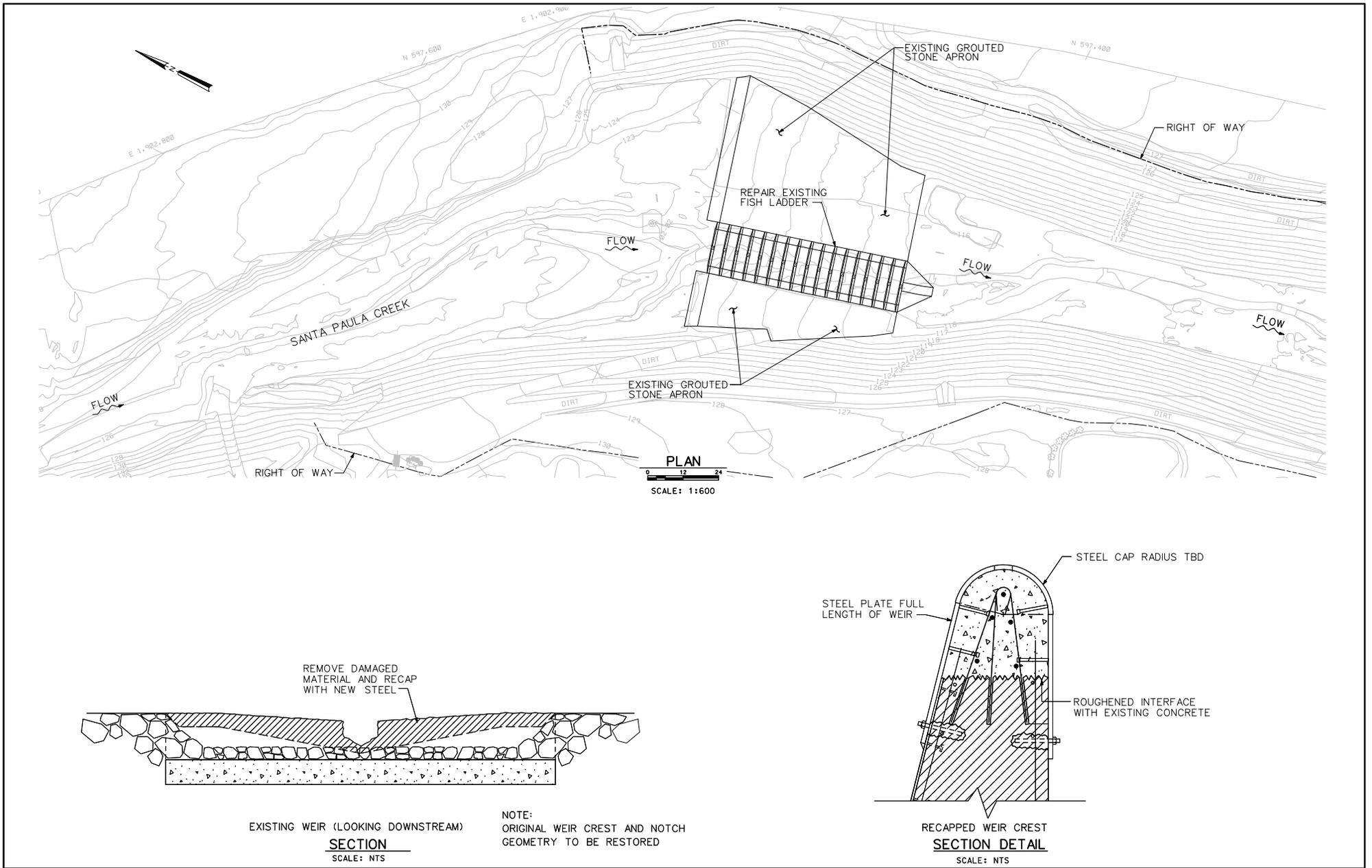
The more rounded crest and the thicker continuous plate of steel over the weir crests are anticipated to increase fish ladder durability, which would decrease the risk of future repairs or maintenance work in the Project area. The continuous crest is designed to provide added protection to the weir tops and minimize the potential for separation between the concrete and steel where water and sediment particles can erode away pockets of concrete or where debris and rocks can catch on exposed steel edges. Thicker, continuous cladding and rounding the top edges of the weir crests is also anticipated to minimize the forces of impact from large bedload and may better allow the bedload material to roll over the crests during extreme flow and sediment transport events and eliminate the possibility of the cap protection being ripped off of the weir top and ending up as a hazard to fish navigating the fish ladder. Annual cleanout of the fish ladder, as required by the O&M Manual, is necessary to optimize its capacity to provide fish ladder throughout each migratory season.

2.5.3.1 *Construction*

Construction activities associated with the Preferred Alternative consist of repair of the fish ladder. This would entail off-site fabrication of the steel plate and weir capping, diversion of flow away from the work area, saw-cutting and preparation of the existing weirs, drilling and anchoring new steel dowels with epoxy to reinforce new concrete and grout, affixing the steel plate and weir capping to the reshaped weir crests with embedded dowels and epoxy, and injecting high strength concrete or grout to fill the space under each weir crest cap. Clearing of sediment and vegetation from the fish ladder would be done in advance of the weir work.

It is estimated that the number of workers on-site would not exceed eight. Construction equipment would include pipes, pumps and sandbags for flow diversion, one front end loader, one hydraulic excavator, off-road haul trucks and pickup trucks, saws, rotary hammer drill, generator, and an air compressor.

In order to accomplish the fish ladder repair, removal of sediment and temporary diversion of water from the fish ladder will likely be required. A temporary water diversion plan will be developed and followed throughout the construction period. VCWPD has an existing Water Diversion Guide from their December 2007 Maintenance Program EIR that gives details on water diversion operation methods and this Proposed Action will follow those specific requirements. In essence, water would be temporarily blocked from entering the fish ladder and directed onto the adjacent grouted stone invert and/or through pipes. Remaining pools of water in the fish ladder will be pumped to a suitable discharge location. Upon construction completion flow will be redirected back into the fish ladder per the terms and conditions of the latest permits associated with the Project (i.e., BO[s], SAA[s], and WQC[s]). Plans for water diversion would be reviewed by the Corps' environmental staff to ensure that it has been developed per specifications identified and all activities related to water diversion would be monitored by a qualified biologist.



Source: HDR, 2011

Construction Schedule

In-channel work to repair the fish ladder weirs would occur over a period from two months to three and a half months. In-channel construction work would only take place during the in-channel work window from June 30 to November 1. It is assumed that water diversion would be required throughout the entire construction period. Construction is planned to commence in the summer of 2012 and be completed by November 1, 2012. Off-site fabrication of the weir caps could occur in advance of, or during, the two month to three and a half month period of on-site construction work.

Should the anticipated construction be delayed due to funding, weather, mechanical, and/or other constraints, it would occur during the in-channel work window of 2013, unless otherwise coordinated with the necessary resource agencies.

Staging Area

A staging area for construction is located along on the top of bank near the access ramp to the fish ladder. As with O&M activities, an additional staging area is located at the downstream end of the FRMC adjacent to the Santa Clara River/Santa Paula Creek confluence.

Haul Roads & Disposal Sites

Haul roads and disposal sites are also the same as identified for O&M activities. The access road located along the right bank of Santa Paula Creek accessible from East Telegraph Road at the west side of the Santa Paula Creek Bridge provides access to the fish ladder. Waste material would be hauled off-site for re-use or disposal at the Toland Road Landfill.

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SECTION 3 – EXISTING CONDITIONS

The following sections describe the existing conditions in the Project area.

3.1 Soils and Geology

This section describes existing conditions related to soils and geology in the Project area.

3.1.1 Landforms

The Santa Paula region consists of mountains and foothills and narrow alluvial valleys and coastal plain. The headwaters of Santa Paula Creek are located in the rugged Topa Topa Mountains, a part of the Transverse Range geomorphic province. The creek flows through steep-walled canyons until it reaches the coastal plain just north and east of the City of Santa Paula. Santa Paula Creek is a major perennial tributary of the Santa Clara River. The Project area is located in this alluvial valley on the coastal plain.

Younger Quaternary non-marine terraces and Holocene stream deposits fill the valley of Santa Paula Creek. Santa Paula Creek has eroded a distinct notch into both the alluvial sediments and the bedrock underlying the alluvium along various reaches of the creek. The maximum depth of the streambed alluvium is 10 feet (USACE 1995).

3.1.2 Seismicity and Earthquakes

The Project area is located in the Transverse Range which is in a coastal area of southern California characterized by ongoing seismic activity. The most severe seismic activity is related to the San Andreas Fault zone, which lies about 30 miles (48.3 kilometers) north of the Project area. Most of the other significant faults within 50 miles (80.5 kilometers) of the Project trend east-west and are parallel or sub-parallel to this fault zone (USACE 1995).

The closest faults to the Project are the San Cayetano, Big Mountain-Sisar, Steckel Park, and Adams Canyon faults located approximately two to seven miles to the north, and the Oak Ridge fault to the south along the Santa Clara River (USACE 1995). The San Cayetano fault to the north is located within an Alquist-Priolo Earthquake Fault Zone and is considered an active fault; the Oak Ridge fault to the south is also considered potentially active and areas to the south east of the Project are within an Alquist-Priolo Earthquake Fault Zone (City of Santa Paula 1998).

3.1.3 Liquefaction

According to seismic hazard maps prepared by the California Department of Conservation, all of Santa Paula Creek falls into a high hazard category for liquefaction due to seismically-induced ground shaking (California Department of Conservation 2003). A small amount of materials that would be considered susceptible to liquefaction (e.g., loose, fine to medium sands with less than 15 percent fines) are present at the Project area (USACE 1995).

3.1.4 Landslides

Numerous landslides have been mapped within the hillsides of the City of Santa Paula, and hillsides to the west and east of the Project area are prone to debris and mud flows, and to rock falls (City of Santa Paula 1998).

3.1.5 Unique Geologic Features

The unique graded beds of sandstone, siltstone and conglomerate exposed along Santa Paula Creek in the Project area exhibit characteristics that indicate marine turbidity current deposits. These deposits extend from the upstream beyond the fish ladder to Bridge Road. There are other outcrops in various

locations throughout Ventura and Los Angeles Counties. However, the unique feature of the Santa Paula outcrops is that there are about 12,000 feet (3,658 meters) of these sediments of the Pico and Santa Barbara Formations present in one accessible location (USACE 1995). These outcrops have educational value as a precise geologic record easily accessible for study, and many theories concerning the origin and physical composition of turbidity currents are based upon the study and interpretation of these sediments (USACE 1995).

3.1.6 Mineral Resources

Oil was a founding industry in Santa Paula and there are several active oil fields within the vicinity. Oil, tar and gas seeps occur from above the confluence of Sisar Creek and Santa Paula Creek downstream to Steckel Park to the north of the Project. Most of the seeps occur just downstream from the confluence in the bedrock narrows of Santa Paula Creek. There are no producing oil wells within the Project area, but several oil fields surround the City of Santa Paula a few miles from the area (USACE 1995).

In addition, Santa Paula Creek contains substantial aggregate (sand and gravel) mineral resources which are in high demand because much of this rock material meets the criteria for Caltrans highway and other development projects throughout southern California (City of Santa Paula 2007).

The Project area is designated in the Santa Paula General Plan as an aggregate resource area and the area to the south is designated as both an aggregate and a petroleum resources area. The portion of the Project area in the unincorporated county is designated by the County of Ventura Non-Coastal Zoning Ordinance as being within a designated Mineral Resource Projection overlay zone. Purposes of the overlay include safeguarding future access to the resource, and facilitating a long-term supply of minerals within the County.

3.2 Water Resources

This section describes existing conditions related to water resources in the Project area.

3.2.1 Hydraulics and Hydrology

3.2.1.1 Stream Flow

Discharge within Santa Paula Creek is characterized by long durations of little to no flow punctuated by flood events triggered by short-duration, high-intensity precipitation events that travel relatively quickly through the watershed. The “flashy” character of this event hydrograph is typical of steep, rocky mountainous watersheds.

The annual maximum discharge for Santa Paula Creek, measured at USGS Gage No. 11113500 approximately 1.4 miles (2.3 kilometers) upstream of the Mud Creek confluence, has ranged from 35 to 27,500 cfs [1 to 778.7 cubic meters per second (cms)] over the past 76 years (1933 to 2009), with the largest annual maximum flows occurring in 1969 and 2005. Table 3.2-1 lists the occurrence of peak flows greater than 10,000 cfs (283 cms) during this period of time. Likewise, annual average discharge during the same period has ranged from 1.37 cfs in 1951 to 155.7 cfs and 148.2 occurring in 1969 and 2005, respectively.

Table 3.2-1: Largest Recorded Flow Events through 2009 (Discharge > 10,000 cfs)

Date	Peak Discharge	
	cfs	cms
Winter 1884 ^a	>10,000	>283
March 2, 1938	13,500	382
January 22, 1943	10,000	283
January 25, 1943	19,000	538
February 25, 1969	21,000	595
February 11, 1973	13,400	395
February 10, 1978	16,000	453
February 16, 1980	11,800	334
February 12, 1992	10,000	283
January 10, 2005 ^b	27,500	779

a = Estimated

b = Maximum Period of Record

Source: USGS National Water Information System, 2012

3.2.1.2 Rainfall

The average annual precipitation in Ventura County ranges from 15.1 inches (38.4 centimeters) at the coast to 28.8 inches (73.2 centimeters) in the mountains near Ojai, most of which occurs November through April (City of Santa Paula 2007). The prevailing weather patterns during the winter and the orientation of the mountain ranges in the northern half of the County combine to produce extremely high-intensity rainfall during the winter months, while late spring, summer, and early fall are typically dry.

3.2.1.3 Flow Characteristics

Santa Paula Creek flows through steep gradient, narrow bedrock canyons in the upper reaches of the watershed, with channel gradients exceeding six percent and consisting of large boulders and cobbles. The lower watershed is characterized by narrow reaches cutting through bedrock, and wide reaches dominated by cobbles and alluvial deposits, with channel gradients ranging from 1.5 percent to 2.5 percent.

The FRMC configuration is trapezoidal with a bottom width that varies between 50 and 210 feet (15 and 64 meters) and a depth of 10 to almost 40 feet (3 to 12 meters). The channel bed is largely composed of earthen material while the sideslopes are grouted riprap. Its design capacity is the 100-year flow at the time design of approximately 28,000 cfs (793 cms).

3.2.2 Surface Water Quality

Surface water quality within Santa Paula Creek is generally good and has a relatively low total dissolved solids (TDS) concentration compared to smaller drainages in the Santa Clara River watershed (LARWQCB 2006). However, during certain periods, such as during and after storm events, high amounts of suspended clays are present within the creek, which contribute to a lower water quality. Other factors that contribute to a lower water quality at time include a high biological oxygen demand (BOD) believed to originate from septic system leachate and/or recreation use at Steckel Park, the presence of natural oil and sulphur seeps upstream of the Project, and suspended solids contributed from Mud Creek (LARWQCB 2006; USACE 1995). The porous, sedimentary rock substrate characteristic of Mud Creek generates a substantial amount of suspended solids flowing into Santa Paula Creek. This results in year-round turbidity within Santa Paula Creek downstream of the confluence with Mud Creek (LARWQCB 2006).

In 2006, the Santa Paula Creek watershed experienced a large wildfire, known as the “Day Fire” that burned almost 164,000 acres (66,370 hectares), 5,000 acres (2,023 hectares) of which were located in the Santa Paula Creek watershed. Wildfires represent significant threat to water quality as exposed burn areas are susceptible to high runoff and erosion rates. The post-fire erosion rate for the Santa Paula watershed was estimated in 2007 to be 15 tons/acre (6 tons/hectare) (VCWPD 2011).

3.2.3 Sediment Transport

Santa Paula Creek is characterized by high rates of sediment transport occurring during high flow storm events and active channel erosion occurring at low flows. Historically, deposition of large quantities of materials after high flows has been a recurring condition observed in Santa Paula Creek. Extreme flows can result in a large amount of deposition of fines, gravels, cobbles and boulders, the latter having the potential to damage structures.

3.2.4 Groundwater

Groundwater is extracted from the Santa Paula Creek basin to supply water for domestic, industrial and agricultural uses. In the vicinity of the City of Santa Paula, groundwater generally occurs within about 50 feet (15.2 meters) of the surface. In East Area 1, adjacent to the east bank of Santa Paula Creek and north of the railroad bridge, groundwater was found at depths as shallow as 10-20 feet (3 to 6 meters) (Leighton and Associates 2007).

3.3 Biological Resources

The 1995 Final EIS/EIR for the Santa Paula Creek Project has an extensive discussion of the biological resources found in and around the Santa Paula Creek channel from Steckel Park south to the confluence with the Santa Clara River. The 1995 EIS/EIR describes the various habitat areas (i.e., alluvial scrub, riparian, and aquatic resources) and the fish and wildlife found along the creek channel. That information is incorporated by reference as per 40 CFR 1502.21. Further discussion is provided in the 2000 SEA of the Rock Source, Low Flow Channel & Redesigned Fish Ladder for the Santa Paula Creek Flood Control Project (USACE 2000) and the 2009 Sediment Removal Project SEA which incorporated data relative to biological resources that has been collected since the Final EIS/EIR was compiled in 1995.

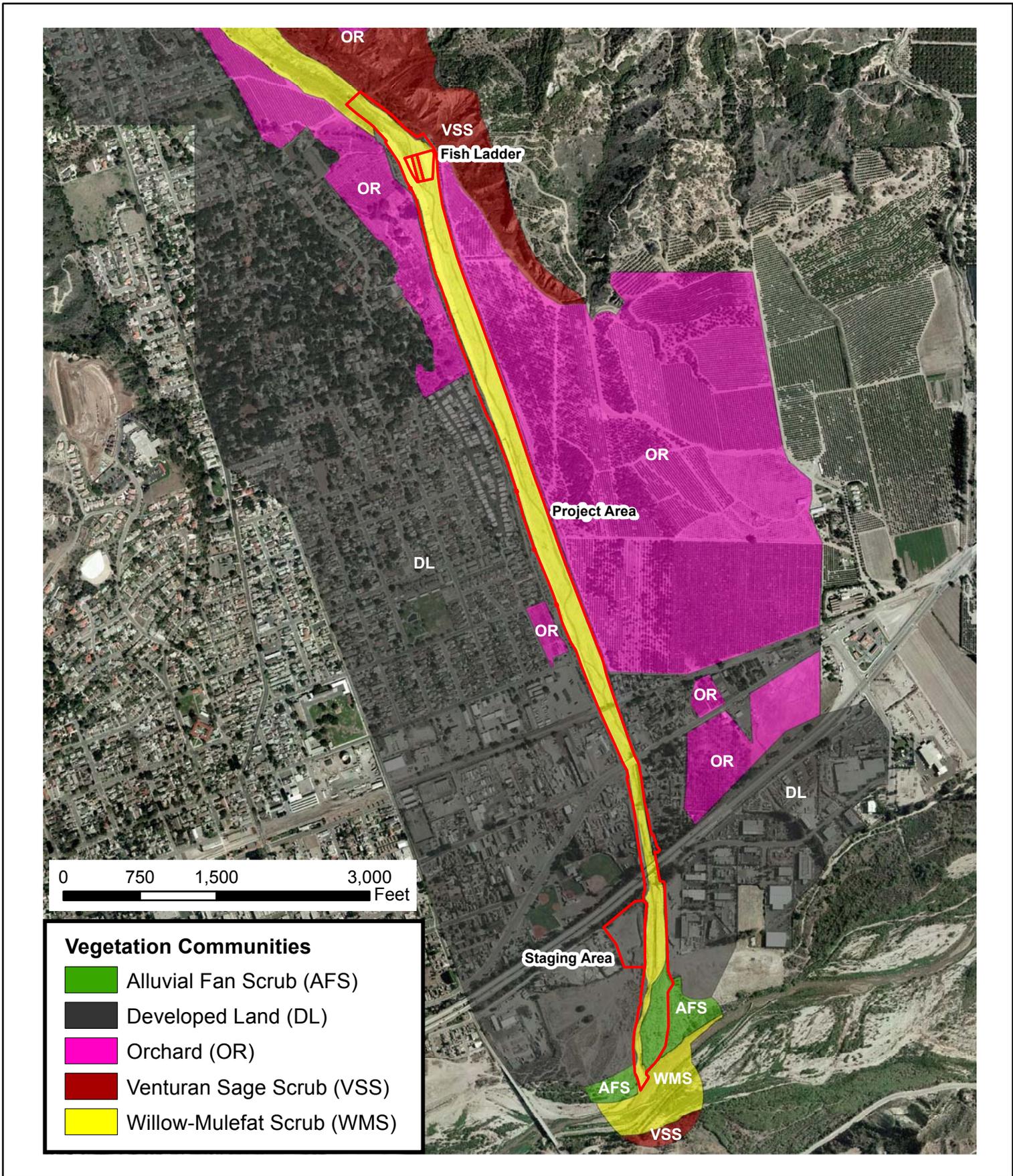
The information provided in Section 3.3 of this document was obtained during field surveys conducted by Entrix staff biologists in January 2007 to determine if habitat for sensitive species was present in or adjacent to the sediment removal study area, as presented in the Biological Assessment prepared for the Santa Paula Creek Maintenance Project (Entrix 2007), subsequent field investigations conducted by Corps biologist in June 2009 and HDR/CDM Joint Venture biologist in January 2012, monitoring reports conducted for a 5-year monitoring plan currently in progress, and the Biological Assessment prepared for the Proposed Action in March 2012 (Appendix D).

3.3.1 Wildlife Habitat

3.3.1.1 Vegetation

The following is a description of the vegetation communities observed within the Project area and vicinity. Community descriptions follow Holland (1986). Distribution of communities within the Project area is depicted in Figure 3.3-1, Vegetation Communities. In addition, plant species observed in the Project area are listed below in Table 3.3-1, Plant Species Observed in the Project area. Nomenclature follows Hickman (1993).

Prior to field investigations in 2007, special-status biological resources present in the region were identified through the California Natural Diversity Data Base (CNDDDB) (CDFG 2011). Other sources consulted included CDFG’s online California Wildlife Habitat Relationship (CWHR) System (CDFG 2007b). The CNDDDB was referred to again in January 2012 to ensure there was no change in the species and communities that were evaluated in the Entrix 2007 Biological Assessment.



Source: U.S. Army Corps of Engineers, 2009



Table 3.3-1: Plant Species Observed in the Project Area

Scientific Name	Common Name	Family	Native/Exotic	Prevalence
<i>Alnus rhombifolia</i>	White Alder	Betulaceae	Native	Rare
<i>Artemisia californica</i>	California Sagebrush	Asteraceae	Native	Common
<i>Atriplex lentiformis</i>	Big Saltbush	Chenopodiaceae	Native	Rare
<i>Baccharis salicifolia</i>	Mulefat	Asteraceae	Native	Common
<i>Calystegia macrostegia</i> <i>ssp. intermedia</i>	South Coast Morning-Glory	Convolvulaceae	Native	Rare
<i>Conyza canadensis</i>	Canadian Horseweed	Asteraceae	Native	Common
<i>Epilobium ciliatum</i>	Hairy Willowherb	Onagraceae	Native	Common
<i>Eriogonum fasciculatum</i>	Eastern Mojave Buckwheat	Polygonaceae	Native	Rare
<i>Eriogonum parvifolium</i>	Seacliff Buckwheat	Polygonaceae	Native	Rare
<i>Gnaphalium luteo-album</i>	Everlasting Cudweed	Asteraceae	Exotic	Common
<i>Hirschfeldia incana</i>	Shortpod Mustard	Brassicaceae	Exotic	Abundant
<i>Lepidospartum squamatum</i>	Scale-Broom	Asteraceae	Native	Common
<i>Leptochloa uninervia</i>	Mexican Sprangletop	Poaceae	Native	Common
<i>Lotus scoparius</i>	Deerweed	Fabaceae	Native	Common
<i>Melilotus alba</i>	White Sweetclover	Fabaceae	Exotic	Abundant
<i>Nicotiana glauca</i>	Tree Tobacco	Solanaceae	Exotic	Common
<i>Picris echioides</i>	Bristly Ox-Tongue	Asteraceae	Exotic	Common
<i>Polypogon monspeliensis</i>	Annual Beard Grass	Poaceae	Exotic	Common
<i>Populus fremontii</i> ssp. <i>fremontii</i>	Fremont's Cottonwood	Salicaceae	Native	Rare
<i>Salix exigua</i>	Sandbar Willow	Salicaceae	Native	Abundant
<i>Salix lasiolepis</i>	Arroyo Willow	Salicaceae	Native	Abundant
<i>Salvia leucophylla</i>	Purple Sage	Lamiaceae	Native	Rare
<i>Xanthium strumarium</i>	Cocklebur	Asteraceae	Native	Abundant
<i>Sonchus sp. (NF)</i> ¹	Sow Thistle	Asteraceae	Exotic	Common
<i>Astragalus sp. (NF)</i>	Loco Weed	Fabaceae	Native	Rare
<i>Plantago sp. (NF)</i>	Plantain	Asteraceae	Exotic	Rare
<i>Tamarix sp. (NF)</i>	Tamarix	Tamaricaceae	Exotic	Common
<i>Amaranthus sp.</i>	Amaranth	Amaranthaceae	Exotic	Rare
<i>Lotus sp.</i>	Trefoil	Fabaceae	Native	Rare
<i>Typha sp.</i>	Cattails	Typhaceae	Native	Rare
<i>Various Poaceae sp.</i>	Various Annual Grasses	Poaceae	Exotic	Common

¹ NF = Not Flowering (cannot be identified to species level)

Sources: Hickman 1993, Entrix 2007

Willow-Mulefat Scrub

Vegetation within the Project area is dominated by a mix of young willow (*Salix* spp.) and mulefat (*Baccharis salicifolia*) seedlings. A few seedlings of Fremont's cottonwood (*Populus fremontii* ssp. *fremontii*) and white alder (*Alnus rhombifolia*) were observed. Several species of willow were present including sandbar willow (*Salix exigua*) and arroyo willow (*Salix lasiolepis*). This community is a mix of two Holland (1986) vegetation types, mulefat scrub and southern willow scrub. Holland (1986) describes mulefat scrub as a tall, herbaceous riparian scrub strongly dominated by mulefat. This type of scrub is an early seral community and is maintained by frequent flooding. Without disturbance events, most stands would succeed to cottonwood or sycamore dominated riparian forests or woodlands. Mulefat scrub is generally found in intermittent stream channels with fairly coarse substrate and moderate depth to the water table.

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*). Most stands are too dense to allow much understory development. Site factors include loose, sandy or fine gravelly alluvium associated with stream channel deposition. Like mulefat scrub, this early seral type requires repeated flooding to prevent succession to a cottonwood-sycamore dominated riparian forest.

Emergent Wetlands

Riparian and aquatic vegetation within the Project area is regularly cleared out from high flows, becoming re-established during low flows. Emergent wetland vegetation is limited to few clumps of cattail found intermittently throughout the Project area, with immature riparian vegetation dominated by willows and mulefat along the channel banks. These areas were too small (less than 100 square feet) to warrant mapping at the community level and are not shown in Figure 3.3-1. This portion of the Project also contains man-made impoundments that may also support wetland vegetation. The most applicable vegetation community described in the literature is coastal and valley freshwater marsh, a community dominated by perennial, emergent monocots including bulrush (*Scirpus* spp.) and cattail (Holland 1986).

Alluvial Fan Scrub

The southern alluvial fan scrub (Holland 1986) plant community is primarily restricted to floodplain habitat containing riverine cobbles, boulders, and sand. These areas apparently only flood occasionally (every five to ten years or more); therefore many upland species establish in the alluvial fan scrub. Magney (1992) has postulated that the occasional flooding and sediment reworking are the driving forces that maintain this vegetation community.

The southern alluvial fan scrub cover type, also known as scalebroom scrub (Scalebroom series of Sawyer and Keeler-Wolf [1995]), is an open to moderately dense, broad-leaved phreatophyte evergreen scrub that attains a height of 1 to 1.5 meters. It is dominated by scalebroom (*Lepidospartum squamatum*) which is primarily restricted to floodplain habitats. Common subdominant shrub species include California sagebrush (*Artemisia californica*) and various other coastal sage scrub and chaparral species. The open understory areas are typically dominated by ruderal herbaceous species (native and non-native) usually associated with grassland communities. Scattered riparian trees and shrubs are also found in association with scalebroom and include California sycamore, mulefat, and Fremont cottonwood (Magney 1992). This cover type is found on the upper terraces of floodplains on both banks of the creek at its confluence with the Santa Clara River.

Venturan Sage Scrub

Venturan coastal sage scrub is distributed from the south Coast Ranges to cismontane southern California and northern Baja California, usually below 910 meters. This cover type is most abundant in the coastal region south of Point Conception, but also extends inland along the Transverse Ranges to San Bernardino and Riverside Counties. Typical site conditions for this community type include dry, rocky slopes. This scrub community is characterized by low, mostly soft-woody shrubs, 0.5 to 2 meters tall, with crowns usually touching, and has bare ground underneath and between shrubs. Dominant plants are dormant through summer and fall, with growth occurring in late winter and spring following the onset of

winter rains. Most flowering occurs in spring, but some species (primarily members of the Asteraceae family) flower into the summer. This community is adapted to fire by crown-sprouting (Holland 1986).

Venturan sage scrub was observed on the native hillsides outside of the stream corridor to the east of the Project area. Dominant species included California sagebrush, California buckwheat (*Eriogonum fasciculatum*), and various sage species (*Salvia* spp.).

Developed Land

Developed land is a blend of urban, industrial, and rural development and generally has low-density structural development. Within the vicinity of the Project, developed lands generally include suburban type development such as houses, exotic plant landscaping, barns, etc., as well as industrial uses. Developed land also includes the service road above the banks of the channel, and the roadway and railroad bridges and supports.

Orchards

Orchards, groves, and vineyards produce various fruit and nut crops and can be found on flat alluvial soils in valley floors, in rolling foothill areas, or on relatively steep slopes. Most are irrigated, usually with sprinklers or drip irrigation. Orchards, primarily avocado trees, are located primarily to the east of the Project north of the railroad bridge and to the west of the Project north of Richmond Road.

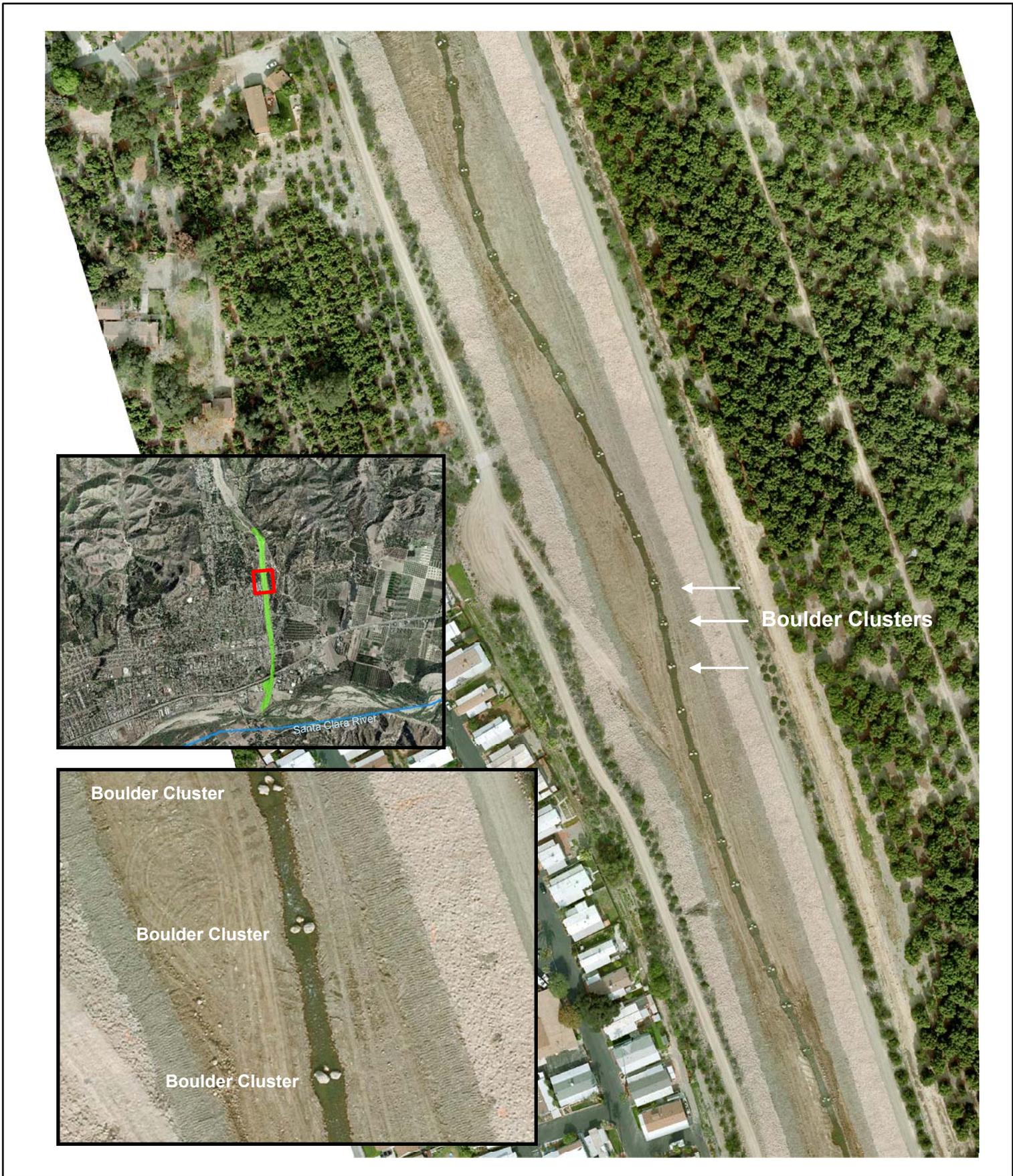
3.3.2 Aquatic Habitat

Aquatic habitat within the Project area is generally composed of bed substrate characterized by cobble and thick, soft mud; periods of high turbidity and high water temperatures and little vegetation. The two main aquatic habitat types within the channel are riffles and runs, with pools being much scarcer. Aquatic vegetation includes *Chara* sp. and *Najas* c.f. *guadalupensis*. These species are generally present in low velocity areas primarily composed of a muddy substrate.

The flood plain within the immediate vicinity of the Project area has a scoured appearance with an exposed boulder and cobble surface substrate and patches of riparian vegetation. Vegetative cover tends to be concentrated along the low flow channel banks and near locations where agricultural and/or storm drains discharge through the grouted stone side slopes of the FRMC. Based on a site reconnaissance of the Project area conducted by biologists in January 2012, vegetative cover within the Project area is sparse. This is primarily due to the frequency and power of high flow events that limit the succession or proliferation of vegetation.

On January 15, 2010, the Corps completed sediment removal from just downstream of the fish ladder to the confluence of Santa Paula Creek and the Santa Clara River (USACE 2010a). This sediment removal was conducted to maintain design levels of flood conveyance capacity within the channel. A meandering low flow channel was re-created per specifications provided in the 2000 BO and 2009 BO amendment (NMFS 2000 and 2009). The meandering low flow channel was designed to replicate a riffle-run-pool sequence, with two- to four-foot boulders placed in clusters to dissipate energy and help create resting refuge and forage opportunities for aquatic species (Figure 3.3-2, Post Sediment Removal Aerial Photograph). In addition, riparian vegetation was replanted along the lower 1,500 feet of the creek.

Following completion of the meandering low flow channel, a series of large storms resulted in breaching and aggradation of the recreated low flow channel. In addition, the majority of the newly planted willow and mulefat was either buried or uprooted and washed downstream. This riparian vegetation is expected to recover quickly via natural processes (USACE 2010a). In Spring 2011, mulefat and willows were planted along the entire stretch of the river that was affected by the 2009 sediment removal project in compliance with requirements of the 2009 BO amendment. Prior to and subsequent to this planting, vegetation was observed to be recruiting on its own.



Source: U.S. Army Corps of Engineers, 2010



3.3.3 **Wildlife**

3.3.3.1 *Terrestrial Wildlife*

The Project area is dominated by riparian habitat which currently supports relatively few native plant and terrestrial animal species. The species present are relatively common plants and animals that are commonly found throughout the Santa Paula and Ventura County area. Vegetation coverage is sparse and is generally insufficient for hiding, or establishment of burrows, dens, or medium to large size bird nests. Santa Paula Creek is likely used for foraging by a variety of bird species, and as a transportation corridor for relatively urban tolerant mammals such as raccoon (*Procyon lotor*), coyote (*Canis latrans*), and other small and medium mammals and rodents. Evidence of use by larger mammals, such as mountain lion (*Felis concolor*), has generally been limited to the upstream and downstream extents of the Project.

Bird fauna is typical of the lowlands of southern California (Table 3.3-2, Terrestrial Species Observed Along Santa Paula Creek). Some species like dark-eyed junco (*Junco hyemalis*), yellow-rumped warbler (*Dendroica coronata*), cedar waxwing (*Bombycilla cedrorum*), and ruby-crowned kinglet (*Regulus calendula*) are winter visitors. Others like the great egret (*Ardea alba*), great blue heron (*Ardea herodias*), greater yellowlegs (*Tringa melanoleuca*), killdeer (*Charadrius vociferous*), and spotted sandpiper (*Actitis macularia*) are attracted by the aquatic habitat. Avian species, such as the mallard (*Anas platyrhynchos*) are also attracted to the small pool habitats. Many other species, including the red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), and American kestrel (*Falco sparverius*), utilize the trees and shrubs on top of the levees outside of the riparian zone. Several species including the northern harrier (*Circus cyaneus*), merganser (*Mergus* sp.), and Canada goose (*Branta canadensis*) were only observed on the mainstem of the Santa Clara River near the mouth of the creek and would not be expected to occur in the vicinity of the Project. The scarcity of the common yellowthroat and the song sparrow (*Melospiza melodia*), reflect the immature nature of riparian vegetation along this section of the creek.

Wildlife observed during the reconnaissance surveys of January 2007 and June 2009 are listed in Table 3.3-2, Terrestrial Species Observed Along Santa Paula Creek. No Federally or state-listed or other special-status wildlife species were observed during field surveys. The probability of the presence of Federally or state-listed or other special-status wildlife species is either very low or not expected to occur in the area based on the marginal quality, and in many cases unavailable, habitat.

Table 3.3-2: Terrestrial Species Observed Along Santa Paula Creek¹

Scientific Name	Common Name	Listing Status	Comments
Birds			
<i>Anas Platyrhynchos</i>	Mallard Duck	--	Twelve or thirteen observed just downstream of the fish ladder, probably transient from pond (agricultural reservoir) just southwest of fish ladder. Nesting Period: May-October.
<i>Branta Canadensis</i>	Canada Goose	--	Seven in river near mouth of Santa Paula Creek. Nesting Period: May-October.
<i>Mergus Sp.</i>	Merganser	--	Pair flying downstream over mouth of creek in Santa Clara River. Nesting Period: May-July.
<i>Cathartes Aura</i>	Turkey Vulture	--	Numerous birds observed periodically flying over the survey area. A pair of Cooper's hawks were observed chasing a turkey vulture away from a small stand of cottonwood trees just upstream of the fish ladder near the east bank of the creek.

Scientific Name	Common Name	Listing Status	Comments
<i>Buteo Lineatus</i>	Red-Shouldered Hawk	SC	One bird on low palm trees just west of creek between fish ladder and railroad bridge. Nesting Period: April-August.
<i>Accipiter Cooperii</i>	Cooper's Hawk	--	One pair observed just above fish ladder near cottonwood trees on the east bank. Another individual was observed flying above upstream of the railroad crossing.
<i>Buteo Jamaicensis</i>	Red-Tailed Hawk	--	A pair observed flying high to the southwest of the Project, south of Highway 126. Nesting Period: April-August.
<i>Circus Cyaneus</i>	Northern Harrier	--	One observed soaring up and down main Santa Clara River and over mouth of Santa Paula Creek. Nesting Period: April-August.
<i>Falco Sparverius</i>	American Kestrel	--	One or two on trees on levees west side, about 200 meters upstream of the railroad bridge. Nesting Period: April-August.
<i>Charadrius Vociferous</i>	Killdeer	--	Twelve or thirteen loafing just upstream of the railroad bridge. Nesting Period: March-August.
<i>Tringa Melanoleuca</i>	Greater Yellowlegs	--	Two flew into creek below Highway 126 and were followed upstream to within 200 meters of fish ladder, joined by a third for a brief period. Nesting Period: March-August.
<i>Actitis Macularius</i>	Spotted Sandpiper	--	One followed over most of Project along wetted channel. Nesting Period: March-August.
<i>Gallinago Delicata</i>	Wilson's Snipe	--	One flushed between Highway 126 and railroad bridge and sighted once or twice farther upstream. Nesting Period: March-August.
<i>Calypte Anna</i>	Anna's Hummingbird	--	Observed two breeding males, about five hummingbirds seen flying over stream from railroad bridge to fish ladder. Nesting Period: March-August.
<i>Colaptes Auratus</i>	Northern [Red-Shafted] Flicker	--	Observed three to five flying over the stream from the railroad bridge to the fish ladder. Nesting Period: March-June.
<i>Zenaida Macroura</i>	Mourning Dove	--	Three observed at upper end of survey area. Nesting Period: March-August.
<i>Corvus Brachyrhynchos</i>	Crow	--	About five observed flying through survey area. Nesting Period: March-August.
<i>Sayornis Nigricans</i>	Black Phoebe	--	Three or four observed along whole stretch of the survey area. Nesting Period: March-July.
<i>Psaltriparus Minimus</i>	Bushtit	--	Approximately 10 observed in riparian area just upstream of fish ladder. Nesting Period: March-August.
<i>Tyrannus Vociferous</i>	Cassin's Kingbird	--	Two observed in shrubs long west side of stream on top of levee about 200 meters downstream of fish ladder. Nesting Period: March-July.
<i>Zonotrichia Leucophrys</i>	White-Crowned Sparrow	--	About thirty observed from the Highway 126 bridge upstream to fish ladder. Winter visitor only. Nesting Period: March-July.

Scientific Name	Common Name	Listing Status	Comments
<i>Junco Hymenalis</i>	Dark-Eyed [Oregon] Junco	--	Winter migrant that breeds farther north. Nesting Period: May-August.
<i>Catharus Guttatus</i>	Hermit Thrush	--	One observed in shrubs at top of east side of levee about half way between railroad bridge and fish ladder. Nesting Period: March-August.
<i>Mimus Polyglottus</i>	Northern Mockingbird	--	Two or three in bushes, trees at top of levees on both sides of creek above railroad bridge. Nesting Period: March-September.
<i>Geothlypis Trichas</i>	Common Yellowthroat	--	One or two observed downstream of Highway 126. Nesting Period: March-August.
<i>Ardea Alba</i>	Great Egret	--	One observed downstream of Highway126. Does not nest locally.
<i>Ardea Herodius</i>	Great Blue Heron	--	Six observed and heard. At least three are residents in the riparian within the Project. Nesting Period: March-August.
<i>Egretta Thula</i>	Snowy Egret	--	About seven throughout the Project during the visit. Does not nest locally.
<i>Dendroica Coronata</i>	Yellow-Rumped [Myrtle's] Warbler	--	About 30 observed and heard mostly in low riparian vegetation along stream both above and below Highway. 126. This is a migrant species that will move north in the spring. Does not nest locally.
<i>Sialia Mexicanus</i>	Western Bluebird	--	Two observed on west side about 200 meters downstream of fish ladder. Nesting Period: March-August.
<i>Carpodacus Mexicanus</i>	House Finch	--	About 10 observed in bushes and trees on levee to west of the Project. Nesting Period: March-September.
<i>Bombycilla Cedorum</i>	Cedar Waxwing	--	Approximately 50 observed and heard on west levee about 50-150 meters downstream of fish ladder. Nesting Period: March-August.
<i>Salpinctes Obsoletus</i>	Rock Wren	--	One or two along east side of rocky floodplain just below fish ladder. Nesting Period: March-August.
<i>Regulus Calendula</i>	Ruby-Crowned Kinglet	--	Three or four in low riparian vegetation within 100 meters downstream of fish ladder. Nesting Period: March-August.
<i>Carpodacus Mexicanus</i>	House Finch	--	Approximately 20 observed in trees upstream of the Project. Some would migrate into willows at upper end of Project. Nesting Period: March-September.
<i>Anthus Rubescens</i>	American Pipit	--	One observed along creek about 200 meters downstream of Highway126. Nesting Period: March-August.
<i>Pipilio Crissalis</i>	California [Brown] Towhee	--	Two or three seen on east side in shrubbery on levee. Nesting Period: March-August.
Mammals			
<i>Spermophilus Beecheyi</i>	California Ground Squirrel	--	Several sighted throughout the Project.

Scientific Name	Common Name	Listing Status	Comments
<i>Procyon Lotor</i>	Raccoon	--	Scat and tracks sighted throughout the Project.
<i>Canis Latrans</i>	Coyote	--	Scat and tracks were observed throughout the Project
<i>Sylvilagus Audubonii</i>	Desert Cottontail	--	Scat, tracks, and a few individuals were observed in alluvial fan scrub.
<i>Lepus Californicus</i>	Black-Tailed Jackrabbit	--	Sighted near Santa Clara River confluence amongst several large felled trees
<i>Felis Concolor</i>	Mountain Lion	--	Tracks were observed near the confluence of the creek and Santa Clara River and near the fish ladder during sediment removal activities and preconstruction surveys, respectively. Scat was also observed near the fish ladder.

¹The survey area encompasses Steckel Park downstream to the confluence with the Santa Clara River, including the Project.

Codes

-- = No listing status

SC - California State Species of Concern

Sources: Peterson 1990, National Geographic Society 2002, Sibley 2003, Entrix 2007, Entrix 2009

3.3.3.2 Aquatic Wildlife

Fish Species

Fish species that are known to occur with the Santa Paula Creek ecosystem include arroyo chub (*Gila orcutti*), fathead minnow (*Pimephales promelas*), Santa Ana sucker (*Catostomus santaanae*), Owens sucker (*C. fumeiventris*), black bullhead (*Ameiurus melas*), green sunfish (*Lepomis cyanellus*), and partially armored threespine stickleback (*Gasterosteus aculeatus microcephalus*). Arroyo chub, fathead minnow, and the two species of sucker and their hybrids are relatively common throughout the survey area. The black bullhead and green sunfish are rare and only in the upper section of the reach near the fish ladder. Only the stickleback is native to the Santa Paula Creek; all the other species are considered introduced to the system (Entrix 2007). Two other species native to the Santa Clara River, the Pacific lamprey (*Lampetra tridentata*) and southern steelhead, were not observed during the 2007 surveys. Both species are anadromous and are known to use the Project area reach as a migratory corridor during high winter flows. Three observations of what appeared to be southern steelhead were reported during the 2009 sediment removal project (USACE 2010a).

Benthic Macroinvertebrates

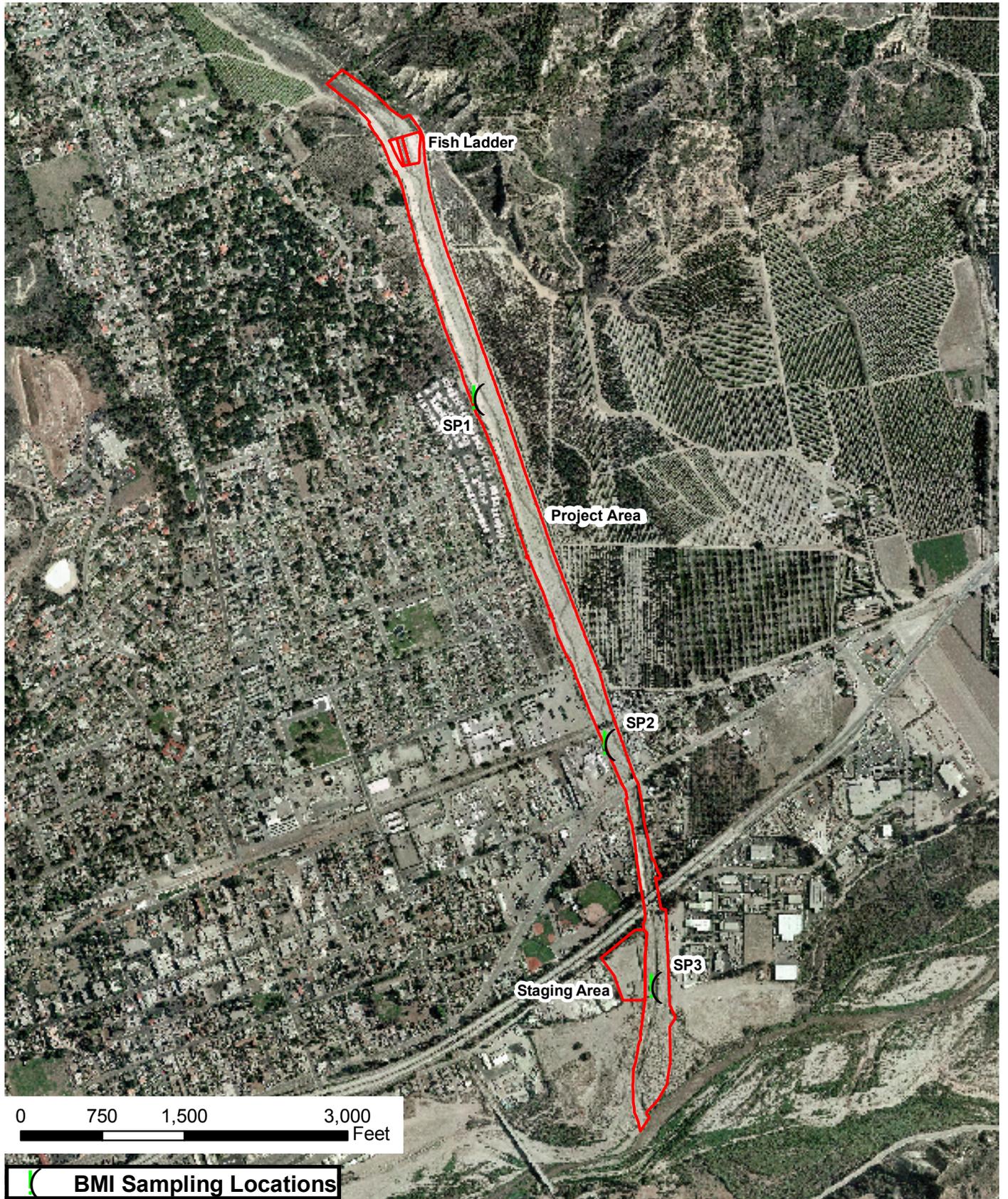
Benthic macroinvertebrates (BMI) were collected during the 2007 survey using the CDFG "Rapid Bioassessment" sampling protocol (CDFG 2003) at three survey locations, and all invertebrates were identified to the taxonomic level of Family. A total of nine families representing five Orders of invertebrates were found. These included *Hydropsychidea* (Order *Trichoptera*), *Dryopidae* (Order *Coleoptera*), *Chironomidae*, *Tipulidae*, *Simuliidae* and *Empididae* (Order *Diptera*), *Baetidae* and *Leptohyphidae* (Order *Ephemeroptera*), and *Hydrachnida* (Order *Arachnida*). Table 3.3-3, Summary of Benthic Macroinvertebrate Species summarizes the frequency and life stage of each individual collected at each survey location.

The most frequently sampled Order was *Diptera*, with *Chironomids* being the most common Family at all three sampling locations. The least common *Dipteran* Family was *Tipulidae* with only one individual taken at location SP2 (Figure 3.3-3, BMI Sampling Locations). The least frequently sampled Order was *Arachnida*, which was only taken seven times at two of the sampling locations (SP1 and SP2).

Table 3.3-3: Summary of Benthic Macroinvertebrate Species

Order	Family	Number of Individuals			Life Stage
		Sample SP1	Sample SP2	Sample SP3	
<i>Trichoptera</i>	<i>Hydropsychidae</i>	12	39	46	Larval
<i>Coleoptera</i>	<i>Elmidae</i>	9	1	2	Adult
		--	--	1	Larval
<i>Diptera</i>	<i>Chironomidae</i>	63	49	52	Larval
	<i>Tipulidae</i>	--	1	--	Larval
	<i>Empididae</i>	8	5	1	Larval
	<i>Simuliidae</i>	1	--	1	Larval
<i>Ephemeroptera</i>	<i>Baetidae</i>	2	--	5	Larval
	<i>Leptohyphidae</i>	--	--	1	Larval
<i>Arachnida</i>	<i>Hydrachnida</i>	5	2	--	Larval

Sources: Merrit et al. 1996, Pennak 1989; Entrix 2007



Source: U.S. Army Corps of Engineers, 2009



3.3.4 Special Status Species

A list of special status species (threatened and endangered species and species of special concern) which may occur in the Santa Paula USGS 7.5-minute quadrangle in which the Project is located was obtained from a search of the California Natural Diversity Database (CNDDDB 2011). Information on the presence of suitable habitat for listed species in the Project area was also obtained from the findings of field investigations conducted by Corps biologists and existing biological studies, including the Biological Assessment prepared for the VCWPD for the Santa Paula Creek Maintenance Project (Entrix 2007). The CNDDDB list is provided in Table 3.3-4. This is not an exhaustive list of special status species with potential to occur in the region; however, no additional species have high potential to occur in the Project area. The majority of species generated by the CNDDDB query do not have appropriate habitat in the immediate Project area, which is composed of riparian scrub and aquatic habitat.

The Federally listed species, and candidate species, identified by the CNDDDB search as having the potential to occur within the vicinity of the Project area include the following:

- Santa Ana sucker (*Catostomus santaanae*), threatened
- Unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*), endangered
- Southern steelhead - southern California ESU (*Oncorhynchus mykiss irideus*), endangered
- Southwestern willow flycatcher (*Empidonax traillii extimus*), endangered
- Coastal California gnatcatcher (*Polioptila californica californica*), threatened
- Least Bell's vireo (*Vireo bellii pusillus*), endangered
- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), candidate
- Two-striped garter snake (*Thamnophis hammondi*), California species of special concern
- South coast garter snake (*Thamnophis sirtalis* ssp.), a California Species of Special Concern

Of these species, the Santa Ana sucker, southern steelhead, southwestern willow flycatcher, LBV, and two-striped garter snake are known to occur near the Project area. Suitable habitat is not present for the other species listed above; therefore, they are considered to be not present and are not further evaluated. Although marginal habitat for LBV exists near the Project area, the species was not found during protocol surveys, as described below. Based on information on species occurrence, as detailed below, the population of Santa Ana sucker in the Project area was introduced.

A brief summary of the history of those species in the Santa Clara River Watershed and the Project area is provided below.

In addition to the species listed by the CNDDDB, two California species of special concern were observed in the Project area during 2007 or 2009 surveys. A sharp-shinned hawk (*Accipiter striatus*) was observed during pre-construction surveys that were conducted in 2009 prior to the start of construction on the sediment removal project. Red-shouldered hawks were seen and heard quite frequently during 2007 and 2009 surveys.

3.3.4.1 *Santa Ana Sucker*

The Santa Ana sucker was listed by USFWS as threatened in 2000 (USFWS 2000). Native populations of Santa Ana suckers are now restricted to three noncontiguous populations in three different stream systems in southern California: the lower and middle Santa Ana River in San Bernardino, Riverside, and Orange Counties; the East, West, and North Forks of the San Gabriel River in Los Angeles County; and lower Big Tujunga Creek, a tributary of the Los Angeles River in Los Angeles County (USFWS 2010).

Santa Ana suckers have been known to occur within the Santa Clara River and its major tributaries since the late 1920s or early 1930s. Subsequent investigations confirm that they were introduced to this system from the Los Angeles Basin about this time along with the arrival of the Owens sucker (*C. fumeiventris*) from the Owens River system via the Los Angeles aqueduct system (Swift et al. 1993; Moyle 2002). These species are widespread in the river and tributaries, including Santa Paula Creek from Piru Creek downstream to near the ocean, and regularly produce hybrids that occur over most of this area. The Santa Clara River population was not included in the threatened listing because of its presumed introduced status (USFWS 2000).

3.3.4.2 *Southern Steelhead - Southern California ESU*

The Southern California Distinct Population Segment (DPS) of steelhead which encompasses the populations occurring from the Santa Maria River to the California-Mexico border was listed as endangered in 1997 and its endangered status was reaffirmed in 2006 (NMFS 2006).

It is estimated that steelhead populations have been reduced to less than one percent of their former population size in southern California (Stoecker and Kelley 2005). Providing adequate upstream steelhead passage through Santa Paula Creek is essential for the recovery of the species to the watershed and would allow steelhead to take advantage of the spawning and rearing habitat in upper reaches of Santa Paula Creek (NMFS 2009b; Titus et al. 2010).

Historically, steelhead migrated upstream through the lower Santa Clara River to reach spawning grounds in Santa Paula, Sespe, and Piru creeks. Santa Paula Creek is the first major tributary above the Vern Freeman Diversion Dam along the Santa Clara River and is one of the three main historical spawning tributaries for southern steelhead. Rainbow trout (*O. mykiss*) are the non-anadromous form of steelhead, and this wild, self-sustaining population of rainbow trout which inhabits Santa Paula Creek can produce some out-migrating smolts that emigrate to the Pacific Ocean (Stoecker and Kelley 2005; Harrison et al. 2006).

In 1993, a trap was installed at the facility at the Vern Freeman Dam on the Santa Clara River. Since that installation, adult steelheads have been detected attempting to migrate up the River. Seven adult steelhead were trapped at the Vern Freeman Dam during the period 1993 to 2006 (Stoecker and Kelley 2005; Harrison et al. 2006).

Both juvenile steelhead and rainbow trout were noted as being present in Santa Paula Creek in a mid-1930s survey conducted by the CDFG. Since the 1940s, the reach of Santa Paula Creek above the Harvey Diversion Dam has been managed intensively as a catchable rainbow trout fishery. In March 1987, the USFWS conducted an electrofishing survey in Santa Paula Creek below the diversion site, which resulted in the detection of two adult steelhead and two adult resident rainbow trout. A 1992 survey in the same area conducted by CDFG resulted in no detection of either steelhead or rainbow trout (Titus et al. 2010).

Observations of three fish that appeared to be steelhead were made in the Project area on January 6, 2010 and January 7, 2010, near the end of the sediment removal project. Corps and NMFS staff were present when the first sighting occurred. Mr. Darren Brumback, NMFS, examined the fish and returned the fish back into the low flow channel. Mr. Brumback recommended that the biologists follow the same procedure for any other fish found and place them below the fish ladder. The same procedure was followed per Mr. Brumback's recommendation for the other fish that was salvaged and relocated.

Table 3.3-4: Special Status Species and Communities with Potential to Occur in the Project Area

Scientific and Common Name	Listing Status	Habitat Conditions	Potential to Occur in the Project Area
Special Communities			
Southern Riparian Scrub	--	NA	Occurs in disturbed patches within the study area. Primarily found along the Santa Clara River.
Fish			
Santa Ana Sucker <i>Catostomus santaanae</i>	FT/SC	Endemic to Los Angeles Basin south coastal streams. Habitat generalists, but prefer sand-rubble-boulder bottoms, cool, clear water, and algae.	Observed within the Project area reach. As the Santa Ana sucker is considered an introduced species in the Santa Clara River Watershed and Santa Paula Creek, the Federal listing does not currently extend to these waters (Federal Register 2000, Swift Pers. Comm. 2007).
Unarmored Threespine Stickleback <i>Gasterosteus aculeatus williamsoni</i>	FE/SE	Weedy pools, backwaters, and among emergent vegetation at the stream edge in small Southern California streams. Requires cool (<24 c), clear water with abundant vegetation.	Not likely to occur. No appropriate habitat within the Project area.
Arroyo Chub <i>Gila orcuttii</i>	SC	Los Angeles Basin south coastal streams. Slow water stream sections with mud or sand bottoms. Feed heavily on aquatic vegetation and associated invertebrates.	Observed within the Project area reach. As the Arroyo chub is not endemic to the Santa Clara River Watershed and Santa Paula Creek, Federal listing status does not extend to these waters (Federal Register 2000, Swift Pers. Comm. 2007).
Southern Steelhead - Southern California ESU <i>Oncorhynchus mykiss Irideus</i>	FE/SC	Federal listing refers to populations from Santa Maria River south to southern extent of range (San Mateo Creek in San Diego County). Southern steelhead likely have greater physiological tolerances to warmer water and more variable conditions.	Potential to occur as a migrant during migration periods. No appropriate spawning or rearing habitat within the Project area.

Scientific and Common Name	Listing Status	Habitat Conditions	Potential to Occur in the Project Area
Reptiles			
Two-striped Garter Snake <i>Thamnophis hammondi</i>	SC	Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	Potential to occur within suitable habitat.
South Coast Garter Snake <i>Thamnophis sirtalis</i> ssp.	SC	Marsh and upland habitats near permanent water with good strips of riparian vegetation.	Potential to occur within suitable habitat.
Birds			
Western Yellow-Billed Cuckoo <i>Coccyzus americanus occidentalis</i>	FC/SE	(Nesting) riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Not likely to occur. No appropriate riparian habitat within the Project area. Potential to occur in the vicinity of the Project area within the Santa Clara River corridor.
White-Tailed Kite <i>Elanus leucurus</i>	CFP	(Nesting) rolling foothills/valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Uses open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Not likely to occur. No appropriate habitat within the Project area. May occasionally occur as a rare transient.
Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i>	FE/SE	Breeds in relatively dense riparian tree and shrub communities in the arid southwestern U.S. Requires riparian vegetation with thickets of trees and shrubs and insect prey populations found within or adjacent to riparian floodplains or moist environments.	Not likely to occur. No appropriate riparian habitat within the Project area. Potential to occur in the vicinity of the Project area within the Santa Clara River corridor.
Coastal California Gnatcatcher <i>Polioptila californica californica</i>	FT/SC	Obligate, permanent resident of coastal sage scrub below 2500 feet in southern California. Low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied.	Not likely to occur. No appropriate riparian habitat within the Project area. Potential to occur in the vicinity of the Project area in the upper watershed.
Least Bell's Vireo <i>Vireo bellii pusillus</i>	FE/SE	(Nesting) summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 feet. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, mulefat, and mesquite.	Low potential to occur. Observed along the Santa Clara River, but not along Santa Paula Creek (the Project area.) Not found during focused surveys in the Project area.

Scientific and Common Name	Listing Status	Habitat Conditions	Potential to Occur in the Project Area
Mammals			
Pallid Bat <i>Antrozous pallidus</i>	SC	Deserts, grasslands, shrublands, woodlands & forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Not likely to occur. No appropriate habitat within the Project area. Potential to occur in the vicinity of the Project area in the upper watershed.
American Badger <i>Taxidea taxus</i>	--/--/SC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground to dig burrows. Preys on burrowing rodents.	Not likely to occur. No appropriate habitat within the Project area. Potential to occur in the vicinity of the Project area in the upper watershed.

Codes

-- = no listing status

FE = federally listed as Endangered

FT = federally listed as Threatened

FC = federal candidate species

FSC = federal species of concern

SE = listed by the state of California as Endangered

ST = listed by the state of California as Threatened

SR = listed by the state of California as Rare

SC = CDFG species of concern

CFP = California Fully Protected

CNPS 1A = California Native Plant Society: plants believed to be extinct in California

CNPS 1B = California Native Plant Society: plants rare or endangered in California and elsewhere

CNPS 2 = California Native Plant Society: rare in California but more common elsewhere

Sources: CDFG 2006, CDFG 2007a, CDFG 2007c, CDFG 2011

3.3.4.3 *Least Bell's Vireo (LBV)*

LBV was listed as Federally endangered in 1996 (USFWS 1996). The LBV is a small, insectivorous, grayish bird that migrates between wintering grounds in southern Baja California to breeding grounds in southern California. LBV are known to arrive in southern California from mid-March to late April and begin to return to their wintering grounds between July and September (USFWS 1998).

The LBV is an obligate riparian breeder, known to prefer riparian woodlands that combine an understory of dense willows or mulefat with a canopy of tall willows for breeding. Preferred woodlands typically consist of red willow and Gooding's black willow, with a dense understory of sandbar willow, arroyo willow, mulefat, and some herbaceous species. Cottonwoods, western sycamore, and coastal live oak also commonly contribute to the over story. The Draft Recovery Plan for the LBV (USFWS 1998) notes the structure provided by vegetation appears to be more important than the species composition or the age of the stand.

The presence of LBV within the Project area is unlikely. Pockets of marginally suitable habitat had previously occurred at irregular intervals throughout the Project area. These pockets of vegetation and nearly all other vegetation within the grouted side slopes were removed during the 2009 sediment removal project.

LBV is known to occur along the Santa Clara River, but there are no documented occurrences along Santa Paula Creek (CDFG 2011). The Corps conducted surveys under a modified protocol, as recommended by the USFWS in 2009. Modified protocol surveys began on June 30, 2009 and were completed in July 2009. Potential LBV habitat was limited to a few small, disconnected pockets within the Project area. These pockets of habitat were marginal in quality at best, often lacking the multi-tiered structure that LBV prefer for nesting, as is described in the Primary Constituent Elements section of the Designation of Critical Habitat for the LBV (USFWS 1994). The survey reports indicated that there is no presence of the LBV within the Project area. The areas of marginal quality habitat described above were removed in the 2009 sediment removal action. Since riparian vegetation within the site is expected to remain in a relatively seral state due to the frequency of cleanouts and large bed load transported during storm events, no suitable habitat is present for LBV within the Project area.

3.3.4.4 *Southwestern Willow Flycatcher*

The southwestern willow flycatcher was listed as endangered in 1995 (USFWS 1995). This small insectivorous bird migrates between wintering grounds in Mexico, Central America, and northern South America to breed in southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, southwestern Colorado, and extreme northwestern Mexico. Southwestern willow flycatchers typically arrive on breeding grounds between early May and early June, although a few individuals may establish territories in very late April (USFWS 2002).

The specific essential biological and physical features for flycatchers include riparian vegetation, typically dense with thickets of trees and shrubs and insect prey populations found within or adjacent to riparian floodplains or moist environments. The southwestern willow flycatcher breeds in relatively dense riparian tree and shrub communities in the arid southwestern United States (USFWS 2002). The species is known to breed along the Santa Clara River, but there have not been documented occurrences along Santa Paula Creek (CDFG 2011; Jones 2011). The nearest documented occurrence of the species to the Project area is along the Santa Clara River approximately 2.5 miles (4 kilometers) downstream of Santa Paula Creek (CDFG 2011).

Critical habitat for the southwestern willow flycatcher has been proposed to include the Santa Clara River. This critical habitat would be located adjacent to the Project area at the downstream end where Santa Paula Creek enters the Santa Clara River.

3.3.4.5 *Two-Striped Garter Snake*

The two-striped garter snake is a California Species of Special Concern. The species is highly aquatic and it inhabits perennial and intermittent streams often bordered by willow thickets or other dense vegetation. It forges primarily in and along streams and during the day can be found on streamside rocks or densely vegetated banks (CDFG 2000). This species was identified in the vicinity of the fish ladder in 2009 (CNDDDB 2011).

3.3.4.6 *South Coast Garter Snake*

South coast garter snake is a California Species of Special Concern. The species inhabits marsh and upland habitats near permanent water with good strips of riparian vegetation. This species has the potential to occur in the Project area within suitable habitat (CNDDDB 2011).

3.3.5 **Critical Habitat**

In 2005, NMFS published a final designation of critical habitat for southern steelhead, with an effective date of January 2, 2006 (NMFS 2005). Santa Paula Creek was included in the final critical habitat designation as part of the Santa Clara Calleguas Hydrologic Unit.

The Project area does not contain critical habitat for any other species. However, the Santa Clara River is included in a proposed revision to critical habitat for the southwestern willow flycatcher. The species is known to breed along the Santa Clara River. Proposed critical habitat includes a 49.4-mile (79-kilometer) segment of the Santa Clara River, including the area at the confluence with Santa Paula Creek (USFWS 2011). The critical habitat would not be located directly within the Project area, but rather at the downstream end where Santa Paula Creek enters the Santa Clara River.

3.4 **Land Use**

The following land use section was prepared based on information found in the 1995 EIS/EIR, General Plans for the City of Santa Paula and Ventura County, and visits to the site. Ventura County's General Plan was adopted in 1988 and most recently amended in 2008. The planning horizon extends to 2020. The City of Santa Paula adopted their most recent plan in 1998 after an extensive visioning process. The planning horizon extends to 2020.

3.4.1 **Land Use Setting**

The Project area is located in Ventura County approximately 65 miles (104.6 kilometers) northwest of Los Angeles and 42 miles (67.6 kilometers) south of Santa Barbara within the Santa Clara River Valley. The Santa Clara River Valley has an east-west trend and is well defined by major land masses such as Sulphur Mountain, the Santa Paula Ridge and South Mountain. The Santa Paula Creek is located generally along the eastern boundary between the City of Santa Paula and unincorporated Ventura County. While the majority of the Project is within unincorporated Ventura County, portions are within the City of Santa Paula.

The Project extends for approximately 1.65 miles (2.7 kilometers) from the fish ladder at the inlet downstream to the confluence with the Santa Clara River. Land uses adjacent to the Project include industrial areas, commercial and residential uses, open space, and agricultural land. Upstream of the railroad bridge land uses consist primarily of open space, agricultural lands, and residential development; while downstream of the railroad bridge land uses are largely comprised of industrial and commercial development and vacant land. The creek is crossed by Highway 126, Telegraph Road, and the railroad bridge.

The main staging area is located on vacant land at the downstream end of the Project. Adjacent land uses include the Project to the east opposite industrial uses, a cement plant, and an operation for stockpiling, sorting, and selling of aggregate removed from Santa Paula Creek in 2009 and 2010 to the

west, Highway 126 to the north, and the Santa Clara River and open space to the south. Also to the north, opposite Highway 126 are a public park, industrial uses, and residential uses.

3.4.2 Ventura County General Plan and Zoning Classification

The Ventura County General Plan was adopted by the Ventura County Board of Supervisors in May 1988 and last amended in December 2008. It consists of a countywide goals, policies, and programs document applicable to unincorporated Ventura County, four technical appendices (Land Use, Resources, Hazards, Public Facilities and Services), and ten Area Plans, which contain goals, policies, and programs for specific geographic areas of the county. The Project is not included in an Area Plan. The planning horizon for the Ventura County General Plan is the year 2020.

The Ventura County General Plan identifies six basic land use designations: Urban, Existing Community, Rural, Agricultural, Open Space, and State/Federal Facilities. As identified on the Ventura County General Plan Land Use Map, the majority of the Project area within unincorporated Ventura County is designated as "Agricultural (40 Acre Min)", with a portion, primarily near Telegraph Road, designated as "Existing Community – Urban Reserve." A portion of the Project in unincorporated Ventura County is designated as Open Space. All incorporated areas, including the Project within the City of Santa Paula, are designated as "Urban".

Santa Paula Creek designated as a "red line" channel on the County's Public Facilities Appendix Figure 4.6.1b. Red line channels are defined by the Ventura County Flood Control District as channels over which the Flood Control District exercises regulatory jurisdiction.

The unincorporated areas east of the Project have the zoning classification of Agricultural Exclusive (AE) and the areas to the west of the creek and the unincorporated portion of the Project are classified as Open Space (OS) with a Mineral Resource Protection (MRP) overlay. The purposes of the MRP overlay zone, as described in the County of Ventura Non-Coastal Zoning Ordinance, include safeguarding future access to the resource and facilitating a long-term supply of minerals within the County.

3.4.3 City of Santa Paula General Plan and Zoning Classification

The General Plan for the City of Santa Paula was adopted in 1998 and has a planning horizon of 2020. The General Plan was amended by the voters in November 2000 to establish a City Urban Restriction Boundary (CURB) around the City and expansion areas to provide for "reasonable urban growth". Any future development (with some exceptions) outside of the CURB requires a voter-approved amendment to the CURB. The Project to the north of the railroad bridge is located within the 2008 CURB boundary as part of the East Area 1 Specific Plan and the unincorporated portion south of the railroad bridge is part of East Area 2.

The General Plan consists of five elements (Land Use, Circulation, Conservation and Open Space, Noise, Housing, and Safety) and four appendices (Circulation, Conservation and Open Space, Noise, and Safety). The General Plan Land Use Map identifies the Project as Open Space – Passive and Golf Course. Surrounding land use designations include residential uses west of the Project and Specific Plan to the east north of the railroad bridge, commercial/light industrial between the railroad bridge and Highway 126, and Industrial or Industrial Park to the south of Highway 126. The unincorporated land to the south of the Project is designated as being within the South Mountain Expansion Area.¹ Development in the South Mountain Expansion Area is limited under the General Plan to open space and recreational uses. The staging area is designated as Industrial.

The City of Santa Paula Zoning Code classifies the Santa Paula Creek as "O" Open Space – Passive, and the areas within and adjacent to the Project that are outside of the Project include R-A - Rural Residential, MHP – Mobile Home Park, R-1- Single Family Residential, C-LI – Commercial-Light Industrial, LI-Light Industrial, and I – Industrial. The portion of the Project south of Highway 126 is also

¹ The City of Santa Paula General Plan has designated several Expansion Areas to indicate the direction Santa Paula may consider growing in the future.

within the airport influence traffic pattern zone, and a portion is with the KS-OS Airport Safety Zone Overlay – Outer Safety Subzone. The staging area is classified as I-Industrial.

3.4.4 Santa Paula-Fillmore Greenbelt Agreement

The Project is in the vicinity of the Santa Paula-Fillmore Greenbelt (the Greenbelt) Agreement that was first established in 1980. This is the largest greenbelt in Ventura County at approximately 34,200 acres, and it extends along portions of the Santa Paula Creek to the east to Sespe Creek, adjacent to the City of Fillmore. The Greenbelt is a voluntary agreement between the County and Cities of Santa Paula and Fillmore to protect open space and agricultural lands and limit premature conversion of land within the greenbelt to agriculturally incompatible uses (County of Ventura 2010).

Originally, the Greenbelt encompassed the length of Santa Paula Creek in the Project area from the fish ladder downstream to the railroad bridge. However, an amendment in June 2010 removed this portion along the creek and to the east from the Greenbelt. The amendment also added an area south and east of the Project within the City of Santa Paula to the Greenbelt. The unincorporated portion of the Project is in the Greenbelt.

3.5 Aesthetics

The following aesthetics section was prepared based on information found in the 1995 EIS/EIR and observations during on-site visits. The Project area affords scenic views of the surrounding hills and mountains which enclose the Santa Paula region. Hills rise from Santa Paula Creek to the east and west, with the San Cayetano, Sulphur, and Topa Topa Mountains located north of the City and South Mountain to the south beyond the Santa Clara River. Industrial and commercial uses are concentrated near the lower reaches, near Highway 126 and the Southern Pacific Railroad Bridge. Adjacent to Telegraph Road, the east side of the creek is occupied by residential uses, agricultural uses, and open areas covered with grass and eucalyptus trees. Upstream of the railroad bridge, the west side of the Project is occupied by residential uses, Oaks Mobile Estates Trailer Park, and open space and orchards. At the fish ladder, to the west is an orchard and the residential development of Stewart Ranch (west of the orchard). To the east of the fish ladder are orchards and the toe of Topa Topa Peak that is covered with natural vegetation with small areas of bare ground.

The channel, which is generally characterized by shallow flowing water (except following storm events) with meandering channels interspersed by islands of sediment and immature vegetation, is flanked by sloping grouted stone walls. During high flow events (i.e., storms), the depth of the waters and turbidity increase and may occupy the channel from bank to bank. Storm events typically uproot the existing vegetation with the channel. The vegetation later re-establishes following the storm season. The creek bed and associated riparian plant community add to the visual quality of the area. Man-made features (i.e., the concrete banks of the channel, adjacent service road and fencing, fish ladder at the inlet and freeway bridge at the outlet, as well as adjacent development) detract from the natural scenery.

The staging area is located adjacent to a cement plant and an operation for stockpiling, sorting, and selling of aggregate removed from Santa Paula Creek, and vacant land between the Santa Clara River confluence and Highway 126. The primarily visual features in the area are agricultural fields and South Mountain to the south and the southernmost segment of the creek near its confluence with the Santa Clara River.

The County of Ventura General Plan Resources Appendix does not identify any scenic resources at or adjacent to the Project. The City of Santa Paula General Plan Conservation and Open Space Element identifies natural scenic resources that include Santa Paula Creek, the hillsides east of the City, and mountains to the north and south; and developed/man-made scenic resources that include Highway 126 and Highway 150 (City Scenic Highways), and agricultural land. Highway 126 and Highway 150 are Eligible State Scenic Highways, but have not been officially designated as such.

3.6 Cultural Resources

The following cultural resources section was prepared based on information found in the 1995 EIS/EIR.

3.6.1 Previous Archaeological Research

In 1967, the Archaeological Survey at the University of California, Los Angeles conducted an archaeological reconnaissance of a proposed freeway south of and parallel to Highway 126. No sites were recorded. In 1972, Ventura College conducted an archaeological survey of the proposed Santa Paula Creek channel for the Corps. This included the survey of two proposed debris basins located along Santa Paula and Mud Creeks. Again, no sites were recorded as a result of the survey.

An archaeological survey of the City of Santa Paula was conducted in 1977, and it failed in the attempt to relocate the village of *Mupu*. In 1977, a cultural resource survey of lower Santa Paula Creek was completed for the Corps. The survey concentrated on the Santa Paula Creek natural channel, from the City of Santa Paula to approximately 0.2 mile (0.3 kilometers) north of Ferndale Ranch. Four new sites were recorded (CA-VEN-273, CA-VEN-404, CA-VEN-500, and CA-VEN-501). In addition, a suspected location for the village of *Mupu* (at the confluence of Mud Creek and the Santa Paula drainage) was sought, again with negative results (Moss 1977).

In 1980, a cultural resource survey of Highway 126 was completed from Hall Road to Castaic Junction. No new sites were recorded. The Northridge Archaeological Research Center conducted a systematic survey of lower Santa Paula Creek (Wessel 1981).

Excavations were undertaken in the Santa Paula Creek area in 1977 at CA-VEN-404, and by the Northridge Archaeological Research Center in 1980, at CA-VEN-500 (Wessel 1981).

The entire study area for the Project, which covered the Santa Paula Creek from the confluence with the Santa Clara River upstream to Steckel Park, was surveyed for cultural resources during preparation of the 1995 EIS/EIR by Greenwood and Associates. This assessment identified one new site, temporarily designated G&A-1, three isolated bedrock mortars, and reevaluated sites CA-VEN-500 and 501. The 1995 EIS/EIR describes the three sites as follows:

G&A-1

Although G&A-1 has incurred substantial impacts as a result of citrus agriculture, the potential for an intact subsurface deposit is not presently known. If a subsurface deposit exists, the site has the potential to yield significant information. Presently, the data suggest that G&A-1 represents a temporary plant processing site; however, based on the scant information this interpretation is tenuous. A determination of eligibility for listing in the NRHP is not possible from the existing data. If the site cannot be avoided, further archaeological studies will be required.

CA-VEN-500

Wessel et al. (1981) recovered eight artifacts (one from subsurface 7.9-11.8 inches [20-30 centimeters]) as a result of an intensive surface and limited subsurface investigation. On the basis of these data and an evaluation of the site stratigraphy, they concluded that CA-VEN-500 had been destroyed through intensive citrus agriculture. In view of the fact that the Greenwood and Associates 1992 investigation failed to record the presence of any cultural material, it would seem that this interpretation is valid. Therefore, it would appear that CA-VEN-500 has lost its surface and subsurface integrity and does not qualify for eligibility for listing in the NRHP.

CA-VEN-501

CA-VEN-501 represents a habitation site (seasonal village or base camp) of potential NRHP eligibility. The site appears to retain good integrity, and on the basis of the surface evaluation, has the data potential to qualify for inclusion in the National Register of Historic Places. If the site cannot be avoided, further archaeological studies will be required.

The 1995 EIS/EIR determined in the impacts analysis that sites G&A-1 and CA-VEN-501 were not within the area of construction and thus would not be impacted by the Project.

3.6.2 Architectural History

A total of 25 structures within the study area for the 1995 EIS/EIR were examined by an architectural historian. Of the evaluated properties, one district, the John Mears Ranch Complex, and Bridge 442 (Mupu Bridge) were identified as appearing eligible for listing on the NRHP. Neither of the sites are located within the Project.

The Southern Pacific Bridge BE415.36 which spans Santa Paula Creek near Ferris Drive north of Telegraph Road and was constructed in 1916. The historical significance of this structure was reviewed in the 1995 EIS/EIR and it was determined to not be eligible for listing since it is not significant in the context of metal railroad bridges in California between 1910 and 1920, nor is it associated with important events or persons of that era.

3.6.3 Paleontology

The Project area is an alluvial valley comprised primarily of younger Quaternary non-marine terraces and Holocene stream deposits consisting of a rocky alluvium, containing cobbles and boulders) that either developed naturally, or was artificially dredged and deposited during previous channel construction activities.

The stream channel deposits have not yielded any fossil remains in the in or near the Project. These deposits moreover are probably too young to contain remains old enough to be considered fossilized. According to the East Area 1 EIR conducted for a project along Santa Paula Creek north of the railroad bridge, the stream channel deposits have not yielded any fossil remains in or near the East Area 1 project site. Further, the steam deposits are likely too young to contain remains that would be considered be considered fossilized. Therefore, the paleontological sensitivity for the Project area is considered low.

3.7 Air Quality

This section addresses the general climatological conditions and existing air quality in the region and presents the regulatory setting. Air quality in the Project area is under the jurisdiction of the Ventura County Air Pollution Control District (VCAPCD). The VCAPCD is responsible for achieving air quality goals within the South Central Coast Air Basin (SCCAB).

3.7.1 Air Quality Standards

The U.S. Environmental Protection Agency (USEPA) has promulgated the Federal Clean Air Act (CAA) of 1970, and associated amendments, which include the national ambient air quality standards (NAAQS), developed to protect those segments of the public most susceptible to respiratory distress. This segment of the public is known as sensitive receptors, such as asthmatics, the very young, the elderly, and people weak from other illness or disease, or persons engaged in strenuous work or exercise. Some portions of the CAA (e.g., certain mobile source and other requirements) are implemented directly by the USEPA. Other portions of the CAA (e.g., stationary source requirements) are implemented by state and local agencies. California has established its own air quality standards, the California Ambient Air Quality Standards (CAAQS), and because of the unique meteorological conditions and associated air quality problems in the state, there is considerable diversity between state and Federal standards currently in effect in California. Pursuant to the 1990 Federal CAA amendments, the USEPA classifies air basins (or

portions thereof) as “attainment” or “nonattainment” for each criteria air pollutant, based on whether or not the NAAQS had been achieved.

3.7.2 Air Quality Monitoring Data

Federal, state, and local agencies operate a network of monitoring stations throughout California to provide data on ambient concentrations of air pollutants. Monitoring data is provided from monitoring stations that continuously monitor ambient air quality, and is used to determine compliance with the NAAQS and CAAQS. The Proposed Action is located in Ventura County and within the SCCAB. Ventura County is currently designated as a nonattainment area (does not meet NAAQS and/or CAAQS) for respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}) and ozone (O₃).

Ambient air pollutant concentrations have generally been monitored by the California Air Resources Board (CARB) and VCAPCD. No monitoring stations are located in close proximity to the Project area. However, because the area is fairly undeveloped and lies midway between the Ojai, El Rio, and Piru stations, the data from these locations are considered the most representative of the Project area.

3.7.3 Climate

The climate of the south central coast is Mediterranean, with approximately one half of the year being wet and cool (November to April) and the remainder of the year characterized by dry, warm weather (May to October). The major climatic influences on the Project area are the Pacific High, a semi-permanent pressure system which generally lies over the ocean to the west; migratory cyclonic storms, which yield most of the annual rainfall; and the Pacific Ocean, which serves as a source of moisture for the atmosphere. The net effect of the above factors is a mild climate with little severe weather and with rainfall concentrated in the winter months.

3.7.4 Temperature

Temperatures can vary widely through the whole SCCAB. Temperatures below freezing are rare, as are those in excess of 100°F (38°C). Land-sea temperature differences are greater in the winter (by several °F) than in the summer. This maritime influence weakens further inland, resulting in greater temperature fluctuations. These variations depend not only on the distance from the ocean, but also on local topography, elevation, and the degree of exposure. Extreme temperatures observed in the Ojai area range from about 100°F (38°C) to about 25°F (-4°C). Annual average temperatures in the Oxnard plain range from 50°F (10°C) at the coast to 77°F (25°C) in Simi Valley.

3.7.5 Precipitation

Precipitation in the Project area is primarily a winter phenomenon (November to April), with approximately 90 percent of the annual total occurring during this period. Precipitation is mainly in the form of rain along the coast and the lowland areas, and may occur as both rain or snow in the higher mountain areas. The summer months are usually quite dry with thundershowers producing occasional rainfall. Average annual precipitation varies markedly over relatively short distances within the region, primarily because of topographic effects. For Ventura County, mean annual precipitation varies by year and with the terrain but averages approximately 14 inches (35.6 centimeters).

3.7.6 Winds

Synoptic pressures produce a regional prevailing northwesterly to westerly flow throughout the year. During the winter, the basic flow reverses to a prevailing southeasterly direction under conditions of pre-storm passage. Except for the coastal zone, the rugged and varied terrain of the area is responsible for deflecting the basic flow. The wind direction and wind speed within the area are mostly a result of local terrain influences, rather than prevailing circulation. Among the more important terrain factors that affect local circulation are as follows:

- The Santa Ynez is an east-west oriented range which averages about 3,000 feet mean sea level (MSL) in height. Areas south of the Santa Ynez lie in a "wind shadow"², and locations such as the Ojai area exhibit much different wind characteristics during northwest flow than areas north of the mountains. Wind speeds tend to be lower, and the typical wind direction is southwest rather than northwest.
- The Project is situated in a pass between Sulphur Mountain to the north and South Mountain to the south. Due to its location, typical morning winds carry the air and pollutants from the Santa Clarita Valley toward Santa Paula. From Santa Paula the wind continues southwest on to Ventura and Oxnard and finally out to sea. In the afternoon this pattern shifts almost 180 degrees such that coastal winds blow inland picking up pollutants generated in Ventura and Oxnard and blow them through the Project area and on through Fillmore, Piru, and into the Santa Clarita Valley on the north side of the Santa Susana Mountains.

3.7.7 Air Quality Standards and Attainment Status

The USEPA, CARB, and the local air districts 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 NAAQS and CAAQS relevant to the Project are provided in Table 3.7-1.

California standards for ozone (1-hour and 8-hour), carbon monoxide (1-hour and 8-hour), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide (1-hour and annual), respirable particulate matter (PM10) (24-hour and annual), fine particulate matter (PM2.5) (annual), and visibility reducing particles are values not to be exceeded. The California standards for sulfates, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. National standards, other than ozone, particulate matter and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over three years, is equal or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

Local air pollution control districts in California are responsible for regulating all sources of air emissions, with the exception of motor vehicles, located in their jurisdiction. The VCAPCD has adopted rules and regulations governing stationary air emission sources as well as thresholds of significance of projects in their jurisdiction. The state has adopted standards for mobile emission sources.

² A wind shadow is the area behind an obstacle where air movement is not capable of moving material.

Table 3.7-1: National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards
Ozone (O ₃)	1-Hour	0.09 ppm	-
	8-Hour	0.070 ppm	0.075 ppm
Respirable Particulate Matter (PM ₁₀)	24-Hour	50 µg/m ³	150 µg/m ³
	Annual Mean	20 µg/m ³	-
Fine Particulate Matter (PM _{2.5})	24-Hour	-	35 µg/m ³
	Annual Mean	12 µg/m ³	15.0 µg/m ³
Carbon Monoxide (CO)	8-Hour	9.0 ppm	9 ppm
	1-Hour	20 ppm	35 ppm
Nitrogen Dioxide (NO ₂)	Annual Mean	0.030 ppm	0.053 ppm
	1-Hour	0.18 ppm	0.100 ppm ¹
Sulfur Dioxide (SO ₂)	24-Hour	0.04 ppm	-
	1-Hour	0.25 ppm	0.075 ppm

Note: ppm = parts per million; µg/m³ = micrograms per cubic meter; “-” = no standard.
Source: CARB 2010.

Table 3.7-2 summarizes the Federal and state attainment status of criteria pollutants for the Project area based on the NAAQS and CAAQS, respectively.

Table 3.7-2: Attainment Status for the South Central Coast Air Basin

Pollutant	Federal	State
Ozone – 8-Hour	Serious Nonattainment	Nonattainment
CO	Unclassified /Attainment	Attainment
NO ₂	Unclassified /Attainment	Attainment
SO ₂	Attainment	Attainment
PM ₁₀	Unclassified	Nonattainment
PM _{2.5}	Unclassified /Attainment	Nonattainment

Source: CARB 2011; USEPA 2011

3.7.8 Green House Gases (GHG)

3.7.8.1 Carbon Dioxide (CO₂) Equivalent

Carbon Dioxide Equivalent is a metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential (GWP). Carbon dioxide equivalents are commonly expressed as "million metric tons of carbon dioxide equivalents (MMTCO₂Eq)." The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP. Below is the formula for calculating the emissions:

$$\text{MMTCO}_2\text{Eq} = (\text{million metric tons of a gas}) * (\text{GWP of the gas})$$

On February 18, 2010, the CEQ issued draft NEPA guidance to assist agencies in considering the effects of climate change and greenhouse gas emissions (GHGs) in agency decision-making (CEQ 2010). The CEQ has not finalized their guidance at this time. The CEQ draft GHG guidance indicates that projects with emissions greater than 27,558 tons (25,000 metric tons) of carbon dioxide equivalent (CO₂e) may warrant discussion in NEPA documents. In the absence of final guidance from CEQ, the 27,558 tons (25,000 metric tons) CO₂e provides a benchmark for comparison purposes to assess the Proposed Action's relative contribution of GHG emissions.

3.7.9 Consistency with Applicable Plans

3.7.9.1 Air Quality Plans

The VCAPCD implements, and periodically updates, the Ventura County Air Quality Management Plan (AQMP). The 2007 Ventura County AQMP was adopted on May 13, 2008 and presents the Ventura County's strategy for attaining the Federal 8-hour ozone standard. The AQMP uses projections of population growth and trends in energy and transportation demand to predict future emissions and determine control strategies to eventually achieve attainment with the ambient air quality standards. The control strategies are then either codified into the VCAPCD's rules and regulations, or otherwise set forth as formal VCAPCD recommendations to other agencies.

The Ventura County General Plan includes policies that require consistency with the AQMP, and specifies review according to the recommendations contained in the VCAPCD's Air Quality Assessment Guidelines. Other policies are aimed at reducing emissions from transportation demand and major stationary sources. This air quality analysis has been prepared in accordance with the recommendations of the VCAPCD's Air Quality Assessment Guidelines; consequently, it is consistent with the air quality policies of the Ventura County General Plan.

The VCAPCD rules and regulations contain both requirements and exemptions for certain types of equipment that may be used during implementation of the Proposed Action. Equipment with small internal combustion engines (less than 50 horsepower) would be exempt from permitting through VCAPCD Rule 23-D. Similarly, dust emissions from mobile equipment that may occur would be exempt under Ventura County Rule 23-B. VCAPCD Rule 74-9 contains limitations for larger, stationary internal combustion engines (greater than 50 horsepower) if they are operated for more than one year. However, within the context of the Proposed Action, use of these types of engines would not occur for more than a few weeks or months; thus, these VCAPCD limitations would not be applicable. Nuisances from either dust or emissions of other contaminants are prohibited by VCAPCD Rule 51.

3.7.9.2 Conformity with Adopted Air Quality Plans

Federal funding would be utilized for the Proposed Action. The USEPA has developed criteria and procedures for determining the conformity of Federal actions to the applicable State Implementation Plans (SIPs). The General Conformity Rule is used to assess conformity with an applicable SIP. Section 93.158 (a)(5)(v) of the 1990 amendments to the CAA (the General Conformity Rule) states that an action will be considered to conform to the applicable SIP if such projects are sized to meet only the needs of the population projections that are in the applicable SIP. The General Conformity Rule applicability emission thresholds shown in Table 3.7-3 would apply to those areas in nonattainment of the NAAQS.

Table 3.7-3: General Conformity Thresholds

NOx	VOC
50 tons/year	50 tons/year

Per Section 176(c) of the Clean Air Act Amendments (CAAA) of 1990, the Corps must make a determination of whether the Proposed Action conforms to the SIP. However, if the total direct and indirect emissions from the Proposed Action are below the General Conformity Rule *de minimis* emission thresholds, the Proposed Action would be exempt from performing a comprehensive Air Quality Conformity Analysis, and would be considered to be in conformity with the SIP.

3.8 Noise

Information on noise measurement and on field monitoring in the Project area is provided in the following paragraphs.

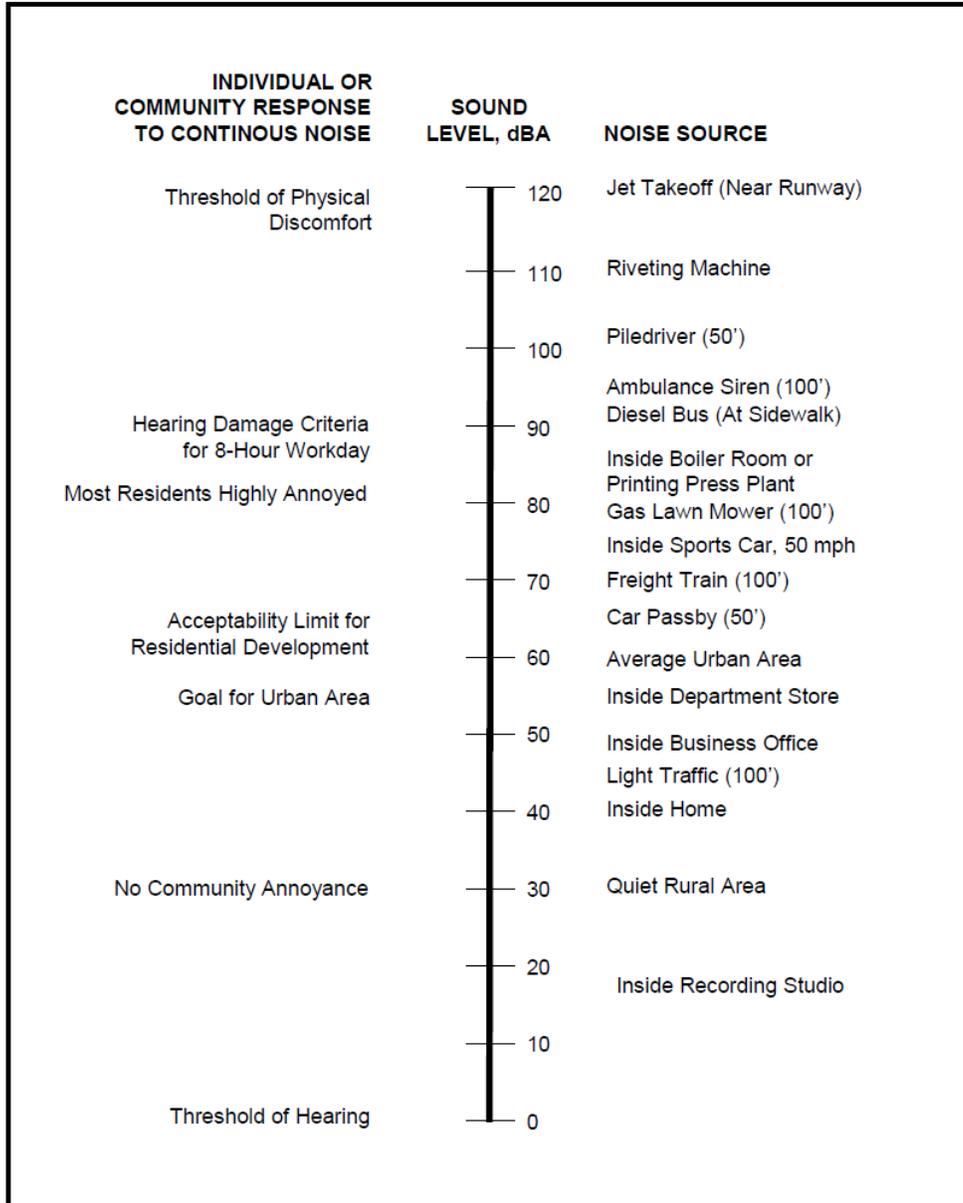
3.8.1 Noise Descriptors

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise is described as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. The decibel (dB) scale is used to quantify sound intensity. Because sound pressure can vary by over one trillion times within the range of human hearing, a logarithmic loudness scale is used to keep sound intensity numbers at a convenient and manageable level. Since the human ear is not equally sensitive to all frequencies within the entire spectrum, noise measurements are weighted more heavily within those frequencies of maximum human sensitivity in a process called "A-weighting" written as dBA. The human hearing can detect changes in sound levels of approximately 3 dBA under quiet conditions. Changes of less than 3 dBA are only discernable under controlled, extremely quiet conditions.

Noise may be generated from a point source, such as a piece of construction equipment, or from a line source, such as a road containing moving vehicles. Noise attenuates (decreases) with distance. The typical atmospheric attenuation rate for point source noise is 6 dBA per doubling of the distance. As noise travels over a soft surface (i.e., non-paved area), an additional natural attenuation of approximately 1.5 dBA per doubling of distance also occurs. Also, any intervening barriers, including natural topography, berms, walls, structures, etc., between the noise source and noise receptors provide for additional noise reduction. Generally, noise is most audible when traveling along direct line-of-sight. Barriers, such as walls, berms, or buildings that break the line-of-sight between the source and the receiver can greatly reduce noise levels from the source because the barriers act to diffract or block the sound. Sound barriers can reduce sound levels by up to 20 dB. However, if a barrier is not high or long enough to break the line-of-sight or otherwise block the sound wave between the noise source and the receiver, its effectiveness is greatly reduced.

Since the human ear is not equally sensitive to sound at all frequencies, a specific frequency-dependent rating scale is used to relate noise to human sensitivity. An dBA scale performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. The basis for compensation is the faintest sound audible to the average ear at the frequency of maximum sensitivity. This dBA scale has been chosen by most authorities for purposes of environmental noise regulation. Typical sounds normally range from 40 dBA (very quiet) to 100 dBA (very loud). Conversation is roughly 60 dBA at 3 feet. As background noise levels increase up to this level (or louder), speech intelligibility becomes increasingly difficult. Noise becomes physically discomforting at 110 dBA as shown in Figure 3.8-1.

When assessing community reaction to noise, there is an obvious need for a scale that averages sound pressure levels over time and quantifies the result in terms of a single numerical descriptor. Several scales have been developed that address community noise levels. Those that are applicable to this analysis are the Leq and CNEL. Leq is the average A-weighted sound level measured over a given time interval. Leq can be measured over any time period, but is typically measured for 1-minute, 15-minute, 1-hour, or 24-hour periods. CNEL is another average A-weighted sound level measured over a 24-hour time period. However, this noise scale is adjusted to account for some individuals' increased sensitivity to noise levels during the evening and nighttime hours. A CNEL noise measurement is obtained by adding 5 decibels to sound levels occurring during the evening from 7 p.m. to 10 p.m., and 10 decibels to sound levels occurring during the nighttime from 10 p.m. to 7 a.m. The 5- and 10-dB penalties are applied to account for increased noise sensitivity during the evening and nighttime hours. The logarithmic effect of adding these penalties to the 1-hour Leq measurements typically results in a CNEL measurement that is within approximately 3 dB(A) of the peak-hour Leq.



Source: County of Ventura 2005. Construction Noise Threshold Criteria and Control Plan.

Figure 3.8-1: Typical Sound Levels of Noise Sources and Expected Reactions

3.8.2 Sensitive Receptors

Some land uses are recognized as being more sensitive to noise levels and vibration than others. Residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, parks, and outdoor recreation areas are generally more sensitive to noise and vibration than are commercial and industrial land uses. In the immediate vicinity of the Project, existing sensitive receptors include single family residences and the Oaks Mobile Estates Mobile Home Park located to the west of the channel north of the railroad bridge. The nearest residential units are less than 100 feet from the edge of the Project. The nearest recreational use is Harding Park, located approximately 350 feet north of the staging area (on opposite side of Highway 126).

3.8.3 Regulatory Setting

3.8.3.1 County of Ventura

Standardized Federal or state criteria have not been adopted for assessing construction noise impacts. As a result, specific construction noise limits for noise-sensitive locations are not currently specified in the General Plan or administrative code of the County of Ventura. However, it is stated in the General Plan that all discretionary development projects shall comply with the requirements of the County's Construction Noise Threshold Criteria and Control Plan. According to the County's Construction Noise Threshold Criteria and Control Plan, land uses considered to be noise sensitive include hospitals, nursing homes (quasi-residential), residential (single-family and multi-family), hotels/motels (quasi-residential), schools, churches, and libraries (when in use). Construction noise criteria take into account the existing noise environment, the time-varying noise during the various phases of construction activities, the duration of the construction, and the adjacent land use.

The established thresholds of significance criteria and standard noise monitoring and control measures for construction during daytime hours would apply to the Proposed Action. The County's *Construction Noise Threshold Criteria and Control Plan* states that construction activities are permitted during daytime hours (7:00 a.m. to 7:00 p.m., Monday through Friday, and 9:00 a.m. to 7:00 p.m., Saturday, Sunday and local holidays). However, in the event such activity is deemed necessary and is permitted, reduced noise threshold criteria are provided for construction that must occur during evening and/or nighttime hours. Emergency construction work is exempt from construction noise thresholds.

3.8.3.2 City of Santa Paula

The City of Santa Paula Noise Ordinance, Chapter 93 of the Santa Paula Municipal Code (SPMC), sets noise standards for land uses within the City. SPMC Section 93.21 establishes the acceptable exterior noise standard for residential uses of 65 dBA from 7:00 a.m. through 10:00 p.m. and 60 dBA from 10:00 p.m. through 7:00 a.m. The exterior noise level standard for other noise-sensitive uses, including schools, libraries, hospitals, community care facilities and assembly halls is 65 dBA at all times. According to the SPMC, commercial and office uses cannot exceed an outdoor noise level of 70 dBA and neighborhood commercial uses cannot experience an external noise level of more than 65 dBA. Industrial uses cannot exceed an external noise level of more than 75 dBA. The SPMC does not set acceptable interior noise level standards.

SPMC Section 93.23 states that construction activities occurring between 8:00 a.m. and 6:00 p.m. Monday through Friday are exempt from the noise standards set in SPMC Section 93.21. A notice listing the times between which construction activities can take place, titled in letters at least 1 inch in height and placed at least 5 feet (1.5 meters) above ground level, must be posted at all entrances to a construction site.

It should be noted that the City of Santa Paula General Plan Noise Element Implementation Measure No. 1 calls for the Development Code (Title 16 of the SPMC) to be amended as necessary to account for the policies and programs contained in the Noise Element. To date, the City has not amended the Municipal Code.

3.8.4 Noise Environment

The primary off-site noise sources in the Project area include adjacent industrial operations, traffic along nearby roads and Highway 126, trains crossing along the railroad bridge, and the Santa Paula Airport. The trains are also an off-site source of groundborne vibration. Currently, the Fillmore & Western Railway Company operates tourist-oriented trains between 12:00 p.m. and 3:00 p.m. on Saturdays and Sundays. The tracks are also used by one freight train traveling once in each direction, on Mondays, Wednesdays, and Fridays between the hours of 8:00 a.m. and 12:00 p.m. The Santa Paula Airport is located on a 38-acre site south of Highway 126, approximately 0.5 mile (0.8 kilometers) west of the staging area. The Santa Paula Airport currently operates as an uncontrolled public-use facility and is not used for commercial purposes. According to the Noise Element of the Santa Paula General Plan, aircraft noise is generally not a problem in the City because the typical aircraft travel pattern is south of the City, over the Santa Clara River, and the required approach and departure altitude is at least 1,500 feet (457.2 meters). Industrial, commercial, and agricultural uses are also identified as noise contributors within the City; however, these are not typically a substantial noise problem.

A noise measurement was taken near the creek between Highway 126 and Telegraph Road for the 1995 EIS/EIR that measured a Leq noise level of 54.1 dBA, with a maximum and minimum value of 60.0 dBA and 50.0 dBA. This reading was considered fairly typical of the noise in proximity to developed area and frequently used roadways and overpasses.

3.9 Hazardous Material

This section describes the conditions in the Project area related to hazardous materials.

3.9.1 National Priorities List (NPL)

NPL Sites are authorized under Section 105(a)(8)(b) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) also known as the Superfund law. This list is updated annually by the USEPA based on various releases or threatened releases throughout the nation. The list criteria are based on risk to public health, welfare, and the environment, taking into account a variety of factors including the extent of population at risk, hazard potential, the potential for contamination of drinking water supplies, and threats to ambient air. There are no NPL sites (or Superfund sites) within the Project area. The nearest NPL site, Pacific Coast Pipelines, is approximately 10 miles (16.1 kilometers) from the study area in Fillmore, California.

3.9.2 Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)

The CERCLIS List contains sites that are either proposed for or on the NPL and sites that are in the screening and assessment phase for possible inclusion on the NPL. The information on each site includes a history of all pre-remedial, remedial, removal, community relation activities or events at the site, financial funding information for the events, and unrestricted enforcement activities. Within the Project area, there are no sites that appear on the NPL or under consideration for the NPL.

3.9.3 Envirostor and GeoTracker

The California Department of Toxic Substances Control (DTSC) maintains an automated database (Envirostor, formerly CalSites), which contains information on properties or sites where an unauthorized release of hazardous substance(s) has occurred and that site investigation and cleanup may be necessary. Similarly, the California Water Resources Control Board maintains the GeoTracker database, which also lists sites where investigation and/or remediation are in progress or completed.

Near to the Project area, sites that appear on Envirostor and/or GeoTracker are located in the City of Santa Paula, primarily along Telegraph Road, Main Street, and Harvard Boulevard. At most of these sites, investigation and/or remediation has been completed and the sites are considered "closed". However, there are several open sites where investigation and/or remediation is currently underway.

These sites are primarily leaking underground storage tank (LUST) sites, where the extent of contamination in soil and/or groundwater is limited. The only open site within one quarter mile of the Project is located at 1349 Main Street, approximately 0.25 mile west of the creek. The sites identified within one quarter mile of the Project consist of a permitted underground storage tank located at 1395 East Harvard Boulevard and LUST cleanup sites at 1398 and 1480 East Harvard Boulevard (closed in 2005 and 2004 respectively), and 208 Hallock Drive (closed in 1989).

3.9.4 Santa Paula Creek Survey

A site reconnaissance was conducted on June 29, 2009, for the sediment removal project SEA to observe present site conditions related to the presence of potentially hazardous materials in the Project area and vicinity. An area approximately 5 miles (8 kilometers) long from Steckel Park to the Santa Clara River confluence was surveyed. Historically, land use in this area included agricultural, residential, and industrial uses with an increase in residential and industrial uses over time. Throughout the reach, the watercourse and embankments of Santa Paula Creek were observed to be generally free of debris, trash, or disposed material.

3.10 Public Safety

This section focuses on issues with regard to public safety, specifically flooding issues. The existing environment has few natural hazards other than wildfires that could adversely impact local urban areas and destroy wildlife habitat. There are no schools, gasoline stations or fuel storage facilities in the immediate vicinity of the Project. The nearest airport is the private Santa Paula Airport located south of Highway 126, approximately 0.5 mile southwest of the Project. The Santa Paula Airport currently operates as an uncontrolled public-use facility and is not used for commercial purposes. It is not considered a safety hazard relative to the Proposed Action.

The Federal Emergency Management Agency (FEMA) is the Federal agency that advises jurisdictions on floodplain management issues. FEMA's mission is to reduce loss of life and property, and protect the nation's critical infrastructure from all types of hazards through a comprehensive, risk-based, emergency management program of mitigation, preparedness, response, and recovery. FEMA provides technical assistance to communities that promote safe and wise land-use planning in designated floodplains as a condition for making Federal flood insurance available to residents in participating communities. FEMA promotes effective land-use planning, building codes, and other means to minimize the effects of disasters such as floods.

For other public health and safety issues, the respective jurisdictions' general plans contain various goals and policies for the protection of public health and safety. In addition, there are local ordinances related to these issues.

3.10.1 Flooding

The Santa Paula Creek watershed has a long history of flooding problems, and major floods have occurred during severe storms. Accurate flood records have been recorded since 1937; since then there have been six flood episodes: 1938, 1943, two flood episodes in 1969, 1978, and 1980. The Project is located within the 100-year flood plain.

The potential for flooding along the Santa Paula Creek channel is considered life-threatening (USACE 2009). Failure of the Project would result in both flooding along the highway embankment and increased susceptibility to flooding of a larger area of urbanized Santa Paula and orchards to the east of the City. The long-term hazard relates to existing conditions on the creek that can generate significant sediment and debris flows, which could cause flooding along the creek with associated property damage and potential for loss of life if the flood risk management capabilities of the Project are not maintained.

3.10.2 Fire Safety

The risk of wildfires in the Project vicinity is higher during the dry season, and the hazard is of most concern where open space meets residential development. Wildfires are an annual threat in the large open space and recreational areas surrounding the Project. The wildfire hazard is considered moderate, according to the draft California Fire Resources Assessment Program draft fire hazard severity zone map for the Local Responsibilities Area in Santa Paula (California Department of Forestry and Fire Protection 2007).

3.11 Socioeconomics and Environmental Justice

3.11.1 Population Community Profile

The Project is primarily in unincorporated rural Ventura County and a portion is in the City of Santa Paula, approximately 65 miles northwest of Los Angeles and 14 miles east of Ventura. It is the geographical center of Ventura County and situated in the agricultural Santa Clara Valley. The area is surrounded by rolling hills and rugged mountain peaks and orange, lemon, and avocado groves. Santa Paula is referred to as the "citrus capital of the world". It is a major distribution point for citrus fruits in the United States. The region is also noted for major avocado producing and processing.

According to State Department of Finance (DOF) 2011 estimates, the population of Ventura County is 828,383 overall. Of the 10 cities in the county, Santa Paula is the fourth smallest with a population of approximately 29,531. Based on 2010 census figures of 823,318 and 29,321 respectively, this represents a 0.62 percent increase in the County overall and 0.72 percent increase in Santa Paula since 2000. With its 0.72 percent growth rate, Santa Paula has experienced modest population growth over the past several years in comparison to most other cities in Ventura County. This also represents a slowing in the growth rate from the 1990s when the City grew by 14 percent from 1990 to 2000.

The reasons for the City's historical slow growth may be due in part to constraints on the City's developable area. The City is relatively compact with few undeveloped areas left within the existing boundaries. The Sphere of Influence and Area of Interest may provide opportunities for growth in the future. The Santa Paula General Plan estimates that full build-out (including the Sphere and Influence and Areas of Influence) would result in 3,807 new dwelling units and could result in a population of 37,920 (City of Santa Paula 1998).

The City faces several economic issues. Many of the City's residents are employed in agriculture and retail industries, which tend to be lower paying than services and manufacturing. Further many of the residents work and shop outside of the City, which limits sales tax revenues. The housing stock also a lower assessed value that many area of Ventura County which limits property tax venues (City of Santa Paula 1998).

Based on 2010 census figures, Santa Paula has a growing Hispanic population. In 1990, the City's population was 59 percent Hispanic origin, and in 2000 and 2010, this percentage had grown to 71 percent and 79.5 percent, respectively. Overall, the Hispanic population in Ventura County is 40.3 percent. The City's population of non-Hispanic minorities is 2 percent, less than Ventura County's 11.2 percent.

3.11.2 Housing

According to Department of Finance estimates, there were 8,757 housing units in the City of Santa Paula in the year 2011. The 2010 Census figures show that 56.2 percent of the occupied housing units are owner-occupied, while 43.8 percent are occupied by renters (based on a count of 8,347 occupied units). This is compared to 65.3 percent of units that are owner-occupied in the Ventura County as a whole (based on a count of 266,920 units occupied).

A draft of the Santa Paula Housing Element was completed in August 2010, which identified overcrowding as problem in Santa Paula housing. Overcrowding is defined by the U.S. Census bureau

when there is more than one person per room in a house (excluding bathrooms and kitchens). Overcrowding is generally a reflection of the lack of affordable housing. According to 2000 and 1990 census figures, overcrowding has greatly increased and is greater for the City of Santa Paula than Ventura County overall (City of Santa Paula 2010).

3.11.3 **Employment**

Employment characteristics based on U.S. Census Bureau's the American Community Survey for 2010 are presented in Table 3.11-2. According to the American Community Survey, there were 12,396 persons 16 years and over in the City of Santa Paula labor force. As shown in Table 3.11-2, City residents are engaged in a variety of occupations, with the natural resources, construction and maintenance sector being the largest occupational category at approximately 22.8 percent. According to the State of California Employment Development Department monthly labor force data, in November 2011, Santa Paula had an unemployment rate of 15.6 percent which the second highest unemployment rate in the county. The overall unemployment rate in the county was at 9.5 percent (California Employment Development Department Labor Market Information Division 2011).

Table 3.11-2: Employment by Occupation

Job Category	Number of Jobs	Percent
Management, professional and related occupations	2,428	19.6
Service occupations	2,376	19.2
Sales and office occupations	2,699	21.8
Natural Resources, construction, extractions, and maintenance occupations	2,828	22.8
Production, transportation, and material moving occupations	2,065	16.7

Source: U.S. Census Bureau, 2008-2010 American Community Survey

3.12 **Traffic**

The following section describes major roadways pertinent to the Proposed Action as well as alternative forms of transportation available in the Project vicinity.

3.12.1 **Local Access and Traffic Circulation**

The primary regional access to the Project area is from Highway 126, which runs east-west through Santa Paula, crossing Santa Paula Creek just upstream of the confluence with the Santa Clara River. It provides regional access from the City of Ventura and U.S. Highway 101 to west and the City of Fillmore and Interstate 5 to the east. Highway 126 is a four-lane divided, limited access freeway from Ventura to the 10th Street interchange, where it then transitions to a four-lane undivided highway. There are interchanges that serve Santa Paula, located at Briggs Road, Peck Road, Palm Avenue, and 10th Street and additional access is provided at an at-grade signalized intersection at Hallock Drive, east of Santa Paula Creek. At present, there are no capacity problems or truck operating restrictions on Highway 126.

Highway 150 runs north-south through the City of Santa Paula, first as 10th Street from the intersection of Highway 126 northward, then as Ojai Road north of Santa Paula Street. To the north of the Project, Highway 150 follows the Santa Paula Creek channel northward from the City limits to the creek's confluence with Sisar Creek.

Other major streets within the vicinity of the Project area include Harvard Boulevard, which is the major east/west route within the City of Santa Paula. The east extension of Harvard Boulevard, which is Telegraph Road, is county-maintained and crosses Santa Paula Creek via a bridge (in this document

generally referred to as Telegraph Road Bridge). The County of Ventura has indicated that there is no truck operating restrictions on this roadway; however, hauling operations affecting county roads are subject to an encroachment permit from the Ventura County Department of Public Works, Transportation Section. The majority of this roadway has two lanes in either direction. Traffic signals occur at major intersections such as Palm Avenue, Olive Street, 8th Street, 10th Street, and 12th Street; however, many local and collector streets also empty onto Harvard Boulevard. The predominant land use is commercial.

Main Street is an arterial roadway that bisects the City's downtown area in an east-west orientation. From 7th Street easterly to Oak Street (the downtown area), Main Street has four travel lanes with a parking lane on each side of the roadway. From Oak Street east, Main Street is a two-lane road with parking and a center turn lane. Main Street ends at the eastern City limits, transitioning to Telegraph Road.

Hallock Drive provides access from Highway 126 to Telegraph Road just to the east of Santa Paula, on the east side of the creek. It is a four-lane road with a two-way left turn lane.

3.12.2 *Truck Routes*

Heavy truck traffic is directed to designated streets serving the commercial and industrial areas; truck routes are primarily limited to Highway 150 and the arterials serving the southern and southeastern portions of the City. Heavy truck traffic is discouraged along Main Street west of 10th Street (Highway 150) due to the predominance of residential uses in this area. On the east side of the City, the Main Street/Harvard Boulevard/Telegraph Road intersection is not a standard configuration and is not signalized, presenting some increased operational hazard for large trucks negotiating a turn from Main Street onto Harvard Boulevard or Telegraph Road. However, Telegraph Road, Harvard Boulevard, and Main Street east of 10th Street are designated truck routes.

3.12.3 *Project Site Access*

Access to the Project from Highway 126 to the western side of the creek is available via the 10th Street exit to Santa Clara Street, and to the eastern side of the creek from South Hallock Drive to East Lemonwood Drive and East Hallock Drive. Vehicle creek crossings are located at Highway 126 and Telegraph Road. Existing service roads provide access along the creek banks within the Project.

3.12.4 *Level of Service in Project Site Vicinity*

Level of Service (LOS) is a qualitative measure used to describe the performance levels of circulation system or facility. Traffic LOS is designated as LOS A representing free flow conditions through LOS F, representing overloaded conditions. LOS D is typically recognized as an acceptable service level in urban areas. The definition for each level of service for signalized intersections is based on the volume-to capacity (V/C) ratio. The definitions of LOS for signalized intersections are presented in Table 3.12-1 below.

Table 3.12-1: LOS Definitions For Signalized Intersections

Level of Service	Ratio	Definition
A	0.000-0.600	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.
B	0.601-0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel some-what restricted within groups of vehicles.
C	0.801-0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801-0.900	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901-1.000	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	>1.000	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays of continuously increasing queue lengths.

Source: Transportation Research Board. 1980. Transportation Research Circular No. 212, Interim on Highway Capacity.

An EIR prepared in 2007 for a proposed East Area 1 development east of Santa Paula Creek (City of Santa Paula 2007) determined that signalized intersections in the Project area generally operate at an LOS C or better during a.m. and p.m. peak hours. However, the 10th street and Highway 126 eastbound ramp operates at LOS F during the p.m. peak hour. Additionally, freeway segments on Highway 126 west of Peck Road operate at LOS B or better during a.m. or p.m. peak hours. Additionally, the 10th Street off-ramps and Palm Avenue off-ramps operate at LOS C or better during a.m. and p.m. peak hours.

3.12.5 Traffic Volumes

The historic and estimated traffic volumes at General Plan build-out (2020) are shown in Table 3.12-2.

Table 3.12-2: Existing and Future Traffic Volumes

Roadway	Historic ADT¹	2020 ADT
HARVARD BLVD		
West of Steckel Drive	10,800	15,300
West of Palm Avenue	16,200	19,200
West of 8 th Street	14,700	17,700
East of Ventura Street	2,500	14,900
MAIN STREET		
West of Palm Avenue	6,900	7,300
West of 8 th Street	8,000	10,400
TENTH STREET (HWY 150)		
North of Say Road	3,600	7,000
North of Santa Paula	12,000	14,500
North of Main Street	14,000	17,800
South of Main Street	12,600	19,000
HIGHWAY 126		
West of Peck Road	35,000	68,900
West of SR-150	26,500	62,600
East of Hallock Drive	21,000	26,000

Source: City of Santa Paula General Plan Table CI-4, 1998.

1. Existing traffic volumes for Santa Paula were collected in 1994, 1995, and 1996. Volume data collected for the 1998 General Plan indicated that traffic levels have remained relatively constant in the mid to late 1990s.

3.12.6 Alternative Transportation Facilities

Class II (on-street) bike paths are located on Santa Maria Street between Steckel Drive and 8th Street. Highway 126 east of Santa Paula is regional state route that permits bicycle use. Transit in the City is provided by the Ventura Intercity Service Transit Authority (VISTA) and entails an express bus that provides service between Ventura and Fillmore and a door-to-door dial-a-ride service that offers City-wide coverage.

3.13 Utilities

Utilities refer to infrastructure and the organizations that oversee them that are designed to provide basic services to citizens and manage waste removal. Public utilities includes sewer, water, gas, oil, electricity, telephone or any other utility lines that cross any part of the Project.

The City of Santa Paula Public Works Department, Water Division, is the City's water supplier. The City's water system is made of up two treatment plants and more than 95 miles (152.9 kilometers) of pipeline throughout the City. Construction of a new water recycling facility was completed in December 2009 to replace an existing facility built in 1939. In addition, the Santa Paula Creek drainage area is largely located west of the Project. Several water lines cross the creek and field inlets are located immediately adjacent to the creek boundary.

Groundwater from the Santa Paula Groundwater Basin is the primary source for the municipal water supplies. The Santa Paula Groundwater Basin is recharged by Santa Clara River, Santa Paula Creek, and other area creeks. The groundwater is pumped from five active City-operated water wells. According

the City's Urban Water Management Plan (UWMP), the City has had an average annual water demand of 5,102 acre-feet (6,293,000 cubic meters) per year and a net surplus of 810 acre-feet (999,000 cubic meters). The UWMP determined that the City's current water supplies are sufficient to meet proposed General Plan development levels to 2020.

Southwest Water Company is under contract to the City of Santa Paula to provide wastewater services. Additional services are provided by the Ventura Regional Sanitation District. The main collector pipeline is located in Harvard Boulevard. This was identified in a 2005 Wastewater Systems Master Plan as being in poor condition and over capacity (City of Santa Paula 2007). A sewer force main crosses Santa Paula Creek south of the Highway 126 overpass and goes under the concrete channel bottom.

Two utility pipelines (water/sewer) that service the Lemonwood Industrial Park to the east of the Project cross under the invert south of the Highway 126 bridges. These utilities were widened and relocated to a greater depth as part of construction of the existing FRMC. A 42-inch reinforced concrete pipe (RCP) is located near the southern end of the Project. There are also an abandoned 6-inch sewer and 8-inch water lines located downstream of the freeway bridge. Additionally, an 8-inch line is located near Hallock Drive and Telegraph Road.

Toland Road Landfill is approximately 5 miles (8 kilometers) from the Project and is used by the City of Santa Paula. Other landfills used by the City of Santa Paula include the Simi Valley Landfill – Recycling Center; Chiquita Canyon Sanitary Landfill; Bakersfield Metropolitan (Bena) Sanitary Landfill; and Waste Management of Lancaster Landfill and Recycling Center.

Southern California Edison (SCE) provides electrical power to the Project and vicinity. There are numerous aboveground distribution lines in the vicinity of the Project. Two parallel 220-kV transmission lines traverse along right-of-way portions of Santa Paula Creek just above April Lane to the north of the Project.

The Southern California Gas Company provides natural gas service to the Project and vicinity through major distribution lines (6-inch to 12-inch [15.2 to 30.5 centimeters]). Underground and suspended lines are located within the Project area.

Time Warner Cable provides both cable television and high-speed internet services to the Project area. Verizon provides telephone service and maintenance and also Fiber Optic Service or DSL internet service in the Project vicinity. There are numerous aerial telephone lines and cable lines in the Project area.

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SECTION 4 – IMPACT ANALYSIS

Section 4 presents a discussion of potential impacts associated with each alternative. Construction activities (i.e., fish ladder repair) would occur under Alternative C at the fish ladder and immediately upstream and downstream. O&M, as guided by the finalized O&M Manual would occur under Alternatives B and C over the length of the Project. O&M would also occur under Alternative A, however, it would occur intermittently as the need arose and funding allowed, as is the current practice within the Project area. Under Alternatives B and C, O&M involves all activities required to keep the flood risk management system or any of its components operable for its authorized use, including appropriate maintenance of fish passage components, as identified in the finalized O&M Manual. This includes inspections, routine repair work, and emergency operations. For this assessment, the O&M impact analysis focuses on Project-wide sediment removal because it is the most intensive O&M activity that is reasonably foreseeable. Project-wide sediment removal has a greater potential to result for environmental effects as compared to other less intensive O&M activities because it would involve in-channel work throughout the entire Project and it would likely be longer in duration and require more construction workers and equipment as compared to other O&M activities. Therefore, sediment removal would have greater potential for environmental effects such as air emissions, noise generation, and potential disruption of biological resources. Project-wide sediment removal could involve removal of up to 335,000 cubic yards of sediment over a period of four to six months. This large scale sediment removal action is estimated to occur once every three years on average³.

The staging area is a disturbed vacant lot that would be used temporarily to store equipment and stockpile excavated sediment, also access road turnouts could be used for a similar purpose. No long-term impacts would occur as a result of this temporary use and thus, are not discussed in the following evaluation. Potential short term impacts resulting from use of the staging area are evaluated for those resource areas where potential impacts could occur (i.e., Geology and Soils [mineral resources], Land Use, Aesthetics, Noise, and Traffic).

This section also presents Environmental Commitments for construction activities and O&M. The Environmental Commitments are commitments proposed by the Corps specifically intended and designed to reduce or avoid adverse effects to environmental resources. The Environmental Commitments include commitments identified in the O&M Manual. The Environmental Commitments are designed to supplement terms and conditions from existing and future permits applicable to the Proposed Action. Permit measures that minimize impacts are referenced throughout the document as appropriate. As applicable, Environmental Commitments are identified in the analysis of each resources area presented in Section 4 and summarized in Section 5.

The Corps is the responsible party for implementing Environmental Commitments and permit requirements until notice of project completion is provided to the VCWPD. At that time VCWPD would take over this responsibility.

4.1 Soils and Geology

This section discusses the potential effects related to soils and geology from the Proposed Action. Impacts would be considered adverse if the Project resulted in the following:

- Substantial adverse effects to people or structures due to seismicity, earthquakes, liquefaction, landslides, or other geologic hazards.
- Substantial soil erosion or the loss of topsoil.
- Alteration or destruction of unique geologic features or mineral resources.

³ Removal of 335,000 could occur following a design storm event. Typically, sediment removal activities would involve removal of a smaller amounts of sediment, depending on the amount of deposition that has occurred between sediment removal actions.

4.1.1 Alternative A: No Action

Under the No Action Alternative, no construction would occur and no new O&M Manual would be established. The Project, as with all areas in the region, is located within a seismically active area and as such would be exposed to some risk from geologic hazards, such as earthquakes. However, the use of the Project would not be altered, nor would structural modifications occur. There would be no repairs to the existing fish ladder, no changes to the design invert and allowable sediment profile, and no action would be taken to reduce scour potential upstream of the railroad bridge. There would be no increase in the risk of loss, injury, or death from fault rupture, ground shaking, liquefaction, or landslides, nor increased risk of other hazardous geological occurrences. However, problems associated with scour in the channel would continue and O&M would only occur on an intermittent basis. The O&M that does occur under Alternative A would be primarily reactive (i.e., taking place when flood risk management capacity is threatened) as opposed to proactive monitoring and regular implementation of actions to address potential problems before the flood risk management capacity of the channel is substantially reduced.

4.1.2 Alternative B: Finalization and Implementation of the O&M Manual

As described under Alternative A, the Project is located within a seismically active area and as such would be exposed to some risk from geologic hazards, such as earthquakes. However, the use of the Project would not be altered, nor would structural modifications occur that could increase the risk of loss, injury, or death from fault rupture, ground shaking, liquefaction, or landslides, nor would the risk of other hazardous geological occurrences increase.

Under Alternative B, O&M, including regular inspections and maintenance, periodic sediment removal and emergency repairs, would occur in compliance with the finalized O&M Manual. A new design invert would be established during the sediment removal actions, which would help to reduce scour potential. The sediment removal operations would occur when the accumulated sediment exceeds the allowable sediment profile, as specified in the O&M Manual (estimated to be approximately every three years on average). Removal of sediment would produce a positive effect by re-establishing flood capacity and greater flood risk management for local residents. All earthwork and site engineering associated with sediment removal and other O&M activities would comply with applicable grading codes and regulations intended to limit the probability of occurrence and the severity of consequences from potential hazards related to geology or soils. The new design invert and allowable sediment profile would not increase the risk of adverse affects from seismic activity or other geologic hazards to people or structures. Therefore, seismicity, earthquakes, liquefaction, landslides, or other geologic hazards would not pose a risk to people or structures compared to existing conditions.

O&M activities involving construction work would be required to comply with applicable construction requirements including the implementation of best management practices (BMPs) to control soil erosion. Section 4.2, Water Resources, below, provides additional discussion regarding control measures applicable to construction-related erosion and sedimentation. With implementation of BMPs there would be no substantial increase in soil erosion or loss of topsoil.

The Project is within an aggregate resource area and near the site of petroleum resources. However, O&M activities would occur within the Project which, as an existing flood risk management channel, is not available for mineral extraction other than materials removed as part of flood risk management maintenance. Thus, Alternative B would not reduce access to an important mineral source. There is an existing cement plant and an operation for stockpiling, sorting, and selling of aggregate removed from Santa Paula Creek in 2009 and 2010 adjacent to the staging area. Use of the staging area would occur on vacant land and not hinder the existing operations. Thus, O&M would not preclude use of a mineral resource and no adverse impacts related to mineral resource would occur. In addition, there would be no alteration or destruction of unique geologic features.

O&M would occur in compliance with the O&M Manual which is intended to guide the O&M of the Project by establishing procedures and instructions and identifying environmental requirements. Additionally,

O&M would comply with Environmental Commitment W-7 requiring implementation of construction BMPs to control erosion, presented in Section 4.2.4 in Section 4.2, Water Resources. Therefore, Alternative A would have no adverse impacts related to soils and geology.

4.1.3 *Alternative C: Implementation of the Finalized O&M Manual and Fish Ladder Repair (Preferred Alternative)*

The Project, as with all areas in the region, is located within a seismically active area and as such would be exposed to some risk from geologic hazards, such as earthquakes. However, the use of the Project would not be altered, nor would structural modifications occur. Alternative C would involve minor repair of the existing fish ladder to round the weir tops edges and encapsulate them with steel plating. The minor fish ladder repairs would not increase the risk of loss, injury, or death from fault rupture, ground shaking, liquefaction, or landslides, nor would it increase the risk of other hazardous geological occurrences.

Excavation of sediment from the pools would be required during construction. As construction would be conducted during the dry season, from June 30 to November 1, it is highly unlikely that a significant storm event would occur during the duration of construction and lead to substantial erosion. Further, construction activities would be required to comply with applicable construction requirements, including the implementation of BMPs to control soil erosion. The fish ladder repairs would occur within the Project and there would be no alteration or destruction of unique geologic features or mineral resources. Therefore, construction would not result in an adverse impact related to geology and soils.

As discussed under Alternative B, O&M activities, including the establishment of the new design invert and allowable sediment profile, would not increase the risk of adverse affects from seismic activity or other geologic hazards to people or structures. There would be no alteration or destruction of unique geologic features or mineral resources. O&M would also occur in compliance with the O&M Manual, and O&M and the fish ladder repairs would occur in compliance with Environmental Commitment W-7 requiring implementation of construction BMPs to control erosion, presented in Section 4.2.4. Therefore, Alternative C would not result in an adverse impact related to geology and soils.

4.1.4 *Environmental Commitments for Construction and O&M*

Environmental Commitment W-7, listed in Section 4.2.5, Water Resources, which requires implementation of erosion controls BMPs would further reduce impacts.

4.1.5 *Determination of Impacts*

With implementation of the Environmental Commitment listed above, the Proposed Action would not result in an adverse impact related to soils and geology.

4.2 Water Resources

Impacts to water resources are considered adverse if one or more of the following conditions occur:

- If the project results in a substantial increase of turbidity during construction, the impact would be considered adverse.
- If the project would considerably increase erosion or sedimentation in relation to the existing condition, the impact would be considered adverse.
- If the project would release substantial chemicals such as oil and grease into the waters of the United States, the impact would be considered adverse.

4.2.1 *Alternative A: No Action*

Under the No Action alternative, O&M would continue to occur intermittently under the draft O&M Manual and there would be no repairs to the existing fish ladder. No new design invert and allowable sediment profile would be established and thus no action would be taken to reduce scour potential.

The O&M that does occur under Alternative A would be primarily reactive (i.e., taking place when flood risk management capacity is threatened) as opposed to regular monitoring and implementation of actions to address potential problems before the flood risk management capacity of the channel is substantially reduced. Therefore, under the No Action Alternative the surrounding communities would be at a higher risk of flood damage should the capacity of the flood conveyance channel be reduced as a result of sediment accumulation or other factors. The O&M activities that do occur would be required to comply with applicable construction requirements pertaining to stormwater and urban runoff, thereby minimizing potential impacts to water quality.

4.2.2 *Alternative B: Finalization and Implementation of the O&M Manual*

Under Alternative B, O&M, including periodic sediment removal and emergency repairs, would occur as specified in the finalized O&M Manual. The new design invert would be established during the sediment removal actions, which would occur when the accumulated sediment exceeds the allowable sediment profile, as specified in the O&M Manual (estimated to be approximately every three years on average).

O&M activities would include sediment removal and use of heavy equipment in the channel. This could adversely affect water quality (i.e., spilled fluids, eroding soils) if proper controls are not implemented. However, the O&M activities would be required to comply with applicable construction requirements pertaining to stormwater and urban runoff. With the implementation of BMPs such as sand bags, fiber rolls and silt fences or other erosion control mechanisms, regular watering of construction surfaces to prevent wind erosion, and stockpiling construction materials in appropriate containment facilities, these effects would be minimized or avoided. Thus, the potential for sediments to enter Santa Paula Creek through runoff and surface waters would be minimized or avoided. For O&M activities, such as sediment removal actions, that disturb one or more acres of soil, a Storm Water Pollution Prevention Plan (SWPPP) that identifies BMPs would be required. The Corps' environmental staff would be responsible for review and implementation of the SWPPP and other permit requirements until notice of Project completion is provided to the VCWPD and then the VCWPD would take over this responsibility. O&M activities conducted by VCWPD would also be required to comply with measures identified in the SAA to protect water quality such as requiring staging/storage and spoils areas to be located outside of the creek and where it cannot be washed into creek waters by runoff or rainfall, immediate cleanup of any spills, maintaining equipment daily to prevent leaks of materials into creek waters, and taking measures to minimize turbidity/siltation.

No work would be accomplished within flowing water. When work in flowing water is required, a diversion channel would be created to minimize impacts to water quality and turbidity. Construction of the diversion channel would occur in compliance with applicable permits, including BO(s), WQC(s), and SAA(s), and be monitored by Corps' environmental staff or VCWPD as appropriate. No construction equipment would be placed or driven within flowing waters.

Grading activities may result in loosening the top soils which could be temporarily exposed and susceptible to erosion, especially if large rainfall events occur. Potential increases in turbidity due to O&M grading and sediment removal are expected to be short-term in nature and are not expected to cause an appreciable increases over background turbidity levels. In particular, appreciable increases are not expected when Mud Creek is flowing, as Mud Creek contributes significantly to high turbidity levels in Santa Paula Creek. Minimization measures specified in permits, such as the SAA, which would be also be implemented to minimize turbidity, including the use of control devices such as use of barriers to prevent silt and other materials from passing from the work area to downstream reaches. Sediment removal and other O&M activities would not occur during the rainy season or during the steelhead

environmental window to the degree feasible. However, if any rain storms do occur during construction O&M activities, the construction would be temporarily ceased.

O&M activities could include removal of existing vegetation which could increase potential for soil erosion to occur. However, once construction/sediment removal is completed, the area is expected to revegetate naturally or be replanted if required by Project permits, thereby reducing the amount of exposed soils and reducing the potential for soil erosion to occur.

O&M activities would occur within the Project and would not alter the course of Santa Paula Creek. O&M would also not affect flow rates, site drainage, or otherwise change the hydrology of this watershed. Conversely, the regular O&M including periodic removal of accumulated sediments is expected to maintain the Project's flood risk management function and the new design invert and allowable sediment profile would reduce scour potential and degradation of the channel bottom. Additionally, O&M would occur in compliance with the O&M Manual which is intended to guide the O&M of the Project by establishing procedures and instructions and identifying environmental requirements. O&M would also comply with the Environmental Commitments presented in Section 4.2.4 and applicable resource agency permits. Therefore, Alternative B would not result in an adverse impact related to water resources.

4.2.3 *Alternative C: Implementation of the Finalized O&M Manual and Fish Ladder Repair (Preferred Alternative)*

Alternative C would involve minor repairs of the existing fish ladder; the use of the Project would not be altered and no structural modifications would occur. Repairs to the fish ladder would occur over an approximately two to three and a half month period during the in-channel work window. As with O&M activities discussed for Alternative B, no work would be accomplished within flowing water in order to minimize or avoid any localized increases in turbidity and water quality impacts. Construction would not occur during the rainy season or during the steelhead migration period, and construction would temporarily cease during any rain events. A diversion channel would be created in order keep stream flows, if any, away from the construction work area. Construction of the diversion channel would be monitored by a qualified biologist and it would be created as per commitments identified in this SEA and applicable permits (BO[s], WQC[s], and SAA[s]). During construction, heavy machinery and material would be located within the Project. No machinery or material would be stored in the Project area during non-working hours when no activity is taking place on-site. Machinery and materials would be removed from the active channel at the end of each working day.

The rounding and capping of the weirs is expected to have a negligible effect on hydraulics. The results of a HEC-RAS model that was run to evaluate the hydraulic design of rounded and capped weirs showed that the significant roughness developed by the weir structures still limits velocities over the ladder and maintains subcritical flows when overtopping of the weirs occur. The operation of the fish ladder would not affect water quality. Therefore, operations of the repaired fish ladder would not adversely impact water resources.

As discussed under Alternative B above, O&M activities such as sediment removal actions, would occur in compliance with applicable requirements pertaining to stormwater and urban runoff controls, water diversion requirements, and applicable Environmental Commitments, including those presented in Section 4.2.4 and the O&M Manual, which would ensure that impacts would not be adverse. Therefore, Alternative C would not result in an adverse impact related to water resources.

4.2.4 Environmental Commitments for Construction and O&M

The following Environmental Commitments are Environmental Protection Requirements specified in Appendix VI of the O&M Manual to further avoid and minimize impacts on water resources:

- W-1** When applicable, the Corps or VCWPD (as applicable) shall prepare and submit a Notice of Intent and a Storm Water Pollution Prevention Plan (SWPPP) to the California Water Resources Board (Sacramento Office) and provide a copy to the Los Angeles Regional Water Quality Control Board (RWQCB) for O&M activities.
- W-2** When applicable, a Waste Water Discharge Permit/ National Pollutant Discharge Elimination System (NPDES) Permit shall be obtained by the Corps or VCWPD (as applicable).
- W-3** An emergency response plan shall be prepared for responding to hazardous materials spills at the project construction site. The plan will identify actions to immediately control hazardous materials spills, and procedures to notify appropriate health officials.
- W-4** Once the notice of project completion is provided to the VCWPD, the VCWPD is responsible for implementing all conditions/measures identified in all permits or agreements issued by Federal, state or local resource agencies (specifically, the 401 Water Quality Certification, Streambed Alteration Agreement, and the Biological Opinion). In case of violation of any permit or agreement, the VCWPD is responsible to pay fines or penalties imposed by a resource agency, and the VCWPD shall ensure compliance with the permits.

Implementation of the following Environmental Commitments would further reduce impacts associated with water resources:

- W-5** No machinery or material shall be stored in the FRMC during non-working hours when no activity is taking place on-site. Machinery and materials shall be removed from the active channel at the end of each working day.
- W-6** Machinery used for construction and maintenance shall be fueled at a secure location a suitable distance from the Project in accordance with procedures contained in the SWPPP, when applicable.
- W-7** Erosion control BMPs, including methods, materials and installation, maintenance and removal requirements, shall be identified prior to initiation of the water diversion and any construction work.
- W-8** Upstream and downstream water quality monitoring sites shall be determined in coordination with the Corps Environmental Staff or VCWPD (as applicable). Water quality shall be measured prior to construction and shall be checked periodically to confirm that construction activities are not significantly affecting water quality within the project area. The Construction Contractor shall submit the monitoring report to the Corps Environmental Staff or VCWPD (as applicable) for their records.
- W-9** The construction contractor shall notify the Corps biologist/Environmental staff or VCWPD (as applicable) one week prior to the commencement of water diversion activities. Water diversion activities shall be monitored by the Corps Environmental Staff or VCWPD (as applicable). The water diversion and work area shall be in place and functional before in-channel work is started.
- W-10** While the water diversion is in place, the channel shall remain operational 24 hours per day.
- W-11** Maintenance and/or repair activities shall not be conducted during a rainfall event.

4.2.5 Determination of Impacts

Environmental Commitments identified above and compliance with permits and applicable regulations would minimize impacts to water resources. No adverse effect would result from construction and O&M of the Proposed Action.

4.3 Biological Resources

Impacts to biological resources are considered adverse if one or more of the following conditions would result:

- Substantial loss or disturbance of individuals of a Federal or state threatened or endangered species.
- Substantial loss of individuals of a Federal Candidate species or any sensitive biological resources.
- Net degradation or loss of riparian habitat.
- Substantial loss of native alluvial scrub vegetation, especially adjacent to riparian woodlands.
- Significant blockage, interference, or disruption of steelhead trout movement or significant disruption of native non-game fish movement.

The staging area is located in a disturbed area adjacent to an existing cement plant and operation for stockpiling, sorting, and selling of aggregate removed from Santa Paula Creek in 2009 and 2010. It is an area that is cleared of vegetation and graded. Access to the Project is provided by ramps associated with existing maintenance roads located on the top of the channel side slopes. No adverse impacts on biological resources associated with use of the staging area and access roads are anticipated and thus they are not discussed in the following analysis.

4.3.1 Alternative A: No Action

Under the No Action alternative, O&M would continue to occur intermittently under the draft O&M Manual and there would be no repairs to the existing fish ladder. No new design invert and allowable sediment profile would be established. The O&M activities that do occur would be required to comply with applicable requirements pertaining to protecting steelhead and other biological resources, including BO(s), SAA(s), and WQC(s) thereby minimizing potential impacts.

As no repairs to the fish ladder would occur, the storm damaged weirs would continue to be subject to erosion and damage from pummeling by bedload. This would increase the potential for future weir damage during storms and may ultimately threaten the ability of the facility to pass fish. Further, without implementation of the regular inspection and maintenance program that would occur under the finalized O&M Manual, the potential for disruption to fish passage is more likely to occur because sediment cleanout of the weir pools, inspection and corrective action to address storm damage or other deterrents to fish passage such as blocked weir notches would occur less frequently. This could be a detriment to fish passage, thereby adversely affecting steelhead.

Less frequent O&M activities, including sediment removal, would result in lower potential for disruption of biological resources associated with water diversion activities, potential direct take of steelhead, removal of habitat including in-channel vegetation, and indirect impacts associated with noise and dust from soil disturbing activities. However, less frequent sediment removal actions would result in a greater accumulation of sediment within the Project that could lead to an increase in sub-surface flows, which could reduce the amount of water available for surface flows and reduce steelhead migration, especially during drought years or drier portion of the year. In addition, large storm events could mobilize aggraded sediment in the Project within the water column. This could lead to increased turbidity downstream of the Project area, which may adversely affect steelhead migration.

Therefore, while Alternative A would not result in adverse impacts to biological resources, benefits associated would improved fish passage that could occur under Alternatives B and C would not occur.

4.3.2 *Alternative B: Finalization and Implementation of the O&M Manual*

Under Alternative B, O&M, including periodic sediment removal and emergency repairs, would occur as specified in the finalized O&M Manual. The new design invert would be established during the sediment removal actions, which would occur when the accumulated sediment exceeds the allowable sediment profile. O&M activities that involve construction, such as sediment removal and repair work, could affect biological resources directly through take of sensitive species or removal of vegetation, or indirectly through construction noise, construction vehicle traffic noise, water quality impacts, and water turbidity. Establishment of the new design invert would not increase O&M requirements as compared to the as-built design invert.

Impacts to biological resources relative to O&M activities, including removal of sediment, have been extensively analyzed in the 1995 Final EIS/EIR for the Santa Paula Creek Project, the 2000 SEA of the Rock Source, Low Flow Channel & Redesigned Fish Ladder for the Santa Paula Creek Flood Control Project, and the 2009 Sediment Removal SEA. A BO was issued in 2000, by NMFS, for the Santa Paula Creek Flood Control Project, which stated the proposed project (Santa Paula Creek Flood Control Project construction and future maintenance) action is not likely to jeopardize the continued existence of the Southern California ESU, and is not likely to destroy or adversely modify critical habitat. An amendment to the BO issued in 2009 for the 2009 sediment removal project reached the same conclusion that the sediment removal action is not likely to jeopardize the continued existence or result in destruction or adverse modification of critical habitat for the southern California DPS of endangered steelhead.

All applicable terms and conditions detailed in existing and future permits (i.e., BO[s], WQC[s], and SAA[s]), Environmental Commitments identified in Section 4.3.4, and BMPs would be implemented to ensure that impacts to water quality, vegetation, and wildlife would be avoided or minimized to the maximum extent possible.

4.3.2.1 *Vegetation*

During sediment removal activities or other work within the Project, existing streamside vegetation would be removed or disturbed. The streamside vegetation that occurs in this portion of the Santa Paula Creek occurs in a fairly constant seral, immature state due to high flow events that either uproot or otherwise damage vegetation. Vegetative coverage within the Project is predominately limited to the immediate edge of the creek, and has an extremely sparse distribution throughout the remainder of the channel.

The amount of vegetation disturbed during O&M activities would vary depending on the amount of vegetation existing in the channel when the action occurs and the extent (i.e., construction footprint) of the action taking place. Sediment removal, estimated to occur approximately every three years on average, would result in the greatest amount of vegetation removal.

The removal of this immature vegetation would not permanently affect the habitat quality of the Project, as the vegetation is regularly disturbed in a similar manner by large storm events (USACE 2009). It is expected that the excavated area would began to naturally revegetate within a matter of months after completion of excavation. Vegetation would not be planted within the FRMC following sediment cleanout, as riparian vegetation has been observed to quickly reestablish itself through colonization by seedlings of willows and other riparian species. This colonization regularly occurs following disturbance from peak flows that create substrate for seedlings, followed by declining spring and summer flows that occur during seed dispersal. Under this natural process, new riparian vegetation would be expected to reestablish within one to two years after a disturbance, as has been previously observed and documented. If two growing seasons pass and these areas have not been naturally restored to pre-project conditions, the Corps would revegetate them to the approximate pre-construction condition as required by conservation measures identified in the Biological Assessment (Appendix D) and Environmental Commitments identified in this SEA (Section 4.3.4).

As part of maintenance activities, vegetation within the channel may be selectively cut between cleanouts to ensure it does not result in an undesirable reduction in conveyance capability. Cutting/pruning activities would occur in compliance with measures determined by the Corps and NMFS, and would be coordinated with a qualified biologist to minimize the potential for pruning to result in tree mortality. Pruning of this nature would allow the root system to stay intact to stabilize the banks, resprout, and provide cover functionality. This selective cutting/pruning methodology would avoid mass vegetation removal in the channel that would require heavy equipment that would disturb the channel bottom. Hand crews would be able to selectively cut/prune vegetation that is progressing outside of the desired growth parameters. Selective cutting/pruning of vegetation would not take place during migratory bird or steelhead migration seasons, unless otherwise coordinated with NMFS and/or USFWS. The use of herbicides is discouraged within the channel and would have to be coordinated with the appropriate agencies, including NMFS and CDFG, prior to use. All vegetation management activities in a given year, including any herbicide use, would be described in VCWPD's Ongoing Routine Maintenance Program, which would be authorized under a Regional General Permit currently in development by the Corps Regulatory Division.

Thus, potential impacts associated with removal of vegetation would be temporary and no more damaging than what occasionally occurs during natural flooding events (USACE 2000). Consequently, there is not expected to be any appreciable increase in permanent impact acreage, and the impact on vegetation would not be adverse.

4.3.2.2 *Terrestrial Wildlife Resources*

Habitat within the Project area is marginal for most bird species, and does not contain large trees for nesting and roosting. However, there are large trees adjacent to the Project which could host nesting raptors or other protected bird species. Although these trees would not be impacted by O&M activities, noise, vibration, dust, and other effects of heavy equipment could disturb nesting activities. Compliance with permits, including the SAA would require that pre-construction surveys be conducted for breeding/nesting birds for work during the active nesting season (March 1 through September 1). If breeding/nesting birds are observed in the area, and concurrence is received from CDFG, the site shall be fenced and the area not disturbed until the nest is no longer active. If threatened or endangered birds are observed in the area, no work would be allowed in the area from March 1 through September 15 to avoid direct and indirect impacts. Compliance with applicable permit requirements would ensure that impacts on bird species are not adverse.

4.3.2.3 *Wildlife Movement Corridor*

Rivers, creeks, and other watercourses act as natural guides through the landscape for wildlife and dispersing vegetation (Hilty, et al., 2006). The presence of minimal vegetative cover and the surrounding land uses of the Project diminish the utility of the Project area as a wildlife movement corridor. Given the results of the field investigations conducted by Entrix and the Corps and a literature review, it is likely that more urban tolerant species, such as coyote, raccoon, opossum, a variety of bird species, and numerous small mammals and reptiles utilize the Project area and its resources. Some small mammals and reptiles may utilize the area as "live in habitat," while most of the larger and more capable dispersers are probably just passing through or foraging there. The lack of vegetative cover available within the Project area restricts the likelihood that other native species known to occur within the area, like the mule deer, mountain lions, and bobcats, would use the Project area, even as a travel corridor.

Temporary disturbance associated with O&M construction activities, including removal of vegetation, would not permanently affect the habitat quality of the Project area as it is regularly disturbed in a similar manner by scouring that occurs during large storm events. Given the temporary nature of the impacts to vegetative cover and overall wildlife movement, there is no threat of a long-term, regional impact to terrestrial wildlife movement from the Proposed Action.

4.3.2.4 *Aquatic Wildlife Resources*

During O&M activities that take place in flowing water channel, such as sediment removal, water diversion would be required for the portion of the creek where work is taking place. BMPs and measures identified

by NMFS, CDFG, and RWQCB, as detailed in the BO(s), SAA(s), and WQC(s), would be implemented to minimize impacts to aquatic wildlife resources.

As previously stated, the Santa Ana sucker (FT) is known to occur in Santa Paula Creek. However, this species is not endemic to the Santa Clara River system, and the listing status does not extend to these waters (Federal Register 2000, Swift Pers. Comm. 2007). Minimization measures related to seasonal exclusion and fish rescue and relocation as specified in Project permits, including the BO(s), SAA(s), and WQC(s), would address potential impact to this species (Entrix 2007).

4.3.2.5 *Sensitive Species*

Southern Steelhead (South Coast ESU)

Steelhead have the potential to occur in Santa Paula Creek during the winter-spring migration period which can extend from November 1 through May 31, depending on hydrologic conditions and fish passage in the lower Santa Clara River. In general, the Project is used as a migration corridor and lacks appropriate water quality, water depth, and cover for rearing or over summering. Minimization measures related to seasonal exclusion and fish rescue and relocation would address potential impacts to this species as discussed further below (Entrix 2007). O&M activities would adhere to the in-channel work window, unless otherwise coordinated with NMFS, USFWS, and CDFG, and/or unless emergency action is required to maintain passage capabilities.

Inspection of the fish ladder would formally occur on an annual basis. More frequent monitoring would be performed following storm events to ensure fish passage needs are being met. Inspections may uncover the need for repairs within the fish ladder to ensure it is functioning as designed. Heavy equipment may be needed to complete repairs prescribed by monitoring results. Any O&M activity requiring the use of heavy equipment would follow the direction of Project permits associated with the Project. If repairs are conducted during the steelhead migration season and require diversion of water and/or fish exclusion, capture, or relocation, direct and indirect effects on steelhead, including injury or mortality, could occur.

Direct effects to southern steelhead and/or their critical habitat as a result of routine O&M activities include potential encounters between fish and maintenance equipment. Regular O&M activities including sediment removal and/or scour repair within the channel would take place outside of the steelhead migration season or in coordination with NMFS and other concerned resource agencies and be consistent with Environmental Commitments and requirements set forth in the Project permits. Although unlikely, potential direct effects from sediment removal and/or scour repair include interactions between fish and equipment, if fish are present. Steelhead are not expected to be present during routine O&M activities since they would take place outside of the steelhead migration season. Environmental Commitments detailed in Section 4.3.4, Project permit requirements, and measures determined during the current coordination effort between the Corps and NMFS would be followed.

In order to further diminish the likelihood of fish-equipment interactions, water would be diverted around the work area(s) under supervision of a qualified biologist. The act of diverting flows can create turbidity, but is not expected to cause an effect to steelhead due to its short duration, typically high background levels of turbidity, and timing during seasons when steelhead are not typically present. During sediment removal or other in-channel work, block netting would be installed upstream and downstream of the work area to prevent potential interactions between construction equipment and any steelhead present. The area between the block netting would be surveyed for steelhead presence/absence by a qualified biologist. If steelhead or any other native fish are observed, they would be captured and relocated to a predetermined site of suitable habitat on the flowing reach, unless otherwise coordinated with NMFS. Given the described avoidance and minimization measures, it is unlikely that any direct effects to steelhead or steelhead critical habitat would result from annual sediment removal or other routine O&M activities.

Preventative measures being adopted by the Corps, such as annual sediment cleanouts from the fish ladder, maintenance to the low flow channel components, including the approach channel to the fish

ladder, and repairs to Project components during the non-migratory season are designed to minimize the need for maintenance during the steelhead migratory season. However, emergency O&M activities associated with maintaining fish passage through the Project may be necessary during the steelhead migratory season, if fish passage is impaired. A few main types of maintenance may be necessary during the steelhead migratory season: (1) removal of sediment or debris that may be lodged in a weir notch; (2) removal of aggraded sediment following a large storm or series of storms; (3) remediation of the low flow channel if drops of more than 1-foot are observed or if hydraulic connectivity needs to be restored; and (4) repairs to the fish ladder or other Project components.

Direct effects to steelhead could occur from work in flowing water during the steelhead migration season. Direct adverse effects could include injury or mortality to individual fish during capture and relocation efforts if steelhead occur within areas where emergency activities are conducted. Should inspections indicate that an emergency removal of sediment from fish ladder pools or large bedload or debris from weir notches is necessary, a thorough assessment of fish passage conditions would be conducted prior to a recommendation of action. The assessment would include coordination with NMFS, CDFG, and concerned resource agencies to determine if sediment/bedload removal during the migratory season is necessary to ensure fish passage. If emergency maintenance is required during the steelhead migratory season to maintain passage, measures would be implemented to exclude fish from the construction area. Block netting or other exclusionary devices would be set up on the upstream and downstream ends of the work area. A qualified biologist would survey for fish within the ladder pools and relocate any steelhead found within the potential work area. If it is not possible to set up block netting or other devices, as necessary, outside of the fish ladder, it may be prudent to set up block netting on a pool by pool basis. If steelhead or any other native fish are observed, they would be captured and relocated to a predetermined site of suitable habitat on the flowing reach, or otherwise handled per the measures determined by the current coordination between the Corps and NMFS. The duration of actual emergency removal of sediment is not expected to take more than three to five days. Given compliance with Project permits and implementation of avoidance measures, including use of exclusionary devices, the potential for steelhead injury or mortality during work taking place in the migratory season is extremely unlikely. Therefore impacts would not be adverse.

Potential indirect effects to steelhead that could occur during routine in-channel O&M activities include migratory delays and stranding due to water diversions and associated temporary increases in turbidity. These effects are considered unlikely given that the activities would take place outside the steelhead migratory season along with the high background turbidity levels that are typically present in the creek. Although steelhead would not be expected to be present in the channel, avoidance and minimization measures would be implemented. Block netting or some other exclusionary device would be set up to preclude steelhead from accessing the work area and a qualified biologist would monitor activities. If steelhead or any other native fish are observed, they would be captured and relocated to a predetermined site of suitable habitat on the flowing reach unless otherwise coordinated with NMFS. With the implementation of avoidance and minimization measures, no indirect effects to steelhead from routine O&M activities, including sediment removal, are anticipated.

Should emergency activities such as sediment removal, removal of large bed load or debris from weir notches, or emergency repairs appear to be warranted following a flood event, indirect effects to steelhead from migration delay and potential for stranding if water diversions are necessary, would be weighed against the potential direct effects to steelhead that could occur during implementation of the maintenance activities themselves. The relationship of time between when a fish passage impediment occurs, (sediment accumulation, weir blockage, etc.) occurs and when it is possible for equipment to access the ladder, and then restore passage, is extremely difficult to quantify relative to the duration of hydrograph elapsed in such a dynamic system. Migration delay can result in depletion of energy reserves of spawning adults, the severity of which depends somewhat on the capacity of fish to find refuge from high flows. It may be possible for steelhead in Santa Paula Creek to withstand migration delays for some time without adverse effects if they are able to find refugia. It is important to note, that excessively high turbidity and occasionally severely low dissolved oxygen quantities and percentages associated with high flow events in the Project reach, as documented in the 2010 and 2011 monitoring reports (presented in Appendix D), may preclude migration of steelhead at times. It is difficult to make predictions about storm

events or quantify the length of time that steelhead migration could be delayed. However, predictions can be made as the predicted frequency of occurrence. As described in the Biological Assessment (Appendix D), medium boulders (approximately 2 feet in diameter) have been observed to become lodged in the weir notches. Medium boulders are expected to be mobilized by flood frequencies on the order of five to ten years. Therefore, this type of potential cause for migratory delay is not expected to occur on a regular basis. Prompt removal a notch blockage is likely to reduce the potential for sediment aggradation upstream of the occlusion, as was documented in Project monitoring reports. Any maintenance activity conducted during the migratory season would be closely monitored by a qualified biologist and Environmental Commitments identified in Section 4.3.4 and any further measures defined by the current coordination between the Corps and NMFS would be followed to make these maintenance activities as minimally impactful as possible. In coordination with NMFS, indirect effects to steelhead from migration delay would be minimized to the extent possible. Additionally, the delay that could occur under Alternative C would be less than would occur under existing conditions (i.e., impediments to fish passage would be removed more quickly than would currently occur). Therefore, potential indirect impacts associated with emergency repairs conducted during the migratory season would not be adverse and restoration of fish passage in a timely manner during the migration season would be a beneficial effect.

The O&M Manual is intended to guide the O&M of the Project to keep the flood risk management system and its components operable, including appropriate maintenance of fish passage components. This includes monitoring, and correcting/repairing as needed, sediment and debris accumulation upstream, downstream, and between weirs of the fish ladder, and evaluating and documenting potential isolated pool formation or other factors that may inhibit steelhead migration through the remainder of the Project, including the low flow channel, approach channel, and pilot channel. The maintenance prescribed in the O&M Manual for the fish ladder and low flow channel, including the approach channel, would enable the fish ladder and low flow channel to operate as designed and there would be no change in existing conditions with respect to fish passage parameters including water depth and velocity. Additionally, the new design invert would prevent long-term degradation below the toe of the grouted stone side slopes and local scour at the base of the fish ladder inlet. With the maintenance prescribed in the O&M Manual, the new design invert and annual maintenance performed to the fish ladder or the low flow channel is expected to benefit the operational ability of the Project to facilitate fish passage and perform flood risk management. Preventative maintenance, including annual cleanouts of the fish ladder prior to each steelhead migratory season and monitoring prescribed in the O&M Manual are expected to reduce the frequency and duration of potential impacts to fish passage. Further, with implementation of the minimization measures described above and Environmental Commitments presented in Section 4.3.4, or other measures coordinated with NMFS, potential effects would be minimized to the greatest extent possible. Therefore, no adverse impacts to steelhead are anticipated.

Least Bell's Vireo

The presence of LBV within the Project area is possible when riparian habitat is allowed to proliferate to provide suitable forage and cover opportunities. As was previously mentioned, sediment removal activities that were completed in January 2010 resulted in the clearing of vegetation throughout the existing fish passage facility and FRMC. Therefore, LBV habitat is not currently available within the Project Area. Additionally, 2009 survey reports indicated that there is no presence of the LBV within the Project area. Given the negative results of the 2009 LBV surveys conducted by the Corps, coupled with the recent absence of LBV (CDFG 2011) and lack of habitat in the Project area, and the Corps' commitment to not remove vegetation between February 15 and August 15, unless otherwise coordinated with USFWS, NMFS and CDFG, the impacts on LBV would not be adverse. The Corps would continue coordination with the USFWS during construction of the Project.

Southwestern Willow Flycatcher

Southwestern willow flycatchers have been identified along the Santa Clara River, with the nearest documented occurrence approximately 2.5 miles (4 kilometers) downstream of Santa Paula Creek (CDFG 2011). While not previously documented in this area, Southwestern willow flycatchers could occur near confluence of Santa Paula Creek and the Santa Clara River. However, no O&M activities would occur

near the confluence and no direct or indirect impacts on the species would occur. There have been no documented sighting of southwestern willow fly catchers with the Project area, nor are they expected to occur (CDFG 2011; Jones 2011). Therefore, there would be no direct or indirect effects to proposed critical habitat for southwestern willow flycatcher from O&M activities and the impacts on LBV would not be adverse.

Two-striped Garter Snake and South Coast Garter Snake

The presence of two-striped garter snake and south coast garter snake within the Project area is possible. The two-striped garter snake was sighted in the vicinity of fish ladder in 2009. Either species could be directly impacted should snakes come in contact with construction equipment. However, with incorporation of Environmental Commitments, including measures to prevent entrapment of the species in construction holes or trenches, presence of biological monitors, and conducting a mandatory biological resources awareness training for all construction personnel, adverse impacts on either two-striped garter snakes or south coast garter snakes would not occur.

Sub-listing of all species

Potential impacts to all other species not specifically mentioned in Section 4.3.1 will not be adverse given the implementation of the Environmental Commitments detailed in Section 4.3.4 and compliance with Project permits.

4.3.2.6 Summary

The terms and conditions detailed in all applicable existing and new permits (BO[s], SAA[s], and WQC[s]), and the Environmental Commitments identified in this SEA would be complied with to ensure impacts on vegetation and wildlife are minimized to a level where O&M activities are not likely to adversely affect them. Additionally, the new design invert established during sediment removal activities would prevent long-term degradation below the toe of the grouted stone side slopes and local scour at the base of the fish ladder inlet. With regular maintenance, the new design invert should protect the Project from scour impacts and maintain conditions favorable to fish passage. Therefore, Alternative B would not result in adverse impacts to biological resources.

4.3.3 Alternative C: Implementation of the Finalized O&M Manual and Fish Ladder Repair (Preferred Alternative)

Repair of the fish ladder would involve construction that would take place during the in-channel work window between June 30 and November 1 or as otherwise coordinated with NMFS and CDFG. The repairs would be required to comply with all Environmental Commitments and terms and conditions set forth in all applicable permits including BO(s), SAA(s), and WQC. Potential impacts on vegetation, terrestrial wildlife resources, wildlife movement corridors, aquatic wildlife resources, and threatened and endangered species (steelhead are discussed in detail below) would be similar to those described above for O&M activities under Alternative B. However, the construction footprint would be smaller for the fish ladder repairs than for O&M activities, such as sediment removal, that would occur throughout the entire Project area and last for a longer duration (i.e., four to six months). As with O&M described for Alternative B, construction of Alternative C would not result in adverse impacts given compliance with the necessary Environmental Commitments and Project permits. Potential impacts on steelhead are discussed below.

Construction of the Alternative C is expected to begin in summer 2012. Construction would occur between June 30 and November 1, outside of the known steelhead migratory season to avoid potential direct impacts to steelhead. As an additional precaution, and to minimize potential impacts, flows would be diverted around work areas. Block netting would be installed upstream and downstream of the work area to prevent potential (although extremely unlikely) interactions between construction equipment and steelhead, or any other fish or aquatic organism that may be present. The area between the block netting would be surveyed for steelhead presence/absence by a qualified biologist. If any native fish are observed, they would be captured and relocated to a predetermined site of suitable habitat on the flowing

reach or otherwise handled per the measures determined by the current coordination between the Corps and NMFS. Finally, in the event smolt are swimming downstream through the Project area, sufficient water would be present in the main channel to support this movement. Qualified biological monitors would be on-site during all in-channel work activities to ensure construction crews are adhering to avoidance and minimization measures as detailed in Project permits.

Indirect effects to steelhead could occur from the diversion of water and increased turbidity during construction. However, because construction would occur during the approved in-channel work window when steelhead are not likely to be present, no indirect effects are anticipated. As discussed above, diversions would be conducted in accordance with guidance provided in Project permits. A qualified biologist would monitor any and all water diversion activities to avoid or minimize the potential for stranding of any fish. Although not expected, if steelhead are observed in the isolated channel, they would be captured and relocated to a predetermined site of suitable habitat on the flowing reach or otherwise handled per the measures determined by the current coordination between the Corps and NMFS.

Additional loading of turbid water is a potential issue with construction projects conducted within active creek or river channels. Irregular, episodic pulses of turbid water are possible during diversion activities and placement of temporary creek crossings. However, these increases in turbidity levels would be local and temporary in nature, lasting minutes rather than hours or days, and would be less than what occurs during a typical storm event. The addition of short lived, increased turbidity levels would be minimal in comparison to background levels and loads contributed by upstream tributaries, such as Mud Creek (NMFS 2000). Additionally, turbidity levels would be tested at appropriate intervals as directed by the Project permits and Project biologist. If the biologist observes excessive project-related turbidity, Corps environmental staff would coordinate with the field representative and provide suggested measures to minimize turbidity levels. Indirect effects associated with construction-related turbidity are not expected because of existing background turbidity and the fact that construction would occur outside of the migratory season for steelhead.

Temporary impacts to adjacent terrestrial habitat may occur in staging areas and along access roads. All temporarily impacted areas would be restored to the original grade. Vegetation in areas that have been cleared and graded would be expected to reestablish through passive restoration as the seed bank is replenished during subsequent storm events. Thus, critical habitat would not be adversely modified as a result of construction. Therefore, the fish ladder repairs are not likely to have an adverse affect on steelhead.

The proposed fish ladder repairs are expected to improve the durability and operability, thereby further promoting fish passage during subsequent migratory seasons and reducing the need for weir maintenance. The proposed repairs would not result in permanent changes to water quality parameters, type of substrate or other habitat features within the fish ladder or adjacent channel. Thus, there would be no change in existing conditions with respect to fish passage parameters including water depth and velocity.

As was evident following the near design event of the winter 2004 - 2005 storm season, the existing steel corner protection could be ripped off of the cement weirs or partially separated from the weirs. The rounding and total encapsulation of the weir tops is expected to avoid this situation, which would eliminate the ability of the ladder features to cause physical harm to fish using it. With the improvements in durability resulting from the weir repairs, the fish ladder repairs would be expected to have a beneficial effect for fish passage relative to existing conditions and no adverse impacts would occur.

As discussed under Alternative B, O&M activities, including establishment of the new design invert and sediment profile, would comply with the minimization measures detailed in the Project permits, the O&M Manual, and Environmental Commitments identified in this final SEA in Section 4.3.4. Additionally, BMPs would be implemented to ensure impacts to water quality and wildlife that may use the creek are minimized to a level where construction and O&M activities are not likely to not affect them. Further, the O&M Manual is intended to guide the O&M of the Project to keep the flood risk management system and

its components operable, including appropriate maintenance of fish passage components. Therefore, overall, O&M would be expected to have a beneficial effect for fish passage.

As described above, Alternative C would not result in adverse impacts to biological resources. Additionally, the new design invert would prevent long-term degradation below the toe of the grouted stone side slopes and local scour at the base of the fish ladder inlet. With regular maintenance, the new design invert should protect the Project from scour impacts and maintain conditions favorable to fish passage.

4.3.4 Environmental Commitments for Construction and O&M

The following Environmental Commitments were established to avoid and minimize potential effects to biological resources, including steelhead, to the maximum extent practicable:

- B-1** Activities between the grouted side slopes (in-channel) associated with construction and regular maintenance of the fish ladder, excluding monitoring, shall be planned to avoid flowing water during the potential steelhead migration period. The normal in-channel work period would occur between June 30 and November 1. In-channel work may occur between June 1 and June 30, if the Harvey Diversion ladder has been closed for at least one week, and the area has been surveyed for steelhead presence. If steelhead are found or expected to be present, work shall not proceed until either steelhead are no longer present, or avoidance and/or relocation measures have been established in coordination with NMFS. In-channel work may occur between November 1 and December 31, if winter storm(s) have not generated flows that facilitate the operation of the Vern Freeman Diversion fish ladder on the Santa Clara River.
- B-2** In-channel work and channel diversion activities for construction and/or O&M of the Proposed Action shall be conducted in a manner to reduce potential impacts to migrating steelhead and would include the following measures:
- a. The area shall be visually surveyed for steelhead presence by a qualified biologist or technician prior to working in-channel.
 - b. The channel shall be diverted or piped outside/around the work area. Equipment shall avoid flowing water other than temporary crossing or diverting activities.
 - c. Residual surface water associated with the diverted channel shall be monitored for steelhead presence by a qualified biologist as soon as flows recede. If steelhead are observed in the isolated channel, they shall be immediately relocated to the flowing reach by a qualified biologist or technician.
 - d. Temporary culverts used in construction, maintenance, and/or operations shall be placed at stream grade and be of an adequate size to not increase stream velocity.
 - e. Silt fences or mechanisms to avoid sediment input to the flowing channel shall be erected adjacent to flowing water if sediment input to the stream may occur.
- B-3** If flowing water will be disturbed by construction or operation and maintenance activities, a qualified biologist/technician shall survey the complete area that may be disturbed, including by downstream turbidity, within one week of the beginning of in-water work. The biologist shall be present during activities that occur within flowing water, if necessary, the biologist would coordinate with the construction representative to cease the work, and provide recommended measures to avoid potential construction-related effects to steelhead and their habitat.
- a. The biologist shall have knowledge and experience in anadromous steelhead biology and ecology, fish/habitat relationships, biological monitoring, and handling, collecting, and relocating steelhead species.

- b. The biologist shall rescue any steelhead that may become stranded and relocate them to an appropriate place in Santa Paula Creek or the Santa Clara River, depending upon the life stage of the fish and flow conditions in the creek and river.
 - c. The biologist shall note the number of individuals observed in the affected area, the number of individuals relocated, the approximate size of individuals, and the date and time of the collection and relocation. One or more of the following methods shall be used to capture steelhead: dip net, seine, throw net, minnow trap, and hand.
- B-4** Following removal of sediment from the FRMC, disturbed areas should be returned to the condition they were in prior to the disturbance, as detailed below.
- a. Re-contour low flow channel components (i.e., approach channel, low flow channel, and pilot channel) per specifications detailed in the O&M Manual.
 - b. Revegetate disturbed areas to the approximately pre-construction density or greater with native vegetation if the area has not naturally revegetated within the second growing period following construction.
- B-5** Maintain the fish ladder at design specifications to facilitate steelhead migration. Contact NMFS during maintenance evaluation and prior to any maintenance activities.
- a. Following observations subsequent to a bedload transport event (>500 cfs), evaluate steelhead passage opportunities and conduct any necessary fish ladder maintenance per protocol detailed in the O&M Manual.
 - i. Remove accumulated sediment and/or debris to ensure passage to and from the fish ladder, and drainage between weirs to avoid isolated pool formation or other fish migration blockage.
 - 1. If removal of debris or sediment from the weir notch occurs without the need for wholesale removal of sediment from the fish ladder pools, construction equipment should operate from the apron so as to avoid potential disturbance to adjacent habitat to the maximum extent practicable.
 - 2. If removal of debris or sediment from the weir notch needs to occur and diversion of flows is not possible, methods shall be employed to discourage fish presence in the action area. These measures could include, but are not limited to, exclusionary devices, such as block netting.
 - b. Monitor the low flow channel configuration and associated discharge at least once per year during low/base flow conditions (mid-April to mid-July) per protocol detailed in the O&M Manual.
 - c. Conduct necessary maintenance of the fish ladder to meet general design specifications.
- B-6** Remove accumulated sediment and debris annually from the fish ladder prior to the start of the steelhead migratory season. This sediment removal activity should be completed prior to November 1.

Implementation of the following Environmental Commitments would further avoid or reduce the potential for mortality and disturbance of special-status species, including nesting birds and reptiles, within construction areas for the Proposed Action:

- B-7** Biological Resources Awareness Training. Before any ground-disturbing work (including vegetation clearing and grading) occurs in the construction area, a qualified biologist would conduct a mandatory biological resources awareness training for all construction personnel and the construction foreman. This training would inform the crews about special-status species that could occur on site. The training would consist of a brief discussion of the biology and life history of the special-status species; how to identify each species, including all life stages; the habitat requirements of these species; their status; measures being taken for the protection of these species and their habitats; and actions to be taken if a species is found within the Project Area during construction activities. Identification cards would be issued to shift supervisors; these cards would have photos, descriptions, and actions to be taken upon sighting of special-status species during construction. Upon completion of the training, all employees would sign an acknowledgment form stating that they attended the training and understand all protection measures. An updated training would be given to new personnel and in the event that a change in special-status species occurs.
- B-8** Prior to construction and/or O&M activities involving heavy equipment, the biologist would conduct a habitat survey within areas where heavy equipment would traverse to determine the presence of suitable habitat for threatened or endangered species. If the biologist determines suitable habitat is present and threatened and/or endangered species have the potential to occur within construction areas, then a survey would be conducted to ensure no special-status animals are present within the area in which any construction activity would occur. A biologist would be present to monitor all construction or O&M activities involving heavy equipment..
- B-9** If determined necessary by the biologist, construction areas, including staging areas and access routes, would be fenced with orange plastic snow fencing to demarcate work areas. The approved biologist would confirm the location of the fenced area prior to habitat clearing, and the fencing would be maintained throughout the construction period. Additional exclusion fencing or other appropriate measures would be implemented in consultation with the resource agencies to prevent use of construction areas by special-status species during construction.

To prevent entrapment of wildlife that do enter construction areas during activities, all excavated, steep-walled holes or trenches in excess of 2 feet deep would be inspected by a biologist or construction personnel approved by the resource agencies at the start and end of each working day. If no animals are present during the evening inspection, plywood or similar materials would be used to immediately cover the trench, or it would be provided with one or more escape ramps set at no greater than 1,000 foot intervals and constructed of earth fill or wooden planks. Trenches and pipes would be inspected for entrapped wildlife each morning prior to onset of activity. Before such holes or trenches are filled, they would be thoroughly inspected for entrapped animals. Any animals so discovered would be allowed to escape voluntarily, without harassment, before activities resume, or removed from the trench or hole by a qualified biologist and the animals would be allowed to escape unimpeded. A qualified biologist would be responsible for overseeing compliance with protective measures during clearing and construction activities within designated areas throughout the construction activities.

- B-10** General Requirements for Construction Personnel include the following:
- The contractor would clearly delineate the construction limits and prohibit any construction-related traffic outside these boundaries.
 - Construction crews would be required to maintain a 20 miles per hour (mph) speed limit on all unpaved roads to reduce the chance of wildlife being harmed if struck by construction equipment.
 - All food-related trash items such as wrappers, cans, bottles, and food scraps generated during construction, subsequent facility operation, or permitted operations and maintenance activities of existing facilities would be disposed of in closed containers only and removed at least once per week from the site. The identified sites for trash collection would be fenced to minimize access from wildlife.

- No deliberate feeding of wildlife would be allowed.
- No pets would be allowed on the project site.
- No firearms would be allowed on the project site.
- If vehicle or equipment maintenance is necessary, it would be performed in the designated staging areas and not in the channel.
- Any worker who inadvertently injures or kills a Federal or state listed species, bald eagle, or golden eagle, or finds one dead, injured, or entrapped would immediately report the incident to the construction foreman or biological monitor. The construction foreman or monitor would notify the resource agencies within 24 hours of the incident.

4.3.5 *Determination of Impacts*

With the incorporation of the Environmental Commitments listed above and compliance with the Project permits including the BO(s), SAA(s), and WQC(s), the Proposed Action would not result in adverse impacts to biological resources.

4.4 *Land Use*

An adverse impact on Land Use would occur if a Proposed Action would cause:

- Incompatibilities with surrounding or onsite uses.
- Inconsistencies with existing land use plans or policies.

4.4.1 *Alternative A: No Action*

Under the No Action alternative, O&M would continue to occur intermittently under the draft O&M Manual and there would be no repairs to the existing fish ladder. No new design invert and allowable sediment profile would be established. No new land uses would be established that would be incompatible with surrounding uses or existing land use plans and policies. Therefore, Alternative A would have no adverse effect related to land use.

4.4.2 *Alternative B: Finalization and Implementation of the O&M Manual*

Under Alternative B, the Project would remain in its current state, no construction would take place, but O&M, including periodic sediment removal and emergency repairs, would continue to occur as specified in the O&M Manual. O&M activities would be localized, limited in duration and performed to maintain the Project's flood risk management capabilities. The new design invert would be established during the sediment removal actions, which would occur when the accumulated sediment exceeds the allowable sediment profile, as specified in the O&M Manual. The O&M activities would not alter the existing use or otherwise result in incompatibilities with the surrounding land uses. The new design invert and allowable sediment profile would involve a change in the bottom profile of the channel and would not alter the existing land use. Thus, no new land uses would be established that would be incompatible with surrounding uses, and no conflicts with existing land uses or existing plans and policies would occur. The construction staging area would be a temporary use within a disturbed vacant area adjacent to industrial uses and designated for industrial uses, which would not pose a land use conflict or plan inconsistency. Nor would there be a conflict with the Santa Paula-Fillmore Greenbelt Agreement. Therefore, Alternative B would have no adverse effects related to land use.

4.4.3 *Alternative C: Implementation of the Finalized O&M Manual and Fish Ladder Repair (Preferred Alternative)*

Repairs to the fish ladder would not alter the use of the ladder, nor the Project as whole. The Project, including the fish ladder, is closed to public access and the continuation of this existing use would not be incompatible with the adjacent uses (i.e., existing industrial areas, commercial and residential uses, open

space, and agricultural land). Fish ladder repairs would not alter the use, nor otherwise create an inconsistency with the existing land use designation applicable to the site (i.e., Agricultural for unincorporated areas and Open Space for portions with the City of Santa Paula). The construction staging area would be a temporary use within a disturbed vacant area adjacent to industrial uses and designated for industrial uses, which would not pose a land use conflict or plan inconsistency. Nor would there be a conflict with the Santa Paula-Fillmore Greenbelt Agreement. Thus, the fish ladder repairs would not result in an adverse impact to land use.

As discussed under Alternative B, O&M activities, including establishment of a new design invert and allowable sediment profile during sediment removal activities and emergency repairs, would be localized and limited in duration, and would not alter the existing use or otherwise result in incompatibilities with the surrounding land uses or existing land use plan. Thus, O&M would not result in an adverse impact to land use.

4.4.4 Environmental Commitments for Construction and O&M

None.

4.4.5 Determination of Impacts

The Proposed Action would not have an adverse effect on land use.

4.5 Aesthetics

An adverse impact on Aesthetics could occur if a Proposed Action would:

- Substantially degrade the visual character or quality of the site.
- Obstruct important scenic views.
- Substantially damage scenic resources.
- Create a substantial new source of light and glare in the region.

4.5.1 Alternative A: No Action

Under the No Action alternative, O&M would continue to occur intermittently under the draft O&M Manual and there would be no repairs to the existing fish ladder. No new design invert and allowable sediment profile would be established. As discussed under Alternative B in greater detail below, the presence of construction equipment during certain O&M activities would be temporarily change the aesthetics of the Project, however, this would be temporary and would not substantially degrade the visual quality of the site. Therefore, Alternative A would not result in adverse aesthetic impacts.

4.5.2 Alternative B: Finalization and Implementation of the O&M Manual

Under Alternative B, no construction would occur and periodic O&M, including sediment removal and emergency repairs, would continue. The new design invert would be established during the sediment removal actions, which would occur when the accumulated sediment exceeds the allowable sediment profile, as specified in the O&M Manual (estimated to be approximately every three years on average). During some O&M activities, such as sediment removal, construction equipment would be present with the Project; however, this would be temporary and would not substantially degrade the visual quality of the site. Further, the equipment would generally be located at the channel bottom which would limit visibility and would have no possibility of obstructing scenic views of the surrounding mountains.

Removal of sediment would also remove some vegetation that adds aesthetic quality to the Project, but vegetation would re-establish in the channel over time and the aesthetic quality would be restored. O&M activities are expected to take place during daylight; therefore, no nighttime lighting would be necessary.

The new design invert and allowable sediment profile would be visually imperceptible and thus not affect the aesthetics of the channel. Operations would remain the same and thus, there would be no permanent visual changes as a result of O&M. Additionally, the O&M Manual includes provisions specifically to maintain the aesthetic aspects of the channel. These provisions include inspection and maintenance of features such as hardscaping, fences and gates, service roads, and grouted stone to ensure visual integrity by repairing any damage, controlling weeds, and painting over any graffiti. The aesthetic treatment provisions also address removal of trash and debris, erosion control, and maintenance of plantings, such as trimming along structures and service roads, weed abatement, and trimming or replacement of unhealthy or dead plant material.

The staging area is located adjacent to industrial uses such as a cement plant and an operation of stockpiling, sorting, and selling of aggregate removed from Santa Paula Creek in 2009 and 2010. Additionally, the staging area has limited visibility to the public. The temporary establishment of staging operations during sediment removal or other O&M activities would not degrade the visual character, obstruct scenic views, or create a new source of light and glare in the area. Use of service road turnouts for staging may have greater visibility to the public depending on the precise location; however, use of these areas would be temporary in duration and not substantially degrade views.

Therefore, Alternative B would not result in adverse aesthetic impacts.

4.5.3 *Alternative C: Implementation of the Finalized O&M Manual and Fish Ladder Repair (Preferred Alternative)*

The fish ladder is located at the inlet to the Project in an area that is not open to the public and it has limited to no visibility. Thus, the repairs would not degrade or alter views for residents or motorists of the area. Construction activities would be short-term and limited to the vicinity of the fish ladder and staging area. Repair activities would occur during daylight and therefore, would not require use of nighttime lighting.

No changes in use or operation of the fish ladder would occur so there would be no changes to the visual quality. The new steel weir caps would be visually consistent with the existing fish ladder and would not change the visual character of the site. The caps would weather from exposure to the elements and would not represent a substantial new source of glare.

Construction staging along service road turnouts and/or staging area downstream of Highway 126 would be temporary and have limited visibility to the public, and thus not result in an adverse aesthetic impact.

As discussed under Alternative B, under the O&M Manual, periodic monitoring and maintenance would occur, including sediment removal. This would include the use of construction equipment in the channel that would temporarily alter views. This would be localized and limited in duration, and as such would not result in adverse impacts on the visual character, nor would it obstruct scenic views or introduce a new source of light and glare. Operations would remain the same and thus, there would be no permanent visual changes as a result of O&M. The new design invert and allowable sediment profile would also be visually imperceptible and thus not affect the aesthetics of the channel. Operations would remain the same and thus, there would be no permanent visual changes as a result of O&M. The O&M Manual also includes provisions to maintain the aesthetic quality of the site such as maintenance of hardscaping and removal of trash and debris. Construction staging along service road turnouts and/or the staging area would not result in visual impacts. Thus, Alternative C would not result in an adverse impact to aesthetics.

4.5.4 *Environmental Commitments for Construction and O&M*

Implementation of the following Environmental Commitment would further avoid or reduce potential impacts related to aesthetics.

- A-1** Construction contractors shall keep construction and staging areas orderly, free of trash and debris.

4.5.5 Determination of Impacts

The Proposed Action would not have an adverse effect on aesthetics.

4.6 Cultural Resources

An adverse impact on Cultural Resources could occur if the Proposed Action would:

- Cause a substantial adverse change to the significance of a historical resource on or eligible for the National Register of Historic Places.
- Cause a substantial adverse change to the significance of a archeological resource.
- Destroy a unique paleontological site or resource.
- Disturb any human remains.

4.6.1 Alternative A: No Action

As discussed in Section 3.6, the entire Project area was surveyed for cultural resources, and no historic resource eligible for the NRHP, or archeological, or paleontological resources were identified within the Project. Further, the Project is highly disturbed as a result of previous construction activities and natural processes. Under the No Action alternative, O&M would continue to occur intermittently under the draft O&M Manual and there would be no repairs to the existing fish ladder. No new design invert and allowable sediment profile would be established. O&M activities would occur in areas that are previously disturbed and thus do not contain intact cultural resources. Excavated sediments would consist of material that has been deposited from upstream and, thus, would not likely contain any intact archeological or paleontological resources of significance. No potential adverse impacts would occur. Therefore, Alternative A would not result in an adverse impact on archeological or paleontological resources.

4.6.2 Alternative B: Finalization and Implementation of the O&M Manual

Under Alternative B, O&M, including periodic sediment removal and emergency repairs, would occur as specified in the finalized O&M Manual. The new design invert would be established during the sediment removal actions, which would occur when the accumulated sediment exceeds the allowable sediment profile. The O&M activities would occur in areas that are previously disturbed. The new design invert would not involve any excavation deeper than the as-built channel, and thus no disturbance of native soils would occur and no previously unknown intact cultural resources would be damaged. Excavated sediments would consist of material that has been deposited from upstream and, therefore, would not likely contain any intact archeological or paleontological resources of significance. Regardless, the Environmental Commitments presented in Section 4.6.4 would be complied with in the event that previously unknown cultural resources are encountered during O&M activities involving construction. Thus, Alternative B would not result in an adverse impact on archeological or paleontological resources.

4.6.3 Alternative C: Implementation of the Finalized O&M Manual and Fish Ladder Repair (Preferred Alternative)

As discussed above, no historic, archeological, or paleontological resources are known to exist with the Project. The fish ladder repairs would include rounding and recapping the weirs. During fish ladder repairs some sediment removal would occur to allow access to the weirs; however, this sediment would consist of material that has been deposited from upstream and, therefore, would not likely contain any intact archeological or paleontological resources of significance.

Likewise, as discussed for Alternative B, O&M activities would occur in areas that are previously disturbed. Excavated sediments would consist of material that has been deposited from upstream and, therefore, would not likely contain any intact archeological or paleontological resources of significance.

Regardless, the Environmental Commitments presented in Section 4.6.4 would be complied with in the event that previously unknown cultural resources are encountered during O&M activities involving construction and fish ladder repair. Alternative C would not result in an adverse impact on archeological or paleontological resources.

4.6.4 Environmental Commitments for Construction and O&M

The following Environmental Commitment is an Environmental Protection Requirement specified in Appendix VI of the O&M Manual to further reduce impacts related to cultural resources.

CR-1 If during operations and maintenance activities items of apparent archaeological or historical interest are discovered, they shall be left undisturbed and the Corps or VCWPD (as applicable) shall report the find immediately to the State Historic Preservation Officer.

Implementation of the following Environmental Commitments would further reduce impacts related to cultural resources:

CR-2 Construction or O&M activities involving grading, excavation, and/or sediment removal shall be monitored periodically by a qualified archeologist meeting the Secretary of the Interior's Standards. In the event that previously unknown cultural resources are encountered, construction in that particular area shall cease until the requirements of 36 CFR 800.13 are met. Pursuant to 36 CFR 800.13(2), in the event of any discoveries during construction of either human remains, archeological deposits, or any other type of historic property, the local agency shall notify the Corps of Engineers Archeology Staff. The agency shall immediately suspend all work in an area(s) where potential cultural resources are discovered. Work shall not resume in the area surrounding the potential cultural resources until the Corps re-authorizes project construction, per 36 CFR 800.13(2).

CR-3 In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps shall be taken:

(1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

(A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and

(B) If the coroner determines the remains to be Native American:

1. The coroner shall contact the Native American Heritage Commission within 24 hours.

2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.

3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code section 5097.98, or

(2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance:

(A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.

(B) The descendant identified fails to make a recommendation; or

(C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

4.6.5 Determination of Impacts

With implementation of the above Environmental Commitments, the Proposed Action would not have an adverse effect on cultural resources.

4.7 Air Quality

According to the VCAPCD, an adverse impact to Air Quality could occur if the Proposed Action would:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).
- Expose the public (especially schools, day care centers, hospitals, retirement homes, convalescence facilities, and residences) to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

4.7.1 Calculation Methodology

The following section describes the methodology for calculation of criteria pollutant and greenhouse gas emissions for all alternatives containing either/or construction or O&M activities.

4.7.1.1 Construction

Emissions were compiled using emission factors for Ventura County from CARB's OFFROAD2007 and EMFAC2007 models for off-road construction equipment and on-road trucks and worker vehicles respectively in the year 2012. Fugitive dust emissions from earthmoving activities were quantified using CalEEMod (version 2011.1.1), which is an emissions estimation/evaluation model developed by the South Coast Air Quality Management District (SCAQMD) in collaboration with the air districts of California. Emissions of paved road dust were calculated using the paved road dust factor for high average daily trip roads under average conditions developed by the Midwest Research Institute (MRI) (SCAQMD 1996). Appendix F provides detailed emissions calculations for construction emissions.

Construction-related emissions would be short-term, but would result in an increase in emissions as compared to existing conditions and would apply to the Preferred Alternative (Alternative C). Construction would take place for approximately two months to three and a half months between June 30 through November 1, 2012.⁴

Air quality in the Project area is under the jurisdiction of the VCAPCD. The VCAPCD is responsible for achieving air quality goals within the SCCAB. The Ventura County Air Pollution Control Board (VCAPCB)

⁴ The emissions modeling assumed a two month construction period. The same construction assumptions (i.e., amount of soil excavation, number of haul trips, and number of construction days) occurring over a 3.5 month construction period would result in similar annual emissions and lower peak day emissions. Should the number of construction days increase (i.e., the number days of workers are traveling to and from the site, annual emissions would increase slightly; however, emissions would remain well below the General Conformity Rule thresholds.

adopted the VCAPCD Air Quality Assessment Guidelines with technical revisions in 2003. VCAPCD has established the regional air pollution emissions criteria shown in Table 4.7-1, below, for determining the significance of an impact during construction and operation.

Table 4.7-1: VCAPCD Regional Significance Thresholds

Pollutant	Significance Threshold
Nitrogen Oxide (NOx)	25 lbs/day (11.34kg/day)
Reactive Organic Gases (ROG)	25 lbs/day (11.34kg/day)

Source: VCAPCD 2003

Construction activities are associated with Alternative C only and are limited to the repair of the fish ladder. The construction activities would entail off-site fabrication of the steel plate and weir capping, diversion of flow away from the work area, saw-cutting and preparation of the existing weirs, drilling and anchoring new steel dowels with epoxy to reinforce new concrete and grout, affixing the steel plate and weir capping to the reshaped weir crests with embedded dowels and epoxy, and injecting high strength concrete or grout to fill the space under each weir crest cap. Clearing of sediment and vegetation from the fish ladder would be done in advance of the weir work.

The number of workers on-site would not exceed eight during construction activities. Construction equipment would include pipes, pumps and sandbags for flow diversion, one front end loader, one hydraulic excavator, off-road haul trucks and pickup trucks, saws, rotary hammer drill, generator, and an air compressor.

Construction includes excavation of the weirs which is estimated to require approximately 300 cubic yards of material be removed and disposed of in 14 truck trips, assuming trucks with a capacity of 20 cubic yards (15.3 cubic meters). Excavated material is anticipated to be hauled off-site to a landfill approximately 5 miles (8 kilometers) away.

All construction activities would occur between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday. As presented in Table 4.7-2, construction-related daily emissions would not exceed VCAPCD significance thresholds, and the net increase in emissions would not exceed the General Conformity Rule thresholds. Standard air pollution control measures would be implemented during construction to reduce short-term atmospheric emissions.

Table 4.7-2: Proposed Action Construction Emissions Summary

Construction	CO (lbs/day)	VOC (lbs/day)	NOx (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)
Peak Daily Emissions	13	2	10	<1	6	2
Daily Threshold	NA	25	25	NA	NA	NA
Exceed (Yes/No)	No	No	No	No	No	No
Construction	CO (tons/yr)	VOC (tons/yr)	NOx (tons/yr)	SOx (tons/yr)	PM10 (tons/yr)	PM2.5 (tons/yr)
Annual Emissions	<1	<1	<1	<1	<1	<1
Annual Threshold	NA	50	50	NA	NA	NA
Exceed (Yes/No)	No	No	No	No	No	No

4.7.1.2 *Future Operation and Maintenance*

O&M activities occurring under Alternative B and C, and less frequently and comprehensively under Alternative A, include inspections, routine repairs, Project-wide and fish ladder weir pool sediment cleanouts, and emergency operations. The extent and frequency of O&M operations would vary from year to year depending on the type of maintenance and repair work required. Therefore, this analysis assesses the peak daily and annual emissions associated with the reasonably anticipated most intensive O&M activity (i.e., activity with the greatest potential air emissions). This most intensive activity is removal of accumulated sediment through the entire Project, which would be required to maintain the design channel capacity as-built in under Alternative A and consistent with the new sediment profile and design invert for Alternatives B and C. Under Alternative B and C, sediment removal is estimated to occur once every three years on average. Under Alternative A, sediment removal would occur as funding is available. This would likely result in less frequent sediment removal operations that entail excavation of larger amounts of sediment.

Similar to the construction analysis, emissions were compiled using emission factors for Ventura County from CARB's OFFROAD2007 and EMFAC2007 models for off-road construction equipment and on-road trucks and worker vehicles respectively. Fugitive dust emissions from earthmoving activities were quantified using CalEEMod (version 2011.1.1). Emission factors for the year 2012 were used for a conservative analysis, however emission factors for all types of equipment would be expected to decline in later years due to state and Federal regulation. Appendix F provides detailed emissions calculations.

The sediment removal would occur during the in-channel work window, unless otherwise coordinated with the necessary resource agencies. Therefore, this analysis assumes the sediment removal activity would take place for a maximum of six months within the in-channel work-window and as otherwise coordinated with NMFS. The 2000 BO prescribes a typical work window from June 30 to November 1 but allows for potential window extensions from June 1 to June 30 and November 1 to December 31, based on whether or not the Harvey and Vern Freeman Diversion fish passage facilities are operating.

The sediment removal activity is assumed to be the removal of approximately 335,000 cubic yards of material, disposed of in 120 days resulting in 70 truck trips per day, assuming trucks with a capacity of 20 cubic yards (15.3 cubic meters). Excavated material is anticipated to be hauled off-site to a landfill approximately 5 miles away. The sediment removal actions under Alternative B and C would typically involve removal of less than 335,000 cubic yards of material, which would also result in lower emissions that presented below given that less sediment would be excavated/hailed off-site. All maintenance activities would occur between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday.

As presented in Table 4.7-3, daily emissions associated with the most intensive O&M activity of sediment removal would not exceed VCAPCD significance thresholds, and the net increase in emissions would not exceed the General Conformity Rule thresholds. Peak daily emissions associated with other less intensive O&M activities, such as sediment cleanouts of the fish ladder weir pools and routine repairs, are anticipated to result in lower peak daily emissions than presented in Table 4.7-3 and thus would not exceed VCAPCD significance thresholds. Total annual emissions associated with other O&M activities would vary depending on the extent and amount of activities performed, however it is anticipated that annual emissions associated with other O&M activities would be well below the annual emissions associated with Project-wide sediment removal (i.e., one ton or less per year of criteria pollutants as shown on Table 4.7-3) and thus, annual emissions associated with sediment removal and other O&M activities would not exceed the General Conformity Rule thresholds. Standard air pollution control measures would be implemented during construction to reduce short-term atmospheric emissions.

Table 4.7-3: Proposed Action Maintenance Emissions Summary

Construction	CO (lbs/day)	VOC (lbs/day)	NOx (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)
Peak Daily Emissions	14	3	22	<1	9	3
Daily Threshold	NA	25	25	NA	NA	NA
Exceed (Yes/No)	No	No	No	No	No	No
Construction	CO (tons/yr)	VOC (tons/yr)	NOx (tons/yr)	SOx (tons/yr)	PM10 (tons/yr)	PM2.5 (tons/yr)
Annual Emissions	1	<1	1	<1	1	<1
Annual Threshold	NA	50	50	NA	NA	NA
Exceed (Yes/No)	No	No	No	No	No	No

4.7.2 Alternative A - No Action

Under the No Action alternative, O&M would continue to occur intermittently under the draft O&M Manual and there would be no repairs to the existing fish ladder. No new design invert and allowable sediment profile would be established and thus no action would be taken to reduce scour potential. Alternative A would include the O&M activities described in Section 4.7.1.2, though these activities would occur less frequently than Alternatives B and C. As described in Section 4.7.1.2, O&M activities, including the most intensive activity of sediment removal shown in Table 4.7-3, would not exceed VPACD thresholds of significance. Additionally, because of the small scale of emissions associated with O&M activities, emissions would be below the “*de minimis*” threshold, and therefore, would be presumed to be in conformance with the General Conformity Rule, and additional clean air plans and associated growth projections.

4.7.3 Alternative B – Finalization and Implementation of the O&M Manual

Under Alternative B, no construction would occur, and O&M, including inspections, periodic sediment removal, and emergency repairs, would occur as specified in the finalized O&M Manual. The new design invert would be established during the sediment removal actions, which would occur when the accumulated sediment exceeds the allowable sediment profile. The new design invert is not expected to increase the need for channel maintenance or the frequency of sediment removal, nor would it alter the maximum amount sediment requiring removal during the sediment removal operations. Alternative B would include the O&M activities described in Section 4.7.1.2 and emissions would not exceed emission levels described in Section 4.7.1.2, including the most intensive activity of sediment removal shown in Table 4.7-3. Therefore, emissions associated with Alternative B would not exceed VPACD thresholds of significance. Because of the small scale of emissions associated with O&M activities, emissions would be below the “*de minimis*” threshold, and therefore, would be presumed to be in conformance with the General Conformity Rule, and additional clean air plans and associated growth projections. Therefore O&M would not result in an adverse effect.

Land uses more sensitive to air quality issues and emissions than commercial and industrial establishments, such as residences, schools, playgrounds, health care facilities, and rehabilitation centers are known as sensitive receptors. There are residences within the vicinity of the Project area that could be exposed to temporary increases in emissions.

The VCAPCD *Air Quality Assessment Guidelines* (2003) state that a project would have significantly affected sensitive receptors from toxic air contaminants (TACs) if:

- The lifetime probability of contracting cancer is greater than 10 in one million.
- Ground-level concentrations of non-carcinogenic toxic air pollutants would result in a Hazard Index of greater than 1.

Emissions of toxic air pollutants would be less than significant because emissions of reactive organic gases (ROG) and PM10, (which are representative of TAC emissions) shown for O&M activities described in Section 4.7.1.2, including the most intensive activity of sediment removal as shown in Table 4.7-3, are less than their respective VCAPCD and/or General Conformity emissions thresholds. Additionally, O&M activities would comply with the Environmental Commitments identified in Section 4.7.5 to further reduce emissions.

Alternative B would not establish any uses identified by the VCAPCD as being associated with odors during operation. According to the VCAPCD's *Ventura County Air Quality Analysis Guidelines*, examples of land uses associated with odor complaints typically include wastewater treatment facilities, landfills, solid waste transfer stations, composting facilities, asphalt batch plants, painting/coating operations, fiberglass operations, food processing facilities, feed lots, petroleum refineries, and metal smelting plants. Potential sources that may emit odors during O&M activities include diesel emissions from construction equipment and haul trucks. However, O&M activities involving use of diesel vehicles and equipment would be limited in duration and would not remain at one location for long periods of time. Therefore, Alternative B would not result in an adverse impact related to odors.

Alternative B would contribute to global climate change as a result of emissions of GHGs, primarily CO₂, emitted by off-road construction equipment, trucks, worker vehicles, and other on-road vehicles associated with O&M. The estimated GHG emissions worksheets are provided in Appendix F. Total CO₂ emissions were estimated to be 5 metric tons for sediment removal operations associated with O&M. Emissions associated with other O&M activities would be less than would occur during sediment removal activities. Emissions of GHGs other than CO₂ were determined to be negligible. This would result in annual CO₂ emissions that would be less than one percent (0.01) of CEQ's suggested threshold of 27,558 tons (25,000 metric tons). Therefore, Alternative B would not be classified as a significant source of GHG emissions and, thus, would not result in substantial amounts of GHG emissions that could potentially have an adverse impact on the environment.

As described above, impacts of Alternative B relative to air quality would not be adverse.

4.7.4 Alternative C – Implementation of the Finalized O&M Manual and Fish Ladder Repair (Preferred Alternative)

Alternative C would include the minor repairs to the fish ladder and which would involve the emissions discussed in Section 4.7.1.1. As shown in Table 4.7-2, construction emissions would not exceed VPACD thresholds of significance.

Alternative C would also include the O&M activities as described in Section 4.7.1.2 and emissions would not exceed emission levels described in Section 4.7.1.2, including the most intensive activity of sediment removal as shown in Table 4.7-3. Therefore, O&M emissions would not exceed VPACD thresholds of significance. Additionally, the fish ladder repairs and O&M activities would comply with the Environmental Commitments identified in Section 4.7.5 to further reduce emissions.

Because of the relatively small scale of both construction and O&M, emissions would be below the “*de minimis*” threshold for all activities, and therefore, would be presumed to be in conformance with the General Conformity Rule, and additional clean air plans and associated growth projections. Neither construction nor O&M activities would result in an adverse effect. Thus, Alternative C would not result in an adverse impact related to adopted air quality plans.

Land uses primarily adjacent to the Project area include open space and residences. There are residences within the vicinity of the Project area that could be exposed to temporary increases in construction and O&M emissions. Emissions of toxic air pollutants are expected to be less than significant because emissions of ROG and PM10, (which are representative of TAC emissions) shown for construction and O&M activities as described in Section 4.7.2.1 and shown on Tables 4.7-2 and 4.7-3 are less than their respective VCAPCD and/or General Conformity emissions thresholds. Thus, Alternative C would not result in an adverse impact to sensitive receptors.

As discussed under Alternative B above, Alternative C would not establish any uses identified by the VCAPCD as being associated with odors during operation.

Potential sources that may emit odors during construction and O&M activities include diesel emissions from construction equipment and haul trucks. However, construction and O&M activities would be limited in duration and, in the case of O&M would not remain at one location. Construction of the fish ladder would occur at one location but for limited duration (approximately two months to three and a half months) and would be located approximately 600 feet (182.9 meters) from the nearest residences. Therefore, Alternative C would not result in an adverse impact related to odors.

Alternative C would contribute to global climate change as a result of emissions of GHGs, primarily CO₂, emitted by off-road construction equipment, trucks, worker vehicles, and other on-road vehicles associated with construction and O&M.

The estimated GHG emissions worksheets are provided in Appendix F. Total combined CO₂ construction and O&M emissions associated with the most intensive sediment removal activities were estimated to be 1 metric ton and 5 metric tons, respectively. Emissions associated with other O&M activities would be less than would occur during sediment removal activities. Emissions of GHGs other than CO₂ were determined to be negligible. During both the construction and O&M periods, the annual CO₂ emissions would be less than one percent (0.01) of CEQ's suggested threshold of 27,558 tons (25,000 metric tons). Therefore, the Alternative C would not be classified as a significant source of GHG emissions and would not result in substantial amounts of GHG emissions that could potentially have an adverse impact on the environment.

Alternative C would not involve additional modifications to the Project site, and thus would not result in an adverse impact related to an adopted air quality plan or long-term regional air quality. In addition, there would be minimal odorous emissions sources from construction and O&M activities (i.e., diesel exhaust associated with use of trucks and heavy equipment), and minimal increase in GHG or TAC emissions. Therefore, impacts of Alternative C relative to air quality would not be adverse.

4.7.5 Environmental Commitments for Construction and O&M

The following Environmental Commitments are adapted from Environmental Protection Requirements specified in Appendix VI of the O&M Manual to further reduce air quality impacts:

AQ-1 The Corps or VCWPD (as applicable) shall keep construction and operation and maintenance activities under surveillance, management and control to minimize pollution of air resources. All activities, equipment, processes, and work operated or performed in accomplishing the specified O&M activities shall be in strict accordance with the State of California, Ventura County Air Pollution Control District and all Federal emission and performance laws and standards. Special management techniques as set out below shall be implemented to control air pollution by the construction activities.

- a. To reduce fugitive dust, the excavation site and the stockpile material shall be watered twice a day and the unpaved roads shall be watered three times per day.
- b. When wind speeds exceed 20 miles per hour, all excavation and grading operations shall be suspended.
- c. Truck speeds on unpaved roads shall not exceed 15 miles per hour.
- d. Operation of heavy equipment shall be limited to the hours between 8:00 a.m. and 5:00 p.m. Truck transportation shall be permitted between 7:00 a.m. and 7:00 p.m., Monday through Saturday. No operation or transportation shall occur on Sundays.

- e. Truck traffic shall be limited to the designated haul route; Harvard Boulevard/Telegraph Road and Hallock Drive shall be used to access Highway 126.

AQ-2 Dust particles, aerosols, and gaseous by products from all construction activities, processing and preparation of materials, such as from asphaltic batch plants, shall be controlled at all times, including weekends, holidays and hours when work is not in progress. All excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and all other work areas within or outside the project boundaries shall be maintained free from particulates which would cause air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, light bituminous treatment, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated at such intervals as to keep the disturbed area damp at all times. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs.

AQ-3 Hydrocarbons and carbon monoxide emissions from equipment shall be controlled to Federal and state allowable limits at all times.

AQ-4 Odors shall be controlled at all times for all construction activities, processing and preparation of materials.

4.7.6 *Determination of Impacts*

With the implementation of the Environmental Commitments listed above, the Proposed Action would not result in a significant impact related to air quality.

4.7.7 *Determination of Conformity*

Based on the air quality analysis described in Appendix F, the Proposed Action would not have an adverse impact on air quality. The total emissions of each criteria pollutant are below de minimis levels as prescribed in 40 CFR 93.153(b) for each alternative. Therefore, this Proposed Action conforms to the Federal Clean Air Act as amended 1990 and, as required, a Record of Non-Applicability has been prepared instead of a conformity determination and is located in Appendix F.

4.8 **Noise**

The noise impact would be considered adverse if it would:

- Result in a substantial temporary or periodic increase in ambient (existing) noise levels, in those areas where sensitive receptors are located.
- Conflict with the Ventura County Construction Noise Threshold and Control Plan due to construction activity occurring between 7:00 p.m. and 7:00 a.m. Monday through Friday, or between 7:00 p.m. and 9:00 a.m. Saturday, Sunday, and holidays, unless such activity meets the reduced noise threshold criteria.
- Violate SPMC Section 93.23 due to operation of heavy equipment prior to 8:00 a.m. or after 6:00 p.m., Monday through Friday.

4.8.1 *Alternative A: No Action*

Under the No Action alternative, O&M would continue to occur intermittently under the draft O&M Manual and there would be no repairs to the existing fish ladder. No new design invert and allowable sediment profile would be established. O&M activities could temporarily generate noise in the vicinity of sensitive receptors. As discussed in greater detail under Alternative B below, through compliance with the City of Santa Paula and County of Ventura noise ordinances and with implementation of Environmental Commitments, temporary noise increases would not result in adverse impacts.

4.8.2 *Alternative B: Finalization and Implementation of the O&M Manual*

Under Alternative B, no construction would occur, but O&M, including periodic sediment removal and emergency repairs, would occur as specified in the finalized O&M Manual. The new design invert would be established during the sediment removal actions, which would occur when the accumulated sediment exceeds the allowable sediment profile. O&M activities involving construction equipment and truck transportation could result in a temporary annoyance to nearby residents and other noise sensitive receptors. Noise levels would fluctuate depending on construction phase, equipment type and duration of use, distance between the noise source and receptor, and presence or absence of noise attenuation barriers. Heavy construction equipment produces a noise level range from 80 to 88 dBA as measured at a distance of 50 feet (79 dBA at 100 feet). This noise level would be higher compared to existing noise levels in the vicinity of the Project, which generally ranges from 49 to 60 dBA.

Several residential areas are located in the vicinity of the Project that would experience an increase in noise levels during O&M activities. Approximately 75 dBA noise level may be experienced at these locations. However, construction activity would be of limited duration and not remain at one location and heavy equipment would generally be operating at lower elevations at the bottom of the channel, muffling the noise level. It is assumed that construction equipment may be at one location (within 100-foot area) for approximately 2 to 5 days during sediment removal activities. Noise increases due to construction would be localized; impacts would be short-term, affecting only the immediate vicinity where work is occurring. Additionally, O&M activities would only occur during daytime hours when ambient noise levels due to traffic and other regular City activities create higher noise levels.

Truck traffic would be limited to a designated haul route. Trucks would travel through industrial or commercial areas, avoiding residential areas. Additionally, the trucks would operate intermittently throughout the day only during the construction period and thus, would not have an adverse noise impact on sensitive receptors.

The primary staging area is located near an area south of Highway 126 near by open space and existing industrial uses. Sensitive uses (residential development and Harding Park) are located opposite Highway 126 from the staging area. Compared to noise generated by industries in the area and vehicular traffic on Highway 126, noise generated within the staging area would be negligible.

To comply with SPMC Section 93.2, operation of heavy equipment (bulldozers, excavators and crushers) would be limited to between 8:00 a.m. to 6:00 p.m., Monday through Friday. Truck transportation would be permitted between 7:00 a.m. and 7:00 p.m. No construction activity would occur on Sundays. Additionally, O&M activities would be required to comply with the environmental protection requirements listed in the O&M Manual which include the requirement that all noise producing construction equipment and vehicles shall be equipped with mufflers and air inlet silencers where appropriate, be in good operating condition, and be equipped with noise control features readily available for the type of equipment being used. The O&M Manual also specifies that O&M activities shall comply with local noise control regulations.

Given compliance with local noise control measures and the Environmental Commitments listed in Section 4.8.4, construction-related noise impacts would not be adverse. No changes to the use or operation of the Project would occur and thus there would be no changes to the long-term ambient noise levels. Therefore, Alternative B would not result in adverse noise impacts.

4.8.3 *Alternative C: Implementation of the Finalized O&M Manual and Fish Ladder Repair (Preferred Alternative)*

Under Alternative C, the proposed repairs to the fish ladder would last for a duration of approximately two months to three and a half months and include noise generating activities such as saw-cutting and encapsulating the weir tops with steel plating, and removal of sediments. These repairs would temporarily increase noise levels in the area. The noise-sensitive use nearest to the fish ladder construction site is residential development located approximately 600 feet to the west, separated from the fish ladder by the

channel walls and intervening agricultural fields. Activities associated with fish ladder construction could generate a noise level up to approximately 80 dBA at 50 feet. At a distance of 600 feet from the construction site, with the intervening land being a soft surface (agricultural fields), the resultant noise levels at the residential area would be approximately 53 dBA. This does not account for any intervening natural berms or barriers, including natural topography, which may shield the construction noise from the residential area. The construction noise level of 53 dBA would be compatible with the existing ambient noise level of approximately 50 dBA. Moreover, the construction noise would only be temporary in duration. Based on the above, no sensitive uses near the fish ladder would be subject to a substantial increase in ambient noise levels from the repairs to the fish ladder and impacts would not be adverse.

As described under Alternative B above, O&M activities, including sediment removal, would include the periodic use of heavy equipment and truck transport which would temporarily increase local noise levels. However, these activities would be limited in duration and would be required to comply with local noise control ordinances and the Environmental Commitments listed in Section 4.8.4. Therefore, construction-related noise impacts would not be adverse. No changes to the use or operation of the Project would occur under Alternative C and thus there would be no changes to the long-term ambient noise levels. Therefore, Alternative C would not result in adverse noise impacts.

4.8.4 Environmental Commitments for Construction and O&M

The following Environmental Commitments are Environmental Protection Requirements specified in Appendix VI of the O&M Manual to further avoid and minimize noise effects:

- N-1** All noise producing construction equipment and vehicles using internal combustion engines shall be equipped with mufflers, and air inlet silencers where appropriate, in good operating condition that meet or exceed original factory specification. Mobile or fixed "package" equipment (e.g., arc welder, air compressor) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.
- N-2** All mobile or fixed noise producing equipment which is regulated for noise output by a local, state, or Federal agency, shall comply with such regulation.
- N-3** Electrically powered equipment instead of pneumatic or internal combustion powered equipment shall be used, where feasible.
- N-4** Noise producing construction and operations and maintenance activities shall comply with local noise control regulations.

Implementation of the following Environmental Commitment would further reduce impacts associated with noise:

- N-5** Haul routes shall be designated to avoid noise-sensitive residential streets.

4.8.5 Determination of Impacts

With the incorporation of the Environmental Commitments listed above, the Proposed Action would not result in an adverse impact related to noise.

4.9 Hazardous Materials

The Proposed Action would have a significant impact related to hazardous materials if it would:

- Result in an accidental release of hazardous materials posing a threat to public health and safety.

- Involve generation, transport, or use of hazardous material that could pose a health risk to the surrounding human and natural environments.

4.9.1 *Alternative A: No Action*

Under the No Action alternative, O&M would continue to occur intermittently under the draft O&M Manual and there would be no repairs to the existing fish ladder. No new design invert and allowable sediment profile would be established.

Based on the environmental agency records review and site reconnaissance, there is no contamination of soil, surface water, or groundwater by hazardous substances at the Project. No hazardous materials operations currently occur, or have historically occurred, on-site and this alternative would not introduce such activities to the site. No special handling is anticipated for the surface and subsurface soil or other material that would be encountered during sediment removal or other O&M activities. Thus, no risk of accidental release of hazardous materials would occur.

O&M activities could involve the minimal transport, use, or disposal of some hazardous materials, such as on-site fueling or servicing of construction equipment. These activities would be temporary in nature and would be subject to Federal, state and local health and safety requirements and compliance with Environmental Commitments presented in Section 4.9.4. O&M would not result in the long-term use, transport, or storage of hazardous materials. Therefore, Alternative A would not result in adverse impacts related to hazardous materials.

4.9.2 *Alternative B: Finalization and Implementation of the O&M Manual*

Under Alternative B, O&M, including periodic sediment removal and emergency repairs, would occur as specified in the O&M Manual.

As discussed under Alternative A, there are no hazardous materials located at the Project and no contamination of soil, surface water, or groundwater. Therefore, no special handling would be required for materials encountered during O&M activities and no risk of accidental release of hazardous materials is anticipated. O&M activities could involve the transport, use, or disposal of some hazardous materials, such as on-site fueling or servicing of construction equipment. These activities would be temporary in nature and would be subject to Federal, state and local health and safety requirements and compliance with Environmental Commitments presented in Section 4.9.5. O&M would not result in the long-term use, transport or storage of hazardous materials. Therefore, Alternative B would not result in adverse impacts related to hazardous materials.

4.9.3 *Alternative C: Implementation of the Finalized O&M and Fish Ladder Repair (Preferred Alternative)*

As discussed above, there is no contamination of soil, surface water, or groundwater by hazardous substances at the Project, and thus, soil or water contamination is not likely to be encountered during fish ladder repairs. As with O&M activities discussed under Alternative A and B, and any transport, use or disposal of hazardous materials that occurs during construction activities would be temporary in nature and subject to Federal, state and local health and safety requirements and compliance with Environmental Commitments presented in Section 4.9.4. Operation of the fish ladder would not change and would not result in the long-term use, transport, or storage of hazardous materials.

Likewise, as discussed under Alternative A, soil or water contamination is not likely to be encountered during O&M activities. Any transport, use or disposal of hazardous materials that occurs during O&M activities, such as on-site fueling or servicing of construction equipment, would be temporary in nature and subject to Federal, state and local health and safety requirements and compliance with Environmental Commitments identified in Section 4.9.4. O&M would not result in the long-term use, transport, or storage of hazardous materials. Therefore, Alternative C would not result in adverse impacts related to hazardous materials.

4.9.4 Environmental Commitments for Construction and O&M

Implementation of the following Environmental Commitment would further reduce impacts associated with hazardous materials:

- H-1** The contractor shall be required to implement best management practices (BMPs) for handling hazardous materials onsite. The use of construction BMPs would minimize negative effects on soils, surface water, and groundwater, and shall include, without limitation, the following:
- Follow manufacturers' recommendations and regulatory requirements for use, storage, and disposal of chemical products and hazardous materials used in construction;
 - Implement spill control and countermeasures, including employee spill prevention/response training;
 - Avoid overtopping construction equipment fuel gas tanks;
 - During routine maintenance of construction equipment, properly contain and remove grease and oils; and
 - Properly dispose of discarded containers of fuels and other chemicals.

4.9.5 Determination of Impacts

With the incorporation of the Environmental Commitment, the Proposed Action would not result in an adverse impact related to hazardous material.

4.10 Public Safety

The Proposed Action would have a significant impact related to public safety if it would:

- Expose the public to an increased threat of flooding related accidents and deaths.
- Impair implementation of emergency evacuation and response plans.
- Result in substantial adverse physical impacts associated with the provision or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times or other performance objectives for fire protection, police protection, schools, parks, or other facilities.

4.10.1 Alternative A – No Action

Under the No Action alternative, O&M would continue to occur intermittently under the draft O&M Manual and there would be no repairs to the existing fish ladder. No new design invert and allowable sediment profile would be established. The intermittent O&M activities would continue to reduce risks of flooding along Santa Paula Creek. However, given that regular maintenance of the facility, including sediment removal and repairs, would occur less frequently, the risks associated with large storm events would be greater. Additionally, without a regular inspection and response plan in place, the response to emergency events would likely be slower and less organized. Therefore, while no new adverse impacts would occur under the No Action Alternative, the beneficial effects associated with implementation of the final O&M Manual and establishment of a new design invert and sediment profile to reduce scour would not occur.

4.10.2 Alternative B: Finalization and Implementation of the O&M Manual

Under Alternative B, no construction would occur, but O&M, including periodic sediment removal and emergency repairs, would occur as specified in the finalized O&M Manual to maintain the existing flood risk management function and fish passage capabilities of the Project. The new design invert would be established during the sediment removal actions, which would occur when the accumulated sediment exceeds the allowable sediment profile.

O&M would occur in compliance with the O&M Manual which is intended to guide the O&M of the Project by establishing procedures and instructions and identifying environmental requirements. The O&M Manual includes requirements for regular inspections and emergency flood operations (monitoring and mobilizing actions to prevent damage or failure of Project features). Thus, the O&M Manual is designed to maintain flood risk management functions and identify emergency response actions, thereby, reducing risks associated with flooding and supporting implementation of emergency response plans. Additionally, with regular maintenance, the new design invert would allow for better sediment transport and reduce the potential of the channel bottom to degrade below the toe of existing grouted stone side slopes. This would improve the operation of the FRMC and not adversely affect the existing flood risk management properties of the Project.

For O&M that occurs within the channel, all water diversion activities would be monitored by the Corps or VCWPD as applicable. The water diversion would take place in compliance with commitments identified in this SEA and applicable permits (BO[s], WQC[s], and SAA[s]) to ensure that no flooding or other public safety risks would occur.

A small temporary increase in vehicular traffic to the Project and staging areas that could occur during O&M activities would not impact emergency access or interfere with the provision of emergency services such as police, fire, and ambulance. No lane closures on public roadways are anticipated, and emergency access to all public roads would be maintained at all times. Therefore, O&M would not result in adverse impacts related to flooding or emergency evacuation and response plans.

The Project is located within a high fire hazard zone. As O&M activities involving construction could occur during the dry season, Environmental Commitment PS-1 would be implemented to minimize risk of fire combustion associated with O&M activities on site. Thus, Alternative B would not result in an adverse impact related to wildfire.

Alternative B would not result in a change in use at the site, nor would it involve the establishment of housing or otherwise bring new population to the region which could generate the need for new and/or expanded public services. Nor would it increase public safety risks triggering the need for increased fire protection or police protection, or present a safety risk related to the Santa Paula Airport.

Thus, Alternative B would not result in adverse impacts related to public safety.

4.10.3 *Alternative C: Implementation of the Finalized O&M Manual and Fish Ladder Repair (Preferred Alternative)*

Repairs to fish ladder would occur outside of the rainy season and water diversion would take place in compliance with commitments identified in this SEA and applicable permits (BO[s], WQC[s], and SAA[s]). Therefore, construction workers would not be exposed to risk of flooding. No structural modification of the fish ladder or FRMC would occur and the integrity of Project would not be compromised, and no increased risk of flooding would occur. Once the repairs are completed, no personnel would be located on-site, except temporarily during O&M activities. Construction activities would be confined to the fish ladder site and staging areas. Thus, no road closures would be necessary and no adverse impact on emergency services or implementation of an emergency response plan would occur.

As discussed under Alternative B above, O&M activities, including as sediment removal and emergency repairs, are intended to maintain flood risk management capabilities of the Project and would not increase risk of flooding, or impair emergency services or implementation of an emergency response plan. Fish ladder repair and applicable O&M activities would comply with Environmental Commitments identified in Section 4.10.4 and there would be no adverse impacts related to public safety under Alternative C.

4.10.4 Environmental Commitments for Construction and O&M

Implementation of the following Environmental Commitments would further reduce risks to public safety:

- PS-1** All staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other material that could ignite. Any construction or maintenance equipment that includes a spark arrestor shall be equipped with a spark arrestor in good working order. During construction and maintenance activities, all vehicles and crews working at the project site(s) shall have access to functional fire extinguishers at all times.
- PS-2** Construction contractors shall be responsible for providing appropriate security measures for all equipment staging and/or storage areas.
- PS-3** Construction contractors shall dispose of construction refuse at approved disposal locations. Contractors will not be permitted to dispose of construction debris in residential or business containers.
- PS-4** Construction contractors shall be required to keep construction and staging areas orderly, free of trash and debris.

4.10.5 Determination of Impacts

With implementation of the Environmental Commitments listed above, the Proposed Action would not result in adverse impacts related to public safety.

4.11 Socioeconomics and Environmental Justice

The significance of population and expenditure impacts are assessed in terms of their direct effect on the local economy and related effect on other socioeconomic resources (e.g., housing). If implementation of a Proposed Action would result in substantial shifts in population trends, adversely affect regional spending and earning patterns, or introduce overwhelming demand for public services or utilities, socioeconomic impacts would be considered adverse.

4.11.1 Alternative A: No Action

Under the No Action alternative, O&M would continue to occur intermittently under the draft O&M Manual and there would be no repairs to the existing fish ladder. No new design invert and allowable sediment profile would be established. The O&M activities would occur intermittently and be limited to the local area adjacent to the Santa Paula Creek. O&M activities would employ a small number of workers on a temporary basis. The temporary jobs are expected to be filled by both currently employed and unemployed labor force participants living with the local Ventura County area and would not attract a long-term worker population to the Project vicinity. Therefore, intermittent O&M activities would neither place a demand on employment opportunities, housing, or public facilities, nor would it create housing, or public facilities in the region nor create blight or otherwise affect property values, and business or tax revenue. Consequently, intermittent O&M activities would not create socioeconomic impacts within the adjacent communities and no adverse impacts would occur.

Additionally, intermittent O&M would not involve other significant impacts that could disproportionately affect minority or low-income communities. Thus, the No Action Alternative would not result in adverse impacts related to socioeconomics and environmental justice.

4.11.2 Alternative B: Finalization and Implementation of the O&M Manual

Under Alternative B, no construction would occur, but O&M, including periodic sediment removal and emergency repairs, would occur as specified in the finalized O&M Manual. The O&M activities would be limited to the local area adjacent to the Santa Paula Creek and employ a small number of workers on a temporary basis. The construction-related jobs are expected to be filled by both currently employed and unemployed labor force participants living with the local Ventura County area and it would not attract a

long-term worker population to the Project vicinity. Therefore, O&M would neither place a demand on employment opportunities, housing, or public facilities, nor would it create housing, or public facilities in the region nor create blight or otherwise affect property values, business or tax revenue. Consequently, O&M activities would not create socioeconomic impacts within the adjacent communities and no adverse impacts would occur.

Additionally, O&M would not involve other significant impacts that could disproportionately affect minority or low-income communities. Thus, Alternative B would not result in adverse impacts related to socioeconomics and environmental justice.

4.11.3 *Alternative C: Implementation of the Finalized O&M Manual and Fish Ladder Repair (Preferred Alternative)*

Alternative C would result in short-term employment opportunities associated with fish ladder repair and O&M activities, including sediment removal. Repair of the fish ladder would be short-term and involve only a small number of workers. The construction-related jobs are expected to be filled by both currently employed and unemployed labor force participants living with the local Ventura County area and it would not attract a long-term worker population to the Project vicinity. Therefore, construction of the Proposed Action would not increase the region's population.

Likewise, as discussed under Alternative B, O&M would periodically involve construction work. However, it would not attract a long-term worker population to the Project vicinity. It would not place a demand on employment opportunities, housing, or public facilities, nor would it create housing, or public facilities in the region, create blight or otherwise affect property values, business or tax revenue. Consequently, Alternative C would not have socioeconomic impacts within the adjacent communities and no adverse impacts would occur.

The fish ladder repair and O&M would not involve significant impacts that could disproportionately affect minority or low-income communities. There are no adverse impacts related to population, housing, employment, business or tax revenue impacts.

Thus, Alternative C would not result in adverse impacts related to socioeconomics and environmental justice.

4.11.4 *Environmental Commitments for Construction and O&M*

None.

4.11.5 *Determination of Impacts*

The Proposed Action would not result in adverse impacts related to population, housing, employment, business or tax revenue, nor would it disproportionately affect minority and/or low income populations.

4.12 Traffic

An impact would be considered adverse if any of the following would occur:

- A major roadway (arterial or collector classification) would be closed to through traffic as a result of project activities and there would be no suitable alternative route available
- An increase in roadway wear in the vicinity of the work zone would occur as a result of heavy truck or equipment movements, resulting in noticeable deterioration of roadway surfaces
- Project activities or operation of the project would result in safety problems for vehicular traffic, transit operations, or trains

- An increase in vehicle trips associated with additional commuter and truck trips would result in an unacceptable reduction in the LOS standards of local jurisdictions in the project vicinity

4.12.1 Alternative A: No Action

Under the No Action alternative, O&M would continue to occur intermittently under the draft O&M Manual and there would be no repairs to the existing fish ladder. No new design invert and allowable sediment profile would be established. O&M activities would result in temporary small increases in the number vehicle trips. This would not be of sufficient volume to cause congestion within the affected street system. Additionally, O&M activities involving construction would be required to comply with the Environmental Commitments identified in Section 4.12.4 pertaining to designation of haul routes and coordination with the City of Santa Paula and County of Ventura, and therefore, intermittent O&M would not result in an adverse impact on the traffic conditions. No impacts to traffic would be incurred under the No Action alternative.

4.12.2 Alternative B: Finalization and Implementation of the O&M Manual

Under Alternative B, no construction would occur, but O&M, including periodic sediment removal and emergency repairs, would occur as specified in the finalized O&M Manual. The small number vehicle trips associated with periodic monitoring and minor maintenance would be accommodated by the existing street system and would not cause congestion. During the larger sediment removal activities, construction is anticipated to last for a duration of approximately four to six months with the majority of the activity occurring within the Project area. Traffic associated with large sediment removal activities involve approximately trucks hauling material to the landfills and other disposal sites (the nearest landfill is 5 miles [8 kilometers] from the Project), workers traveling to and from the job site, and transport of equipment. Traffic impacts along any one street segment or at any intersection would be intermittent and temporary during sediment removal activities, and would not have long-term effects on traffic flow. Further, coordination with the City of Santa Paula and Ventura County would serve to reduce any potential effects related to construction traffic. The increase in vehicle trips would be temporary and not of sufficient volume to cause congestion within the affected street system. Additionally, O&M activities involving construction would be required to comply with the Environmental Commitments identified in Section 4.12.4 pertaining to designation of haul routes and coordination with the City of Santa Paula and County of Ventura, and therefore, O&M would not result in an adverse impact on the traffic conditions.

4.12.3 Alternative C: Implementation of the Finalized O&M Manual and Fish Ladder Repair (Preferred Alternative)

Construction associated with the minor fish ladder repair would last for approximately two months to three and a half months with a majority of the activity would be occurring at the site of the existing fish ladder. A small number of trucks traveling to and from the site and staging area to transport equipment and materials, and workers driving to and from the site would be the only activity occurring on any streets. No temporary lane closures are anticipated. The increase in vehicle trips associated with the fish ladder repair would be short-term and not of sufficient volume to cause congestion within the affected street system. Further, coordination with the City of Santa Paula and Ventura County, as required by the Environmental Commitments identified in Section 4.12.4, would serve to reduce any potential effects related to construction traffic. Thus, fish ladder repair would not result in an adverse impact on the traffic conditions.

As discussed under Alternative B above, traffic associated with O&M would not be temporary and not of sufficient volume to cause congestion within the affected street system. Additionally, O&M activities involving construction would be required to comply with the Environmental Commitments identified in Section 4.12.4 pertaining to designation of haul routes and coordination with the City of Santa Paula and County of Ventura, and therefore, O&M, including the new invert and sediment profile, would not result in an adverse impact on the traffic conditions.

4.12.4 Environmental Commitments for Construction and O&M

Implementation of the following Environmental Commitments would further reduce impacts associated with traffic:

- T-1** Roads designated for truck traffic shall be used for truck traffic and movement of heavy equipment.
- T-2** The construction contractor shall coordinate with the transportation department of the applicable jurisdiction in order to implement standard construction traffic controls, such as the posting of notices, signage, detours, flag men and other appropriate measures along Telegraph Road.
- T-3** The construction contractor shall restore any damaged or defaced asphalt concrete paving as a result of truck traffic from the construction project.
- T-4** Signs shall be posted in visible locations along the project site perimeter and along local roadways per City of Santa Paula and/or Ventura County requirements and approved traffic control plan instructions.

4.12.5 Determination of Impacts

With implementation of the Environmental Commitments listed above, the Proposed Action would not result in adverse impacts related to traffic.

4.13 Utilities

4.13.1 Criteria for Evaluation

The repair of the fish ladder would have an adverse impact on utilities and service systems if it would:

- Require a substantial modification to existing facilities or services that would have an adverse environmental impact on sensitive resources or land uses.

4.13.2 Alternative A: No Action

Under the No Action alternative, O&M would continue to occur intermittently under the draft O&M Manual and there would be no repairs to the existing fish ladder. No new design invert and allowable sediment profile would be established. As discussed in greater detail under Alternative B, intermittent O&M activities, including sediment removal, are intended to maintain flood risk management capabilities of the Project and would not result in the alteration or damage of existing utilities. The O&M activities would involve only limited use of water and energy consumption and no new connections the existing water and power grid are required. Additionally, periodic solid waste generation from O&M activities is not expected to exceed capacity any local disposal sites in the area. Under the No Action alternative, no adverse impacts to utilities would occur.

4.13.3 Alternative B: Finalization and Implementation of the O&M Manual

Under Alternative B, O&M activities, including establishment of the new design invert and sediment profile, would occur within the Project and would not disturb or relocate existing utilities. Existing power lines along any segment of the street or right-of-way would not be affected by O&M activities, as no shut downs would be required.

O&M activities would involve only the limited use of water, anticipated to be provided via a water truck, and limited energy consumption (i.e., water used for dust suppression and fuels and generators to power construction equipment). No new connections the existing water and power grid, or construction of new sewer lines would be required. Other than temporary use of municipal water during construction, O&M would not have a water demand and, therefore, would not require new water or wastewater supplies or facilities.

O&M activities, primarily sediment removal, would periodically generate waste requiring re-use or disposal at an approved local landfill. The selection of the appropriate disposal site would be the responsibility of the contractor. The periodic generation of material for disposal is not expected to exceed the capacity of any disposal sites. Further the Proposed Action would comply with state and local policies for diverting waste from landfill disposal (i.e., source reduction, recycling, and composting), such as the requirements of the California Integrated Waste Management Act of 1989 (Assembly Bill 939).

As described above, Alternative B would not have an adverse impact on utilities.

4.13.4 *Alternative C: Implementation of the Finalized O&M Manual and Fish Ladder Repair (Preferred Alternative)*

The fish ladder repairs would include rounding and recapping the weirs and would not affect any existing utilities in the vicinity. As with O&M activities described under Alternative B, fish ladder repairs would involve only limited use of water and energy consumption (i.e., water used for dust suppression and fuels and generators to power construction equipment). No new connections to the existing water and power grid, or construction of new sewer lines would be required. Other than temporary use of municipal water during construction, O&M would not have a water demand and, therefore, would not require new water or wastewater supplies or facilities.

The repairs would generate a small amount of solid waste associated with removing existing weir caps and reshaping the weirs, and sediment removal from the weir pools. Such materials would be transported by the contractor for off-site disposal or recycling/reuse as appropriate. This is not expected to exceed capacity of any local disposal sites in the area.

As discussed under Alternative B, O&M activities, including sediment removal, are intended to maintain flood risk management capabilities of the Project and would not result in the alteration or damage of existing utilities. The O&M activities would involve only limited use of water and energy consumption and no new connections to the existing water and power grid are required. Additionally, periodic solid waste generation from O&M activities is not expected to exceed capacity of any local disposal sites in the area.

Therefore, Alternative C would not result in an adverse impact to utilities.

4.13.5 *Environmental Commitments for Project Construction and O&M*

Implementation of the following Environmental Commitment would further reduce impacts related to utilities:

- U-1** Prior to any grading and excavation activities, utility locations shall be verified through field surveys or documentation of prior surveys.

4.13.6 *Determination of Impacts*

With implementation of the Environmental Commitment listed above, the Proposed Action would not result in adverse impacts related to utilities.

4.14 Cumulative Effects

Under NEPA, a cumulative impact is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions (40 CFR 1508.70). For this SEA, cumulative impacts were analyzed using a list of reasonably certain projects that have been or would be constructed within or in the general vicinity of the Project that could contribute to cumulative impacts.

Under the CEQA Guidelines, cumulative impacts are defined as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental effects. The individual effects may be changes resulting from a single project or a number of separate projects.

The cumulative impact from several projects is the change in the environment that results from the cumulative impact of the Proposed Action when added to other future projects. In identifying projects that may contribute to cumulative impacts, the CEQA Guidelines allow the use of either a specific list of past, present, and reasonable anticipated future projects, or a summary of projections contained in an adopted General Plan or related planning document which is designed to evaluate regional or area wide conditions.

The following cumulative impact analysis takes into consideration existing conditions plus the Proposed Action, in combination with projects currently proposed or approved yet unbuilt within the City of Santa Paula. Applicable agencies with regulatory approval over development projects in the Project area were contacted to determine past, present and reasonably foreseeable future projects in the vicinity of the Project. Proposed projects identified in the general vicinity (approximately 0.25 mile) of the Project consist of a 19-lot residential subdivision to the northwest of the Project inlet at Cliff Drive and Forest Drive, a mixed-use development referred to as the East Area 1 General Plan Expansion Area (“East Area 1 Project”) immediately east of the site, and an approximately 95 acres that encompasses the portion of the Project from the railroad bridge to just north of Highway 126 referred to as the “East Area 2 Project” (see Figure 4.14-1).

The 19-lot residential subdivision application with the City of Santa Paula is currently on-hold and no development is currently being considered; thus, no notable cumulative effects relationship would result from the combination of the Proposed Action and the residential lot subdivision.

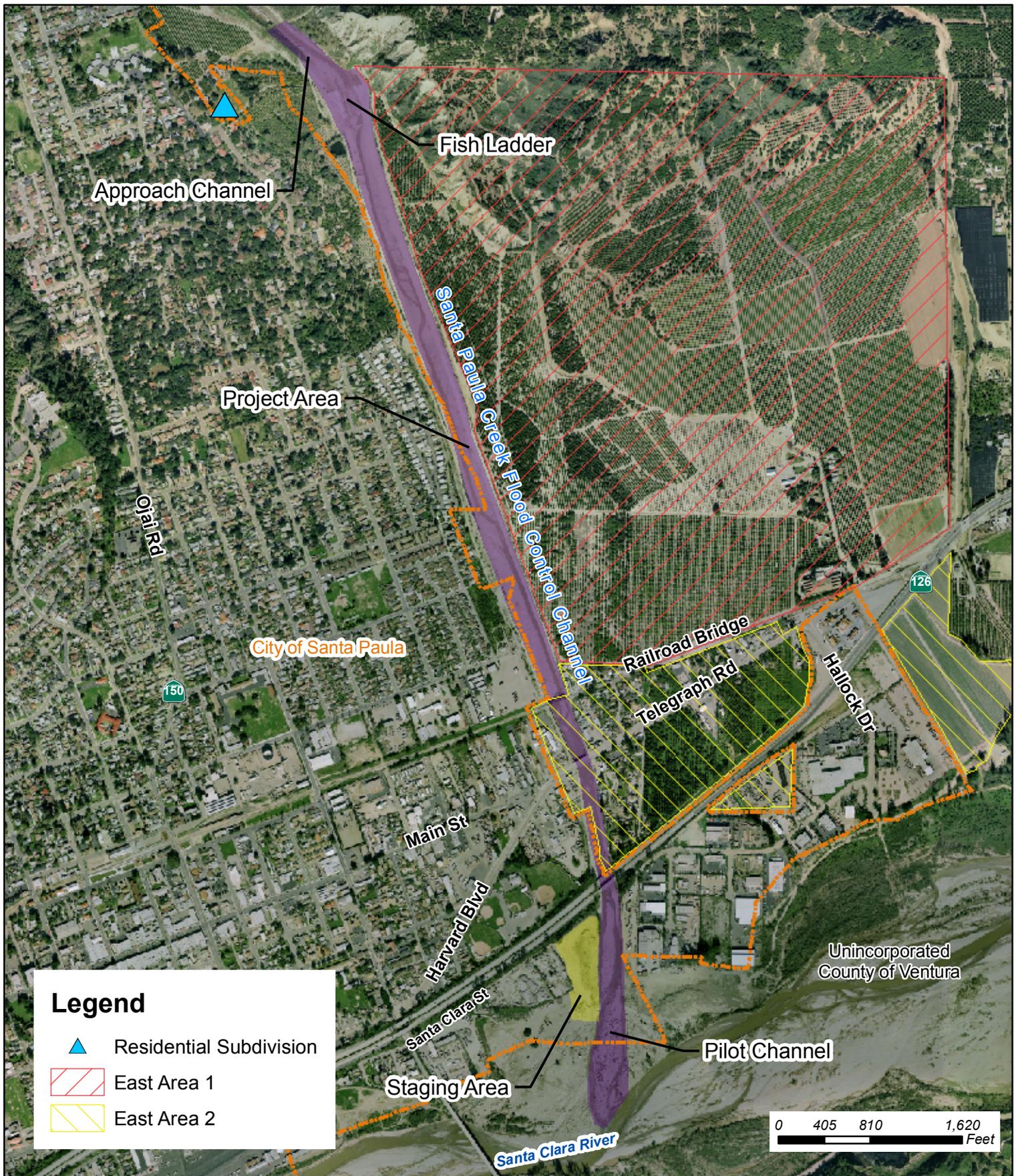
The East Area 1 Project was approved by the Santa Paula City Council on February 26, 2008, and annexation into the City is expected in 2013. The East Area 1 Project includes a maximum of 1,500 dwelling units of various types and supporting parks and schools. Some retail and office uses would be permitted along Hallock Drive and Santa Paula Street. The northern portion of the development, including the area immediately to the east of the fish ladder is designated as open space. Roadway improvements to accommodate the increase in traffic would include the addition of a traffic signal and reconfiguration of the Telegraph Road/Hallock Drive intersection, and the extension of Santa Paula Street across Santa Paula Creek. Development of East Area 1 is currently on-hold due to a slowdown in the housing market. Construction is not anticipated to begin until 2014 or beyond (Hernandez 2012). Thus, repairs to the fish ladder would not occur simultaneously with construction of East Area 1. Construction of East Area 1 is expected to take 10 years to complete and therefore, O&M activities would periodically occur simultaneously with East Area 1 construction.

A Notice of Preparation of a Draft Environmental Impact Report was released in August 2011 for the East Area 2 Project. However, according to the City of Santa Paula Planning Department, this project is currently on-hold and annexation and development of this site is not anticipated until after implementation of the East Area 1 Project (Hernandez 2012). Given that no development is currently proposed, or likely to be proposed in the near future, East Area 2 is not considered in the cumulative analysis.

The following addresses the potential for cumulative impacts associated with the Proposed Action and the East Area 1 Project. As that fish ladder repairs would occur prior to implementation of the East Area 1 Project, the discussion focuses on O&M, which would occur periodically during the East Area 1 construction and operations.

4.14.1 Soils & Geology

Implementation of the Proposed Action would adhere to site-specific geotechnical recommendations and applicable building codes, and it is anticipated that would also be the case for the East Area 1 Project. On-site impacts related to erosion, loss of top soil and expansive soils, would be controlled for both the Proposed Action and the East Area 1 Project through standard construction procedures, compliance with applicable regulations, and Environmental Commitments/mitigation measures. The Proposed Action would not increase exposure of people to risk of loss, injury, or death as the risk of seismic activity is similar to elsewhere in region; therefore, it would not contribute to any cumulative effects in those regards. As such, there would be no cumulatively considerable impact related to soils and geology.



Aerial Source: Ventura County Watershed Protection District, 2010

4.14.2 Water Resources

Implementation of the Proposed Action would contribute to short-term water quality impacts during O&M activities, including turbidity and sedimentation, however the potential water quality effects of the Proposed Action would not be adverse. Similar measures are required for all other projects within the floodplain. Relative to potential water quality impacts from future implementation of the East Area 1 Project, all new development in Ventura County, including in Santa Paula, is subject to the water quality protection requirements set forth in the Ventura Countywide Storm Water National Pollutant Discharge Elimination System (NPDES) Permit, as implemented through SWPPPs, Stormwater Quality Urban Impact Management Plans (SQUIMPs), and Low Impact Development (LID) plans. Regarding hydrology, according to the East Area 1 Project Drainage Technical Report storm flows within the East Area 1 Project area would be directed to a debris basin before conveyed to an outfall along edge of Santa Paula Creek (downstream of the fish ladder), which would increase flows into Santa Paula Creek. However, these flows would not exceed the flow or quantity capacity of Santa Paula Creek, plus the debris basin would eliminate the potential for flooding within the East Area 1 and off-site areas.

Based on the above, potential cumulative effects to water resources from construction and O&M activities would not be substantial and adverse.

4.14.3 Biological Resources

Given compliance with the Environmental Commitments required by Project permits, such as BO(s), SAA(s), WQC(s), and this SEA, the Proposed Action would not adversely impact biological resources. Thus, the Proposed Action is not expected to contribute to impacts to biological resources that would be cumulatively considerable.

4.14.4 Land Use

The Proposed Action would not change the existing use of the Project, and thus no incompatibilities with the existing and planned land uses in the vicinity would be created. Therefore, the Proposed Action is not expected to contribute to impacts to land use that would be cumulatively considerable.

4.14.5 Aesthetics

The Proposed Action would not adversely impact the scenic views or change the visual character of the area, nor would it create a new source of light and glare. Thus, the Proposed Action is not expected to contribute to aesthetics impacts that would be cumulatively considerable.

4.14.6 Cultural Resources

The Proposed Action would not disturb any native soils and is not likely to impact intact cultural resources (archeological and paleontological artifacts). Thus, the Proposed Action is not expected to contribute to impacts on cultural resources that would be cumulatively considerable.

4.14.7 Air Quality

The Proposed Action would result in temporary air emissions associated with minor fish ladder repairs (Alternative C) and O&M activities (Alternatives B and C). These emissions would be temporary and relative minor, thereby not resulting in an exceedance of VCAPCD thresholds. There is the potential that O&M activities involving air emissions (i.e., sediment removal or repairs requiring use of heavy equipment) would overlap with construction of the East Area 1 Project. Construction of East Area 1 would result in significant air quality impacts; however, given the temporary and minor contribution that would be associated with the Proposed Action in relation to the large scale grading and construction associated with East Area 1, emissions associated with the Proposed Action would not contribute to a cumulatively considerable effect on air quality.

4.14.8 Noise

Similar to above, the most notable noise impacts associated with the Proposed Action would be from heavy equipment associated with minor fish ladder repairs (Alternative C) and O&M activities (Alternatives B and C), which could potentially coincide or overlap with construction of the East Area 1 Project. Noise associated with O&M of the Proposed Action would be limited to periodic and short-term use of heavy equipment and haul trucks on a limited basis and thus would not contribute to a cumulatively considerable relative to potential cumulative long-term operational noise impacts.

4.14.9 Hazardous Materials

Any temporary handling of hazardous materials during the minor fish ladder repairs (Alternative C) and O&M activities (Alternatives B and C) would comply with applicable regulations and standards, and the operation of the Proposed Action does not involve hazardous materials. Thus, the Proposed Action is not expected to contribute to hazardous material impacts that would be cumulatively considerable.

4.14.10 Public Safety

The Proposed Action would not cause any risks to public safety. Therefore, the Proposed Action is not expected to contribute to impacts to public safety that would be cumulatively considerable.

4.14.11 Socioeconomics & Environmental Justice

The Proposed Action, in consideration with other planned and reasonably foreseeable projects, would not cumulatively result in disproportionately high and adverse human health effects or environmental hazards on minority and low-income populations, or create an environmental health risk or safety risk that may disproportionately affect children.

The Proposed Action, in consideration with other planned and reasonably foreseeable projects in the area, would not require the relocation of residences, would not result in a net decline in employment, would not lessen income levels, and would not significantly increase population. Consequently, there would be no significant cumulative socioeconomic impacts with implementation of this Proposed Action.

4.14.12 Traffic

Impacts on traffic conditions in the Project area consist primarily of short-term increase in traffic throughout the day, associated with the minor fish ladder repairs (Alternative C) and O&M activities (Alternatives B and C). East Area 1 would result in traffic increases associated with construction and operations. However, given the minor amount and temporary nature of traffic associated with the Proposed Action, there would be no significant cumulative traffic impacts with implementation of this Proposed Action.

4.14.13 Utilities

The Proposed Action would not affect any nearby utilities and would allow them to continue to operate at their designed capacities. As such, there would be no cumulative effects relationship to the East Area 1 Project.

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SECTION 5 – ENVIRONMENTAL COMMITMENTS

5.1 Soils & Geology

None.

5.2 Water Resources

- W-1** When applicable, the Corps or VCWPD (as applicable) shall prepare and submit a Notice of Intent and a Storm Water Pollution Prevention Plan (SWPPP) to the California Water Resources Board (Sacramento Office) and provide a copy to the Los Angeles Regional Water Quality Control Board (RWQCB) for O&M activities.
- W-2** When applicable, a Waste Water Discharge Permit/ National Pollutant Discharge Elimination System (NPDES) Permit shall be obtained by the Corps or VCWPD (as applicable).
- W-3** An emergency response plan shall be prepared for responding to hazardous materials spills at the project construction site. The plan will identify actions to immediately control hazardous materials spills, and procedures to notify appropriate health officials.
- W-4** Once the notice of project completion is provided to the VCWPD, the VCWPD is responsible for implementing all conditions/measures identified in all permits or agreements issued by Federal, state or local resource agencies (specifically, the 401 Water Quality Certification, Streambed Alteration Agreement, and the Biological Opinion). In case of violation of any permit or agreement, the VCWPD is responsible to pay fines or penalties imposed by a resource agency, and the VCWPD shall ensure compliance with the permits.
- W-5** No machinery or material shall be stored in the FRMC during non-working hours when no activity is taking place on-site. Machinery and materials shall be removed from the active channel at the end of each working day.
- W-6** Machinery used for construction and maintenance shall be fueled at a secure location a suitable distance from the Project in accordance with procedures contained in the SWPPP, when applicable.
- W-7** Erosion control BMPs, including methods, materials and installation, maintenance and removal requirements, shall be identified prior to initiation of the water diversion and any construction work.
- W-8** Upstream and downstream water quality monitoring sites shall be determined in coordination with the Corps Environmental Staff or VCWPD (as applicable). Water quality shall be measured prior to construction and shall be checked periodically to confirm that construction activities are not significantly affecting water quality within the project area. The Construction Contractor shall submit the monitoring report to the Corps Environmental Staff or VCWPD (as applicable) for their records.
- W-9** The construction contractor shall notify the Corps biologist/Environmental staff or VCWPD (as applicable) one week prior to commencement of water diversion activities. Water diversion activities shall be monitored by the Corps Environmental Staff or VCWPD (as applicable). The water diversion and work area shall be in place and functional before in-channel work is started.
- W-10** While the water diversion is in place, the channel shall remain operational 24 hours per day.
- W-11** Maintenance and/or repair activities shall not be conducted during a rainfall event.

5.3 Biological Resources

- B-1** Activities between the grouted side slopes (in-channel) associated with construction and regular maintenance of the fish ladder, excluding monitoring, shall be planned to avoid flowing water during the potential steelhead migration period. The normal in-channel work period would occur between June 30 and November 1. In-channel work may occur between June 1 and June 30, if the Harvey Diversion ladder has been closed for at least one week, and the area has been surveyed for steelhead presence. If steelhead are found or expected to be present, work shall not proceed until either steelhead are no longer present, or avoidance and/or relocation measures have been established in coordination with NMFS. In-channel work may occur between November 1 and December 31, if winter storm(s) have not generated flows that facilitate the operation of the Vern Freeman Diversion fish ladder on the Santa Clara River.
- B-2** In-channel work and channel diversion activities for construction and/or O&M of the Proposed Action shall be conducted in a manner to reduce potential impacts to migrating steelhead steelhead and would include the following measures:
- a. The area shall be visually surveyed for steelhead presence by a qualified biologist or technician prior to working in-channel.
 - b. The channel shall be diverted or piped outside/around the work area. Equipment shall avoid flowing water other than temporary crossing or diverting activities.
 - c. Residual surface water associated with the diverted channel shall be monitored for steelhead presence by a qualified biologist as soon as flows recede. If steelhead are observed in the isolated channel, they shall be immediately relocated to the flowing reach by a qualified biologist or technician.
 - d. Temporary culverts used in construction, maintenance, and/or operations shall be placed at stream grade and be of an adequate size to not increase stream velocity.
 - e. Silt fences or mechanisms to avoid sediment input to the flowing channel shall be erected adjacent to flowing water if sediment input to the stream may occur.
- B-3** If flowing water will be disturbed by construction or operation and maintenance activities, a qualified biologist/technician shall survey the complete area that may be disturbed, including by downstream turbidity, within one week of the beginning of in-water work. The biologist shall be present during activities that occur within flowing water, if necessary, the biologist would coordinate with the construction representative to cease the work, and provide recommended measures to avoid potential construction-related effects to steelhead and their habitat.
- a. The biologist shall have knowledge and experience in anadromous steelhead biology and ecology, fish/habitat relationships, biological monitoring, and handling, collecting, and relocating steelhead species.
 - b. The biologist shall rescue any steelhead that may become stranded and relocate them to an appropriate place in Santa Paula Creek or the Santa Clara River, depending upon the life stage of the fish and flow conditions in the creek and river.
 - c. The biologist shall note the number of individuals observed in the affected area, the number of individuals relocated, the approximate size of individuals, and the date and time of the collection and relocation. One or more of the following methods shall be used to capture steelhead: dip net, seine, throw net, minnow trap, and hand.

- B-4** Following removal of sediment from the FRMC, disturbed areas should be returned to the condition they were in prior to the disturbance, as detailed below.
- a. Re-contour low flow channel components (i.e., approach channel, low flow channel, and pilot channel) per specifications detailed in the O&M Manual.
 - b. Revegetate disturbed areas to the approximately pre-construction density or greater with native vegetation if the area has not naturally revegetated within the second growing period following construction.
- B-5** The Corps shall provide a written report to NMFS within 45 working days following completion of the construction phase for the Proposed Action.
- B-6** Maintain the fish ladder at design specifications to facilitate steelhead migration. Contact NMFS during maintenance evaluation and prior to any maintenance activities.
- a. Following observations subsequent to a bedload transport event (>500 cfs), evaluate steelhead passage opportunities and conduct any necessary fish ladder maintenance per protocol detailed in the O&M Manual.
 - i. Remove accumulated sediment and/or debris to ensure passage to and from the fish ladder, and drainage between weirs to avoid isolated pool formation or other fish migration blockage.
 1. If removal of debris or sediment from the weir notch occurs without the need for wholesale removal of sediment from the fish ladder pools, construction equipment should operate from the apron so as to avoid potential disturbance to adjacent habitat to the maximum extent practicable.
 2. If removal of debris or sediment from the weir notch needs to occur and diversion of flows is not possible, methods shall be employed to discourage fish presence in the action area. These measures could include, but are not limited to, exclusionary devices, such as block netting.
 - b. Monitor the low flow channel configuration and associated discharge at least once per year during low/base flow conditions (mid-April to mid-July) per protocol detailed in the O&M Manual.
 - c. Conduct necessary maintenance of the fish ladder to meet general design specifications
- B-7** Remove accumulated sediment and debris annually from the fish ladder prior to the start of the steelhead migratory season. This sediment removal activity should be completed prior to November 1.

Implementation of the following Environmental Commitments would further avoid or reduce the potential for mortality and disturbance of special-status species, including nesting birds and reptiles, within construction areas for the Proposed Action:

B-8 Biological Resources Awareness Training. Before any ground-disturbing work (including vegetation clearing and grading) occurs in the construction area, a qualified biologist would conduct a mandatory biological resources awareness training for all construction personnel and the construction foreman. This training would inform the crews about special-status species that could occur on site. The training would consist of a brief discussion of the biology and life history of the special-status species; how to identify each species, including all life stages; the habitat requirements of these species; their status; measures being taken for the protection of these species and their habitats; and actions to be taken if a species is found within the project area during construction activities. Identification cards would be issued to shift supervisors; these cards would have photos, descriptions, and actions to be taken upon sighting of special-status species during construction. Upon completion of the training, all employees would sign an acknowledgment form stating that they attended the training and understand all protection measures. An updated training would be given to new personnel and in the event that a change in special-status species occurs.

B-9 Prior to construction and/or O&M activities involving heavy equipment, the biologist would conduct a habitat survey within areas where heavy equipment would traverse to determine the presence of suitable habitat for threatened or endangered species. If the biologist determines suitable habitat is present and threatened or endangered species have the potential to occur within construction areas, then a survey would be conducted to ensure no special-status animals are present within the area in which any construction activity would occur. A biologist would be present to monitor all construction or O&M activities involving heavy equipment.

B-10 If determined necessary by the biologist, construction areas, including staging areas and access routes, would be fenced with orange plastic snow fencing to demarcate work areas. The approved biologist would confirm the location of the fenced area prior to habitat clearing, and the fencing would be maintained throughout the construction period. Additional exclusion fencing or other appropriate measures would be implemented in consultation with the resource agencies to prevent use of construction areas by special-status species during construction.

To prevent entrapment of wildlife that do enter construction areas during activities, all excavated, steep-walled holes or trenches in excess of 2 feet deep would be inspected by a biologist or construction personnel approved by the resource agencies at the start and end of each working day. If no animals are present during the evening inspection, plywood or similar materials would be used to immediately cover the trench, or it would be provided with one or more escape ramps set at no greater than 1,000 foot intervals and constructed of earth fill or wooden planks. Trenches and pipes would be inspected for entrapped wildlife each morning prior to onset of activity. Before such holes or trenches are filled, they would be thoroughly inspected for entrapped animals. Any animals so discovered would be allowed to escape voluntarily, without harassment, before activities resume, or removed from the trench or hole by a qualified biologist and the animals would be allowed to escape unimpeded. A qualified biologist would be responsible for overseeing compliance with protective measures during clearing and construction activities within designated areas throughout the construction activities.

B-11 General Requirements for Construction Personnel include the following:

- The contractor would clearly delineate the construction limits and prohibit any construction-related traffic outside these boundaries.
- Construction crews would be required to maintain a 20 miles per hour (mph) speed limit on all unpaved roads to reduce the chance of wildlife being harmed if struck by construction equipment.
- All food-related trash items such as wrappers, cans, bottles, and food scraps generated during construction, subsequent facility operation, or permitted operations and maintenance activities of

existing facilities would be disposed of in closed containers only and removed at least once per week from the site. The identified sites for trash collection would be fenced to minimize access from wildlife.

- No deliberate feeding of wildlife would be allowed.
- No pets would be allowed on the project site.
- No firearms would be allowed on the project site.
- If vehicle or equipment maintenance is necessary, it would be performed in the designated staging areas and not in the channel.
- Any worker who inadvertently injures or kills a Federal or state listed species, bald eagle, or golden eagle, or finds one dead, injured, or entrapped would immediately report the incident to the construction foreman or biological monitor. The construction foreman or monitor would notify the resource agencies within 24 hours of the incident.

5.4 Land Use

None.

5.5 Aesthetics

A-1 Construction contractors shall keep construction and staging areas orderly, free of trash and debris.

5.6 Cultural Resources

CR-1 If during operations and maintenance activities items of apparent archaeological or historical interest are discovered, they shall be left undisturbed and the Corps or VCWPD (as applicable) shall report the find immediately to the State Historic Preservation Officer.

CR-2 Construction or O&M activities involving grading, excavation, and/or sediment removal shall be monitored periodically by a qualified archeologist meeting the Secretary of the Interior's Standards. In the event that previously unknown cultural resources are encountered, construction in that particular area shall cease until the requirements of 36 CFR 800.13 are met. Pursuant to 36 CFR 800.13(2), in the event of any discoveries during construction of either human remains, archeological deposits, or any other type of historic property, the local agency shall notify the Corps of Engineers Archeology Staff. The agency shall immediately suspend all work in an area(s) where potential cultural resources are discovered. Work shall not resume in the area surrounding the potential cultural resources until the Corps re-authorizes project construction, per 36 CFR 800.13(2).

CR-3 In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps shall be taken:

(1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

(A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and

(B) If the coroner determines the remains to be Native American:

1. The coroner shall contact the Native American Heritage Commission within 24 hours.

2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.

3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code section 5097.98, or
- (2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance:
 - (A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.
 - (B) The descendant identified fails to make a recommendation; or
 - (C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

5.7 Air Quality

- AQ-1** The Corps or VCWPD (as applicable) shall keep construction and operation and maintenance activities under surveillance, management and control to minimize pollution of air resources. All activities, equipment, processes, and work operated or performed in accomplishing the specified O&M activities shall be in strict accordance with the State of California, Ventura County Air Pollution Control District and all federal emission and performance laws and standards. Special management techniques as set out below shall be implemented to control air pollution by the construction activities.
- a. To reduce fugitive dust, the excavation site and the stockpile material shall be watered twice a day and the unpaved roads shall be watered three times per day.
 - b. When wind speeds exceed 20 miles per hour, all excavation and grading operations shall be suspended.
 - c. Truck speeds on unpaved roads shall not exceed 15 miles per hour.
 - d. Operation of heavy equipment shall be limited to the hours between 8:00 a.m. and 5:00 p.m. Truck transportation shall be permitted between 7:00 a.m. and 7:00 p.m., Monday through Saturday. No operation or transportation shall occur on Sundays.
 - e. Truck traffic shall be limited to the designated haul route; Harvard Boulevard/Telegraph Road and Hallock Drive shall be used to access Highway 126.
- AQ-2** Dust particles, aerosols, and gaseous by products from all construction activities, processing and preparation of materials, such as from asphaltic batch plants, shall be controlled at all times, including weekends, holidays and hours when work is not in progress. All excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and all other work areas within or outside the project boundaries shall be maintained free from particulates which would cause air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, light bituminous treatment, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated at such intervals as to keep the disturbed area damp at all times. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs.

- AQ-3** Hydrocarbons and carbon monoxide emissions from equipment shall be controlled to Federal and State allowable limits at all times.
- AQ-4** Odors shall be controlled at all times for all construction activities, processing and preparation of materials.

5.8 Noise

- N-1** All noise producing construction equipment and vehicles using internal combustion engines shall be equipped with mufflers, and air inlet silencers where appropriate, in good operating condition that meet or exceed original factory specification. Mobile or fixed "package" equipment (e.g., arc welder, air compressor) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.
- N-2** All mobile or fixed noise producing equipment which is regulated for noise output by a local, state, or Federal agency, shall comply with such regulation.
- N-3** Electrically powered equipment instead of pneumatic or internal combustion powered equipment shall be used, where feasible.
- N-4** Noise producing construction and operations and maintenance activities shall comply with local noise control regulations.
- N-5** Haul routes shall be designated to avoid noise-sensitive residential streets.

5.9 Hazardous Materials

- H-1** The contractor shall be required to implement best management practices (BMPs) for handling hazardous materials onsite. The use of construction BMPs would minimize negative effects on soils, surface water, and groundwater, and shall include, without limitation, the following:
- Follow manufacturers' recommendations and regulatory requirements for use, storage, and disposal of chemical products and hazardous materials used in construction;
 - Implement spill control and countermeasures, including employee spill prevention/response training;
 - Avoid overtopping construction equipment fuel gas tanks;
 - During routine maintenance of construction equipment, properly contain and remove grease and oils; and
 - Properly dispose of discarded containers of fuels and other chemicals.

5.10 Safety

- PS-1** All staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other material that could ignite. Any construction or maintenance equipment that includes a spark arrestor shall be equipped with a spark arrestor in good working order. During construction and maintenance activities, all vehicles and crews working at the project site(s) shall have access to functional fire extinguishers at all times.

- PS-2** Construction contractors shall be responsible for providing appropriate security measures for all equipment staging and/or storage areas.
- PS-3** Construction contractors shall dispose of construction refuse at approved disposal locations. Contractors will not be permitted to dispose of construction debris in residential or business containers.
- PS-4** Construction contractors shall be required to keep construction and staging areas orderly, free of trash and debris.

5.11 Socioeconomics & Environmental Justice

None.

5.12 Traffic

- T-1** Roads designated for truck traffic shall be used for truck traffic and movement of heavy equipment.
- T-2** The construction contractor shall coordinate with the transportation department of the applicable jurisdiction in order to implement standard construction traffic controls, such as the posting of notices, signage, detours, flag men and other appropriate measures along Telegraph Road.
- T-3** The construction contractor shall restore any damaged or defaced asphalt concrete paving as a result of truck traffic from the construction project.
- T-4** Signs shall be posted in visible locations along the project site perimeter and along local roadways per City of Santa Paula and/or Ventura County requirements and approved traffic control plan instructions.

5.13 Utilities

- U-1** Prior to any grading and excavation activities, utility locations shall be verified through field surveys or documentation of prior surveys.

SECTION 6 – ENVIRONMENTAL COMPLIANCE & COORDINATION SUMMARY

6.1 Federal

6.1.1 *National Environmental Policy Act of 1969 (Public Law 91-190) as amended*

This SEA has been prepared in accordance with the requirements of NEPA of 1969 (42 USC 4321, as amended) and the CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500-1508), dated 1 July 1988. 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. NEPA regulations are followed in the preparation of this SEA. Federal agencies consider potential environmental consequences of Proposed Actions in their decision-making process. Under the Regulations for Implementing the Procedural Provisions of the NEPA, Federal agencies are required to prepare an SEA or Environmental Impact Statement, which is dependent upon the impacts, resulting from the implementation of the Propose Action.

6.1.2 *Department of Army, U.S. Army Corps of Engineers Regulations. ER-200-2-2, 33 CFR 230, March 1988*

This regulation provides guidance for implementation of the procedural provisions of the NEPA for the Civil Works Program of the Corps. It supplements CEQ regulations 40 CFR 1500-1508, November 29, 1978, in accordance with the CEQ 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 responsibilities for preparing and processing environmental documents in support of civil works functions. The aforementioned regulations have been followed in the preparation and processing of this SEA.

6.1.3 *Clean Air Act (Public Law 91-604) as amended*

Section 118 specifies that any Federal activity which may result in discharge of air pollutants must comply with Federal, state, interstate, and local requirements respecting control and abatement of air pollution. The air quality analysis was performed for the most intensive scenario. The analysis revealed that the emissions generated by construction and O&M activities would be below state and Federal thresholds. Section 176(c) requires that all Federal projects conform to Environmental Protection Agency-approved or promulgated State Implementation Plans. The conformity determination is not required for the Proposed Action because the emissions generated by the proposed construction and O&M are below the Federal standards. A Record of Non Applicability (RONA) is included in Appendix F. Air quality analysis is included in Section 4, Impact Analysis, and air quality data are included in Appendix F.

6.1.4 *Clean Water Act of 1977 (Public Law 95-217)*

To comply with Clean Water Act, a Section 404(b)(1) guidelines compliance evaluation is included in this document (Appendix G). The Section 404(b)(1) was prepared in coordination with Regulatory Division. Coordination with the RWQCB, Los Angeles Region has been established. The RWQCB had issued a Section 401 WQC for the Project construction and future maintenance in 1996 (see Appendix E). However, the WQC has expired. The Corps would submit a request letter and an application to the RWQCB for a WQC. If the Corps does not receive response from the RWQCB within 60 days from the submittal of a request, the conditions identified in the Section 401 WQC (1996) would be followed to minimize impacts to water quality. The Proposed Action would be in compliance with the Clean Water Act. A qualified Corps Environmental Staff member would monitor construction activities to ensure that measures identified in the permits as well as in the Final SEA would be followed to minimize/avoid impacts to the Waters of U.S. Thus the Proposed Action would be in compliance with the Clean Water Act.

A Construction contractor would prepare a SWPPP to control erosion and minimize impacts to water quality. The SWPPP would be reviewed by the Corps' Environmental Resources Branch to ensure appropriate erosion control devices and specifically diverting water from the construction area. A Construction Contractor would submit a Notice of Intent with appropriate fees to the Storm Water Resources Board in Sacramento to comply with Section 402 of the Clean Water Act. A Pollution Prevention Plan would be prepared to meet the state's requirements of NPDES Storm Water Program prior to the project construction. A copy of the SWPPP would be available at the construction site.

6.1.5 *Endangered Species Act of 1973 (Public Law 93-205) as amended*

Section 7 of the ESA requires consultation with the USFWS or the NMFS, as appropriate, to determine if a Federal action would affect threatened or endangered wildlife species, and to ensure that any action would not jeopardize the continued existence or result in the destruction of habitat of any endangered or threatened species (see 50 CFR 402).

A BO was issued by NMFS in 2000 for the Project and later amended in 2009. During preparation of this SEA, the Corps prepared a Biological Assessment (Appendix D) to evaluate project construction and future maintenance related impacts on fish species protected under the law and to initiate formal Section 7 Consultation with NFMS.

The Corps submitted the Biological Assessment and request for reinitiation of consultation to NMFS on 13 March 2012. Conservation measures identified in the Biological Assessment, also included as Environmental Commitments in this SEA, would be followed to minimize impacts to steelhead. Any measures coordinated with NMFS to minimize impacts to the steelhead would be followed during repair of the fish passage and future maintenance. Thus the Proposed Action would be in compliance with the ESA.

The Proposed Action would not have an effect on the Federally listed species LBV. Therefore, Section 7 Consultation for LBV and southwestern willow flycatcher is not required. The Proposed Action is in compliance with the ESA.

6.1.6 *Executive Order 11988, Floodplain Management, May 24, 1977*

Under this Order, the Corps of Engineers must take action to avoid development in the base (100-year) floodplain unless it is the only practicable alternative; to reduce hazard and risk associated with floods; to minimize the impact of floods on human safety, health, and welfare; and to restore and preserve the natural and beneficial value of the base floodplain. The Proposed Action would not result in new development within the flood plain but would ensure the Project's flood risk management properties are maintained, thereby reducing hazards and risk associated with floods and thus would not conflict with Executive Order 11988.

6.1.7 *Executive Order 11990, Protection of Wetlands, May 24, 1977*

Section 2 of the Order states that each agency shall avoid undertaking new construction in wetlands unless there is no practicable alternative, and that the Proposed Action include all practicable measures to minimize harm to wetlands. The Proposed Action would occur with the existing FRMC and not involve any new construction that could affect wetlands.

6.1.8 *Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*

Executive Order 12898 identifies and addresses disproportionately high and adverse human health or environmental effects resulting from the programs, policies, or activities of Federal agencies on minority populations and low-income populations within the United States. The Order is further intended to provide information access and public participation relating to potential impacts to these populations. As discussed in Section 4.11, Socioeconomics and Environmental Justice, the Proposed Action would not create socioeconomic impacts within the adjacent communities, nor would it have any adverse impacts

that would disproportionately affect low income and/or minority populations. There would be no conflict with Executive Order 12898.

6.1.9 Fish and Wildlife Coordination Act of 1958 (Public Law 85-624)

In response to the requirements of this Act, the Corps has conducted ongoing coordination efforts with the USFWS and CDFG during initial stages of planning. Extensive coordination was conducted with the USFWS during preparation of the Draft and Final EIS/EIR (1995) for the Project. The USFWS provided Planning Aid Letters dated July 31, 1992 and September 1993. A Coordination Report for the project construction and future maintenance was provided by the USFWS with the Final EIS/EIR. Coordination with the USFWS would continue throughout the finalization of the SEA and the project implementation as applicable.

6.1.10 National Historic Preservation Act of 1966 (Public Law 89-665 as amended December 12, 1980)

A record and literature search and field investigations were conducted. As a result of these studies, the Corps has determined that the project would not affect National Register or eligible properties. A letter dated June 6, 1994 was sent to SHPO requesting concurrence with the Corps determination. The Corps has not received a response from SHPO; therefore, it is considered that SHPO concurs with the Corps determination of no effect and the project is in compliance with Section 106 of the NHPA. The Proposed Action is within the same footprint as identified in the Final EIS/EIR (1995).

6.2 State

6.2.1 California Environmental Quality Act (CEQA) (California Public Resources Code section 21000 et seq.)

CEQA requires state and local agencies to disclose and consider the environmental implications of their actions. It further requires that agencies, when feasible, avoid or reduce the significant environmental impacts of their decisions. This document meets the goals, policies, and requirements of CEQA.

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.

An addendum has been prepared in compliance with CEQA and is included in Appendix B.

6.2.2 California Endangered Species Act of 1984 (California Fish and Game Code 2050- 2116)

The California Endangered Species Act (CESA) of 1984 provides for the protection of rare, threatened, and endangered plants and animals, as recognized by the CDFG, and prohibits the unauthorized taking of such species. As a responsible agency, the 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 City shall continue to coordinate with CDFG to the greatest extent practicable. 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 BO has been prepared for a species, the CDFG must use this BO 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 BO, the CDFG need not issue a taking permit per Section 2081 of the state Code. If the BO is consistent with CESA, the CDFG will complete a 2095 form in finalizing the

adoption of the BO. If the Federal BO is found to be inconsistent with CESA, the CDFG will issue its own BO per Section 2090 of the state Code and may issue a 2081 take permit with conditions of approval.

6.2.3 California Fish and Game Code (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 local sponsor is a participant in the project; therefore, the local sponsor will file a Section 1601 application for a streambed alteration agreement or amendment to the existing agreement. The local CDFG warden or unit biologist typically has responsibility for issuing streambed alteration agreements. These agreements usually include specific requirements related to construction techniques and remedial and compensatory measures to mitigate adverse impacts.

6.3 Local

6.3.1 Local Ordinances and Policies

The Proposed Action is not in conflict with any local ordinances.

SECTION 7 – LIST OF PREPARERS & REVIEWERS

7.1 Project Delivery Team

U.S. Army Corps of Engineers

Chris Jones	Biologist
Antal Szijj	Biologist (Regulatory Division)
Hayley Lovan	Ecosystem Planning Section Chief

HDR/CDM Joint Venture (Environmental Consultant for the Corps)

Anthony Skidmore, AICP	Environmental Planner
Kathleen Owston	Environmental Planner
Juan Ramirez	Environmental Planner
Jennifer Jones	Biologist
Katherine Travis	Air Quality Scientist

7.2 Reviewers

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Antal Szijj	Biologist (Regulatory Division)
Hayley Lovan	Ecosystem Planning Section Chief
Raina Fulton	Environmental Resources Branch Chief
Josephine Axt	Planning Division Chief

VCWPD

Elizabeth Martinez	Environmental Planner
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SECTION 8 – LIST OF ACRONYMS

Numerous acronyms are used throughout the SEA. The following are the acronyms and meanings related to this EA:

AE	Agricultural Exclusive
AQMP	Air Quality Management Plan
BMI	Benthic macroinvertebrates
BMP	Best Management Practice
BO	Biological Opinion
BOD	Biological oxygen demand
C	Celsius
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CDFG	California Department of Fish and Game
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CESA	California Endangered Species Act
cfs	Cubic feet per second
cms	Cubic meters per second
CNDDB	California Natural Diversity Data Base
CO	Carbon monoxide
CO ₂ e	Carbon dioxide equivalent
Corps	U.S. Army Corps of Engineers
CURB	City Urban Restriction Boundary
CWHR	California Wildlife Habitat Relationship
cy	Cubic yards
dB	Decibel
dBA	A-weighted dB
DOF	Department of Finance
DPS	Distinct Population Segment
DTSC	Department of Toxic Substances Control
EIS/EIR	Environmental Impact Statement/Environmental Impact Report
ER	Engineer Regulation
ESU	Evolutionarily Significant Unit
F	Fahrenheit
FEMA	Federal Emergency Management Agency

FESA	Federal Endangered Species Act
FONSI	Finding of No Significant Impact
FRMC	Flood Risk Management Channel
ft	Feet
FT	Federal Threatened
GHG	Greenhouse gas
GRR	General Reevaluation Report
GWP	Global warming potential
Highway 126	State Route 126
LBV	least Bell's vireo
LID	Low Impact Development
LOS	Level of Service
LUST	Leaking underground storage tank
m	Meter
MBTA	Migratory Bird Treaty Act
µg/m ³	Micrograms per cubic meter
MMTCO2Eq	Million metric tons of carbon dioxide equivalents
mph	Miles per hour
MRI	Midwest Research Institute
MRP	Mineral Resource Protection
NAAQS	National ambient air quality standards
NEPA	National Environmental Policy Act
NF	Not Flowering
NMFS	National Marine Fisheries Service
NO ₂	Nitrogen dioxide
NO _x	Nitrogen Oxide
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRHP	National Register of Historic Places
O ₃	Ozone
O&M	Operations and maintenance
OS	Open Space
PM10	Particulate matter less than 10 microns
PM2.5	Particulate matter less than 2.5 microns
ppm	Parts per million
RCP	Reinforced concrete pipe
REC/CX	Record of Environmental Consideration/Categorical Exclusion
ROD	Record of Decision
ROG	Reactive Organic Gases
RONA	Record of Non Applicability
RPM	Reasonable and Prudent Measure

RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SC	Species of Concern
SCAQMD	South Coast Air Quality Management District
SCCAB	South Central Coast Air Basin
SCE	Southern California Edison
SEA	Supplemental Environmental Assessment
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO ₂	Sulfur dioxide
SQUIMP	Stormwater Quality Urban Impact Management Plans
SP	Sampling locations
SPMC	Santa Paula Municipal Code
SWPPP	Storm Water Pollution Prevention Plan
TAC	Toxic air contaminant
TDS	Total dissolved solids
T&C	Terms and Conditions
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UWMP	Urban Water Management Plan
V/C	Volume-to capacity
VCAPCB	Ventura County Air Pollution Control Board
VCAPCD	Ventura County Air Pollution Control District
VCWPD	Ventura County Watershed Protection District
VISTA	Ventura Intercity Service Transit Authority
WQC	Water Quality Certification

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