US Army Corps of Engineers

San Luis Rey Flood Control Project

Whelan Mitigation Site Habitat Restoration Action

San Diego County, California

DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
and
MITIGATED NEGATIVE DECLARATION

January 2014

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Los Angeles District
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1.0 INTRODUCTION

The U.S. Army Corps of Engineers, Los Angeles District (Corps or Los Angeles District) and City of Oceanside (City) propose to restore southwestern willow flycatcher (*Empidonax traillii extimus*, flycatcher) habitat along the San Luis Rey River, within the San Luis Rey River Flood Risk Management Project Area, to meet environmental commitments and permit requirements consistent with the Record of Decision signed by the South Pacific Division Commander, February 21, 2008, for the Final Integrated Post Authorization Decision Document/ Supplemental Environmental Impact Statement/Environmental Impact Report/Post Authorization Change Report for the San Luis Rey Flood Control Project from College Blvd. to the Pacific Ocean, San Diego, California (SLR PADD/FEIS/FEIR/PAC), July 2007. The proposed action would include active restoration of riparian habitat and floodplain. The proposed site, located along the San Luis Rey River within the existing flood risk management project site, is owned by the City of Oceanside, the project's non-Federal sponsor, and is herein referred to as the Whelan Mitigation Site.

The purpose of this Environmental Assessment/Mitigated Negative Declaration (EA/MND) is to characterize environmental impacts that may result from the proposed restoration activities on the site. This EA/MND is prepared in compliance with the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA). Based on the EA and public comments received on the EA, the District Commander for the Los Angeles District Commander will determine whether a Finding of No Significant Impact (FONSI) is warranted or if an Environmental Impact Statement (EIS) needs to be prepared for this proposed action. The restoration activities would be performed by the Corps, and long term operation and maintenance activities would be performed by the City.

1.1 Project Location

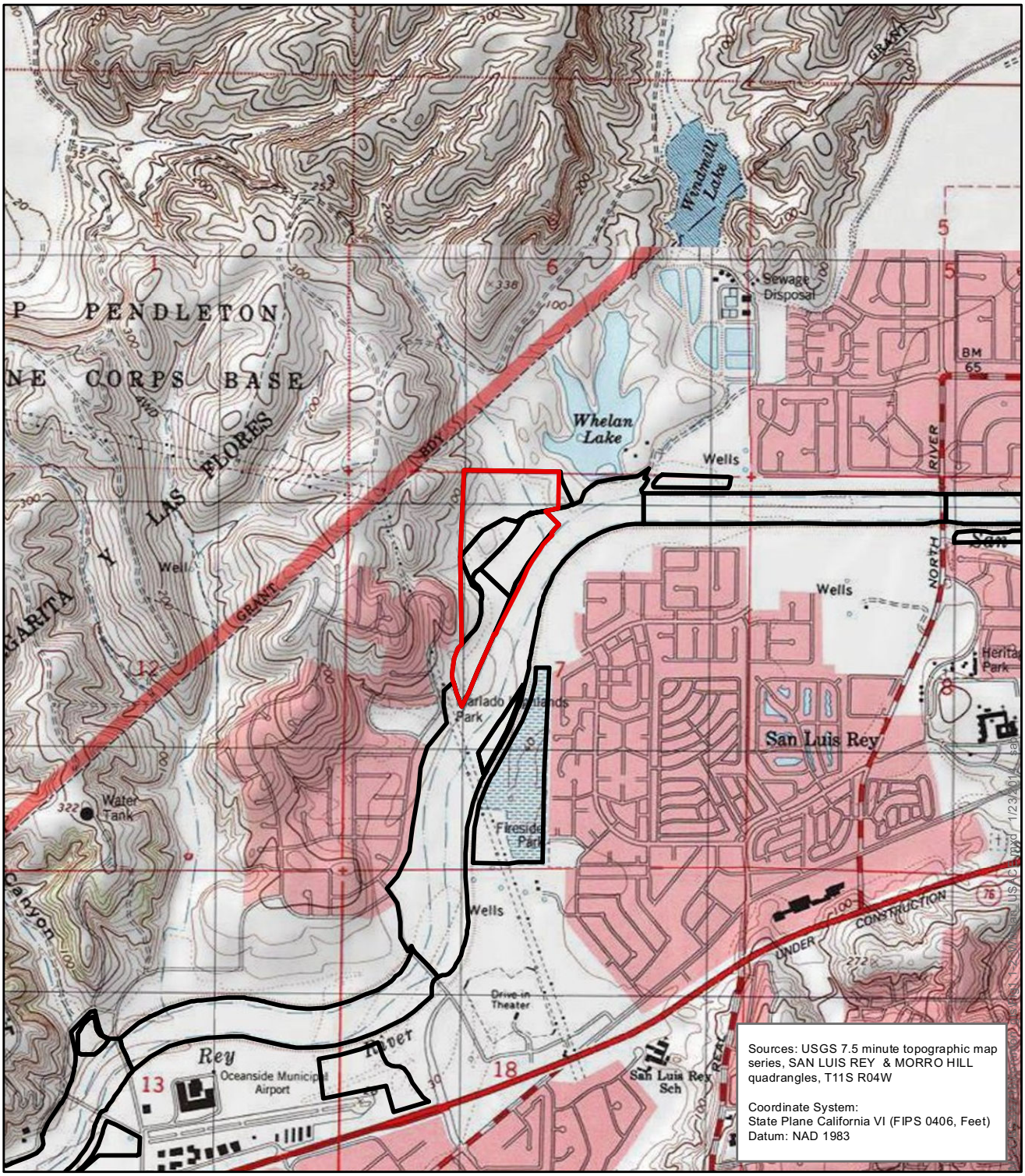
The San Luis Rey River Flood Risk Management Project is located in southern California, 86 miles south of the City of Los Angeles and 30 miles north of the City of San Diego in San Diego County, California. The San Luis Rey River flows from its head at the crest of the coast range near the northern boundary of San Diego County and flows generally in a westward direction to the Pacific Ocean at the City of Oceanside, San Diego County, California. The San Luis Rey River Flood Risk Management Channel/Project Area encompasses approximately 7.2 river miles from College Blvd. (formerly Murray Rd.) in the east to the Pacific Ocean in the west.

The Whelan Mitigation Site, the site of the proposed project, is located along the San Luis Rey River, approximately 1 mile west (downstream) of the Douglas Drive Bridge (Figure 1.1-1), and approximately 1,000 feet southwest of Whelan Lake.

WHELAN MITIGATION SITE
HABITAT RESTORATION EA/MND

FIGURE 1.1-1
PROJECT VICINITY

CORPS OF ENGINEERS
LOS ANGELES DISTRICT



Legend

- Whelan Restoration Project Study Area
- SLRR Management Plan Area

N

0 0.125 0.25 0.5 Miles

WHELAN MITIGATION SITE
HABITAT RESTORATION EA/MND

FIGURE 1.1-2
PROJECT LOCATION
ON USGS MAP

CORPS OF ENGINEERS
LOS ANGELES DISTRICT

1.2 Project Authorization

Flood Control Act of 1965 (Public Law 89-298)

The San Luis Rey River Flood Control Project was authorized by Senate Public Works Committee Resolution, December 17, 1970, and House Public Works Committee Resolution, December 15, 1970, in accordance with the plans and recommendations of the Chief of Engineers contained in his report dated April 2, 1970, printed as Senate Document 91-106, 91st Congress, 2nd Session, pursuant to Section 201 of the Flood Control Act of 1965 ((42 U.S.C. 1962d-5).

Water Resources Development Act of 1986 (WRDA 86) (Public Law 99-662)

The Water Resources Development Act (WRDA) of 1986 affected the San Luis Rey River Flood Control Project in two ways.

- Section 103 of WRDA 86 established the cost sharing formula for the project. The local sponsor will contribute a minimum of 25 percent of the total project costs attributed to flood control, including a minimum of 5 percent of the cost in cash.
- Section 1165 of WRDA 86 established the interest rate to be used for cost and benefit analysis:

  "The interest rate used for purposes of analyzing the costs and benefits of the San Luis Rey Flood Control Program in San Diego County, California, shall be the applicable interest rate at the time of the agreement under Section 215 of the Flood Control Act of 1968 was entered into."

  The Section 215 agreement was signed in 1983, setting the interest rate at 7-7/8 percent.

Water Resources Development Act of 1990 (WRDA 90) (Public Law 101-640)

Approval of the Supplemental Phase II General Design Memorandum (Section 1.3.2.5) in 1988 by the Chief of Engineers, as the Congressionally Authorized Plan or Modified Single Levee Plan, was a result of Section 7 consultation with the USFWS. The Standard Project Flood (SPF) design was 89,000 cubic feet per second (cfs) discharge frequency. Section 102(f) of WRDA 90 reauthorized the project as follows:

> "SAN LUIS REY RIVER, CALIFORNIA.—The project for flood control, San Luis Rey River, authorized pursuant to section 201 of the Flood Control Act of 1965 (42 U.S.C. 1962d-5; 79 Stat. 1073-1074) is modified to construct the project at a total cost of $60,400,000, with an estimated first Federal cost of $45,100,000 and an estimated first non-Federal cost of $15,300,000."

Water Resources Development Act of 1996 (WRDA 96) (Public Law 104-303)

As a result of the Post Authorization Change (PAC) Report of December 1995, the San Luis Rey River Flood Control Project was re-authorized with an increased cost of the project due to a revised total cost above the limit prescribed in Section 902 of WRDA 86. Section 902 specifies that projects with costs exceeding the limit require further authorization by Congress to increase

the maximum cost established for the project. As stated in the re-authorization the total project cost increased to $81,600,000. Section 301(a)(3) of WRDA 86 states:

> "3. SAN LUIS REY RIVER, CALIFORNIA.—The project for flood control of the San Luis Rey River, California authorized pursuant to section 201 of the Flood Control Act of 1965 (42 U. S. C. 1962d-5; 79 Stat. 1073-1074) is modified to construct the project at a total cost of $81,600,000, with an estimated Federal cost of $61,100,000, and an estimated non-Federal cost of $20,500,000."

1.3 Background

In 2006, the Corps prepared a Post Authorization Decision Document/Supplemental Environmental Impact Statement/Environmental Impact Report/Post Authorization Change Report (PADD/SEIS/EIR/PAC) to review the authorized flood risk management project and to recommend a modified vegetation and sediment management plan, in compliance with NEPA, CEQA, and Corps regulations and policy. The Corps and City of Oceanside engaged in extensive coordination and consultation with resource agencies on the modified vegetation and sediment management plan. This included re-initiation of Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS), pursuant to the Endangered Species Act of 1973, as amended (ESA). Biological opinion (BO) 1-6-87-F-17R2 was received on February 14, 2006 and a subsequent concurrence was received from the USFWS on February 20, 2008 concerning further revisions to the modified vegetation and sediment management plan. Other applicable environmental permits, approvals, and concurrences were obtained by the Corps and City. They include:

- California Department of Fish and Wildlife (CDFW) California Endangered Species Act (CESA) Permit (issued to the City);
- CDFW Streambed Alteration Agreement (SAA) (issued to the City);
- Clean Water Act (CWA) Section 401 Water Quality Certification (WQC); and
- Coastal Consistency Determination (CCD).

Throughout the coordination and consultation processes for permits and approvals, the Corps and City incorporated specific measures into the overall plan to minimize and mitigate effects and impacts to federally- and state-listed endangered and threatened species and their habitat. This included commitments to:

- Restore, monitor and manage 45.5 acres of vireo-occupied or potential habitat outside of (i.e., offsite from) the original flood risk management project area (CESA Permit).
- Contract for the expenditure of $5 million, as appropriated by Congress, to further the recovery of the vireo and southwestern willow flycatcher (Empidonax traillii extimus, flycatcher) (CESA Permit and USFWS BO).

The Corps, City, and resource agencies agreed that the expenditure of the already-committed $5 million, herein referred to as the recovery fund, could be used, in part, to fulfill the 45.5 acre offsite restoration or mitigation requirement from the CESA Permit.

Coordination between Corps Los Angeles District, Corps South Pacific Division (SPD), and Corps Headquarters (HQUSACE) resulted in the determination that the LAD would identify the specific lands needed and the restoration plan for those lands after approval of the PADD, to provide the time needed to identify a site and develop an acquisition and restoration plan. The extent and scope of land acquisition was anticipated to be small in comparison to the existing project commitments and within Corps approval authorities, not requiring approval by Assistant Secretary of the Army, Civil Works [ASA(CW)]. The LAD, the District Support Team (DST), and Regional Integration Team (RIT) coordinated the ESA issues and land requirements with Corps HQUSACE. With this understanding, as well as the various project agreements and permits in place, the Corps finalized the PADD/SEIS/EIR/PAC, and a Record of Decision was signed by the South Pacific Division Commander on February 21, 2008, approving the modified vegetation and sediment management plan and associated environmental commitments.

Thus, this EA/MND has been prepared to address potential impacts that may result from the proposed restoration activities on the site associated with the San Luis Rey River Flood Risk Management Project.

1.4 Prior Reports

Post Authorization Decision Document/Supplemental Environmental Impact Statement/Environmental Impact Report/Post Authorization Change Report, July 2007, approved February 2008

The purpose of the PADD/SEIS/EIR/PAC was to review the authorized flood risk management project and to recommend modifications to vegetation and sediment management elements of operation and maintenance activities in response to the presence of endangered species and their critical habitat within the flood control project area following construction of the physical features of the flood risk management project. The PADD/SEIS/EIR/PAC recommended:

- a change in the level of channel flow conveyance goals;
- a modified operation and maintenance plan; and
- implementation of conservation and minimization measures.

This plan accounts for both the completion of the construction phase of the project and provides the vegetation and sediment management activities for operation and maintenance of the San Luis Rey River Flood Risk Management Project.

The PADD/SEIS/EIR/PAC contains a comprehensive list of earlier reports published for the project.

2.0 PURPOSE AND NEED

2.1 Need

The Corps and City must restore mitigation lands for the southwestern willow flycatcher, consistent with the permit and agreement commitments made in the 2008 Record of Decision as described in Section 1.3 above.

Condition 5.2.3 of the CESA Permit specifically calls for restoring "2.11 acres of flycatcher-occupied or potential habitat." It further requires that the restored areas be actively monitored and managed. Condition 12b of the CDFW SAA and condition F2b of the Section 401 WQC requires restoration/enhancement of 100.14 acres of riparian habitat.

Condition 5.2.5 of the CESA Permit requires the City, the project non-Federal sponsor, in conjunction with the Corps, to provide five million dollars, subject to the availability of funds, to further the recovery of the vireo and flycatcher. Conservation Measure No. 20 of the USFWS BO commits the Corps to contract for the expenditure of $2 to $5 million, as appropriated by Congress, to further the recovery of the vireo and flycatcher within the San Luis Rey River watershed or northern San Diego County.

2.2 Purpose

The purpose is restore riparian habitat at the Whelan Mitigatin Site to meet regulatory requirements associated with the San Luis Rey River Flood Risk Management Project

3.0 ALTERNATIVES

The following provides a summary of the process for identifying the potential site for restoration and development of action alternatives for associated restoration activities at that site. These alternatives were developed based on extensive research and coordination with the USFWS, CDFW, U.S. Geologic Survey (USGS), and other technical experts in the field of habitat restoration. Potential impacts to environmental resources were also considered during development of alternatives.

3.1 Search for Restoration Sites

The Corps undertook a sequenced search for restoration sites that would meet the requirements laid out in the project environmental commitments and permits. Based on input from the USFWS, CDFW, and USGS, and experts in the field of habitat restoration, it was determined that preferences should be given to sites with the highest potential for successfully restoring flycatcher habitat and within close proximity to existing or previously known flycatcher-occupied habitat.

Consideration was also given to location of a site with respect to the flood risk management project area and landownership. Per the CDFW CESA Permit (condition 5.2.3), the restoration could occur inside or outside the flood risk management project area. The CESA Permit and USFWS BO specify the restoration to be within the San Luis Rey River watershed (condition 5.2.5 and CM 20, respectively). Given this criteria, preference would be given to sites in closer proximity to the project area to maximize initial and long term management efficiency and cost. Additionally, preference would be given to land in the ownership of the City of Oceanside, the project non-Federal sponsor.

Evaluation of known flycatcher presently or previously occupied habitat within the San Luis Rey River watershed greatly narrowed the list of sites for consideration. Known flycatcher occupied or previously occupied habitat within the San Luis Rey River watershed includes riparian habitat within the flood risk management project area, in the vicinity of Whelan Lake, and the upper extreme reaches of the San Luis Rey River watershed, near Lake Henshaw. Given the location of these occurrences, an area within the flood risk management project near Whelan Lake was identified as the preferred restoration site. This area (see Figure 1.1-2) was identified as being adjacent to previously flycatcher-occupied habitat and presented the best opportunity to restore riparian habitat for the flycatcher and other species. Additionally, this area presented an opportunity to restore floodplain functions in a portion of the San Luis Rey River. Since the area is already within the project area and the City is the landowner, no additional land acquisition would be necessary.

3.2 Restoration Alternatives Eliminated from Further Study

Offsite Alternatives

- Other sites

  As discussed above, the only other potential restoration site identified was within the vicinity of Lake Henshaw, along the uppermost reaches of the San Luis Rey River. Due to its great distance from the San Luis Rey River Flood Control Project Area (about 40 river miles), not within the City of Oceanside ownership, and lower opportunity for restoration potential, this site was eliminated from further consideration.

- Mitigation Banks

  The Corps is authorized and encouraged to use available mitigation banks to mitigate impacts from Corps Civil Works projects. There are currently no mitigation banks within the watershed available for use by the Corps that would provide mitigation consistent with the Corps' and City's needs. A search of RIBITS (Regulatory In lieu fee and Bank Information Tracking System) shows current authorized mitigation banks in the watershed are not designed to provide flycatcher-quality habitat and have insufficient credits available even if wetland/riparian credits were considered acceptable. Additional banks have been proposed in the watershed, but these banks would be single-user banks, not available for credit sales.

Onsite Alternatives

The following paragraphs summarize restoration alternatives and/or measures at the proposed mitigation site that have been eliminated from further detailed analysis.

Non-native Species Removal and Planting

The proposed mitigation site is dominated by non-native invasive plants, *Arundo donax* semi-natural herbaceous alliance (giant reed breaks), and *Tamarix* spp shrubland alliance (salt cedar). These species have out-competed the native riparian vegetation and formed their own vegetation type alliances and associations. This alternative would include eradication of non-native plants from the proposed mitigation site, planting of native plants, and habitat management measures such as continued weeding and watering of the site. The current elevation of the site is approximately 8-10 feet higher than the current San Luis Rey River bed elevation. A rock rubble wall, constructed as a result of the 1991-1992 storm flows to prevent the area from flooding and washing out the newly constructed Whelan 1 and 2 mitigation sites, also separates the river bottom from the adjacent river banks and terraces. Due to extended drought conditions over the last several years, in addition to the dominance of non-native invasive plant species, the existing riparian vegetation within the area has decreased the quality of the habitat further. In coordination with the resource agencies, it was determined that an alternative limited to

eradication of non-native species and planting with native species would have a low potential for successful establishment of flycatcher-quality habitat given the prevailing dry conditions and high elevation difference from the main river bottom. Therefore, this alternative was not carried forward for further study.

3.3 Overview of Alternatives Carried Forward and Alternatives Analysis

Development of alternatives has been a coordinated effort between the Corps, City, CDFW, and USFWS. The Corps and City met with CDFW and USFWS on a number of occasions during 2011 and 2012 to review relevant information and data, as well as preliminary analysis of the data. These include updated vegetation mapping data, endangered species data, and available hydrology and hydraulic data of existing conditions. Evaluation of the available data and input received during the extensive coordination efforts has been incorporated into the development of the Proposed Action. Table 3.3-1 presents an overview of the restoration alternatives carried forward for analysis.

Table 3.3-1. Overview of Alternatives

Alternative	Construction Elements			Acres Restored	Meets Purpose and Need?
	Dig Pilot Channel?	Lower Levee?	Grade Site?		
Alt. 1 - No Action	No	No	No	0	No
Alt. 2 – Channel & Overbank Flooding	Yes	No	No	6.5 – 7.5	Yes
Alt. 3 – Natural Scour	No	Yes	No	7	Yes
Alternative 4 - Channel & Overbank Flooding & Natural Scour	Yes	Yes	Yes	19.3	Yes

All alternatives with the exception of the No Action Alternative would meet the purpose and need. However, Alternative 4 would maximize the opportunity for habitat restoration success for the least Bell's vireo compared to Alternatives 2 and 3. Therefore, Alternative 4 has been identified as the preferred alternative.

3.4 Restoration Alternatives Carried Forward for Detailed Analysis

Alternative 1: No Action

The "No Action" alternative would result in no restoration, monitoring, or habitat management actions taking place at the site. The extent of potential flycatcher and vireo habitat would remain the same or decrease due to the potential for continued decrease in riparian habitat quality at the site. The "No Action" alternative would not meet the San Luis Rey River Flood Risk Management Project's permit and approval requirements. However, the No Action Alternative is carried forward for comparison purposes.

Alternative 2: Channel and Overbank Flooding Alternative

This alternative was developed by the Corps with goal of restoring approximately 6.5 to 7.5 acres: the required 2.11 acres for southern western willow flycatcher and maximizing the remaining 4.5 to 5.5 acres for LBVI. Figure 3.3-1 shows a sketch of the channel and overbank flooding alternative concept. Under this alternative, a 40 foot wide pilot channel would be created which would allow periodic flows through the channel (2-year flood events) and into the mitigation site at low velocities [less than 3 feet per second (fps)]. The low velocities through the mitigation site would prevent further scouring of the channel and adjoining floodplain. Small "fingers" would extend from the pilot channel landward towards the interior part of the site. Small portions of the existing rock rubble levee would be removed at the inlet and outlet of the pilot channel. The inlet and outlet would be reinforced with large rock to prevent channel migration during major flood events. No direct restoration actions would occur within the area between the pilot channel and the rock rubble levee. One-hundred year storms would result in 6-8 feet of inundation throughout the entire mitigation site with low velocities of less than 6 fps. Following grading, the restoration site would be planted with appropriate riparian vegetation suitable for LBVI and southern willow flycatcher (SWFL).

Figure 3.3-1. Channel and Overbank Flooding Alternative

Alternative 3: Natural Scour Alternative

This alternative was developed by the U.S. Fish and Wildlife Service, Carlsbad Field Office with goal of maximizing the natural scour restoration (Figure 3.3-2). This alternative would restore about 7 acres of riverine riparian habitat: required 2.11 acres for southern western willow flycatcher and 4.9 acres for vireos. Under this alternative approximately 600 feet of the rock rubble levee would be removed to allow for more scour events that are a natural process for riverine systems. A 50 foot wide low flow channel would be created just above the main river thalweg with bench areas created approximately 1 foot higher than the low flow channel. This

alternative would result in excavation of material to approximately 6 feet below the ground surface in the low flow channel and about 5 feet below the ground surface within the bench. With removal of longer segments of the rock rubble levee compared to Alternative 2, the channel and mitigation site would be allowed to migrate and expand during significant storm events. Following grading, the restoration site would be planted with appropriate riparian vegetation suitable for LBVI and SWFL.

Figure 3.3-2. Natural scour alternative design

Alternative 4: Channel Overbank Flooding Natural Scour Alternative

This alternative includes a footprint of approximately 19.3 acres and would entail restoring 2.11 acres of riparian habitat for the southwestern willow flycatcher. In accomplishing the proposed design for the 2.11 acres for the flycatcher, a total of 19.3 acres of riparian habitat would be restored and also benefit other riparian avian species including the endangered least Bell's vireo.

Alternative 4 would restore the San Luis Rey River flood plain to a more natural condition as illustrated in Figure 3.3-3. The upland landform was used as farming and ranching until the City of Oceanside (City) purchased the land for use in the flood risk management project as one of the material or sediment borrow sites to construct the levees and a portion to serve as a mitigation site. The site has deteriorated over a 20-year period due to increased sediment accumulation in this area.

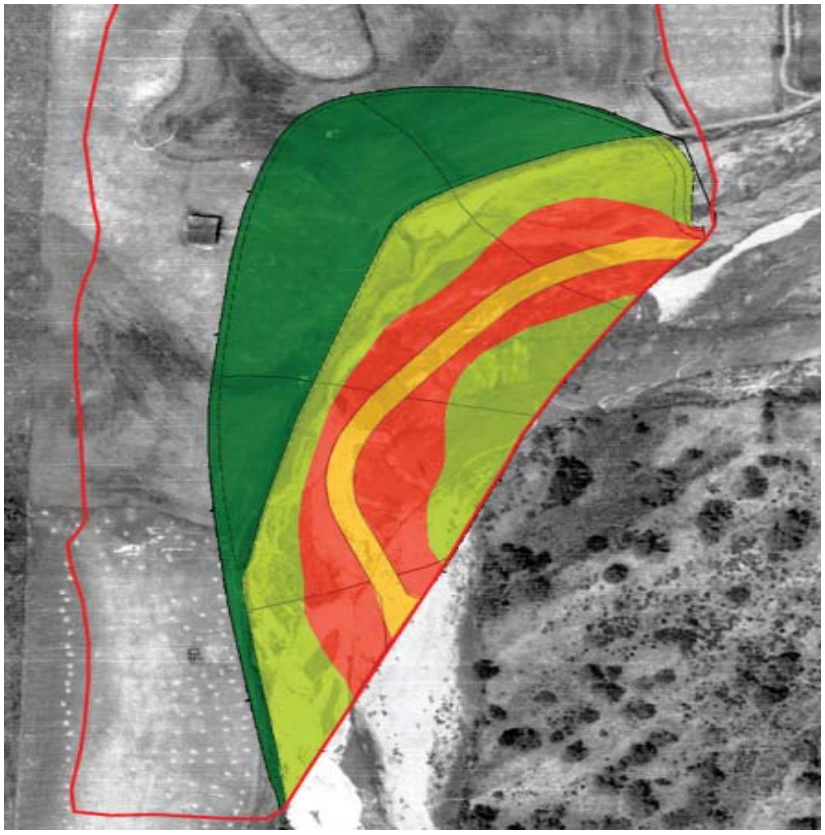


Figure 3.3-3. Historical aerial of the Whelan Mitigation Site overlay with the proposed restoration.

Restoration activities would include manual, mechanical, and chemical control of invasive exotic plant populations. This alternative will involve removal of approximately 1,500 linear feet of a rock rubble "levee", excavation to the historic riverbed (pre-1938) to allow for natural scour to occur, excavation of a low flow channel to provide connectivity between the main San Luis Rey River thalweg and interior portions of the mitigation site (Figure 3.3-4). The proposed channel would allow for flood flows to convey onto the northern interior areas of the site during 2-year storm events. The banks and terrace above the riparian habitat will be restored through active and natural processes (passive restoration) after invasive exotic weeds have been eradicated. Terraces immediately adjacent to the low flow channel would be graded and planted with appropriate riparian vegetation suitable for the southern willow flycatcher. This alternative would entail long term habitat management by the City of Oceanside in accordance with the

Adaptive Habitat Management Plan (AHMP) Restoration Program (Corps 2013, *in prep*) for the San Luis Rey River Flood Risk Management Project.

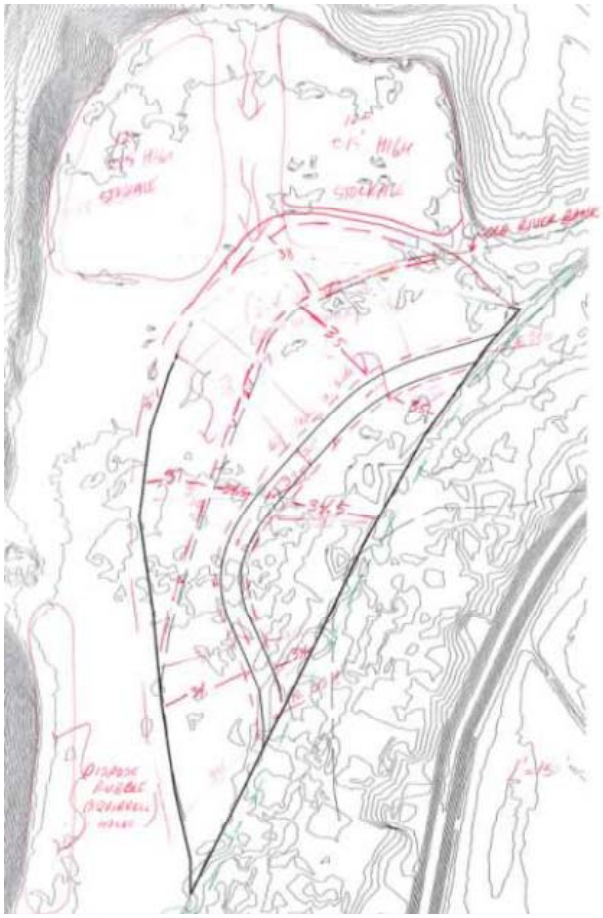


Figure 3.3-4. Initial design drawings of the Channel Overbank Flooding Natural Scour Alternative

Restoration Design

The restoration design includes removal of portions of the rock rubble levee and the creation of approximately 19.3 acres of floodplain and riverine habitat that are expected to support the target vegetation communities, including *Baccharis salicifolia* Shrubland Alliance, *Populus fremontii* Woodland and Forest Alliance, and various *Salix* ssp. Woodland and Forest Alliances (Figure 3.3-5; Table 3.3-2). Through the investigation of historical aerial photographs, and confirmation through soil borings, the conceptual design will recreate the historic banks of the San Luis Rey River as they existed in 1938 and prior. This will require the removal of approximately 140,000 cubic yards (cy) of sediment. Approximately 92,000 cy of the 140,000 cy were identified to be beach compatible sand, with the remaining 50,000 cy determined not beach compatible. It is anticipated that the 92,000 cy of beach compatible sand would be taken by the City of Oceanside and used in a separate beach replenishment project. The remaining 50,000 cy of material would be used onsite to create native upland habitats that would naturally buffer riparian areas. In the

instance that the City does not take the approximate 92,000 cy of material, this material may be sold by the restoration contractor, utilized for other purposes such as other construction projects or incorporated into the overall upland habitat area design.

The rock rubble that is removed from the levee would be used to create between 10 and 20 small rubble mounds to serve as habitat for burrowing owls. The remaining rock rubble would be placed along the toe of slope where material was excavated for levee construction. Currently, the toe of slope is a steep escarpment. Excess rock rubble would be placed along the current toe and then capped with a minimum of 18 inches of soil, creating a gentler slope along the hillside and removing the steep grade brake towards the bottom.

The Whelan Mitigation Site would consist of a 50 foot-wide, 1,250 foot-long pilot or low flow channel that would be set at an elevation which is anticipated to receive river flows during 2-year flood events. This channel would be allowed to migrate throughout the floodplain as flows dictates and would allow for the natural flooding and scour events that are necessary for early successional riparian habitats. The floodplain will be graded approximately 1 foot above the low flow channel elevation.

Flood modeling of this conceptual design shows that 2-year storm events or greater within the San Luis Rey River would allow flows through the pilot channel. Due to the flatness of the site and position along a curve of the river, the velocities will remain low through the pilot channel at 3 fps. During a 100-year storm event, the floodplain is anticipated to receive approximately 6 to 8 feet of inundation with flows at less than 6 fps. Grading plans would be developed prior to construction, according to these specifications. A preliminary grading plan (Figure 3.3-6) illustrates the natural river scour and the connecting low flow channel to provide overbank flooding at the 2-year flood inundation level.

The Restoration Program for the San Luis Rey River Flood Risk Management Project (USACE, *in prep*) will also be amended to include a comprehensive restoration program for the Whelan restoration project.

Figure 3.3-5. Vegetation type alliances being restored along with three soil disposal sites that will be compacted to approximately 80%-85%, hydroseeded with coastal sage scrub seed mix, and rock rubble mounds placed onto top for ground squirrel and burrowing owl habitat.

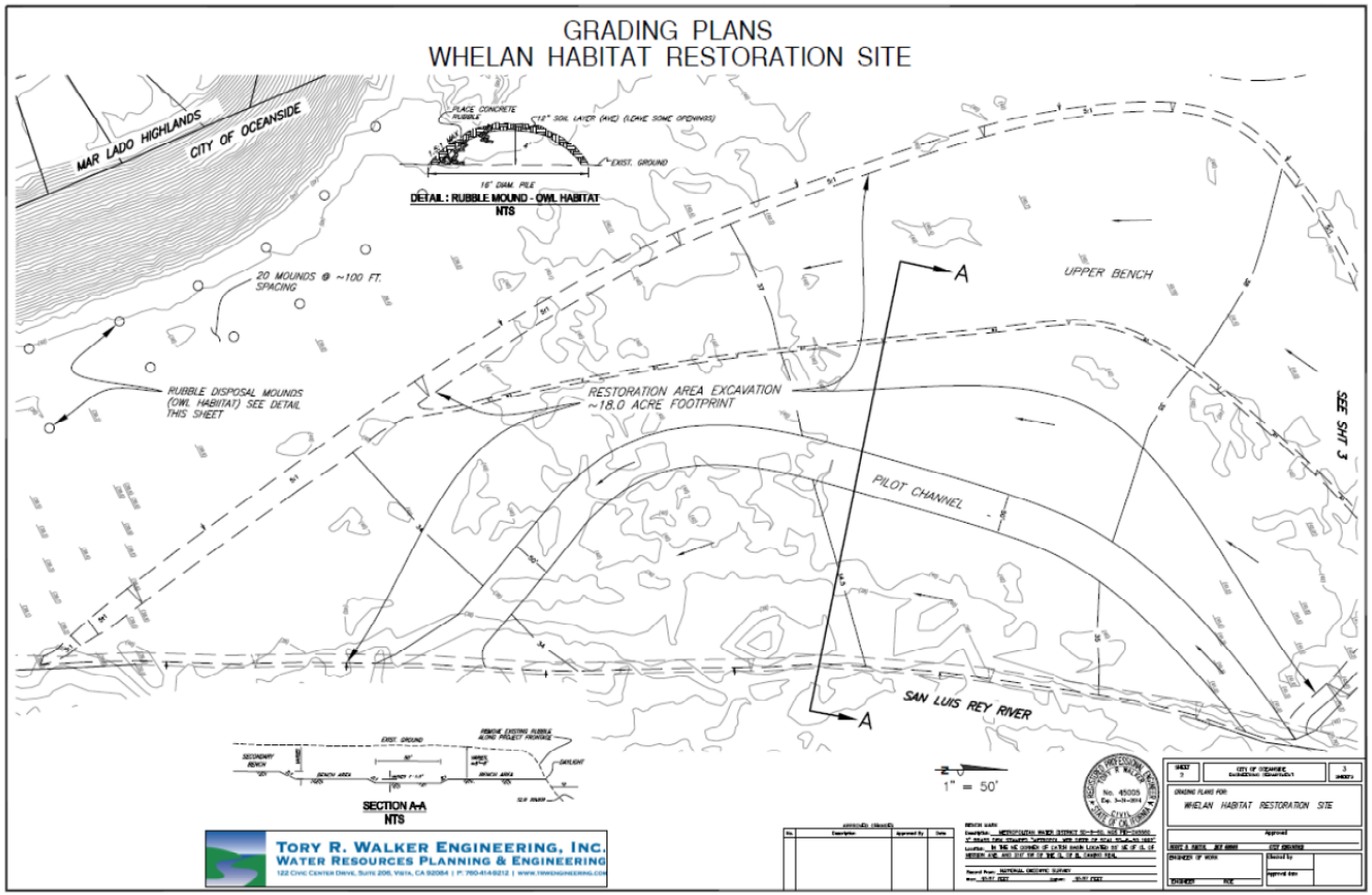


Figure 3.3-6. Proposed grading plan for the Channel Overbank Flooding Natural Scour Alternative

The vegetation types and the number of acres that will be restored are in Table 3.3-2 Planting Plan.

Table 3.3-2. Planting Plan

Number of acres	Vegetation Type
6.8	*Baccharis salicifolia* Shrubland Alliance
1.5	*Salix exigua* Shrubland Alliance
11	*Salix gooddingii* Woodland Alliance

The following is a summary of the restoration alternative Channel Overbank Flooding Natural Scour Alternative concept and design:

1. Periodic flows through channel (<2 year)
2. Low velocities through channel (<3 fps)
3. Q100 storms 6-8 ft inundation (<6 fps)
4. Restore/Enhance approx. 18 acres of shrubland and woodland alliance habitat
5. Minimum 2.11 acres southwestern willow flycatcher habitat
6. Approximately 16 acres of riparian habitat that would benefit the vireo
7. 50-ft wide pilot channel
8. Remove rock along entire project edge
9. Excavate to historic river bank (1938), averaging of about 6 ft cut from the ground surface, resulting in approximately 140,000 cy of material

Construction Equipment

Construction is expected to begin in February 2014 and be completed by early April 2014. Earthmoving and restoration activities will employ a variety of equipment such as those detailed in Table 3.3-3.

Table 3.3-3. Construction Equipment

Quantity	Equipment Type
1	Articulated Dump Truck, Cat 730 gross - loaded 112,000 lbs approx 58 PSI
1	Ripper Dozer, Cat D8R - 83,000 lbs approx 9 PSI,
1	Excavator, Cat 330 - 74,000 lbs approx 7.7 PSI
1	Dozer Cat, D5N 30,000 lbs approx 7.3 PSI
4	Scraper, Cat 637 gross 181,000 lbs approx 63 PSI
1	Motor grader, Cat 140H - 32,000 lbs approx 25 PSI
1	40-ft flatbed truck plant delivery
2	Stake-bed pickup trucks for transporting equipment and the field crew.
1	Pickup truck equipped with a spray rig
1	Water truck, 2,000 gallons, 30,000 lbs
2-4	backpack sprayers, machetes, chainsaws, shears, line trimmers

Site Preparation

Site preparation of the restoration areas will include clearing and grubbing of existing vegetation, removal of rock rubble wall, and eradication of invasive exotic weeds. The sections below provide a variety of methods that may be used for site preparation including initial weed control and identification and management of weed species that are known either to occur or have a high probability of infesting the site once the primary weeds are removed.

Clearing and Grubbing

The limits of work shall be clearly demarcated in the field and remain in place for the duration of implementation. The restoration biologist will identify and flag sensitive biological resources for protection. Once flagging is completed, bulldozers will clear and grub portions of the site which will be excavated. During clearing and grubbing it may be determined in the field by the restoration biologist, grader, and project engineer that some healthy and mature native trees may be left in place or salvaged if their position will not significantly affect the function and grading of the restoration site. All other materials will be either chipped and mixed with topsoil or exported to a landfill as green waste.

Excess Rock Rubble

Approximately 1,500 linear feet rock rubble levee will be removed first through the use of excavators and articulating dump trucks/rock trucks. Some of the rock rubble will be dumped in upland areas to serve as owl burrow mounds while the remaining rubble will be placed along a linear path at the toe of steep embankments to the east of the mitigation site where soil was

previously excavated for river levee construction. Topsoil will be added to the owl mounds and used to cap the excess rubble along the toe of slope. In these instances, a minimum of 18 inches of soil will be placed in order to allow for revegetation following construction. Both the owl mounds and topsoil placement areas will be weeded and maintained throughout the 5-year project.

Connection to San Luis Rey River

The San Luis Rey lies at the southern edge of the restoration site. The proposed action would also include the excavation of an approximate 50 foot wide by 1 foot deep low flow trapezoidal channel with a 2:1 slope. The resulting channel would provide hydrologic connectivity between the main San Luis Rey River and the interior of the site, allowing for a natural riverine flow and induce more frequent overbank flooding. The proposed low flow channel would allow conveyance of flood flows associated with 2 to 5 year storm events. The proposed channel would therefore help to restore the hydrogeomorphic dynamics on the western portion of the mitigation site by increasing the frequency for overbank flooding and allowing for more natural scour during storm events.

Excess Soil Placement

For excess soil placement, scrapers would excavate soil and carry it to the three predetermined disposal sites for non-sandy soil as illustrated in Figure 3.3-7. These disposal sites will not be more than 3 feet to 4 feet in height and will spread linearly over the non-native, semi-natural stand vegetation types. The exportable clean sand materials that lay beneath the topsoil would be temporarily stored at a city-owned property located adjacent to the site. This sand material is anticipated to be taken and used by the City for a separate beach nourishment project. If the material is not taken by the City, the material would either be sold, or given to other entities for re-use, or incorporated into the overall upland habitat design. The total duration for this work is anticipated to take up to 20 work days, 8 hours per day.

Planting

Following grading, the floodplain and upper terraces will be planted with target riparian species including willows, cottonwoods, and mulefat (Table 3.3-4). The planting layout will be overseen by a restoration biologist and plants will be positioned within the stream profile according to their hydrologic requirements. Plants will be cared for until they are established. Due to the nature of the floodplain, planting will be minimal since many species will naturally recruit into the site within the first few years. Plantings will focus on areas that are higher above the floodplain since those areas are less likely to receive natural recruitments.

The plan for planting will follow the guidelines provided in the AHMP (Corps 2013, *in prep*) and incorporates a combination of container plants, cuttings, seed, and native volunteer recruitment to create the basic structure of the desired habitat. All active restoration areas will be planted using standard horticultural practices, as outlined in the Restoration Program.

Specifications shall be followed in implementing the project and shall be documented at the end of the installation phase. The final plant installation will be reviewed and approved by the Corps restoration biologist.

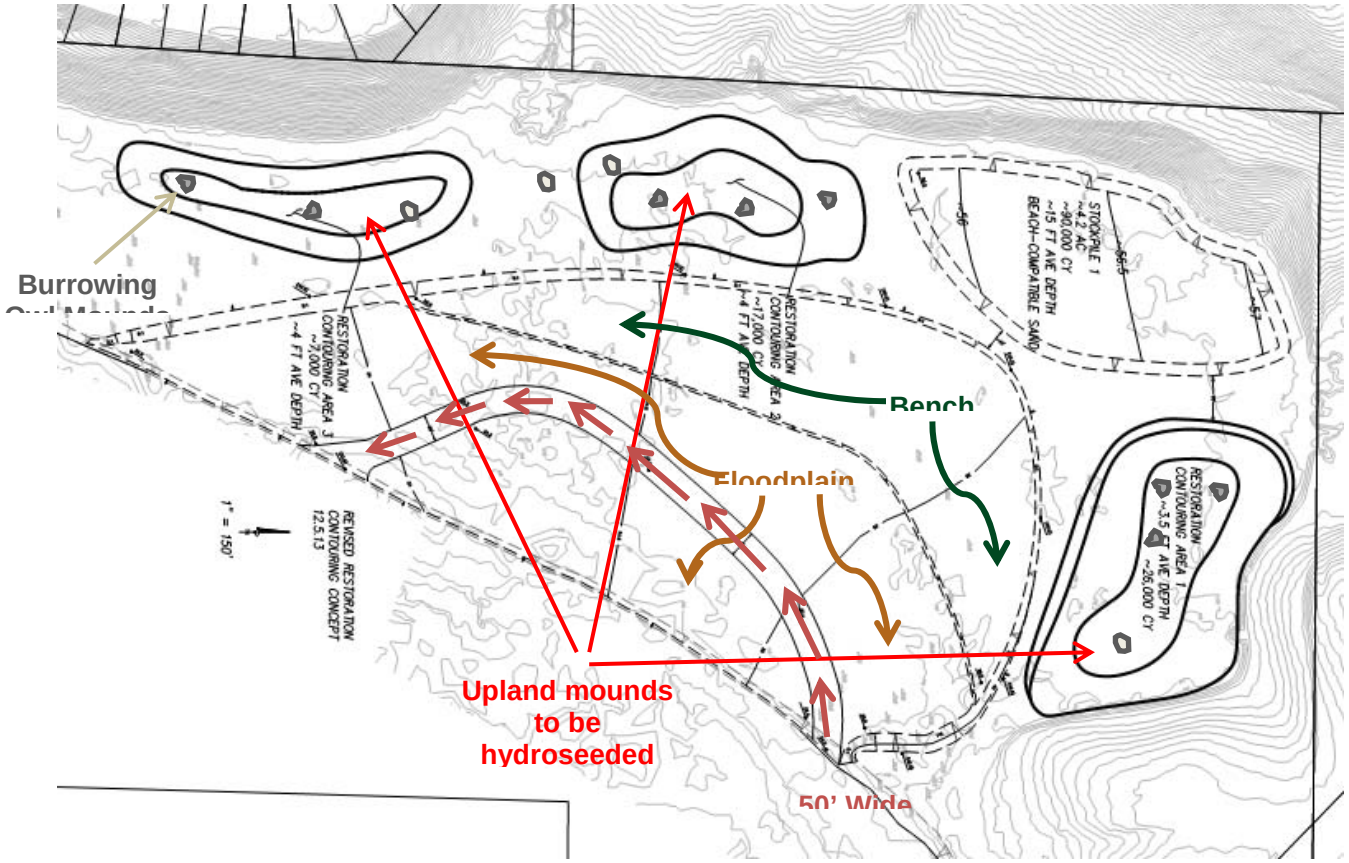


Figure 3.3-7. Excess soil placement locale that will be hydroseeded with coastal sage scrub seed mix, and rock rubble mounds placed onto top for ground squirrel and burrowing owl habitat.

The planting plan would distinguish between active and passive restoration treatment areas. Active restoration includes areas where installation of container plants and cuttings would occur. Passive restoration practices include areas where only invasive plant removal would occur and the area will be allowed to naturally succeed. The tentative planting layout includes approximately 19.2 acres of active restoration, including 12.5 acres of riparian habitat (*Populus fremontii* Woodland Alliance; *Salix gooddingii* Woodland Alliance; and *Salix exigua* Shrubland Alliance) and 6.8 acres of transitional habitat (*Baccharis salicifolia* Shrubland Alliance). The riparian habitat will be planted with roughly 560 plants per acre plus cuttings for a total of about 7,000 containers/cuttings. The transitional habitat will be planted with roughly 500 plants per acre for a total of about 3,400 containers and cuttings. Plants used for restoration are found in Table 3.3-4. Large native willows and cottonwoods may be salvaged in order to maintain structural diversity of the riverine restoration habitat so it is not a monotypic age class.

Table 3.3-4. Plant Material for Planting

Common Name	Scientific Name
Arroyo willow	*Salix lasiolepis*
Black willow	*Salix gooddingii*
Mule fat	*Baccharis salicifolia*
Narrow-leaved willow	*Salix exigua*
Red willow	*Salix laevigata*
Douglas mugwort	*Artemisia douglasiana*
Fremont cottonwood	*Populus fremontii*
Giant wild rye	*Leymus condensatus*
Salt marsh fleabane	*Pluchea odorata*
Desert wild grape	*Vitis girdiana*

Irrigation

Water will be needed during grading of the Whelan Mitigation Site for dust control and post-grading during the plant establishment period. While the duration of grading work is only expected to be 20 working days (February-April 2014), it is expected that supplemental irrigation water will be needed for container plantings for a maximum of 1 to 2 years. The duration of providing supplemental irrigation will be dependent on seasonal rainfall and proximity of plantings to groundwater. Irrigation cycles will consist of deep watering events to encourage container plants to develop deep roots that will eventually tap into shallow groundwater. Once the container plants become established, supplemental water will be tapered off.

During construction, water would be provided through the use of a temporary portable water tower (Figure 3.3-8). The water tower would be placed in a staging area within the project footprint. Water would be supplied to the portable water tower through a mainline that is connected to a City of Oceanside fire hydrant located within a nearby residential community to the west of the project site.

The planted container stock would be provided supplemental water until they become established. Even though planting will occur in spring 2014, supplemental water would likely be necessary for 1 to 2 years until the plantings develop roots that reach the shallow water table. Irrigation cycles would focus on few deep watering events as opposed to frequent shallow watering in order to encourage plants to send their roots downward towards the water table.

Figure 3.3-8. Example Portable Water Tower

A temporary construction meter would be used to monitor water use. The alignment of the mainline would pass mostly through undeveloped open space to minimize disturbance to the nearby community and paved roads (Figure 3.3-9). The 4 inch to 2 inch diameter mainline would be installed above-ground but would be trenched and sleeved below-ground where utility road(s) are crossed. Along its entire length, the mainline will be held in place with "J" hook rebar. Construction water daily use is estimated at 100,000 gallons per day, over a 20-day work period.

Supplemental water would be provided through a system of mainlines that would be placed across the restoration site. The mainline would be tied to a construction water meter and a fire hydrant in a nearby residential community to the west of the project site. The mainlines would have a series of ball valves and connection points such that a fire hose may be connected at several points along the mainline to water individual sections of the restoration site, one at a time.

Following grading, the portable water tower would be removed but the mainline and point of connection for the mainline would be left in place for container plant maintenance. A temporary irrigation system of 2" mainlines would be assembled with hose connections and shut-off ball valves in several locations which would allow maintenance crews to attach fire hoses and water portions of the site where water is needed (Figure 3.3-10). An irrigation schedule would fluctuate based on the amount of winter and spring rainfall received.

Supplemental water may be used in select locations only to assure survival of container plantings until root systems are established to access groundwater in the dry season. In these cases, water use is expected to be highest during the first growing season, tapering off gradually until no supplemental water is necessary. Supplemental watering would be discontinued at least two years prior to the end of the five-year maintenance program based on monitoring results and progress on meeting identified performance criteria. Watering of plantings would be necessary

during the first growing season during the bird nesting season as discussed in the restoration plan of the AHMP.

Figure 3.3-9. Irrigation mainline alignments to restoration site passing through undeveloped open space to minimize disturbance to the nearby community and paved roads

Figure 3.3-10. Irrigation line hose connections and shut-off ball valves in several locations

Access, Staging Areas, Equipment Storage, and Disposal Site

Main access to the Whelan Mitigation Site by heavy equipment would be through Marine Corps Base Camp Pendleton (MCBCP). The Corps and its contractor has coordinated with the MCBCP Environmental Security/Land Management Branch for utilizing MCBCP roads to access the Whelan property (Ms. Deborah Bieber, personal communication to Recon, Pete Tomsovic, January 2014) with the following conditions:

1. Rapid Gate access
2. Stay on paved roads, dirt roads, and fire breaks
3. Contact Mr. John Madden beforehand to get "November Training Area Range" clearance
4. Repair the barbed-wire fence when done
5. Close off daily access to MCBCP (close the fence once crossed over).

Earthmoving equipment would enter MCBCP through I-5 at Vandegrift Road. The restoration contractor and subcontractors have permits to enter MCBCP. The Corps reconnoitered the ingress and egress using the starting point at Vandegrift Road (Figure 3.3-11) traveling through the "November Range." Access through the range would be allowed when the range is cold and thus not in operation by MCBCP. Dirt roads on November Range have past and present use by military heavy equipment.

The dirt roads were reconnoitered and several photographic images taken of its condition (Figure 3.3-12). The scrapers would be off-loaded in the open area immediately adjacent to Vandegrift Road and driven the 2.1 miles to Whelan Mitigation Site. Equipment, such as dozers/excavators would be trailer directly to the site and off loaded on the MCBCP fire break road immediately adjacent to the restoration site.

Two alternate access points are available at the northern and southern boundaries. The northern entry point is an existing dirt road circumscribing the Whelan Bird Conservancy (Figure 3.3-13). The southern entry point would be on City owned land. The entry point would be determined and coordinated with the appropriate landowner prior to commencement of work. Equipment would ingress and egress once during the construction implementation. Trucks and lighter transport vehicles may utilize existing roads from North River Road cul de sac near the City of Oceanside Wastewater Treatment Plant. All equipment, trucks, and lighter transport vehicles would avoid a historic archaeological site located within the project footprint.

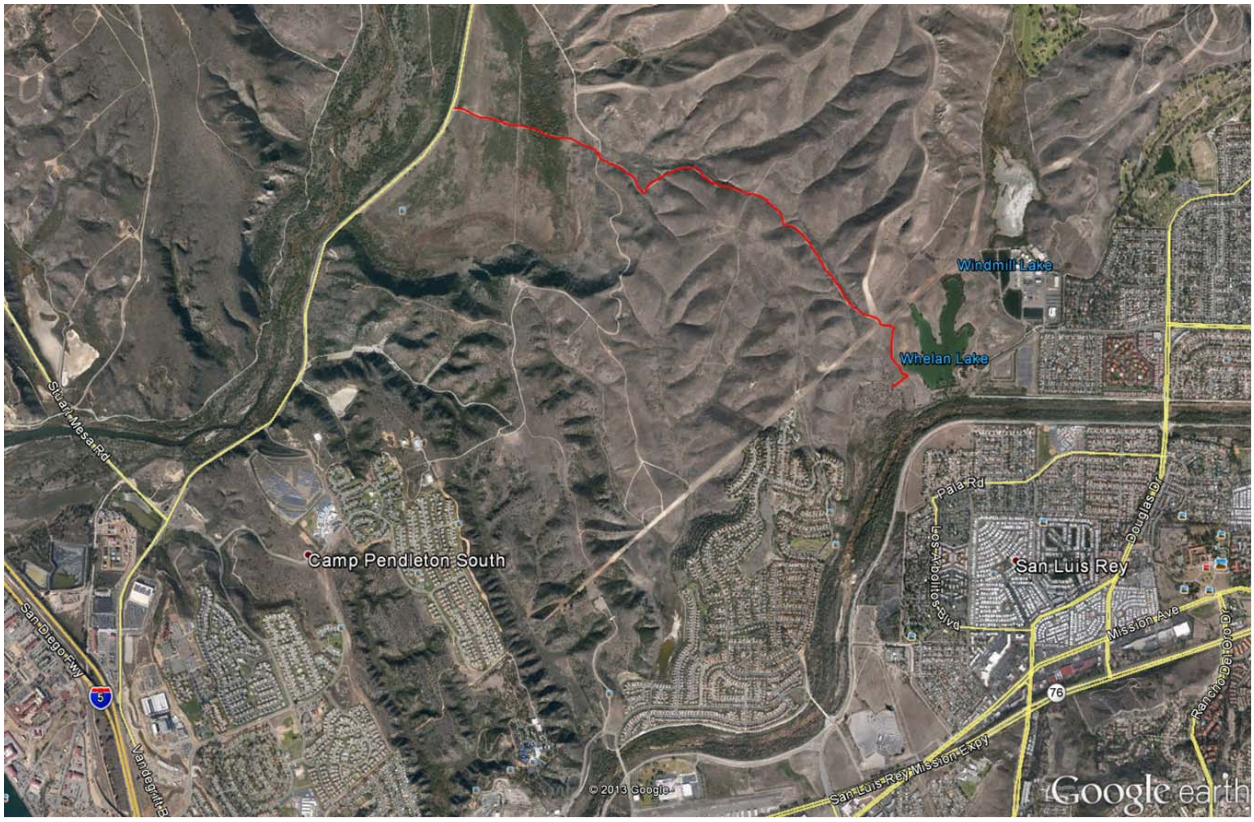


Figure 3.3-11. Ingress for all heavy equipment from MCBCP to the Whelan Restoration Site.

Figure 3.3-12. Photographic images of ingress and egress road from MCBCP and entry points to Whelan Mitigation Site.

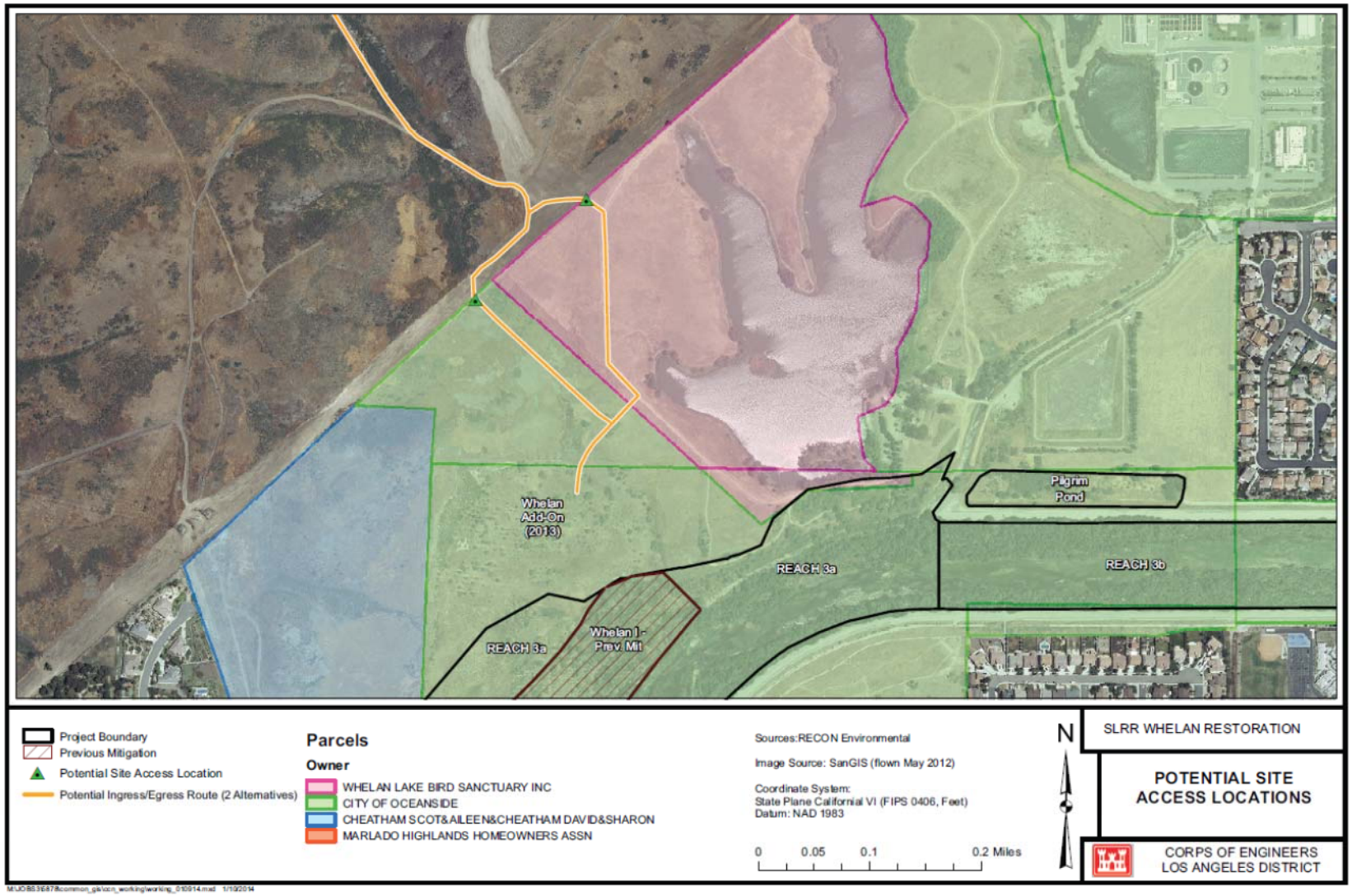


Figure 3.3-13. Ingress and egress from the Whelan Restoration Site.

The staging site would be located on the restoration site. The staging area will be used for equipment parking overnight, placement for the temporary water tower, and refueling of equipment. Equipment storage and maintenance would occur in disturbed upland areas away from the San Luis Rey River. Best Management Practices (BMPs) will be installed around the staging area and spill containment devices will be staged onsite for immediate use for any refueling or equipment maintenance that may be necessary. Following construction, the staging area will be decompacted, if determined necessary by the restoration ecologist, and restored to its natural condition then maintained throughout the 5-year maintenance period. The ingress/egress dirt roads on City land or Whelan Conservancy land will also be hydroseeded with a coastal sage mix.

Weed Control Methods

Controlling weeds in riverine environments requires selecting one or more control mechanisms—mechanical, cultural, biological, and chemical. Of these four methods, chemical control is most frequently used because herbicides are an economical way to control most wetland weeds in a quick and thorough manner (O'Connor–Marer and Garvey 2001). However, in some cases, the other three methods, or a combination of other methods may provide the most effective results given specific settings and constraints.

Schedule

It is estimated that implementation of initial restoration activities may take approximately six weeks and is scheduled to occur in the spring of 2014. Restoration activities will commence first from the rock rubble wall nearest the San Luis Rey River to the north upland. Project phases would be chronologically sequenced in the following manner:

- Grubbing, clearing, and salvaging of existing vegetation.
- Removal of the 1,500 linear feet rock rubble levee.
- Grading and earth moving activities including stockpiling of sand and contouring of three soil disposal mound features.
- Planting of approximately 10,400 container plants and cuttings on the restoration site and hydroseeding the soil disposal mound sites.

Proposed hours of work would be 7:00 A.M. to 5:00 P.M., Monday through Friday. If restoration activities are delayed due to weather, mechanical equipment or other constraints, construction will continue through the spring 2014 to the second week of April. If there are delays to the proposed schedule, it is anticipated that all rock removal and earthwork will be completed and only planning and irrigation system will be remaining. Restoration planting activities would occur during the spring 2014. If delays occur, the concerned agencies would be notified and coordination initiated.

Restoration Monitoring

Monitoring of the restoration site would be performed for a period of five years following completion of the initial restoration activities or until the restored vegetation has met performance standards, whichever is shorter. The monitoring and management activities for this program will be incorporated into a broader adaptive management program for all riparian habitats in the San Luis Rey River Flood Risk Management Project. Monitoring of the proposed mitigation site would be accomplished by assessing a level of performance criteria based on a reference site located adjacent to the restoration areas. The performance criteria or standards evaluated during the monitoring include 1) hydrologic regime; and 2) vegetation measurements. The Corps restoration biologist will be responsible for conducting monitoring of the mitigation through a five-year period. The restoration biologist will qualitatively and quantitatively evaluate mitigation success in relation to the performance criteria and submit reports documenting the progress.

Future Maintenance

A five-year maintenance program is proposed to ensure the success of the planting areas and to allow native plants to establish and become self-sustaining. Maintenance is needed to create and maintain conditions favorable to establishment and growth of native plants. The maintenance program ensures that native species are being allowed to recruit, container plants are becoming established, and weeds are under control. Maintenance measures would be determined based on results of the restoration monitoring, may be conducted throughout all active and passive restoration areas and would be coordinated by the Corps' restoration biologist. Maintenance will consist of two phases: the plant establishment period and long-term maintenance for the life of the project. The Corps project restoration biologist will oversee all aspects of the restoration program in order to detect any problems at the earliest stage during the plant establishment and monitoring period (about 5 years). The City would take over long term maintenance and management responsibilities thereafter.

Routine maintenance activities expected to be necessary during the maintenance program include weed control, supplemental watering, herbivory protection, trash removal, remedial planting, and access control. The Corps will perform these activities during the bird breeding season for the first growing year and possibly the second year.

4.0 AFFECTED ENVIRONMENT

This chapter describes existing environmental resources at the Whelan Mitigation Site. For the purposes of this document, and pursuant to guidelines for implementing NEPA and CEQA, the baseline used for the impact analysis reflects the conditions at the time of the preparation of this report.

Overall Setting

The proposed Whelan mitigation site is located in the northwestern section of San Diego County, approximately 3 miles east from the Pacific Ocean, north of the intersection of SR-76 and Mission Avenue in Oceanside, California. The site is bounded by the San Luis Rey River to the south, Camp Pendleton to the north, Whelan Lake to the east, and residential developments to the south and west. The Whelan mitigation site is situated within the flood plain of the San Luis Rey River, and is approximately 18.0 acres in size (19.2 acre total project footprint).

The existing conditions of the site are characterized by:

- Degraded riparian forest/scrub habitat and open riparian scrub/grassland.
- High concentrations of giant reed (*Arundo donax*).
- Open scrub/grassland dominated by non-native grasses.

The Whelan Mitigation Site is physically separated from the San Luis Rey River by 1,700 foot long rock rubble levee that was constructed by the Corps in 1992-1993. The levee forms the southern boundary of the mitigation site. The topography of the site gently slopes upward from the levee. The elevation increases from approximately 45 feet above sea level near the levee, to approximately 60 feet above sea level in the interior areas of the site.

4.1 Water Resources

The proposed mitigation site is located within the San Luis Rey Hydrologic River Watershed, an area of approximately 565 square miles which includes three Hydrologic Areas (HA): Lower San Luis (903.1), Monserate (903.2), and Warner Valley. The proposed site is within the Lower San Luis HA, and the Mission Hydrologic Sub-Area (HSA). The receiving water body in the Mission HSA is the San Luis Rey River. The Whelan Mitigation Site is located along the north bank of the San Luis Rey River, approximately 4-miles upstream from the mouth of the San Luis Rey River at the San Luis Rey Estuary on the Pacific Ocean. Major land uses in the watershed include 55% of the land identified as vacant or undeveloped, 15% residential, and 14% agriculture (County of San Diego 2011c). The principle agricultural uses include cattle grazing, nurseries, citrus groves, and avocado groves. Within the Mission HSA there are 7 commercial animal facilities and 66 plant nurseries (Projectcleanwater.org).

Groundwater

San Luis Rey Valley Groundwater Basin's (#9-7) major hydrologic feature is the San Luis Rey River, which drains an east-west trending alluvium-filled valley located in northwestern San

Diego County. Below the approximately 200 feet deep alluvial aquifer lays the Eocene La Jolla Group aquifer at an estimated depth of 1,650 feet. The alluvial aquifer is recharged from artesian springs from the La Jolla Group, imported irrigation water in upland areas, and storm-flow in the San Luis Rey River and its tributaries (California Department of Water Resources 2004). Groundwater levels range from 0 to 20 feet below the ground surface (bgs), and the estimated total storage capacity for the San Luis Rey Valley Basin is 240,000 acre-feet (af) (California Department of Water Resources 1984). Exploratory trenches were dug at the Whelan Mitigation Site on March 20, 2013, and groundwater was encountered at a depth of 7 feet bgs (Recon Environmental 2013).

Surface Water Quality

The reach of the San Luis Rey River that lies adjacent to the proposed mitigation site is listed on the Clean Water Act (CWA) Section 303(d) list for: Indicator bacteria (lower 13 miles), chloride (lower 19 miles), and total dissolved solids (Projectcleanwater.org). The 303(d) listing of indicator bacteria is related to agricultural, livestock, and septic system impacts on water quality. The upper reaches of the San Luis Rey River are unincorporated areas of San Diego County that rely heavily on septic systems, and the lower reach is characterized by agricultural land use. Chlorine impairment is generally attributable to urban runoff from commercial and industrial sources. The 303(d) listing for total dissolved solids is attributed to the following: Natural dissolution of rocks/minerals, septic tanks, agricultural runoff, and storm water runoff.

Beneficial uses, as identified in by the Regional Water Quality Control Board, San Diego Region, for the San Luis Rey River include:

- Municipal Supply
- Agricultural Supply
- Industrial Service Supply
- Freshwater Replenishment
- Spawning habitat
- Contact Water Recreation
- Non-contact Water Recreation
- Preservation of Biological Habitats of Special Significance
- Warm Freshwater Habitat
- Rare, Threatened, or Endangered Species
- Wildlife Habitat

4.2 Biological Resources

Introduction

Riparian ecosystems natural history, ecology, and restoration have been intensively studied in both the journal referred and gray literature for the last 50 years by a variety of government, academic, and consulting biologists from central to southern California including the desert regions. Suffice to say, the science of these natural systems is well known and documented but the restoration of these unique ecosystems is in continues to require an adaptive approach given the unique and dynamic nature of these systems. The proposed Whelan restoration project is for the successful restoration of least Bell's vireo primary constituent habitat elements.

Vegetation Mapping

The Whelan parcel was mapped using an aerial photograph flown in February, 2010 at a scale of 1:1200. This aerial imagery was used to review existing vegetation prior to the field assessment to identify areas of interest such as large weed stands or potential wetlands. Vegetation types were determined in the field using the Sawyer-Keeler-Wolf methodology and key to vegetation alliances and associations. Both of the keys from A Manual of California Vegetation (Sawyer et al. 2009) and Vegetation Classification Manual for Western San Diego County (SANDAG 2011) were used to determine each vegetation classification. Boundaries for these vegetation types were also determined in the field except where areas of the site were inaccessible. In these instances, the aerial imagery was used to determine the boundaries. Vegetation polygons were mapped to a minimum mapping unit of 0.25 acres with the exception of stands of *Arundo donax* which were mapped smaller than 0.25 acre.

Vegetation Types

Vegetation types are characterized by the dominant plant species within a given area. The word "dominant" refers to areas that comprise 50 percent total cover by a particular species or group of common plant species, such as willow or non-native grasses. Other characteristics involved in determining the vegetation types included qualitative estimates of vegetation composition, structure, and/or density; total vegetation cover, tree height, tree diameter at breast height (dbh), percent cover by trees, percent cover by shrubs, and percent cover by herbs. Some areas are not dominated by vegetation and therefore are described by habitat descriptors.

Vegetation alliances identified within the San Luis Rey River Whelan Mitigation project area are: *Baccharis salicifolia* (mule fat) Shrubland Alliance, *Salix. exigua* (sandbar willow) Shrubland alliance (southern willow scrub), and *Populus fremontii* (Fremont cottonwood) Woodland Alliance.. However, the project site is dominated by non-native invasive plants, *Arundo donax* semi-natural herbaceous alliance (giant reed breaks), and *Tamarix* spp shrubland alliance (salt cedar). These areas have out-competed the native riparian vegetation and formed their own vegetation type alliances and associations within the river. The proposed restoration site encompasses eight vegetation type alliances with associations. Acres of the various vegetation type alliances are in Table 4.2-1. The largest vegetation type parcel mixture of non-

native annual and perennial grasses comprising 20.5 acres (37.8%). A native vegetation type alliance is the second largest parcel (*Populus fremontii - Salix gooddingii/Baccharis salicifolia* Association) with 16.9 acres (31.1%) a parcel that is degraded and dying. Together these two vegetation type alliances cover 37.4 acres or 68.9% of the vegetation cover. Only 15.2% of the vegetation cover is of native riparian plants

Table 4.2-1. Current Whelan Restoration Site Vegetation Type Alliances

Current Whelan Restoration Site Vegetation Type Alliances	
Vegetation Type Alliance	**Number of Acres**
Baccharis salicifolia Alliance	
Baccharis salicifolia - Tamarix ramosissima Association	2.0
Baccharis salicifolia Association	4.8
Eriogonum fasciculatum Alliance/Association	3.1
Isocoma menziesii Alliance/Association	3.5
Salix lasiolepis Alliance	
Salix lasiolepis/Baccharis salicifolia Association	2.0
Populus fremontii alliance	
Populus fremontii - Salix gooddingii/Baccharis salicifolia Association	16.9
Semi-natural Stands	
Arundo donax Semi-natural Stands	1.6
Mediterranean California Naturalized Annual and Perennial Grassland Semi-natural Stands	20.5
Total Vegetation Classification	54.3

(Source: USACE/Recon Environmental Inc, *in Prep*, 2011 *Vegetationn and Sampling Report for the San Luis Rey River Flood Risk Management Project*)

Baccharis salicifolia Alliance

This alliance can be found as medium-sized stands throughout the study area. Two different associations (*Baccharis salicifolia* association and *Baccharis salicifolia–Tamarix ramosissima* association) within this alliance were mapped, both containing mule fat (*Baccharis salicifolia*) as the dominant shrub with other native shrubs and native and non-native herbs intermixed and almost no tree cover present.

One stand of the *Baccharis salicifolia–Tamarix ramosissima* association can be found at the southern tip of the study area. This stand has a similar composition to the *Baccharis salicifolia* association except that it contains approximately the same amount of tamarisk (*Tamarix ramosissima*) as mule fat within the shrub layer.

Eriogonum fasciculatum Alliance/Association

This alliance/association can be found within the study area as two medium-sized strips of vegetation along the western edge. This alliance is dominated by California buckwheat (*Eriogonum fasciculatum*) and black sage (*Salvia mellifera*), with other native species such as California sagebrush (*Artemisia californica*), coyote bush (Baccharis pilularis), bush sunflower (*Encelia californica*), and coast goldenbush (*Isocoma menziesii*) present in the shrub layer as well. No trees exist within these stands, and the herb layer is dominated by non-native grasses.

Isocoma menziesii Alliance/Association

A single medium-sized stand of this alliance/association can be found along the study area's western edge. This stand is heavily dominated by coast goldenbush, with few other shrub species such as California sagebrush and mule fat present. Non-native grasses dominate the herb layer, and no trees are present within the stand.

Populus fremontii Alliance

This alliance can be found as one large, continuous stand within the southeastern portions of the study area. It is characterized by a large tree cover dominated by various Salix species with Fremont cottonwood (*Populus fremontii*) found throughout. Both black willow (*Salix gooddingii*) and mule fat are diagnostically present within this vegetation category. Herb cover comprises non-native grasses and native herbs such as mugwort (*Artemisia douglasiana*) and curly dock (*Rumex crispus*). Much of this area has a canopy with less than 60% closure, is highly disturbed, and some of the trees are decadent.

Salix lasiolepis Alliance

One medium-sized stand of this alliance can be found near the study area's eastern edge. This alliance contains a small to moderate amount of tree cover dominated by red willow (*Salix lasiolepis*) with a large amount of mule fat within the shrub layer. The understory is dominated by non-native grasses.

Semi-natural Stands

Semi-natural stands contain vegetation in which past or present human activities significantly influence composition or structure but do not eliminate or dominate spontaneous ecological processes (Sawyer et al. 2009). Two types of semi-natural stands can be found within the study area, *Arundo donax* semi-natural stands and Mediterranean California Naturalized Annual and Perennial Grassland Semi-Natural Stands. These vegetation classifications consist of vegetation stands heavily dominated by non-native vegetation. The amount of non-native cover present within these stands precludes their inclusion within native alliances or associations.

***Arundo donax* Semi-natural Stands** can be found in small strips within the southern portion of the survey area. These vegetation stands are heavily dominated by dense giant reed (*Arundo donax*) and contain few other plant species.

Mediterranean California Naturalized Annual and Perennial Grassland Semi-Natural Stands exist as one large stand within the northern portion of the study area and one medium-sized stand within the southwestern portion of the study area. These stands are composed of various native shrubs such as mule fat and California buckwheat within an understory containing non-native grasses and herb species. The stand in the northern portion contains a few scattered native trees, such as black willow and red willow, which are remnants of an abandoned tree farm. However, the amount of tree cover provided by these species is insufficient to include their stand in any of the riparian forest or woodland alliances or associations. The amount of non-native cover present in both of these study area stands precludes their inclusion within any native alliances or associations.

Wildlife Resources

Riparian and wetland habitats are considered sensitive due to extensive historic losses of wetlands nationwide and the value of these habitats for sensitive species and wildlife movement. Riparian ecosystems benefit a variety of species through their highly productive vegetation and their ability to buffer the effects of organic nutrients and toxins. Habitat diversity typically influences wildlife abundance. Plant density, composition, age structure, and cover within and adjacent to riparian woodlands and forests affect habitat diversity (which may be measured by the degree of vertical and horizontal habitat structure). Riparian woodlands (>60% canopy cover) and forests (<60% canopy cover) are composed of several vertical layers, including canopy, shrub, herb, and ground. Woodland overstory provides valuable roosting, foraging, and breeding areas, while foraging birds and mammals utilize the understory. The trees themselves provide extensive foliage and bark surface for foraging, insectivorous birds. Although overall wildlife species richness is generally greater where vertical vegetation structure is well developed, species-specific occurrence can frequently be linked to the quality or presence of one component of the vertical structure. Riparian areas usually harbor greater species richness and abundance than upland areas and frequently serve as corridors due to their linear nature and the cover they provide.

Animal taxa associated with the project habitat types include the Pacific chorus frog (*Pseudacris regilla*), American bullfrog (*Rana catesbeiana*) western fence lizard (*Sceloporus occidentalis*), black phoebe (*Sayornis nigricans*), song sparrow (*Melospiza melodia*), spotted towhee (*Pipilo maculates*), bushtit (*Psaltriparus minimus)*, common yellowthroat (*Geothlypis trichas*), lesser goldfinch (*Carduelis psaltria*), Anna's hummingbird (*Calypte anna*), bushtit, ash-throated flycatcher (*Myiarchus cinerascens*), Bewick's wren (*Thyromanes bewickii*), raccoon (*Procyon lotor*) and striped skunk (*Mephitis mephitis*).

Special Status Listed Taxa

Plant Resources

There are no special status listed plant taxa within the project site.

Animal Resources

Four Federal listed animal taxa may occur or are known to occur within or within three miles the Whelan Mitigation Site. These are the Federal endangered southwestern willow flycatcher, least Bell's vireo, and southern California steelhead and Federal threatened coastal California gnatcatcher.

Southwestern Willow Flycatcher (Empidonax traillii extimus)

The southwestern willow flycatcher was federally listed as endangered in 1995 and California state listed as endangered in 1990. Federally designated critical habitat exists for the species. In San Diego County, only two substantial breeding populations are known to remain along the Santa Margarita River and the upper San Luis Rey River.

The southwestern willow flycatcher is an insectivore that forages within and above the canopy, along the patch edge, in openings within their territory, and above surface water. Adults typically take insects on the wing or by gleaning them from leaves and other vegetation. Larger prey (such as dragonflies or butterflies) is often beaten against the perch, killing and softening it prior to consumption. Overall, the flycatcher is considered somewhat of a generalist in its diet though wasps and bees (Hymenoptera) are the most common food item. Beetles (*Coleoptera*), flies (*Diptera*), and butterflies/moths (*Lepidoptera*) comprise other major components of the diet.

Southwestern willow flycatchers typically arrive in suitable breeding habitat between early May and early June, although a few individuals may arrive as early as late April. Arrival dates can vary geographically and annually, presence and status is often confused by the migrating individuals of northern subspecies passing through *E. t. extimus* breeding habitat (Unitt 2004). The subspecies that breeds to the north in the northern Sierra Nevada and the Cascade Range (*E. t. brewsteri*) migrates through San Diego between mid-May and mid-June. There is a period of overlapping occurrence in San Diego County riparian habitats for these two very similar looking subspecies during spring and fall migration. Fall migration of both subspecies occurs rather early, from August through mid-October. The flycatcher has one or more territories within a home range during the breeding season. Although territory size varies considerably, flycatchers are generally found in habitat patches ranging from 1.2 to 2.7 acres depending on site conditions. Southwestern willow flycatchers depart from their breeding grounds by mid to late September and migrate to their wintering grounds in Mexico, Central America, and portions of northern South America (Peterson 1990).

The flycatcher breeds in different types of dense riparian habitats, across a large elevational and geographic area. Nest site vegetation may be even- or uneven-aged, but usually comprises dense willow thickets that are structurally homogeneous and often near standing water. Although other willow flycatcher subspecies in cooler, less arid regions may breed more commonly in shrubby habitats away from water, the southwestern willow flycatcher usually breeds in patchy to dense riparian habitats along streams or other wetlands, near or adjacent to surface water or underlain by saturated soil. Habitat characteristics such as plant species composition, size and shape of

habitat patch, canopy structure, vegetation height, and vegetation density vary across the subspecies' range. However, general unifying characteristics of flycatcher habitat can be identified. No breeding willow flycatchers have been detected from 2008 to 2013.

In addition to dense riparian thickets, another characteristic common to the vast majority of flycatcher nesting sites is that they are associated with lentic water (quiet, slow- moving, swampy, or still) or saturated soil. Occupied sites are often located in situations such as along slow-moving stream reaches, at stream backwaters, in swampy abandoned oxbows, marshes, cienegas, and at the margins of impounded water, including the inflows of streams into reservoirs. Where flycatchers occur along moving streams, those streams tend to be of relatively low slope (or gradient), i.e., slow-moving with few (or widely spaced) riffles or other cataracts. The apparent association between southwestern willow flycatcher habitat and quiet water likely represents the relationship between the requirements of the bird for certain vegetation characteristics and patch size/shape, and the hydrological conditions that allow those conditions to develop. Lentic water conditions may also be important in influencing the insect prey base of the flycatcher.

Historically, a small population of breeding southwestern willow flycatchers have occurred adjacent to the Whelan Restoration Site within the San Luis Rey Flood Risk Management project area. Table 4.2-2 provides a summary of the breeding pairs and transients recorded between 1999 and 2013. A peak of 6 breeding pairs was ddetected in 2002. This number dropped gradually until only 1 pair was observed in 2007. This site has been unoccupied since as determined through surveys conducted between 2008 and 2013.

Table 4.2-2. Southwestern willow flycatcher population within the lower San Luis Rey River Flood Risk Management project boundary at adjacent to Whelan Lake.

Survey Year	Breeding Pairs	Transient Birds
Prior to 1999	No records	No records
1999	0	5
2000	5	4
2002	6	2
2003	2	1
2005	3	1
2006	3	1
2007	1	Transients recorded
2008-2013	0	Transients recorded

Critical Habitat. Critical habitat for the southwestern willow flycatcher was listed in 2005 and revised in 2011 (FWS 2005 and 2011) (Figure 4.2-1a and 4.2-1b). Listed critical habitat is present within the project area; however, the primary constituent elements (PCE) for critical habitat within the Whelan restoration site are not met. Flycatcher PCE is composed of the following:

1. ***Mixed willow riparian***: dominated by one or more willow species including black willow (*Salix gooddingii),* arroyo willow (*Salix lasiolepis*, and red willow *(S. laevigata),* with mule fat (*Baccharis salicifolia*) as a frequent co-dominant.

2. ***Willow-cottonwood:*** Willow riparian habitat in which cottonwood (*Populus fremontii)* is a co-dominant.

3. Mid to late succession vegetation types 10-15 years age class, dense canopy (>60% closure) and dense shrub layer.

4. Edges or ecotones with the tree/shrub habitat component may be important.

5. Detected between 0 and 120 m away from surface water.

6. ***Non-native***: Area vegetated exclusively with non-native species such as salt cedar/tamarisk (*Tamarix ramosissima*) followed by poison hemlock.

The vegetation type discussion as well as the number of acres present indicate that the SWFL critical habitat PCE's are not met.

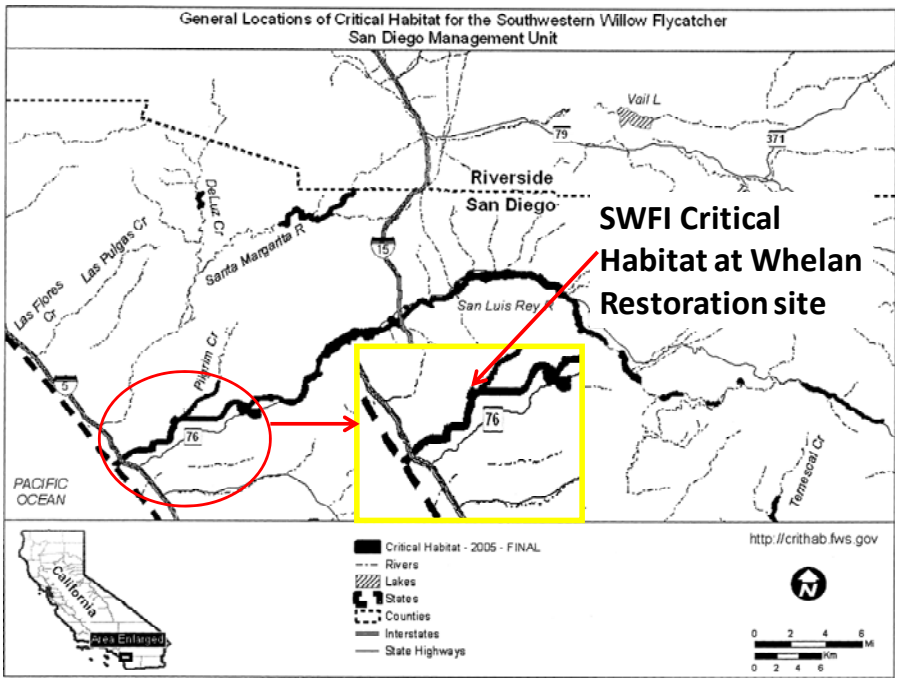


Figure 4.2-1a Revised listed critical habitat for the southwestern willow flycatcher at the Whelan Restoration site.

Corps/USGS Survey Results. Southwestern willow flycatchers have not been detected by the Corps/USGS since 2008 focused protocol surveys. A total of five transient Willow Flycatchers of unknown sub-species were detected within the Project Area in 2010 between 19 May and 7 June. In the river channel, one transient was detected between Benet Road and Interstate 5 (Reach 1), one west of Douglas Drive (Reach 3b), and one west of College Boulevard (Reach 4). Outside of the river channel, one transient was detected each in Upper Pond and Whelan Mitigation site. Four transients and no pairs were detected in 2011 in the Project Area. Two were detected in the river channel just downstream of College Boulevard and two were detected

in Upper Pond. Only one transient was detected in 2012 downstream of Douglas Road.

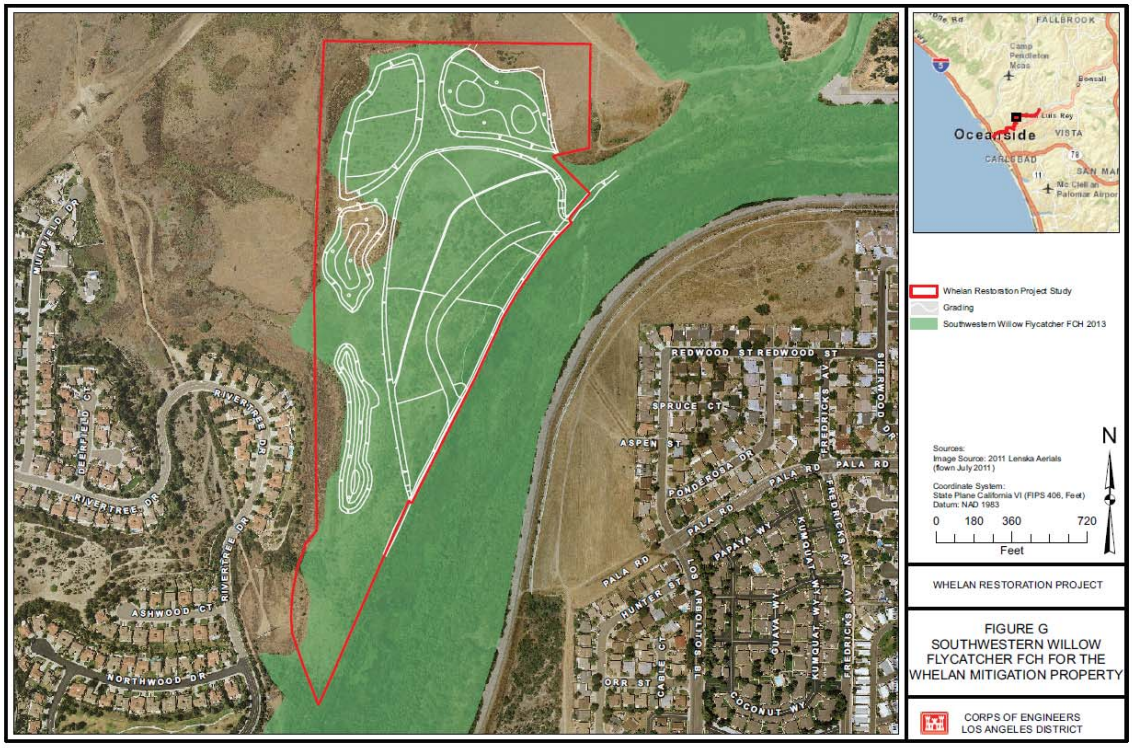


Figure 4-2.1b. Revised listed critical habitat for the southwestern willow flycatcher at the Whelan Restoration site.

Least Bell's Vireo (Vireo belli pusillus)

The least Bell's vireo was Federally listed as endangered in 1986 and state listed as endangered in 1980. Federally designated critical habitat exists for the species. The least Bell's vireo is the westernmost subspecies of the Bell's vireo. The least Bell's vireo begins to arrive at its breeding grounds in southern California riparian areas from mid-March to early April. The least Bell's vireo breeding season extends from March through September. In San Diego County, it occurs mainly in the coastal lowlands, rarely up to 3,000 feet elevation.

Least Bells' vireo natural history and ecology has been intensively studied in both the journal referred and gray literature for 27 years (1978 – 2005) by a variety of government, academic, and consulting biologists, from central to southern California including the desert regions (Pitelka and Koestner 1942; Nolan 1960; Barlow 1962; Goldwasser 1978, 1980; Salata 1983a, 1983b; Franzreb 1989; Gray and Greaves 1984; Greaves 1987, 1989; Greaves and Gray 1991; Kus 1989, 1990, 1991, 1992, 1993, 2001, 2002; 2003, 2005, 2006, 2007; 2008, 2009, 2010, 2011; Kus and Miner 1987; Wells and Turnbull 2000; Unit 1987; Unit 2004; Kus and Whitfield 2005; Pike et.al. 1997, 2002, 2003, 2004, 2005, 2006; USACE 1988, 2005, 2006, 2007; 2008, 2009, 2010, 2011; USFWS 1986, 1987, 1994, 1998).

Nesting Habitat. The least Bell's vireo primarily occupies riparian habitats that typically feature dense cover within 3 to 7 ft of the ground and a dense, stratified canopy. It inhabits low, dense riparian growth along water or along dry parts of intermittent streams. Vegetation types used by the vireo are the *Salix gooddingii* Forest Alliance, *Baccharis salicifolia* Shrubland Alliance, *Salix lasiolepis* Shrubland Alliance, *Salix hindsiana* Shrubland Alliance (Sawyer et al 2009). The understory is typically dominated by *Salix hindsiana* (sandbar willow), *Baccharis salicifolia* (mulefat), individuals of other willow species such as *Salix lasiolepis* (arroyo willow) or *Salix gooddingii* (black willow), and one or more herbaceous species (Salata 1983a, 1983b, Zembal 1984, Zembal et al. 1985). Important overstory species include mature arroyo willows and black willows. Other overstory species that may contribute to vireo habitat include *Populus fremonti* (Fremont's cottonwood).), *Platanus racemosa* (western sycamore) and *Quercus agrifolia* (coast live oak). It primarily nests in small, remnant segments of vegetation typically dominated by willows and mule fat but may also use a variety of shrubs, trees, and vines. Nests are typically built within 3 ft of the ground in the fork of willows, *Rosa californica* (California wild rose) mulefat, or other understory vegetation (Franzreb 1989). Cover surrounding nests is usually a moderately open midstory with an overstory of willow, cottonwood, sycamore, or oak. Crown cover is usually more than 50 percent and contains occasional small openings. The most critical structural component to least Bell's vireo breeding habitat is a dense shrub layer at 2 to 10 ft above the ground (Franzreb 1989). The birds forage in riparian and adjoining chaparral habitat (Kus and Minor 1989; Minor 1989).

Vireos were found to inhabit the northern edge of the Whelan restoration site, north of the rock rubble levee from 2010-2013 (Figure 4.2-2) and along the southwest boundary. The data indicate that vireo territories have decreased as a result of the deterioration of habitat conditions and the birds tended to establish territories along the river margin. The habitat was deteriorating due to increase sedimentation from the placement of the rock rubble wall in 1992 and thus the elevation differences from the river to the north side rock rubble wall ranged between six to ten feet. As illustrated in Figure 4.2-2, vireo territories decreased from 2010 to 2012 and with only one nest in 2013 within the restoration project boundary. Table 4.2-3 illustrates the LBVI territories from 2010 to 2013.

Figure 4.2-3 illustrates the number of vireo territories for the 2013 breeding season. There are two vireo territories within the Whelan restoration site construction boundary that will be removed and one vireo territory that is partially inside the southwestern portion of the construction boundary. One vireo territory abuts to the north boundary of disposal site 3, and this habitat will be left in place.

Table 4.2-3. Least Bell's Vireo Territories in the Whelan Restoration Site from 2010-2013

Survey Year	Number of Territories	Comments
2010	5	One territory is immediately adjacent to soil disposal site 3, and habitat will not be removed but left intact.
2011	4	
2012	3	One territory is immediately adjacent to soil disposal site 3, and habitat will not be removed but left intact.
2013	3	One territory is immediately adjacent to soil disposal site 3, and habitat will not be removed but left intact.

Critical Habitat. Final designation of least Bell's vireo critical habitat was February 2, 1994 (Figure 4.2-4). The critical habitat designation included all of the lower and middle reaches of the San Luis Rey River from I-5 upstream to Pala. The primary constituent elements (PCE) are general and not as specific as for other listed taxa. The PCE is *"These habitat features can be described as riparian woodland vegetation that generally contains both canopy and shrub layers, and includes some associated upland habitats. Vireos meet their survival and reproductive needs (food, cover, nest sites, nestling and fledgling protection) within the riparian zone in most areas. In some areas they also forage in adjacent upland habitats"*. This general PCE exist at the Whelan Mitigation site, but only at the river edge with the mitigation site.

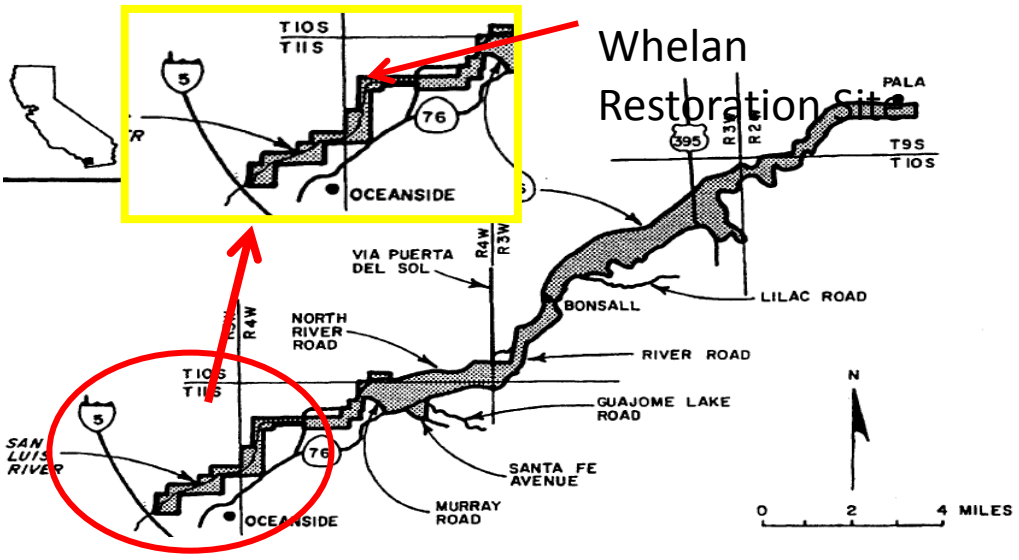


Figure 4.2-4. Critical habitat for the least Bell's vireo within the Whelan restoration site.

Coastal California Gnatcatcher (Polioptila californica)

The Service listed the coastal California gnatcatcher as threatened on March 30, 1993 (58 FR 16742). The coastal California gnatcatcher is one of three subspecies of the California gnatcatcher (*Polioptila californica*) (Atwood 1991). Prior to 1989, the California gnatcatcher was classified as a subspecies of the Black-tailed gnatcatcher (*Polioptila melanura*). Atwood (1980, 1988) concluded that the species was distinct from *P. melanura*, based on differences in ecology and behavior.

Coastal California gnatcatchers typically occur in or near sage scrub habitat. Sage scrub is patchily distributed throughout the range of the species, and coastal California gnatcatchers are not uniformly distributed within the structurally and floristically variable coastal sage scrub vegetation community. Sage scrub is a broad category of vegetation that includes the following vegetation types: *Eriogonum fasciculatum* Shrubland Alliance, *Salvia apiana* Shrubland Alliance, *Salvia mellifera* Shrubland Alliance, *Artemisia californica* Shrubland Alliance.

Coastal California gnatcatchers are typically found in stands of coastal sage scrub that have moderate shrub canopy cover, generally less than 60%percent. Coastal California gnatcatchers will use sparsely vegetated coastal sage scrub as long as perennial shrubs are available, although there appears to be a minimum cover threshold below which the habitat becomes unsuitable. The relative density of shrub cover influences gnatcatcher territory sizes, with territory sizes increasing as shrub cover decreases, probably due to limited resource availability. Beyers and Wirtz (1997) speculate that the non-native grasses and forbs that typically occupy the gaps between shrub species do not support a sufficient insect fauna and that there are probably differences in insect availability among shrub species as well, which may explain shrub species preferences by gnatcatchers.

Dominant species within these plant communities include *Artemisia californica* (California sagebrush), *Eriogonum fasciculatum* (California buckwheat), *Encelia californica* (common encelia), *E. farinosa* (brittlebush), *Salvia mellifera* (black sage), *S. apiana* (white sage), and *S. leucophylla* (purple sage). Other commonly occurring plants include *Isocoma menziesii* (coast goldenbush), *Bahiopsis (=Viguiera) laciniata* (San Diego sunflower), *Baccharis pilularis* (coyote brush), *Baccharis sarothroides* (broom baccharis), *Mimulus aurantiacus* (bush monkeyflower), *Acmipson glabra* (=*Lotus scoparius*) (deerweed), *Malosma laurina* (laurel sumac), *Rhus integrifolia* (lemonadeberry), *Lycium* spp. (box-thorn), *Euphorbia misera* (cliff spurge), *Simmondsia chinensis* (jojoba), *Opuntia littoralis* (prickly pear), *O. prolifera* (cholla), *Ferocactus viridescens* (coast barrel cactus), and *Dudleya spp*. (live-forever).

RECON biologist Wendy Loeffler (permit number TE-797665), assisted by RECON biologists Alex Fromer and Cailin O'Meara, conducted a habitat assessment and focused surveys for coastal California gnatcatcher in July 2013. Surveys were conducted in accordance with the most current presence/absence survey protocol prepared by USFWS (1997). Survey dates, times, and weather conditions are provided in Table 4.2-4.

Table 4.2-4. Survey dates, times, personnel, and survey conditions.

Date	Survey	Personnel	Beginning	Ending
07/10/13	CAGN #1; Habitat assessment	Wendy Loeffler	10:15 A.M.; 78° F; winds 3–7 mph;	12:00 P.M.; 79° F;
07/17/13	CAGN#2; Vegetation mapping	Wendy Loeffler	10:15 A.M.; 72° F; winds 1–5 mph;	12:00 P.M.; 78° F;
07/25/13	CAGN#3; Vegetation mapping	Wendy Loeffler	10:15 A.M.; 75° F; winds 1–5 mph;	11:30 A.M.; 78° F;

CAGN = coastal California gnatcatcher
°F = degrees Fahrenheit
mph = miles per hour

Coastal California gnatcatcher was not detected on or adjacent to the Whelan restoration project site during the focused surveys. The closest recorded sighting is from the early1990s located approximately 1,500 feet to the west in an area that has since been developed into a residential community.

Potentially suitable habitat for coastal California gnatcatcher within the project area is present within the coastal sage scrub found along the upper slopes on the western edge of the study area. Based on the MCV2 classification system, this habitat is mapped as *Eriogonum fasciculatum* alliance/association. California buckwheat and black sage are the dominant species with other native shrub species throughout.

Critical Habitat. The vast majority of the study area is designated by USWFS as critical habitat for coastal California gnatcatcher (Figure 4.2-5). Critical habitat for this species contains two primary constituent elements: 1) dynamic and successional sage scrub habitats and 2) non-sage scrub habitats in sufficient proximity to sage scrub habitats to provide for dispersal, foraging, and nesting (USFWS 2007). Most of the area does not contain suitable sage scrub for gnatcatchers, as it is dominated by more open riparian scrub and non-native semi-natural stands. The stands of *Eriogonum fasciculatum* alliance/association on the western edge of the study area along with the adjacent *Isocoma menziesii* alliance for foraging and dispersal do provide these primary constituent elements. However, their density and cover are greater than one would expect to support coastal California gnatcatcher nests; this is potentially a result of the steepness of the slopes, which primarily range from 1:1 to 2:1, and the proximity to water. In addition, this small area of coastal sage scrub is relatively isolated by residential development to the east, west, and south, the presence of the river channel immediately to the south, and expanses of non-antive grasslands to the north on Marine Corps Base Camp Pendleton (MCBCP).

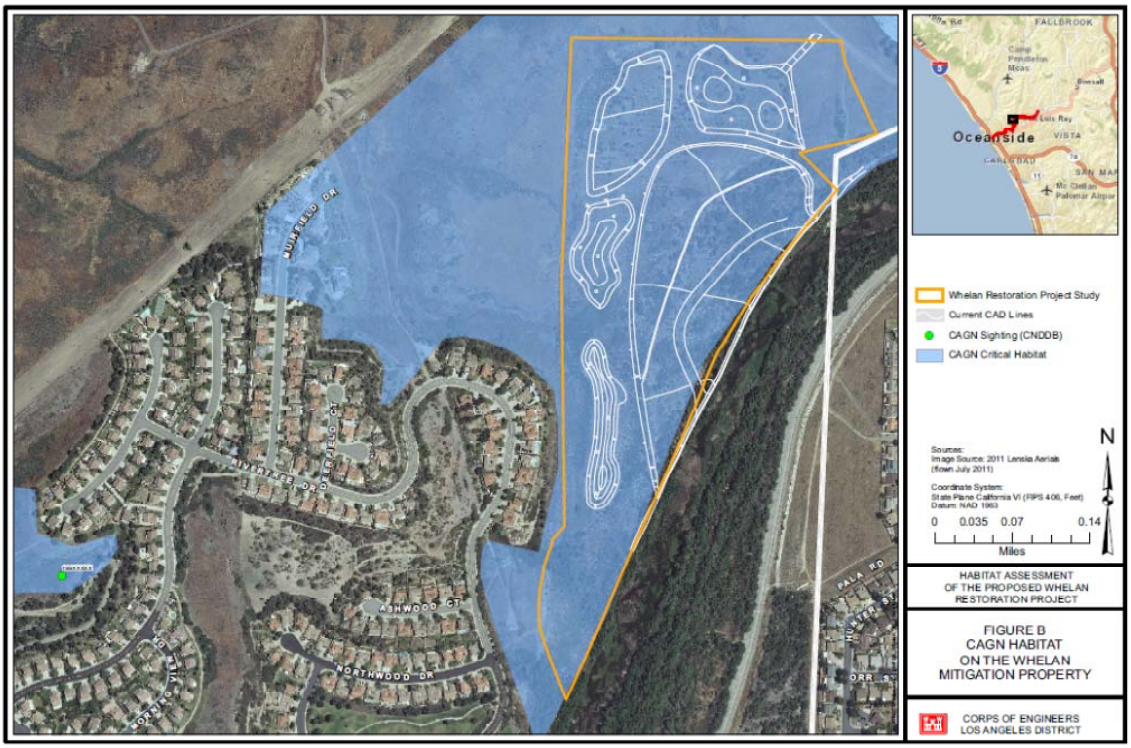


Figure 4.2-5. Critical habitat for the California gnatcatcher within the Whelan restoration site.

Southern California Steelhead (Onchorynchus mykiss)

Steelhead are rainbow trout within the Salmonid Family, with a life cycle similar to that of a salmon. They are an anadromous (or diadromous) species: born and reared in freshwater streams, they migrate as juveniles to estuaries, adjust to saltwater, and then migrate to the ocean to mature into adults. Steelhead habitat once extended from Alaska down to northern Baja California. In California, most steelhead spawn from December through April, often making their way past normally dry sections of rivers, small streams, and tributaries during winter rainstorms that increase in-stream flows. This ability to migrate, spawn, hatch, rear, and mature in subsequently hydrologically isolated and marginal aquatic environments until the next storm event re-establishes a migration corridor between the inland and marine environment makes the steelhead uniquely able to exist in the southern extent of their range. After spending two to four years foraging on the food sources of the Pacific, large adult steelhead, some reaching 20 pounds, generally return to their home streams – some to the very pools of their birth – driven upstream by the instinct to reproduce. Unlike salmon, steelhead does not necessarily die after spawning and may make the spawning journey more than once. And, unlike juvenile salmon that typically migrate to the ocean after just a few months of freshwater rearing, juvenile steelhead reside in coastal streams from one to three years.

Based on the available literature, southern steelhead are relatively adaptable, able to survive in modest habitat and withstand higher stream temperatures and lower dissolved oxygen

concentrations than their northern counterparts. Basic habitat requirements cited were adequate spawning gravel for adults, and areas of perennial flow or intermittent flow associated with pools and vegetative cover for over-summer juvenile rearing. Rainbow trout have been observed surviving water temperatures as high as 84°F, but prolonged exposure to temperatures greater than 77°F would likely be lethal. In intermittent streams, trout will tolerate low dissolved oxygen in order to escape high water temperatures. Large or deep thermally stratified pools likely provided the best opportunity for juvenile survival and growth, however, shallow pools associated with coldwater seeps or springs are also used. Estuary/lagoon rearing is beneficial, but may not be essential due to rapid in-river growth potential.

Southern California Steelhead Distinct Population Segment. The Endangered Species Act defines "species" as including "any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife that interbreeds when mature." Until 2006, National Marine Fisheries Service (NMFS) applied its Pacific salmon policy for determining distinct population segments, called "evolutionarily significant units" or ESUs, to *O. mykiss*. In response to court decisions and listing petitions, NMFS determined it would review the status of salmonid ESUs, and NMFS eventually determined that *O. mykiss* populations should be regulated under the DPS policy it shares with FWS, given the joint jurisdiction of FWS and NMFS over the species. Therefore, Southern California steelhead were first listed as an ESU and later listed as a DPS.

NMFS has conducted several comprehensive status reviews of west coast Pacific salmon and steelhead populations over the past ten years pursuant to the Endangered Species Act (ESA). In August 1997, NMFS listed the Southern California steelhead Evolutionarily Significant Unit (ESU) as an endangered species and defined its southern limit as Malibu Creek in Los Angeles County, California, based on the best information available at that time. The biological status of this ESU was described in the final rule based on the results of NMFS's west coast steelhead status review and in an updated status review (NMFS, 1997), which concluded that this ESU was at a high risk of extinction.

In December 2000, NMFS presented new information indicating that steelhead or their progeny occurred in at least two coastal river basins south of Malibu Creek and had successfully spawned in one of these basins (San Mateo Creek, San Diego County). Based on this new information, NMFS proposed to extend the current range of this endangered ESU to San Mateo Creek in northern San Diego County, California. Only naturally spawned populations of steelhead and their progeny which reside below naturally occurring and man-made impassable barriers (e.g., impassable waterfalls and dams) were included in the redefined Southern California steelhead ESU.

In 2006, NMFS issued final determinations to list 10 Distinct Population Segments (DPSs) of West Coast steelhead (*O. mykiss*) (71 Fed. Reg. 834). The Southern California Steelhead DPS adopted the geography of the southern California steelhead ESU, including all naturally spawned populations of steelhead in streams from the Santa Maria River, San Luis Obispo County,

California (inclusive) to the U.S.-Mexico Border (62 Fed. Reg. 43937; 67 Fed. Reg. 21586). The DPS does not include any artificially propagated steelhead stocks that reside within the historical geographic range of the DPS. In issuing the final rule, NMFS stated that its Pacific Salmonid expert panel had a strong majority opinion that the DPS is "in danger of extinction." (71 Fed. Reg. 851).

Critical Habitat. In February 2000, NMFS designated critical habitat for 19 salmon and steelhead ESUs, including 6 in California that included all accessible and occupied waterways, including the adjacent riparian zone, below longstanding impassable natural barriers within the range of the ESU. As a result of subsequent litigation, however, the designations were vacated by court order in 2002 and remanded back to NMFS for further consideration. In December 2004, NMFS published proposed critical habitat designations, and in September 2005, NMFS issued final critical habitat designations for 19 West Coast salmon and steelhead ESUs, including the Southern California steelhead ESU (70 Fed. Reg. 52488 and 52630).

The earliest historical records of steelhead occurring in Northern San Diego County are largely anecdotal. Historic population estimates for MCBCP streams were not found in the reviewed literature, but steelhead runs on the San Luis Rey River were reportedly large enough to provide a major food supply for the Luiseno Tribe as late as the 1890s and 1900s (USFWS 1998). Kondolf and Karson (1995) described the natural conditions of the San Luis Rey River as probably perennial in most years; surface flow may have ceased in dry years, but the alluvial water table probably remained high, supporting riparian vegetation and maintaining deep pools as refugia for aquatic organisms.

Current Distribution. In 2002, an extensive study was made of steelhead occurrence in most of the coastal drainages within the geographic boundaries of the ESU (Boughton and Fish 2003). Steelhead were considered to be present in a basin if adult or juvenile *O. mykiss* were observed in any stream reach that had access to the ocean (i.e. no impassable barriers between the ocean and the survey site), in any of the years 2000-2002 (i.e. within one steelhead generation). Three basins were considered vacant because they were dry, 17 were considered vacant due to impassable barriers below all spawning habitat; and six were considered vacant because a snorkel survey found no evidence of *O. mykiss*.

One of the "dry" basins—San Diego River—may have water in some tributaries—it was difficult to establish that the entire basin below the dam was completely dry. Numerous anecdotal accounts suggest that several of the basins that had complete barriers to anadromy may have landlocked populations of native steelhead/rainbow trout in the upper tributaries. These basins include the San Diego, Otay, San Gabriel, Santa Ana, and San Luis Rey Rivers. Occupancy was also determined for 17 basins with no historical record of steelhead occurrence; none were found to be currently occupied (NMFS 2005).

Steelhead presence in the San Luis Rey River. San Luis Rey River has several barriers from the ocean upstream to Lake Henshaw Dam. Barriers occur on some of the San Luis Rey River

tributaries, such as Douglas Road, College Blvd, and Pala Creek. Inland rainbow trout exist within the San Luis Rey River above the Vista/Escondido diversion dam upstream to Henshaw Reservoir, more than 30 miles upstream of the project area (http://www.sandiegotrout.org/sdstreams.html).

CDFW had genetic analysis accomplished by Gary Thorgaard, Postdoctoral Research Geneticist Department of Animal Science University of California Davis. Chromosome and electrophoretic analysis of proteins were used to study rainbow trout from Pauma Creek and the San Luis Rey River mainstem in the Mt. Palomar region. Chromosome analysis showed that it is highly probable that the San Luis Rey River tributary *O. mykiss* population is composed predominantly of fish native to the region. The mainstem San Luis Rey has received hatchery rainbow trout, as have tributaries such as Pauma Creek. Stocking of non-native trout was ongoing from CDFW's Mojave River Trout Hatchery into the upper reaches of the San Luis Rey River ("West Fork") and above Henshaw Dam for recreational fishing. The CDFW is coordinating with Mojave Hatchery to discontinue stocking operations below Henshaw Dam in efforts to restore native *O. mykiss* habitat. According to the CDFW, fishing for the native *O. mykiss* is restricted.

The CDFW completed surveys for native *O. mykiss* within the lower San Luis Rey near Oceanside in 1999 and the results were negative. During a CDFW survey on 3 May 2007, one *O. mykiss* was found within the Corps' project boundary. Digital photographic images of the *O. mykiss* were taken and its location recorded using a geopgraphic positioning system (GPS) (M. Larson, pers. comm., 8 May 2007). The steelhead was about 20 inches in length, appeared to be healthy, in riverine habitat with a good canopy cover from the large willows or cottonwoods, and a moderately deep holding pool. The CDFW emphasized that the riverine habitat in which the *O. mykiss* was observed on the lower San Luis Rey River is strictly migration habitat on their way to their spawning habitat up stream on tributaries to the San Luis Rey River. Nonetheless, since the implementation of the Corps FRM O&M mowing action, water quality monitoring during the winter season, vireo and flycatcher population monitoring, vegetation sampling, restoration implementation and maintenance year round, no *O. mykiss* have been detected or observed during the last five years. Corps biologists and Corps contract biologist have been on the SLRR during all vegetation management and water quality monitoring activities and have not detected this species.

In summary, according to Titus et. al (2013), no formal records of steelhead use were discovered for the San Luis Rey River, although steelhead were reportedly caught there by anglers. The dam that forms Lake Henshaw reduces the downstream river flow, and blocks steelhead access to the uppermost portion of the drainage. The native San Luis Rey steelhead stock is extinct (Nehlsen et al. 1991), although resident rainbow trout persist in headwater tributaries such as Pala and Pauma creeks (Behnke 1992; Swift et al. 1993).

Wildlife Corridors

Connectivity, or the ability of organisms to move through a landscape, is essential in heterogeneous landscapes, especially in increasingly urban settings, for the persistence of healthy

and genetically diverse animal communities. Corridors can facilitate connectivity on different temporal and spatial scales which are linear landscape features that allow for species movement over time between two patches that would otherwise be disconnected (Beier and Noss 1998; Lidicker and Peterson 1999; Beier et al. 2008). Because many wildlife species have species-specific habitat requirements for survival and dispersal, corridors may also be species specific. At a minimum, corridors promote local colonization or re-colonization of distinct habitat patches and potentially increase genetic variability within and between populations. Isolation of populations can have harmful effects on both population genetics and meta-population dynamics. In addition, increased exposure to an inhospitable urban matrix due to reductions in connectivity can increase general mortality. All of these factors can contribute significantly to local species extinctions. Thus, corridors help species populations distributed in and among habitat patches to persist over time. Wildlife corridors are linear landscape features that allow animal movement between two patches of comparatively undisturbed habitat, or between a patch of habitat and some vital resources. Regional corridors link two or more large areas of natural open space. Local corridors allow resident animals to access critical resources (food, water, and cover) in other areas that might otherwise be isolated.

The San Luis Rey River and associated riparian habitat have been identified as an important regional wildlife movement corridor in southern California providing connectivity to conservation lands in both Riverside County to the north and coastal areas to the west, including Marine Corps Base (MCB) Camp Pendleton. Riverine corridors provide linear habitat with sufficient structural vegetative cover to allow the passage of many different types of wildlife. Large mammals are known to travel through riparian corridors. For some species, such as mountain lions, riparian habitat is often preferred for movement and the presence of this habitat may reduce some of the negative impacts of roads as a deterrent for movement (Dickson and Beier 2002). Riverine habitat has inherent value to wildlife. In the semiarid Mediterranean climate of San Diego, water is a valuable limited resource. For this reason, many animals specifically inhabit these areas throughout their lives, inhabit these areas for at least one life-stage, or often move in and out of these areas from adjacent upland habitats throughout the course of their lifetime. This resource and the associated bottom-up effects on subsequent prey and predator populations create areas of diversity within and surrounding riparian corridors.

The Whelan Mitigation site is an intact parcel with no aberrations of disconnected habitat. It is connected to the San Luis Rey River and will remain in this condition as a mitigation site for the City.

4.3 Air Resources

Regulatory Setting

The Federal Clean Air Act of 1970 directs the attainment and maintenance of National Ambient Air Quality Standards (NAAQS) for six "criteria" pollutants (e.g., ozone, carbon monoxide). Under the Clean Air Act, the USEPA must approve a State Implementation Plan (SIP), which defines the actions to be taken, and the time schedule for achievement of attainment, when a

geographical area is classified as "non-attainment." The USEPA implements the New Source Review and Prevention of Significant Deterioration regulations in areas of "attainment."

Under 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 State Implementation Plan (SIP). Conformity is defined in Section 176(c) of the CAAA as compliance with the SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards. 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. A Record of Non Applicability would be written instead.

Emissions that would result from Proposed Actions are subject to the rules and regulations of the San Diego Air Pollution Control District (SDAPCD). These rules and regulations are designed to achieve defined air quality standards that are protective of public health. To that purpose they limit permissible emissions from projects and specify emission controls and control technologies for each type of emitting source in order to ultimately achieve state and Federal air quality standards.

Local Climate

The area of the proposed site lies within the San Diego Air Basin (SDAB), which is characterized as a moderate Mediterranean climate with dry summers and wet winters. The nearest climate station is in the Oceanside Municipal Airport. The Western Regional Climate Center (WRCC) reports annual average precipitation for Oceanside is 10.4 inches, with more than 70 percent of the seasonal precipitation occurring between December and March. As reported by WRCC, the highest precipitation level recorded for a given year in the City of Oceanside, the nearest measuring station, was 21.9 inches in 1983. The lowest precipitation level recorded for a year was 2.8 inches in 1953.

The summer mean high and low temperatures (August) in the City of Oceanside are 76.7ºF and 61.7ºF, respectively. Winter mean high and low temperatures (January) are 65.8ºF and 40.4ºF, respectively. With regard to wind speed and direction, average daily wind speed in winter months (December through February) is 3.9 miles per hour (mph), and in the summer months (June through August) average daily wind speed is 4.3 mph, and generally flows from the southwest to the northeast.

The Whelan Mitigation Site is located approximately 3.5 northeast of the Camp Pendleton air quality monitoring station (33º13'01"N, 117º23'46"W). This monitoring station is located near the coastline, and the proposed mitigation site is situated downwind from the air monitoring station.

Air Quality Standards and Attainment Status

Air quality is evaluated by measuring ambient concentrations of pollutants that are known to have deleterious effects. The degree of air quality degradation is then compared to the current National and California Ambient Air Quality Standards (NAAQS and CAAQS, respectively). Because of unique meteorological problems in the state, and because of differences of opinion by medical panels established by the California Air Resources Board (CARB) and the USEPA, there is considerable difference between state and Federal standards currently in effect in California. In general, the CAAQS are more stringent than the corresponding NAAQS. The NAAQS-CAAQS collated standards currently in effect in California are listed in Table 4.3-1.

Table 4.3-1 NAAQS-CAAQS (Combined Air Quality Standards)

Pollutant [final rule cite]		**Primary/ Secondary**	**Averaging Time**	**Level**	**Form**
Carbon Monoxide		primary	8-hour	9 ppm	Not to be exceeded more than once per year
[76 FR 54294, Aug 31, 2011]			1-hour	35 ppm	
Lead		primary and	Rolling 3 month average	0.15 μg/m3 (1)	Not to be exceeded
[73 FR 66964, Nov 12, 2008]		secondary			
Nitrogen Dioxide		primary	1-hour	100 ppb	98th percentile, averaged over 3 years
[75 FR 6474, Feb 9, 2010]					
[61 FR 52852, Oct 8, 1996]		primary and	Annual	53 ppb (2)	Annual Mean
		secondary			
Ozone		primary and	8-hour	0.075 ppm (3)	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
[73 FR 16436, Mar 27, 2008]		secondary			
Particle Pollution	$PM_{2.5}$	primary	Annual	12 $\mu g/m^3$	annual mean, averaged over 3 years
		secondary	Annual	15 $\mu g/m^3$	annual mean, averaged over 3 years
		primary and	24-hour	35 $\mu g/m^3$	98th percentile, averaged over 3 years
		secondary			
	PM_{10}	primary and	24-hour	150 $\mu g/m^3$	Not to be exceeded more than once per year on average over 3 years
		secondary			
Sulfur Dioxide		primary	1-hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
[75 FR 35520, Jun 22, 2010]					

[38 FR 25678, Sept 14, 1973]	secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

Source: EPA 2013.

Air quality standards are designed to protect those people most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, and people already weakened by other disease or illness. It should be noted that healthy adults can tolerate occasional exposure to air pollutant concentrations above these minimum standards before adverse effects are observed.

Existing Air Quality

The area of the proposed action is located within the SDAB. There are 10 air quality monitoring stations in San Diego County that are operated by the SDAPCD. The monitoring station that is representative of the area of the Proposed Action is the Camp Pendleton station, which monitors ozone (O_3), nitrogen dioxide (NO_2), and fine particulate matter (i.e.,$PM_{2.5}$).The Escondido monitoring station is located approximately 17-miles to the southeast of the Whelan Mitigation Site, and monitors additional air quality parameters: carbon monoxide (CO), and course particulate matter(i.e., PM_{10}) within the SDAB.

Table 4.3-2. Camp Pendleton and Escondido Air Monitoring Stations' Data

Camp Pendleton Air Monitoring Station Data					
	Max Concentration (ppm)	Annual Average (ppm)	Max Concentration ($\mu g/m^3$)	Max Annual Average ($\mu g/m^3$)	Days Above Nat'l Standard (# days)
O_3 (8-hr)	0.078	0.032			1
NO_2 (1-hr)	0.081	0.008			0
$PM_{2.5}$ (FEM, 24-hr)			26.1	11	0
Escondido Air Quality Monitoring Station Data					
	Max Concentration (ppm)	Annual Average (ppm)	Max Concentration ($\mu g/m^3$)	Max Annual Average ($\mu g/m^3$)	Days Above Nat'l Standard (# days)
O_3 (8-hr)	0.084	0.028			3
NO_2 (1-hr)	0.064	0.0014			0
$PM_{2.5}$ (FRM, 24-hr)			18.7	11	0
$PM_{2.5}$ (FEM, 24-hr)			52.2	15.3	1
PM_{10} (24-hr)			42	20.9	0
CO (8-hr)	2.5	0.6			0

CO (1-hr)	3.9	0.6			0

Source: Ambient Air Quality Network Plan, San Diego Air Pollution Control District (SDAPCD) 2010.

A summary of the air quality status of the SDAB, per the NAAQS and CAAQS, is provided in Table 4.3-3. Non-attainment is a term used to indicate violations of the standard. Air quality in the SDAB is in non-attainment of the CAAQS for PM_{10}, $PM_{2.5}$, and O_3 (1-hour and 8-hour). The SDAB is in non-attainment for NAAQS for O_3 (8-hour).

Table 4.3-3. Attainment Status of San Diego Air Basin

Pollutant	ADAB Attainment Status	
	Federal	State
Ozone (1-hour)	Attainment	Nonattainment
Ozone (8-hour)	Nonattainment	Nonattainment
Nitrogen Dioxide	Attainment	Attainment
Carbon Monoxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	No Federal Standard	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Visibility	No Federal Standard	Unclassified
PM_{10}	Unclassified	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment

Source: County of San Diego Air Pollution Control District (SDAPCD) (2010).

4.4 Earth Resources

Topography

The Whelan Mitigation Site is located in northwest San Diego County, within the San Luis Rey River Valley. The valley is broad, extending east to west from the Peninsular Ranges in northern San Diego County to the Pacific Ocean. Elevations in the San Luis Rey River Valley range from sea level at the mouth of the river to about 6,533 feet at Hot Springs Mountain in the headwaters. The terrain is characteristic of the general coastal region, with steep mountain ridges 1000 to 3000 feet above the valley floors in the east opening to terraces and foothills towards the west.

The Whelan Mitigation Site is within the San Luis Rey River flood plain and slopes down generally to the south and southwest, toward the San Luis Rey River. The elevation in this area ranges from approximately 45 to 65 feet above mean sea level.

Soils and Geology

The mountains east of the coastal valley in the vicinity of the San Luis Rey River are composed mostly of granitic intrusive rocks of cretaceous rock. The lower San Luis Rey River flows

through an alluvium-filled valley. Soils underlying the site consist of alluvial materials (6 to 8 foot depth) under a 3 to 6 inch topsoil layer (silty, fine to medium sand, with trace amounts of organic matter). The soil classification in southwestern portion of the proposed site is Ramona sandy loam (2% to 5% slope), and the northeastern portion of the site is classified as Visalia sandy loam (2% to 5% slope) (Soilweb 2013). These soils generally have rapid permeability.

Seismic Faults

There are several major active faults in San Diego County and include San Jacinto, Elsinore, La Nacion, and Rose Canyon faults onshore and the Coronado Bank, San Diego Trough, and San Clemente faults offshore. There are no known faults within the immediate project area.

4.5 Land Use

The proposed mitigation site is located in the city of Oceanside within the San Luis Rey River watershed. Land use within the San Luis Rey River watershed has been largely undeveloped (55%). Other land use include residential and spaced rural residential (16%), agriculture (15%), parks (9%), military (3%), transportation (2%), and commercial recreation (1%) (County of San Diego 2011c). Less than 1% of land use area consists of commercial, industrial and public facility land uses.

Within the city of Oceanside, the Whelan Mitigation Site is adjacent to single family residential developments to the southwest, south, and east. Due to the proximity of the residential developments to the San Luis Rey River, the General Plan places additional restrictions on developments with respect to flood risk minimization (Oceanside General Plan 2009, Section 1.34). Lands to the immediate northeast of the Whelan Mitigation Site contain Whelan Lake and the San Luis Rey Wastewater Plant. The lands to the north and west of the site are owned are within the boundaries of Camp Pendleton, and are characterized by steep undeveloped foothills that serve to buffer Camp Pendleton operations from the city.

4.6 Noise

Affected Environment

The Whelan Mitigation Site is adjacent to residential developments, agricultural, and open spaces. Noise sources in the area surrounding the proposed action are primarily related to transportation activities and military training exercises. Vehicular traffic is the primary noise source. Roadways in the area of the site that generate noise levels include: SR-76, Douglas Drive, Mission Avenue, and North River Road (see Section 4.7 Transportation).

The residential development to the west is approximately 200 feet away from the western edge of the Whelan Mitigation Site, and the residential development to the south is approximately 650 feet away from the southern edge of the site. The Whelan Bird Conservancy lies approximately 500 feet from the eastern edge of the Whelan Mitigation Site. The agricultural area to the north of the Whelan Mitigation Site abuts the northern edge of the proposed site.

San Diego County and the City of Oceanside have established maximum ambient noise levels for residential, agricultural, and open space areas at 50 dBA from 7:00 am to 10:00 pm. Furthermore, the City of Oceanside's General Plan (2002) outlines supplementary guidelines for construction noise levels that recommend restricting construction noise to 50 dBA at a distance of 500 feet from the source between the hours of 8:00 pm and 7:00 am. Additionally, the construction equipment cannot exceed the ambient noise level by more than 5 dBA between the hours of 6:00 pm and 7:00 am, and can't exceed 85 dBA at a distance of 100 feet from the source at any time of day without approval from the Oceanside City Manager.

Construction Equipment Noise Levels

Table 4.6-1 (below) outlines noise levels associated with the construction equipment that will be utilized at the Whelan Mitigation Site. The standard of 6 decibel (dBA) attenuation per doubled distance from the noise source was used to calculate the estimated noise levels at a 100' distance from the source.

Table 4.6-1. Construction Equipment Noise Levels at 100 foot Distance

Manufacturer	Model	Description	Actual Measured dBA @ 50 Feet from Noise Source (Samples Averaged)	Estimated dBA @ 100 Feet from Noise Source
Caterpillar	D5N	Dozer	82	76
Caterpillar	330	Excavator	81	75
Caterpillar	730	Articulating Rock Truck	76	70
Caterpillar	635/637	Scraper	84	78
Caterpillar	D8R	Dozer	82	76
Unknown	Unknown	Water Truck	76	70
Caterpillar	140H	Motor Grader (if needed)	83	77
Unknown	Unknown	40' Flatbed Truck	76	70

Source: Construction Noise Handbook, U.S. Department of Transportation, Federal Highway Administration 2013.

Federal and State Standards and Regulations

No Federal noise standards directly regulate environmental noise from construction or project operation. Federal regulations safeguard the hearing of workers exposed to occupational noise and are enforced by the Office of Safety and Health Administration (OSHA). The USEPA has developed guidelines on recommended maximum noise levels to protect public health and welfare (Table 4.6-2) (USEPA 1974). The USEPA does not enforce these regulations, but rather offers them as a planning tool for state and local agencies.

Table 4.6-2. EPA Designated Noise Safety Levels

Effect	Level	Area
Hearing Loss	Leq (24) < 70 dB	All areas
Outdoor Activity Interference and Annoyance	Ldn < 55 dB	Outdoors in residential areas and farms and other outdoors areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	Leq (24) < 55 dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor Activity	Ldn < 45 dB	Indoor residential areas
	Leq (24) < 45 dB	Other indoor areas with human activities such as schools, etc.

Leq (24): Equivalent continous noise level during a 24-hour period.
Source: USEPA (1974).

San Diego County

Noise impacts on the surrounding community are enforced through the County of San Diego Code of Regulatory Ordinances (No. 9962). The ordinance lists maximum allowable noise levels to be used as the baseline for determination of public nuisance on various land uses/zones. Table 4.6-3 lists the noise level limits according to land uses and zoning.

Table 4.6-3. San Diego County Sound Level Limits in Decibels (dBA)

Zone		Time	One-Hour Avg. Sound Level Limits (dBA)
1	RS - Single Family Residential RD - Duplex Family Residential RR - Rural Residential RMH – Mobile home Residential A70 - Limited Agriculture A72 - General Agriculture S80 - Open Space S81 - Ecological Resource Area S90 - Holding Area S92 - General Rural RV - Variable Family Residential[1] RU - Urban Residential[1]	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	50 45
2	RRO - Residential-Recreation Oriented RC - Residential-Commercial RM - Multi Family Residential S86 - Parking V5 - Village 5 RV - Variable Family Residential[2]	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	55 50

	RU - Urban Residential[2]		
3	S94 - Transportation and Utility Corridor Other Commercial	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	
4	V1 (Village 1), V2 (Village 2) V1 , V2 V1 V2 V3 (Village 3)	7 a.m. to 7 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m. 10 p.m. to 7 a.m. 7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	60 55 55 50 70 65
5	M50 - Basic Industrial M52 - Limited Industrial M54 - General Impact Industrial	Anytime	70
6	S82 - Extractive Use M56 - Mixed Industrial M58 - High-Impact Industrial	Anytime	75
7	S88 - Specific Plan[3]		

1. Density of less than 11 dwelling units per acre
2. Density of 11 or more dwelling units per acre
3. Specific Planning Areas allow different uses; sound level limits that apply in an S88 zone depend on the use being made of the property

Source: County of San Diego (2011a)

The Oceanside Municipal Code (Ch. 38, Art. III,Sec. 38.12) states that "it shall be unlawful for any person to cause or allow the creation of any noise to the extent that the one-hour average sound level, at any point on or beyond the boundaries of the property in the applicable base district zone on which the sound produced exceeds the applicable limits set forth" in Table 4.6-4 (below). Section 38.15 of the Oceanside Municipal Code outlines that the city manager has the authority to approve exceeding the noise level limits for construction, maintenance, or other public improvement activities by a government agency.

The City of Oceanside's Noise Element (General Plan 2002) establishes desirable maximum construction noise levels with the following three guidelines:

- "It shall be unlawful for any person within any residential zone or 500 feet therefrom to operate any pile driver, power shovel, pneumatic, power hoist, or other construction equipment between 8:00 pm and 7:00 am generating an ambient noise level of 50 dBA at any property line, unless an emergency exists."
- "It should be unlawful for any person to operate any construction equipment at a level in excess of 85 dBA at 100 feet from the source."
- "It should be unlawful for any person to engage in construction activities between 6:00 pm and 7:00 am when such activities exceed the ambient noise level by 5 dBA. A special permit may be granted by the Director of Public Works if extenuating circumstances exist."

Table 4.6-4. City of Oceanside's General Sound Level Limits (dBA)

Base District Zone	7:00 a.m. to 9:59pm	10:00 p.m. to 6:59 am
RE (Residential Estate)	50	45
RS (Single-Family)	50	45
RM (Medium Density)	50	45
RH (High Density)	55	50
RT (Residential Tourist)	55	50
C (Commercial)	65	60
I (Industrial)	70	65
D (Downtown)	65	55
A (Agricultural)	50	45
OS (Open Space)	50	45

Source: City of Oceanside (2013) Municipal Code Ch. 38, Article III, Section 38.12.

Sensitive Receptors

Some land uses are considered more sensitive to elevated noise levels because of purpose and intent of the use. For example, residences, hospitals, schools, libraries, places of worship, or similar facility are places where quiet is an important attribute and are more sensitive to noise than are commercial and industrial land uses.

The residential development to the west is approximately 200 feet away from the western edge of the Whelan Mitigation Site, and the residential development to the south is approximately 650 feet away from the southern edge of the site. The Whelan Bird Conservancy lies approximately 500 feet from the eastern edge of the Whelan Mitigation Site.

Caltrans conducted a noise study in 2009 in support of their SR-76 South Mission Road to Interstate 15 Highway Improvement Project. The study reported noise measurements at various sensitive receptor sites, including sites in the vicinity of the proposed mitigation site. Table 4.6-5

identifies the noise measurements at the sensitive receptor sites closest to the Whelan Mitigation Site.

Table 4.6-5 Existing Noise Levels at Sensitive Receptors

Location	Approx. Distance (ft)	Existing Noise Level dBA Leq
2357 Via Monserate	725	59
3108 SR-76	680	61

Source: Caltrans (2010).

4.7 Transportation

Construction equipment will access the site via dirt roads at Camp Pendleton.

Earthmoving equipment would enter Camp Pendleton through I-5 at Vandegrift Road. Recon and its subcontractors already have permits to enter MCBCP. The Corps has identified the ingress and egress using the starting point at Vandegrift Road (Figure 4.7-1) traveling through the "November Range". Access through the range will be allowed when the range is not is use. Dirt roads on November Range have past and present use by military heavy equipment.

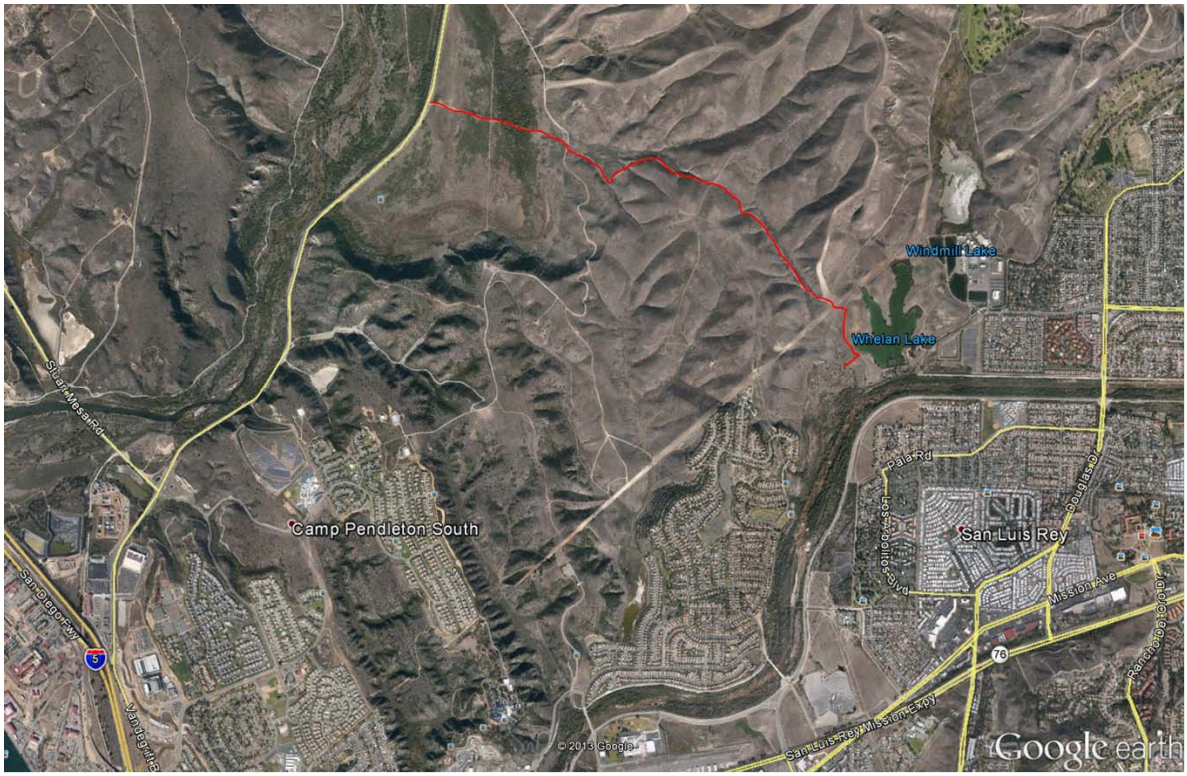


Figure 4.7-1: Access route through Camp Pendleton for all heavy equipment from MCBCP to the Whelan Restoration site.

The dirt roads were reconnoitered and several photographic images taken of its condition (Figure 4.7-2).

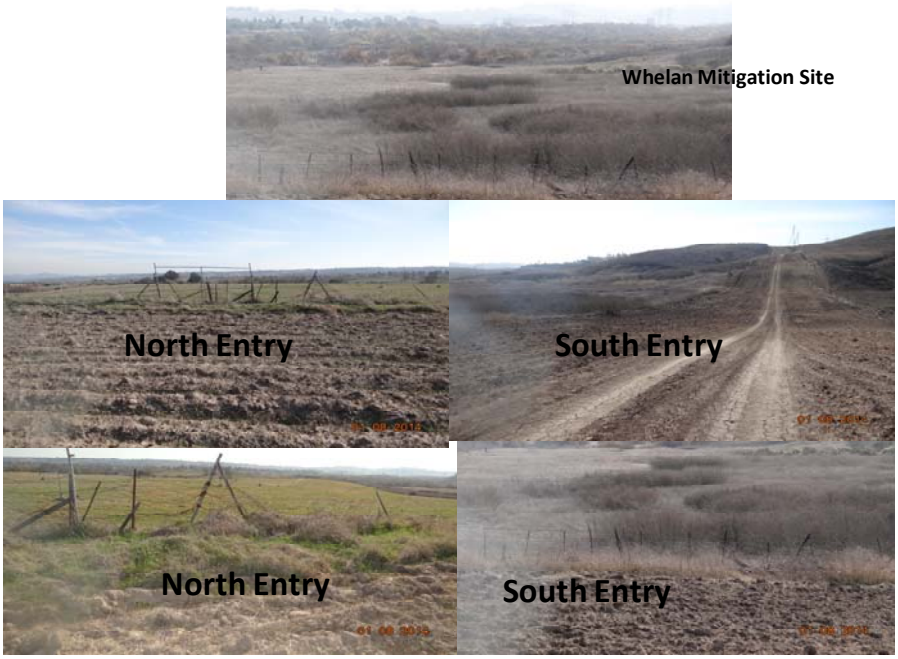


Figure 4.7-2. Ingress and Egress road from MCBCP and entry points to Whelan mitigation site.

The scrapers would be off-loaded in the open area immediately adjacent to Vandegrift Road and driven the 2.1 miles to Whelan Mitigation site. Equipment, such as dozers/excavators would be trailer directly to the site and off loaded on the Camp Pendleton fire break road immediately adjacent to the restoration site. Furthermore, there are two potential entry points into the restoration site (Figure 4.7-3). The northern entry point would have to cross onto the Whelan Bird Conservancy existing dirt road and southern entry point would be on City owned land parcel. A decision on which entry point will be used will be made on-site at the time of entry. Equipment will ingress and egress once during the construction implementation since they will be stored on site.

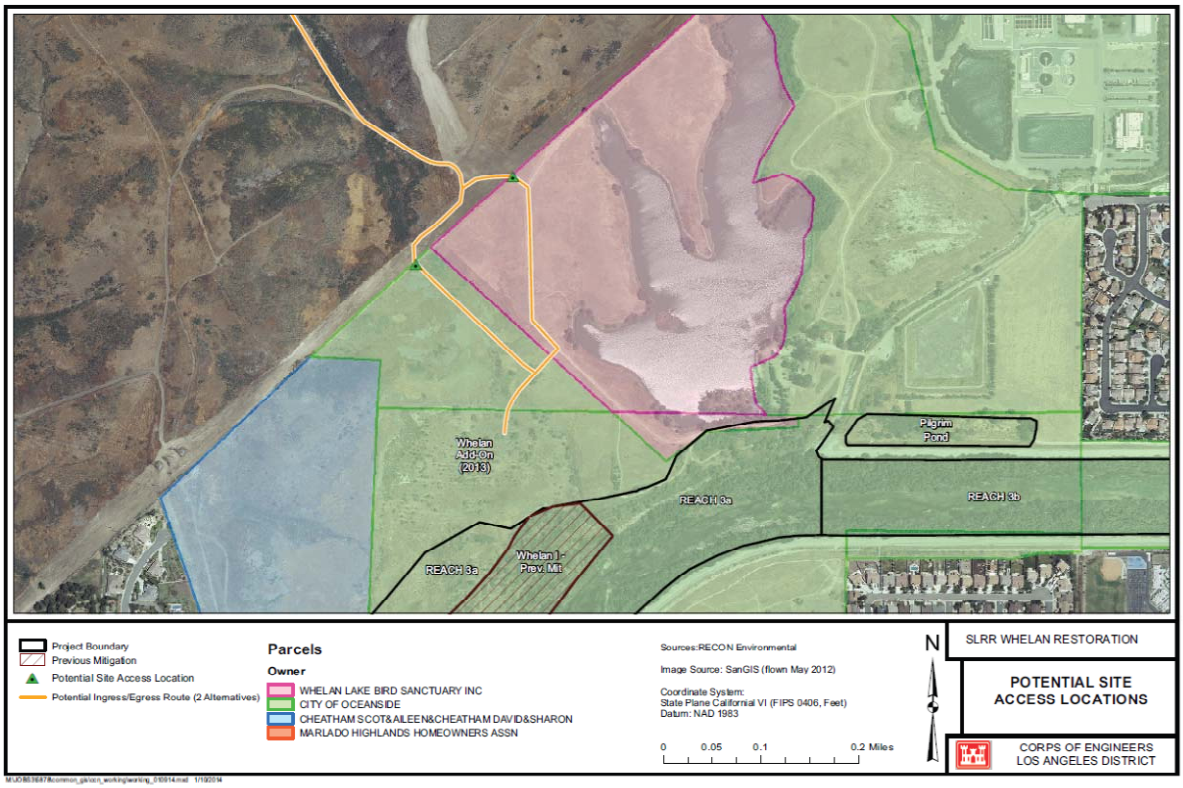


Figure 4.7-3. Ingress and egress from the Whelan Restoration site. There are potentially two entry points into the site as illustrated above and observed in Figure 4.7-2.

A staging area will be established for equipment parking overnight, placement for the temporary water tower, and refueling of equipment. BMPs will be installed around the staging area and spill containment devices will be staged onsite for immediate use for any refueling or equipment maintenance that may be necessary.

4.8 Cultural Resources

A field survey of the APE was conducted by the Corps archeology staff in 1991, and updated in 2013. One previously recorded historic site was present, CA-SDI-6010H in 1991. A test excavation and NRHP evaluation was conducted by Greenwood and Associates. It was evaluated, and determined to not be NRHP eligible. In a letter dated February 5, 1992 the SHPO concurred The Corps requested an updated Sacred Lands File search, and a Native American contact list from the Native American Heritage Commission (NAHC) and information on potential sacred sites in 2013. The NAHC did not indicate cultural resources within one-mile of the APE.

In addition, the project site is in an area that is very disturbed from an archeological perspective as construction of the original mitigation site completely disturbed the ground surface. If any buried historic or prehistoric remains had once been present they would have been severely impacted. Construction of the original mitigation site did not uncover any buried resources in the early 1990s. None are expected by this reconstruction.

A Programmatic Agreement (PA) was executed for the San Luis Rey Flood Control Project in 1989. This document put the Corps in compliance with Section 106 of the act (as implemented by 36 CFR 800). For this mitigation site reconstruction an updated reconnaissance survey was conducted by the Corps archeology staff to confirm the current status of the project area. No NRHP resources were identified. The Corps is in compliance with the PA.

4.9 Socioeconomics

The Whelan Mitigation Site is located Oceanside, California. According to the 2010 U.S. Census, the city of Oceanside has a population of 167,086. Regional population growth in San Diego County will increase by an estimated 20% between 2010 and 2030. However, the City of Oceanside is projected to have a slower growth rate of 10% during that same time period (Oceanside General Plan 2009).

The median household income in Oceanside is $61,181 which is commensurate with a median household income of $63,373 for San Diego County (U.S. Census 2007-2011). The predominant employment type in Oceanside is services (18,365 jobs), followed by retail trade (11,959 jobs) and manufacturing (4,596 jobs) (Market Assessment of Development Opportunities in Coast Highway Area of Oceanside 2008). The 2010 unemployment rate in Oceanside was 8.8%, compared with 10.5% for San Diego County (U.S. Census 2010).

Table 4.9-1. Comparison of Demographic Data betweenCity of Oceanside San Diego County

	City of Oceanside	San Diego County
Total Population (2010)	167,086	3,095,313
Minority Aggregate	51.6%	52.4%
White (non-Hispanic/Latino)	48.4%	47.6%
Hispanic/Latino	35.9%	32.7%
Asian	6.6%	11.6%
Black or African American	4.7%	5.6%
American Indian & Alaska Natives	0.8%	1.3%
Pacific Islanders & Hawaii Natives	1.3%	0.6%
Two or More Races	5.8%	4.2%
Per Capita Income (2012 dollars)	$27,173	$30,683
Median Household Income (2012 dollars)	$61,181	$63,373
Persons below the poverty level	11.8%	13.9%
Source: U.S. Bureau of the Census (2012)		

The City of Oceanside's racial demographic is dominated by non-Hispanic whites (48.4%) and Hispanic or Latinos (35.9%). The remaining population is comprised of 6.6% Asians, 5.8% of people with two or more races , 4.7% black or African-American, 1.3% native-Hawaiian or other

Pacific Islanders, and 0.8% American Indian or Alaska-native (U.S. Census 2010). The racial demographics is not substantially different from San Diego County.

Camp Pendleton is located north-west of the proposed mitigation site, occupying approximately 250,000 acres. It is the largest employer in north San Diego County with a daytime population of 70,000 civilian and military personnel. Camp Pendleton provides some medical, emergency and residential services internally, but also depends on the surrounding community (USMC 2011).

4.10 Hazardous and Toxic Materials

The proposed mitigation site was not listed in the ENVIROSTOR database or on the EPA Superfund database. ENVIROSTOR has one listing located approximately 1.1 miles from the Whelan Mitigation Site: Pala West School cleanup (Pala Rd and Douglas Dr) listed with a status of no further action required (ENVIROSTOR 2013).

With regard to solid waste, there are no landfills or dumps located within the area of the Proposed Action. The closest municipal landfill is the Ramona Landfill, located at 20630 Pamo Road in Ramona (approximately 29 miles southeast of the Whelan Mitigation Site). There is a closed landfill, known as Bonsall Landfill, located off of Gopher Canyon Road and Twin Oaks Valley Road, approximately nine miles east from the proposed mitigation site. The landfill is owned and maintained by the County of San Diego. According the County of San Diego's website, the landfill was opened in 1968 and stopped accepting waste in 1985.

4.11 Aesthetics

Natural features including natural open space, unique topographic resources, and scenic vistas characterize the San Diego County region. The proposed mitigation site is located in northwest San Diego County, in the foothills of the Peninsular Mountain Range in the City of Oceanside, California.

The proposed site is within the San Luis Rey River floodplain and is bordered by undeveloped foothills within Camp Pendleton to the northwest, Whelan Lake to the east, and residential/commercial areas to the south and west.

In addition to the adjacent residential areas, urban development follows SR-76, which runs in an east-west direction just south of the site. SR-76, from Oceanside to I-15, and Mission Road, from SR-76 to Reche Road, is included in the County Scenic Highway System (Conservation and Open Space Element, County of San Diego 2011b).

The river flood plain, including the proposed site, is characterized by riparian forests, riparian scrub, upland benches, and occasional open sandy areas. At the proposed site specifically, the landscape is dominated by degraded riparian forest and scrub habitat. A dirt road is present providing non-public access from Whelan Lake Road to the eastern edge of the proposed mitigation site. The Whelan Mitigation Site has a moderate scenic quality as viewed from the

vantage points near Whelan Lake and the residential developments to the west of the proposed site.

4.12 Public Safety

Flood Hazards

The proposed mitigation site lies within the flood plain of the San Luis Rey River. The main low flow course of the river flows through the southern part of the proposed site in a generally east to west direction, then exits the proposed site and turns in a west to south west direction to continue its flow downstream. During large storm events, the proposed site would likely flood as in the 1978 and 1980 flood events (40-year flood event). This area is designated by the Federal Emergency Management Agency (FEMA) as a high risk flooding area (Zone A), with a one percent annual chance of flooding (100-year flood plain). No detailed hydrology analyses have been performed for this area; thus, no depth or base flood elevations have been determined.

Fire

In southern California, drought, hot weather, and dry offshore winds (i.e., Santa Ana winds) are contributing factors that increase the risk of wildfires to occur. In 2007, two of the largest fires in California occurred in San Diego County, burning almost 55,000 acres of land in the San Luis Rey Basin. The vegetation within the San Luis Rey River floodplain is potential fuel for fires, and a major concern is post-fire erosion potential. Additionally, certain non-native plant species, such as giant reed, can increase fire loads within a riparian area (Cal-IPC 2011). Past known fires within the Whelan Mitigation Site include fires from 1919, 1991, 2007.

Vector-Borne Diseases

Since the proposed site is located within the flood plain of the San Luis Rey River, there is a potential for ponded or standing water to be present at the site. Ponded or standing water as well as the surrounding riparian habitat is breeding habitat for numerous insects and animals such as mosquitoes, ticks, rodents, and fleas that can transmit vector-borne diseases such as Lyme disease, Hantavirus, and the plague.

4.13 Public Services and Utilities

The proposed mitigation site is located within the City of Oceanside, and is within the city's jurisdiction for public services. Regional communications, gas, and electric power utilities are under the authority of state agencies.

Public Services

Fire Protection. There are eight fire stations in the City of Oceanside that provide fire and emergency services throughout all of the neighborhoods within the 41 square miles of Oceanside's city limits. Table 4.13-1 lists the locations of the fire stations.

Table 4.13-1. Fire Station Locations

Station	Location
Station One	714 Pier View Way
Station Two	1640 S Ditmar St
Station Three	3101 Oceanside Blvd
Station Four	3990 Lake Blvd
Station Five	4841 N River Rd
Station Six	895 N Santa Fe Ave
Station Seven	3350 Mission Ave
Station Eight	1925 Avenida Del Oro, Suite F

Source: Oceanside Fire Department 2013.

Police Protection. The City of Oceanside Police Department provides police services for all neighborhoods within the Oceanside's city limits. The Oceanside Police Department has 211 sworn officers, and 89 professional staff members.

Public Utilities

The area in which the proposed mitigation site is located is served by utility and service systems in San Diego County. A variety of local suppliers in this area provide and maintain utility and service system facilities associated with electricity, water, storm water and wastewater, solid waste, and natural gas. Table 4.13-2 lists the utility providers within the area.

Table 4.13-2. Utility and Providers

Utility	Provider
Water	Rainbow Municipal Water District
Sanitation	Rainbow Municipal Water District
Natural Gas	San Diego Gas and Electric Company
Electricity	San Diego Gas and Electric Company
Solid Waste/Landfills	Ramona Landfill

Source: San Diego Water Authority, San Diego Gas & Electric, 2012.

4.14 Recreation

The San Luis Rey River Trail is a 7.2 mile pedestrian trail located on the southern edge of the Whelan Mitigation Site, and is utilized by pedestrians and bicyclists as a recreational trail. The trail is a one-way class-I bike path (separated from vehicle traffic) that stretches from the Oceanside Transit Center (west end) to its terminus at the College Bridge (east end) (Oceanside General Plan 2012).

Whelan Lake is located adjacent to the eastern edge of the Whelan Mitigation Site. The land that immediately surrounds the perimeter of Whelan Lake is maintained as a bird sanctuary. There are organized monthly group-walks on the first Saturday of every month and appointment-based individual bird watching walks (Buena Vista Audubon Society - BVAS).

5.0 ENVIRONMENTAL CONSEQUENCES

5.1 Water Resources

This section considers the potential impacts of the alternatives on surface and ground water resources. The following criteria have been considered in the evaluation of impacts from the alternatives.

- Violate any water quality standards, create any substantial new sources of polluted runoff, or otherwise degrade water quality;
- Substantially deplete groundwater supplies or interfere with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion, siltation, or other flood-related damage on- or offsite;
- Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite, or otherwise create or contribute to runoff water which would exceed the capacity of existing or planned storm water drainage systems; and
- Place housing within a 100-year floodplain as shown on the FEMA Insurance Rate Maps.

Alternative 1: No Action

Under the No Action Alternative, no restoration or habitat management activities would be implemented. No earthmoving activities would occur at the site. As a result, there would be no temporary impacts to water quality. Site drainage patterns, groundwater recharge functions, surface runoff rates, and changes to the floodplain would remain unchanged.

Invasive exotic plant species coverage may expand within the site. Some invasive exotic plant species, such as giant reed, are known to use increased amounts of water to support its growth rate compared to native plant species. Thus, as invasive exotic plant coverage expands, water use by the plants could increase.

Alternative 2: Channel and Overbank Flooding Alternative

Alternative 2 entails earth moving activities within a flood plain. As such, the first rainfall or flooding subsequent to construction would entrain unconsolidated topsoil into the water column, temporarily increasing turbidity. Since the entrained topsoil would be composed primarily of sand, they are expected to quickly settle out of the water column. Furthermore, use of heavy equipment and vehicles during the restoration and habitat management activities could potentially result in the accidental release or discharge of pollutants such as oils, fuels, and other equipment fluids. Releases, if any, are expected to be minor.

Alternative 2 would involve the excavation of a 40 foot wide channel to allow for increased frequency of overbank river flows, within return frequencies of 2- and 5-year storms. This action would help to restore the hydrogeomorphic dynamics of the proposed mitigation site. The overall topography of the site would remain unchanged except for the limited excavation work. The increased frequency of overbank flooding would be expected to affect the erosion and deposition pattern at the Whelan site, possibly increasing the rate of change; however, this would be expected as part of natural riverine processes. The main course of the San Luis Rey River and nearby drainages would not be affected. Alternative 2 would not change the overall drainage pattern of the site since the overall topography of the site (not including the proposed channel) would not be affected.

The adjoining low-flow channel would promote overbank flooding during precipitation events, effectively increasing the surface area capable of infiltrating water through the substrate and into groundwater. Increased infiltration capacity favors natural water purification processes that support improved groundwater quality. Additionally, the decreased flow-velocities in the low-flow pilot channel could positively impact surface water quality by reducing turbidity and the amount of total suspended solids.

Implementation of Alternative 2 would result in an improved riverine system, which would be a benefit to water resources, including wetlands and waters of the U.S. as identified under the Clean Water Act. The environmental commitments identified below would be implemented to ensure that any potential impacts to water resources would be less than significant.

The proposed thalweg connector would also result in soil disturbance within the footprint of the proposed thalweg connector site. Impacts to surface water may occur if rain events occur during or immediately following completion of restoration actions, causing loose soil to erode and enter into the river. Erosion mitigation during construction will be partially accomplished by leaving the rock rubble levee in place until the low-flow channel and related excavation activities are complete. Due to the limited disturbed surface area and proposed minimization measures identified below, impacts to surface water from soil erosion and sedimentation are not considered significant.

The planting of native plant species would reduce the risk of soil erosion where invasive exotic plants are controlled, which would reduce and minimize the rate and amount of surface runoff. The proposed excavated channel would be expected to increase the frequency of overbank flooding onto the southwestern portion of the mitigation site. However, Alternative 2 would not change the overall drainage pattern of the site, and would not increase the rate or amount of surface runoff or erosion within the overall floodplain. Alternative 2 would not cause the capacity of existing or planned storm water drainage systems to be exceeded.

Changes to flooding, erosion, and deposition patterns would be expected locally on the mitigation site as a result of the proposed small channel excavation. However, the Proposed Action would not result in any changes to existing patterns of floods, erosion, and deposition

within the overall San Luis Rey River floodplain and would not result in changes to the FEMA 100-year floodplain mapping.

Based on the above, Alternative 2 would result in less than significant impacts to water resources.

Future Maintenance

Future maintenance consists of two phases: the plant establishment and monitoring phase, and the long-term maintenance for the life of the of the project. The first phase is expected to last about five years, and will be overseen by Corps' restoration biologists. The City of Oceanside will take over the long-term maintenance and management responsibilities thereafter. Anticipated maintenance responsibilities include habitat management activities such as weed control, supplemental watering, remedial planting, herbivory protection, trash removal, and access control. Potential impacts to water resources as a result of future maintenance would be less than the initial restoration implementation. Applicable environmental commitments identified below would be implemented during future maintenance activities to ensure that any potential impacts to water resources would be less than significant.

Environmental Commitments

The Proposed Action shall follow Best Management Practices (BMPs) as prescribed under the Stormwater Pollution Prevention Plan (SWPPP) that shall be prepared for the project. The Corps Environmental Resources Branch (ERB) will be responsible for review and approval of the SWPPP prior to implementation of restoration and habitat management activities. Consistent with Federal and state regulations, BMPs shall be implemented to control the erosion of sediments into the water, prevent or contain spills from storage locations or equipment used within or adjacent to the river and other actions that may affect water quality. The plan will be implemented during restoration and habitat management actions and shall be the responsibility of the Corps during the implementation phase and the City throughout the maintenance phase. This measure will be implemented as part of project's Clean Water Act (CWA) Section 402 permit requirements, if applicable. Where applicable, the contractor would prepare the SWPPP, file a Notice of Intent with the State Water Resources Control Board with applicable fees. This Plan shall state that:

WQ-1 Construction and maintenance fluids (oils, antifreeze, fuels) shall be stored in closed containers (no open buckets or pans) and disposed of promptly and properly away from the channel to prevent contamination of the site.

WQ-2 Refueling of the mower and other equipment can be accomplished on site least 50 feet away from flowing water and with the use of liners. BMP's will be used and include such actions as having hazardous waste clean-up equipment and spill kits staged on-site, using the appropriate size and gauge drip pans and absorbent diapers. Spill kits shall be in close proximity to the fuel truck and mower in case of fuel or other fluid spills. Contractor equipment shall be checked for leaks prior to operation and repaired as necessary.

WQ-3 Fluids released because of spills, equipment failure (broken hose, punctured tank) or refueling should be immediately controlled, contained, and cleaned-up per Federal and state regulations. All contaminated materials should be disposed of promptly and properly to prevent contamination of the site. To reduce the potential for spills into the channel during refueling, refueling of portable equipment shall occur on shore. Where that is not possible, barriers shall be placed around the site where the fuel nozzle enters the fuel tank. The barriers shall be such that spills shall be contained and easily cleaned up. Someone shall be present to monitor refueling activities to ensure that spillage from overfilling, nozzle removal, or other action does not occur.

WQ-4 Actions such as equipment maintenance shall not take place within the active river bed or in areas that directly drain to these locations. These actions shall take place at designated staging sites away from open water or surface flow.

Alternative 3: Natural Scour Alternative

Alternative 3 would involve passive and active restoration as described for Alternative 2, but would increase the pilot channel width to 50 feet (10 feet wider than Alternative 2) and would remove approximately 1,500 linear feet of the rock rubble levee. The area between the San Luis Rey River thalweg and the pilot channel would be exposed to natural scour. A 1 foot bench would be created on the northern bank of the main thalweg, requiring the excavation of material to a depth of approximately 6 feet below ground surface within the low-flow channel, and about 5 feet below ground within the bench (6.5 to 7.5 acre project footprint).

The frequency for overbank flooding at the Whelan Mitigation Site would be increased from a 10-year return frequency to a 2-year return frequency. As a result, the interior areas of the Whelan Mitigation Site would be wetted more frequently than in the conditions under Alternative 2. Increased infiltration capacity under alternative 3 would favor natural water purification processes as surface waters filter through the soil into the groundwater supply. Long term maintenance related impacts would be similar to Alternative 2. Environmental commitment identified for Alternative 2 would also be proposed for Alternative 3.

Impacts to water resources associated with Alternative 3 would be similar to those characterized for Alternative 2.

Alternative 4: Channel Overbank Flooding Natural Scour Alternative (Preferred Alternative)

Alternative 4 has the largest project footprint (19.2 acres) compared to other alternatives. The preferred alternative would restore 18 acres of riparian habitat, requiring increased excavation throughout this area. Infiltration capacity would be maximized under this alternative, which could yield increased groundwater recharge and natural purification processes through infiltration.

Removal of the approximately 1,500 feet of rock rubble levee and the excavation plans throughout the 18 acre riparian restoration would favor increased flood flows into the northern

interior areas of the mitigation site, favoring natural flood plain interaction with the San Luis Rey River (natural scour).

Long term maintenance related impacts would have a larger footprint than alternatives 2 and 3 as a result of increased riparian habitat requiring vegetative controls (2 year watering and long term invasive species removal). Impacts to water resources associated with Alternative 4 would be similar to those characterized for Alternative 2. Environmental commitments for Alternative 4 are commensurate with those listed for Alternative 2.

5.2 Biological Resources

An impact to biological resource would be considered significant if a project alternative results in:

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

Alternative 1: No Action

The "No Action" alternative would result in no restoration, monitoring, or habitat management actions taking place at the mitigation site. Invasive exotic plant population, including giant reed (*Arundo donax*), would continue to expand its coverage within the site, and compete with native species. The extent of potential vireo habitat would remain the same or decrease due to the potential for increased giant reed and other invasive plant infestation. The "No Action" alternative would not meet the CDFW CESA Incidental Take Permit No. 2081-2007-029-05, Condition 5.2.3 to restore a minimum of 2.11 acres for the Southwestern willow flycatcher; nor would it achieve 4.9 acres of recovery for the least Bell's vireo and riverine habitat (USFWS 2006, Conservation Measure 20, Term and Condition 21). The ecosystem would be left to rejuvenate on its own and would take many years competing with invasive non-native exotic plants, especially giant reed.

Alternative 2: Channel and Overbank Flooding Alternative

This alternative would install a 40-foot wide pilot channel with small engineered and armored inlet and outlet. Approximately 6.5 to 7.5 acres would be restored, including the required 2.11 acres for southwestern willow flycatcher and 4.5 to 5.5 acres for least Bell's vireo. The desing and size of the inlet and channel would result in water flowing into the restoration site at low velocitieswhich would prevent further scouring of the channel and adjoining floodplain. One-hundred year storms would result in 6-8 feet of inundation throughout the entire mitigation site with low velocities of less than 6 fps. Small "fingers" would extend from the pilot channel landward towards the interior part of the site which would be planted with appropriate riparian vegetation suitable for the vireo and flycatcher.

The lack of natural scour would support the establishment of southwestern willow flycatcher habitat by supporting an old growth, climax riparian community; however, this would be at the risk of reducing the site to support least Bell's vireo long-term, by reducing any natural vegetation succession. The armored design of the inlet/outlet may also require additional management long-term to maintain functionality. This design requires the importation of large quantities of engineered rock in order to construct the armored inlet and outlet, which limited the overall potential project footprint based on the cost of these materials and implementation. This alternative results in an underutilization of the total area available for restoration, especially a reduction in least Bell's vireo habitat.

Alternative 3: Natural Scour Alternative

This alternative maximizes the natural scour regime by removing approximately 600 feet of the rock rubble wall would be removed and a 50 foot wide low flow channel would be created just above the main river thalweg with bench areas created approximately 1 foot higher than the low flow channel. This alternative would result in excavation of material to approximately 6 feet below the ground surface in the low flow channel and about 5 feet below the ground surface within the bench. With removal of longer segments of the rock rubble levee compared to Alternative 2, the channel and mitigation site would be allowed to migrate and expand during significant storm events. This alternative would restore about 7 acres of riverine riparian habitat: required 2.11 acres for southwestern willow flycatcher and 4.9 acres for vireos.

The substrate in the restoration site is sandy material that would continue to erode, potentially increasing sedimentation and deposition downstream. Restoration under this alternative would rely on the natural vegetative succession, which could result in a longer establishment time for the appropriate mature, climax habitat for the southwestern willow flycatcher. This alternative results in an underutilization of the total area available for restoration, especially a reduction in least Bell's vireo habitat.

Alternative 4: Channel Overbank Flooding Natural Scour Alternative (Preferred Alternative)

This alternative includes a footprint of approximately 19.3 acres and would entail restoring 2.11 acres of riparian habitat for the southwestern willow flycatcher with the remainder restored as riparian habitat supporting other riparian avian species including the endangered least Bell's vireo. This alternative will involve removal of approximately 1,500 linear feet of a rock rubble wall, excavation to the historic riverbed (pre-1938) to allow for natural scour to occur, excavation of a low flow channel to provide connectivity between the main San Luis Rey River thalweg and interior portions of the mitigation site. The proposed channel would allow for flood flows to convey onto the northern interior areas of the site during 2-year storm events. The banks and terrace above the riparian habitat will be restored through active and natural processes (passive restoration) after invasive exotic weeds have been eradicated. The terraces immediately adjacent to the low flow channel would be graded and planted with appropriate riparian vegetation suitable for the southern willow flycatcher. This alternative would entail long term

habitat management by the City of Oceanside in accordance with the Adaptive Habitat Management Plan (AHMP) Restoration Program (Corps 2013, *in prep*) for the San Luis Rey River Flood Risk Management Project.

The preferred alternative maximizes use of the area for restoration potential, be restoring 19.3 acres. This design allows for the removal of a larger area of the rock rubble wall, which is an introduced, non-beneficial feature along the river's edge. A more natural flood system will be allowed through the site because the design has a larger area located closer to the water table, increasing probability for plant establishment. This alternative is a good balance of having portions of the site that is stable allowing for the development of the old-growth climax community required for the willow flycatcher as well as supporting the natural scour and early successional vegetation preferred by the vireo.

Staging Area

The staging locale is on the mitigation site itself, no additional off-site areas would be used for ,implementation of the preferred alternative. Impacts associated with staging and maintenance of equipment would be limited to the existing disturbed area. The staging site will grubbed and cleared and restored when completed with the appropriate native plants for the site once it is determined no longer needed for restoration and habitat management activities.

Invasive Plant Eradication

Giant reed stands present in the restoration footprint will be eradicated by chemical and/or physical methods. Giant reed plants can be chemically sprayed first or mowed first then re-sprouts sprayed in the following year. The preferred method of giant reed eradication is foliar application of a glyphosate-based herbicide approved for aquatic applications to kill the root/rhizome mass. For the Whelan restoration, this fall herbicide treatment would be applied following the least Bell's vireo breeding season. Other non-native plants encountered on site would be eradicated and managed as well.

Container Planting

Native plants used for container stock will come from the same genetic plant source of the site or immediate surrounding environs. Plants may be grown at the contractor's nursery or an on-site nursery may be established.

Federal Listed Taxa

Several Federal listed taxa occur within the Whelan mitigation site as described in the Chapter 4.2. Informal ESA Section 7 consultation with the USFWS/Carlsbad Office began early in the process using the best available scientific data from Recon/USGS San Diego Field Station. Informal ESA Section 7 consultation is currently on-going with the USFWS Carlsbad Office and will result in amending the original biological opinion, Reinitiation of Formal Section 7 Consultation and Confirmation of a Conference Opinion on the Operation and Maintenance of

the San Luis Rey River Flood Control Channel in the City of Oceanside, San Diego County, California (1-6-87-F-17R2).

Southwestern Willow Flycatcher

The southwestern willow flycatcher breeds in riparian habitats along rivers, streams, or other wetlands, where relatively dense growths of trees and shrubs are established, near or adjacent to surface water or underlain by saturated soil. Habitat characteristics such as dominant plant species, size and shape of habitat patch, canopy structure, vegetation height, and vegetation density vary widely among sites. This tyrannid flycatcher has not been recorded as nesting within the Whelan Mitigation Site since 2008 although transient migrant flycatchers have been recorded at the Whelan restoration site and are expected to move through the mitigation site during their migration seasons.

Although the revised southwestern willow flycatcher listed critical habitat covers the Whelan site, no PCE's occur within the Whelan mitigation site but are found on the south edge of the rock rubble wall within the San Luis Rey River outside the project boundary. Implementation of Whelan restoration actions will not affect the southwestern willow flycatcher because there have been are no breeding southwestern willow flycatchers present within the restoration site boundary within the last five years. Implementation of the restoration actions may affect but not adversely affect the revised critical habitat southwestern willow flycatcher even though flycatcher PCE's do not current exist on site. Restoration activities will create and restore *Salix gooddingii* Forest Alliance and *Salix gooddingii/Baccharis salicifolia* Association and 2.11 acres of suitable breeding flycatcher habitat are expected to be available over a time period of 15 to 20 years.

The USFWS/Carlsbad Office indicated during the informal consultation that the USFWS would concur with the Corps determination that proposed restoration activities at the Whelan Mitigation Site would not affect the southwestern willow flycatcher. The FWS and Corps concur that the project actions may be affected but not adversely the critical habitat of the flycatcher due to restoration activities. Both agencies concur that the restoration efforts will be beneficial to the flycatcher and its revised critical habitat by creating the necessary habitat PCE's.

Least Bell's Vireo

The least Bell's vireo begins to arrive at its breeding grounds in southern California riparian areas from mid-March to early April. The least Bell's vireo breeding season extends from March through September. Least Bells' vireo natural history and ecology has been intensively studied in both the peer-reviewed journal publications and gray literature for 35 years (1978 – 2013) by a variety of government, academic, and consulting biologists, from central to southern California including the desert regions.

The least Bell's vireo primarily occupies riparian habitats that typically feature dense cover within 3 to 7 ft of the ground and a dense, stratified canopy. It inhabits low, dense riparian growth along water or along dry parts of intermittent streams. Vegetation types used by the

vireo are the *Salix gooddingii* Forest Alliance, *Baccharis salicifolia* Shrubland Alliance, *Salix lasiolepis* Shrubland Alliance, *Salix hindsiana* Shrubland Alliance. The understory is typically dominated by *Salix hindsiana* (sandbar willow), *Baccharis salicifolia* (mulefat), individuals of other willow species such as *Salix lasiolepis* (arroyo willow) or *Salix gooddingii* (black willow), and one or more herbaceous species. Important overstory species include mature arroyo willows and black willows.

There are two vireo territories within the Whelan restoration site boundary that will be removed and one vireo territory that is partially inside the southwestern portion of the restoration boundary. One vireo territory abuts to the north boundary of disposal site 3, and it will be left intact. These data are based on the 2013 population monitoring (USGS, *In Prep*; Corps/Recon, *In Prep*). The Corps considers this restoration action a may affect but not likely to adversely affect of the San Luis Rey vireo population or the cohorts of the Whelan habitat for several reasons.

- First, the FWS 2006 Final Biological Opinion (FBO) (Reinitiation of Formal Section 7 Consultation and Confirmation of a Conference Opinion on the Operation and Maintenance of the San Luis Rey River Flood Control Channel in the City of Oceanside, San Diego County, California (1-6-87-F-17R2) impact analysis is based on grubbing and clearly vegetation every year from I-5 to College Blvd. The FRM O&M mows the vegetation (no grubbing and clearing with a dozer).
- Second, the FWS 2006 FBO's analysis included all riverine habitats from I-5 to College Blvd, when in fact the O&M is essentially from Benet Road Bridge 1,650 feet downstream; not to I-5. Thus, approximately 8,700 linear feet of habitat has been removed from the active O&M mowing project equating to about 42 acres of riparian habitat which was removed from the O&M actions.
- Third, nearly 40 acres of vireo *Salix gooddingii* Forest Alliance, *Baccharis salicifolia* Shrubland Alliance, *Salix lasiolepis* Shrubland Alliance, *Salix hindsiana* Shrubland Alliance are being restored in Reach 1 below Benet Road. The understory will be dominated by *Salix hindsiana* (sandbar willow), *Baccharis salicifolia* (mule fat), and individuals of other willow species such as *Salix lasiolepis* (arroyo willow).
- Fourth, the FWS 2006 FBO's analysis included annual mowing, which has not been implemented. Phase 1 was mowed in fall 2008, fall 2010 and 2011 and will not be re-mowed until fall 2014. Phase 2 was not mowed until fall 2012. Thus the FBO analysis was based on yearly mowing of riparian habitat. Therefore, edge riparian habitat has been left to be utilized for foraging/breeding habitat for vireos in between years or FRM O&M activities.
- Fifth, the vireo population has fluctuated considerable over the last seven years reaching a high of 171 territorial males, as recorded in 2009 and a low of 76 in 2012. It has been calculated that the lower San Luis Rey vireo population is up about 20 pairs from 2012, based on the interim report provided by USGS, which simply continues the fluctuation

observed since starting the mowing and restoration activities began in earnest. Implementation of the restoration effort should increase the vireo territories to a minimum of 18 territories (1.0 acres per territory) and potential upwards of 36 territories (0.5 acres per territory).

Survey Year	**Territories in SLRR Flood Risk Management Area**	**Whelan Mitigation Territories (Subset of total pairs**
2006	119	14
2007	108	9
2008	130	12
2009	171	15
2010	157	16
2011	130	12
2012	76	11
2013	99*	Not available*

*Preliminary data, final data analysis in prep.

- Lastly, the Whelan restoration site has a vegetative composition of non-native annual and perennial grasses (semi-natural stand) which comprising 20.5 acres (37.8%). A native vegetation type alliance has the second largest area (*Populus fremontii - Salix gooddingii/Baccharis salicifolia* Association) with 16.9 acres (31.1%); however, it is a landscape parcel that is degraded and dying. Together these two vegetation classifications cover 37.4 acres or 68.9% of the vegetation cover. Only 15.2% of the vegetation cover is of native riparian plants. The Whelan restoration effort is also proposing to create and restore 2.11 acres for the southwestern willow flycatcher (CDFW CESA Incidental Take Permit No. 2081-2007-029-05, Condition 5.2.3). Furthermore, the additional 18 acres of riparian habitat (*Salix gooddingii* Woodland and Forest Alliance, and Forest Alliance, *Baccharis salicifolia* Shrubland Alliance, *Salix exigua* Shrubland Alliance *Salix lasiolepis* Shrubland Alliance) is to meet recovery for LBVI and riverine habitat (USFWS 2006, Conservation Measure 20, Term and Condition 21). The purpose for redesigning the Whelan 1 and 2 mitigation site is to improve the mitigation sites' hydrologic connectivity to the San Luis Rey River by removing portions of the rock rubble levee, and install additional native plantings. The native plantings will help restore the habitat to favorable conditions for the endangered birds that were once present on site. The removal of portions of the rock rubble levee will help return the hydrologic conditions to those prior to the installation of the rock rubble levee.

Vegetation in which the two territories were detected in 2013 will be grubbed and cleared in early March 2013 prior to the vireo arrival. These two pairs are expected relocate inside the river channel with smaller territories, based on historic precedent within the San Luis Rey River. The vireo territory near soil disposal site 3 will be left intact.

Critical habitat is designated for the vireo at the Whelan Mitigation Site even though many habitat PCE's do not occur within a major portion of the Whelan restoration site; most occur at the outer boundary edges at or river side portion of the rock rubble wall. Implementation of actions would may affect but not adversely affect critical habitat of the vireo. A key component of the vireo restoration is implementing the 10% AEP and 20% AEP hydrologic connection. That is the restoration site would be subject to the 2-year and 5 –year flood frequency as well as restoring overbank flooding to the entire riverine plain of the former borrow site.

The spatial and temporal objectives of restoring the vegetation type to *Salix gooddingii* Woodland Alliance/ *Salix gooddingii/Baccharis salicifolia* Association over a period of 2-5 years would be realized and vireo PCE's would be restored. Vireos would not be present when the passive or active restoration methods are implemented because the grubbing and clearing of the territories will take place prior to their return. Listed critical habitat may be temporarily disturbed by restoration construction activities; however, a long-term sustainable benefit of vireos dispersing into the restored habitat over a short period of time is expected. As an example, in Reach 1 massive amount of monoculture giant reed stands have been eradicated over a three year period. One year after active restoration plantings Reach 1 went from three or four vireo territories in 2012 to nine territories in 2013. There would be a beneficial effect to the special status listed birds themselves as well as well as the listed critical habitat.

Informal ESA Section 7 consultation with the FWS/Carlsbad Office began early in the process using the best available scientific data from Recon/USGS San Diego Field Station. The USFWS/Carlsbad Office indicated during the informal consult that the USFWS would concur with the Corps determination that the proposed restoration activities at the Whelan Restoration Site would affect but not adversely affect vireo and their critical habitat. Nonetheless, the Corps seeks to amend the FBO in order to obtain coverage for incidental take under Section 9 of the Act. The purpose of the project is to benefit the vireo and meet the project's BO and CDFG CESA Permit requirements.

In summary, even though two vireo territories will be removed, there is a minimum of 18 vireo territories that will be restored over a one to two year period. More importantly, the hydrologic connection between the river and the restoration site will be restored including the returning natural scour and overbank flooding to the restoration site. Furthermore, the effects to the vireo analyzed in the FBO are not as great as anticipated since 42 acres of Reach 1 has been removed from the active O&M activities, activities were changed from grubbing and clearing not mowing vegetation that resprout after mowing, and the annual mowing has been phased in longer periods than the FBO required.

Coastal California Gnatcatcher (Polioptila californica)

Coastal California gnatcatchers typically occur in or near sage scrub habitat. Sage scrub is patchily distributed throughout the range of the species, and coastal California gnatcatchers are not uniformly distributed within the structurally and floristically variable coastal sage scrub vegetation community. Sage scrub is a broad category of vegetation that includes the following vegetation types: *Eriogonum fasciculatum* Shrubland Alliance, *Salvia apiana* Shrubland Alliance, *Salvia mellifera* Shrubland Alliance, *Artemisia californica* Shrubland Alliance.

RECON biologist Wendy Loeffler (permit number TE-797665), assisted by RECON biologists Alex Fromer and Cailin O'Meara, conducted a habitat assessment and focused surveys for coastal California gnatcatcher in July 2013. Surveys were conducted in accordance with the most current presence/absence survey protocol prepared by USFWS (1997). Coastal California gnatcatcher was not detected on or adjacent to the Whelan restoration project site during the focused surveys. The closest recorded sighting is from the early 1990s located approximately 1,500 feet to the west in an area since developed into a residential community.

Potentially suitable habitat for coastal California gnatcatcher within the project area is present within the coastal sage scrub found along the upper slopes on the western edge of the study area. Based on the MCV2 classification system, this habitat is mapped as *Eriogonum fasciculatum* alliance/association. California buckwheat and black sage are the dominant species with other native shrub species throughout.

A large part of the restoration project area does not contain suitable sage scrub for gnatcatchers, as it is dominated by more open riparian scrub and non-native semi-natural stands. The stands of *Eriogonum fasciculatum* alliance/association on the western edge of the study area along with the adjacent *Isocoma menziesii* alliance for foraging and dispersal do provide these primary constituent elements. However, their density and cover are greater than one would expect to support coastal California gnatcatcher nests; this is potentially a result of the steepness of the slopes, which primarily range from 1:1 to 2:1, and the proximity to water. In addition, this small area of coastal sage scrub is relatively isolated by residential development to the east, west, and south, the presence of the river channel immediately to the south, and expanses of non-antive grasslands to the north on Marine Corps Base Camp Pendleton (MCBCP).

Informal ESA Section 7 consultation with the FWS/Carlsbad Office began early in the process using the best available scientific data and a current localized gnatcatcher protocol survey. The USFWS/Carlsbad Office indicated during the informal consult that the USFWS would concur with the Corps determinations that the proposed restoration activities at the Whelan Restoration Site may affect but not likely to adversely affect critical habitat of the California gnatcatcher.

Southern California Steelhead (Onchorynchus mykiss)

In 2002, an extensive study was made of steelhead occurrence in most of the coastal drainages within the geographic boundaries of the ESU (Boughton and Fish 2003). Steelhead were considered to be present in a basin if adult or juvenile *O. mykiss* were observed in any stream

reach that had access to the ocean (i.e. no impassable barriers between the ocean and the survey site), in any of the years 2000-2002 (i.e. within one steelhead generation). Three basins were considered vacant because they were dry, 17 were considered vacant due to impassable barriers below all spawning habitat; and six were considered vacant because a snorkel survey found no evidence of *O. mykiss*. It appears the SLRR is part of the southern California DPS but critical habitat is not listed for the San Luis Rey River. The closest steelhead critical habitat is San Mateo Creek, about 20 miles north to the San Luis Rey River.

One of the "dry" basins—San Diego River—may have water in some tributaries—it was difficult to establish that the entire basin below the dam was completely dry. Numerous anecdotal accounts suggest that several of the basins that had complete barriers to anadromy may have landlocked populations of native steelhead/rainbow trout in the upper tributaries. These basins include the San Diego, Otay, San Gabriel, Santa Ana, and San Luis Rey Rivers. Occupancy was also determined for 17 basins with no historical record of steelhead occurrence; none were found to be currently occupied (NMFS 2005). San Luis Rey River has several barriers from the ocean upstream to Lake Henshaw Dam. Barriers occur on some of the San Luis Rey River tributaries, such as Douglas Road, College Blvd, and Pala Creek. Inland rainbow trout exist within the San Luis Rey River above the Vista/Escondido diversion dam upstream to Henshaw Reservoir, more than 30 miles upstream of the project area.

The CDFW completed surveys for native *O. mykiss* within the lower San Luis Rey near Oceanside in 1999 and the results were negative. During a CDFW survey on 3 May 2007, one *O. mykiss* was found within the Corps' project boundary. Digital photographic images of the *O. mykiss* were taken and its location GPS (M. Larson, pers. comm., 8 May 2007). The steelhead was about 20 inches in length, appeared to be healthy, in riverine habitat with a good canopy cover from the large willows or cottonwoods, and a moderately deep holding pool. The CDFW emphasized that the riverine habitat in which the *O. mykiss* was observed on the lower San Luis Rey River is strictly migration habitat on their way to their spawning habitat up stream on tributaries to the San Luis Rey River. Nonetheless, since the implementation of the Corps FRM O&M mowing action, water quality monitoring during the winter season, vireo and flycatcher population monitoring, vegetation sampling, restoration implementation and maintenance year round, no *O. mykiss* have been detected or observed during the last five years. Corps biologists as well as Corps contract biologist have been on the SLRR during all vegetation management and water quality monitoring activities and have not detected this species.

In summary, according to Titus et. al (2013), no formal records of steelhead use were discovered for the San Luis Rey River, although steelhead were reportedly caught there by anglers. The dam that forms Lake Henshaw reduces the downstream river flow, and blocks steelhead access to the uppermost portion of the drainage. The native San Luis Rey steelhead stock is extinct (Nehlsen et al. 1991), although resident rainbow trout persist in headwater tributaries such as Pala and Pauma creeks (Behnke 1992; Swift et al. 1993). Hubbs 1946 summarizes that rivers in coastal southern California are rarely used for steelhead spawning except in years where there is heavy storm runoff from intense precipitation.

The Whelan restoration site is not part of the southern California steelhead critical habitat. The southern California steelhead DPS does include the San Luis Rey River but to date no steelhead have been detected or observed by CDFW is suspect even though a digital photographic images of the *O. mykiss* were taken and its location GPS on the lower San Luis Rey River. The project restoration site does not contain any attributes for steelhead habitat and has been cut off from the mainstem of the river for over 20 years and has become upland habitat. Therefore, the restoration effort will have no effect on steelhead or their southern California DPS.

Future Maintenance

Future maintenance would be overseen by Corps restoration biologists or the Corps contractor (approximately 5 years), and will ultimately be managed by the City of Oceanside. Future maintenance will include habitat management activities such as weed control, supplemental watering, remedial planting, herbivory protection, trash removal, and access control. Potential impacts to biological resources as a result of future maintenance would be similar to the initial restoration implementation, but less in scale and duration. The environmental commitments identified below would be implemented during future maintenance activities to minimize potential impacts to biological resources. Potential impacts would be less than significant.

Environmental Commitments

Environmental commitments for the biological resources include avoidance and minimization measures under the ESA:

B-1 Staging site must be located inside the mitigation site (avoidance).

B-2 Implementation of the passive and active restoration will be accomplished from 3 March 2014 to 11 April 2014 (minimization).

B-3 Ingress and egress is established through MCBCP and the Whelan Bird Conservancy existing dirt roads (avoidance).

B-4 Qualified knowledgeable and experienced least Bell's vireo biologists will monitor the entire construction (minimization) activities as well as planting activities. The qualified biologist shall monitor construction activities throughout the duration of the project to ensure that all practicable measures are being employed to avoid incidental disturbance of habitat and any target species of concern outside the project footprint. The project biologist shall be empowered to halt work activity if necessary.

B -5 Construction employees shall strictly limit their activities, vehicles, equipment, and construction materials to the proposed footprint and designated staging areas and routes of travel. The construction area(s) shall be the minimal area necessary to complete the project and shall be specified in the construction plans. All people on site shall be instructed that their activities are restricted to the construction areas.

B-6 The removal of native vegetation shall be avoided and minimized to the maximum extent practicable. Temporary impacts shall be returned to pre-existing contours and revegetated with appropriate native species.

B-7 Vireo habitat that does not have to be grubbed and cleared will be left intact and not removed. Fencing, other markers, and daily pre-construction briefings will be used to keep these habitat patches from construction equipment.

B-8 To avoid attracting predators of the target species of concern, the project site shall be kept clean of debris as possible. All food related trash items shall be enclosed in sealed containers and regularly removed from the site.

B-9 Equipment storage, fueling and staging areas shall be located to minimize risks of direct drainage into riparian areas or other environmentally sensitive habitats. These designated areas shall be located in such a manner as to prevent runoff from entering sensitive habitats. All project related spills of hazardous materials shall be reported to appropriate entities including but not limited to the City of Oceanside, USFWS, and CDFG, RWQCB and shall be cleaned up immediately and contaminated sails removed to approved disposal areas.

B-10 Erodible fill material shall not be deposited into water courses. Brush, loose soils, or other similar debris material shall not be stockpiled within the stream channel or on its banks.

B-11 Stockpiling of materials and other aspects of construction staging shall be limited to designated areas, disturbed areas without native vegetation, areas to be impacted by project development or in non sensitive habitats.

B-12 "No-fueling zones" shall be established within a minimum of 10 meters (33 feet) from all drainages and fire sensitive areas.

5.3 Air Quality

Significance Criteria

Impacts to air quality would be considered significant if an alternative:

- Exceeds daily CEQA thresholds
- Exceeds Clean Air Act General Conformity de minimis thresholds

Alternative 1: No Action

Alternative 1 (No Action Alternative) would not result in restoration, habitat management, or any other activities in the foreseeable future. There would not be any sources of emissions at the

Whelan Mitigation Site. Therefore, no emission impacts would result under the No Action Alternative.

Alternative 2: Channel and Overbank Flooding Alternative

Under Alternative 2, earthmoving equipment would be used to establish a 1,500 foot long low-flow channel within the Whelan Mitigation Site. Construction would affect approximately five acres of land and would require the use of a bulldozer, an excavator, two scrapers and two off-highway trucks. One week would be required to clear and grub the channel alignment, and three weeks would be required to excavate the channel.

CalEEMod, an air emissions modeling program utilized by all air districts within California, was used to estimate emissions associated with the work described above. Emissions results were compared to the California Environmental Quality Act's (CEQA) daily construction threshold and the Clean Air Act's (CAA) de minimis thresholds per the General Conformity Rules.

Table 5.3-1. Comparison of Daily Estimated Emissions to CEQA Daily Thresholds

Pollutant	Estimated Emissions (lb/day)			CEQA Threshold (lb/day)
	Alternative 2	Alternative 3	Alternative 4	
CO	1.11	0.61	2.6	550
NO_x	1.83	1.05	5.8	55
ROG	0.22	0.11	0.66	55
SO_x	0	0	0.0	150
PM_{10}	0.44	0.33	0.22	150
$PM_{2.5}$	0.27	0.16	0.27	55

Table 5.3-2. Comparison of Annual Estimated Emissions to CAA de minimis Thresholds

Pollutant	Estimated Emissions (tons/year)			CAA de minimis Thresholds (tons/year)
	Alternative 2	Alternative 3	Alternative 4	
VOC	0.04	0.02	0.12	10
NO_2	0.33	0.19	1.04	10
PM_{10}	0.08	0.06	0.04	70
$PM_{2.5}$	0.05	0.03	0.05	100
CO	0.2	0.11	0.47	100

Based on the above, air quality impacts associated with Alternative 2 would not exceed daily CEQA emissions thresholds or the CAA annual General Conformity thresholds. Therefore, Alternative 2 would entail less than significant impacts to air quality.

Construction associated greenhouse gas emissions under Alternative 2 is 33.04 metric tons.

Future Maintenance Emissions

Future maintenance would be performed by the City of Oceanside and include habitat management activities such as weed control, supplemental watering, remedial planting, herbivory protection, trash removal, and access control. Potential on- and off-site emission sources would be the same as the initial phases of restoration; however, the scale and duration of long term habitat management activities is anticipated to be much less than the initial periods.

Onsite air pollutant emissions would principally consist of exhaust emissions from heavy-duty diesel- and gasoline-powered equipment, as well as fugitive particulate matter from soil disturbed during restoration activities. Use of a mower/masticator is not expected, and therefore a fueling truck would not be required during long term management. No additional earth moving would occur. Offsite exhaust emissions would result from workers commuting to and from the restoration or mitigation site, as well as from limited truck trips for hauling material (e.g. vegetation and other debris) from the site to a disposal site and plant delivery, as needed.

No additional calculations were performed for proposed maintenance activities since these activities would be similar in nature to the initial restoration implementation but less in scale, resulting in lower anticipated emissions. Annual maintenance emissions would be well below the General Conformity de minimis thresholds for the ozone precursors and other pollutants. Therefore, emissions resulting from maintenance activities would not be significant. Emissions of greenhouse gases associated with operation of the site would be negligible.

Alternative 3: Natural Scour Alternative

Under Alternative 3, earthmoving equipment would be used to lower the elevation of a 1,700 foot long rock levee adjacent to the Whelan Mitigation Site. Construction would affect approximately five acres of land and would require the use of one bulldozer and two off-highway trucks. One week would be required to clear and grub the channel alignment, and two weeks would be required to excavate the channel.

Air emissions associated with construction of Alternative 3 are shown in Tables 5.3-1 and 5.3-2 above. Based on the results, air emissions associated with consumption of Alternative 3 would be less than significant.

Construction associated greenhouse gas emissions under Alternative 2 is 19.04 metric tons.

Air emissions associated with future maintenance of the site would be similar to that characterized for Alternative 2.

Alternative 4: Channel Overbank Flooding Natural Scour Alternative (Preferred Alternative)

Under Alternative 4, earthmoving equipment would be used to lower the elevation of a 1,700 foot long rock levee adjacent to the Whelan Mitigation Site, establish a 1,500 foot long low-flow channel, and grade 18 acres of land. Construction would entail the use of equipment in Table 3.3-3. One week would be required to clear and grub the channel alignment, and four weeks would be required to complete construction.

Air emissions associated with construction of Alternative 4 are shown in Tables 5.3-1 and 5.3-2 above. Based on the results, air emissions associated with consumption of Alternative 3 would be less than significant.

Construction associated greenhouse gas emissions under Alternative 4 is 115.87 metric tons.

Air emissions associated with future maintenance of the site would be similar to that characterized for Alternative 2.

General Conformity Determination

The Clean Air Act (CAA), 40 CFR Part 93.153 states that a conformity determination is required for each pollutant where the total of direct and indirect emissions in a non-attainment or maintenance area caused by a Federal action would exceed the de minimis Federal standards established in 40 CFR 93.153. A conformity determination for Alternative, the preferred alternative, would only be mandated if the direct and indirect emissions from the proposed activities exceed the identified thresholds. As per the calculations in Appendix B, the CO, ROG, NOx, SOx and particulate matter emissions fall well below these de minimus levels as prescribed in 40 CFR 93.153(b). Therefore, Alternative 4 conforms to the Federal Clean Air Act as amended in 1990 and a General Conformity Determination is not required.

Environmental Commitments

AQ-1 Minimize amount of disturbed area and limit vehicle speeds to 15 mph or less within the work areas.

AQ-2 After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, or revegetating, or by spreading soil binders until work is completed so that dust generation will not occur.

AQ-3 Only heavy-duty diesel-powered construction equipment with engines meeting California Air Resources Board/U.S. EPA Tier 2 certification levels or engines manufactured after 2005 shall be used.

AQ-4 The engine size of construction equipment shall be the minimum practical size.

AQ-5 The number of pieces of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number are operating at any one time.

AQ-6 Construction equipment shall be maintained in tune per the manufacturer's specifications.

AQ-7 Catalytic converters shall be installed on gasoline-powered equipment, if feasible.

AQ-8 Diesel catalytic converters, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by U.S. EPA or California Air Resources Board shall be installed on equipment operating on-site.

AQ-9 Idling of heavy-duty diesel trucks during loading and unloading shall be limited to five minutes; auxiliary power units should be used whenever possible. State law requires drivers of diesel fueled commercial vehicles weighing more than 10,000 pounds:

- Shall not idle the vehicle's primary diesel engine for greater than 5 minutes at any location
- Shall not idle a diesel-fueled auxiliary power system (APS) for more than 5 minutes to power a heater, air conditioner, or any ancillary equipment on the vehicle if you have a sleeper berth and you are within 100 feet of a restricted area (homes and schools).
- Construction worker trips should be minimized by requiring carpooling and by providing for lunch onsite.

AQ-10 The restoration contractor shall be responsible for obtaining and complying with all applicable permits and permit conditions.

5.4 Earth Resources

Protection of unique geologic features and minimization of soil erosion are considered when evaluating potential impacts to earth resources and geology, as well as limitations due to potential geologic hazards. An impact to earth resources and geology would be significant if it would meet the following significance criteria:

- Project activities occur on a geologic unit or soil that is unstable or that would become unstable as a result of the project and would potentially result in a landslide, lateral spreading, subsidence, liquefaction, or collapse.

Impacts that would be expected to occur with regards to earth resources and geology under all project alternatives are discussed below. Environmental commitments included as part of the Proposed Action are also discussed below.

Alternative 1: No Action

The No Action Alternative would not have any impacts associated with major or rapid changes to the topography, soils, or geology of the area. The existing patterns of floods, erosion, and deposition within the San Luis Rey River floodplain would continue or change naturally.

Alternative 2: Channel and Overbank Flooding Alternative

As discussed in Section 4.4, the soils underlying the proposed site consist of alluvial materials and generally have rapid permeability. Ground disturbance associated with Alternative 2 would be limited to invasive exotic plant species removal, planting activities, and channel excavation. Incidental ground disturbance may occur during mowing of biomass of invasive exotic plant species. Native plant species would be planted in select areas within the site where invasive exotic plant species were eradicated and removed. A small channel would be excavated as part of Alternative 2 in order to provide connectivity between the main river thalweg and the interior portion of the Whelan site. The proposed dimensions of the channel would be 36' wide bottom (40' top width) by 1' deep low-flow trapezoidal channel with a 2:1 slope. Approximate length of channel is 1,500 feet.

The proposed restoration and habitat management activities would not result in changes in the overall topography at the site. The proposed activities would not promote conditions for landslides, lateral spreading, subsidence, liquefaction, or collapse of the ground to occur. The proposed channel excavation would be limited in scope and area. The excavated material may be stockpiled at the staging site temporarily for re-use by the City or other entity at a later time, or transported offsite to an approved landfill or other site for re-use. The excavated material would be limited in quantity (approximately 5,200 bcy) and any temporary stockpiling would result in a small footprint outside of the 10-year floodplain.

Planting of native plant species would reduce the risk of soil erosion where invasive exotic plants are controlled, which would create more stable conditions on site. If significant rain events occur during or immediately following the excavation or removal of invasive exotic plant species, erosion and subsequent deposition of the top soil may occur. This would not be considered significant since the proposed channel is small in size and scope, and overall coverage of invasive exotic plant species is patchy throughout the site. Thus erosion would be localized and limited to relatively small areas or patches within the site. Alternative 2 would result in a localized change in overbank flooding and resulting erosion and deposition at the Whelan site, but would not change overall patterns of floods, erosion, and deposition within the surrounding San Luis Rey River floodplain. The Proposed Action would not result in significant impacts to earth resources and geology.

Future Maintenance

Future maintenance would be overseen by the Corps and performed by the City of Oceanside. Maintenance plans include habitat management activities such as weed control, supplemental watering, remedial planting, herbivory protection, trash removal, and access control. Minor

ground disturbing activities would be limited to weed control and remedial planting. These activities would not promote conditions for landslides, lateral spreading, subsidence, liquefaction, or collapse of the ground to occur. Future maintenance activities would not result in changes to existing overall patterns of floods, erosion, and deposition within the San Luis Rey River floodplain. Potential impacts to earth resources and geology as a result of future maintenance activities would be minimal and not significant.

Environmental Commitments

ER-1 The Corps shall avoid grading and excavation activities within the San Luis Rey River to the maximum extent feasible, and shall not conduct grading and construction activities during a rain event. Removal of the rock rubble levee at the head and mouth of the low-flow pilot channel will take place during the final phase of construction to avoid water flows into the site during construction activities. The Corps shall prepare and implement an erosion and sedimentation control plan including both temporary and long-term best management practices for channel excavation work. Prior to work conducted within the rainy season, extensive measures shall be implemented to avoid contamination of surface water. All requirements shall be shown on grading plans. Condition shall be adhered to throughout all grading and construction periods. The Corps shall retain a copy of erosion and sedimentation control plan on the construction site, and shall document compliance in monitoring reports.

ER-2 The Corps or construction contractor shall be responsible for obtain all applicable permits including any grading and/or stockpiling permits from the County of San Diego.

Environmental Commitment WR-1 would be implemented in addition to the measures listed above to minimize potential impacts to Earth Resources.

Alternative 3: Natural Scour Alternative

Alternative 3 would involve passive and active restoration as described for Alternative 2, but would also include the removal of 1500 linear feet (600 running feet) of rock rubble levee and the creation of a 50’ wide pilot channel. The proposed dimensions of the channel would be 46’ wide bottom (50’ top width) by 1’ deep low-flow trapezoidal channel with a 2:1 slope. Approximate length of channel is 1,500 feet.

Removal of the rock rubble levee would increase the frequency for overbank flooding at the Whelan Mitigation Site from the current 10-year cycle to a 2-year flood cycle. As a result, the interior areas of the Whelan Mitigation Site would be wetted more frequently compared to Alternative 2, and would likely be periodically inundated during 2-year flood events. Proposed activities associated with Alternative 3 would cause a localized change in overbank flooding, resulting in sediment erosion and deposition at the Whelan site. Potential impacts to Earth resources and geology associated with Alternative 3 would be similar to Alternative 2: localized topographical changes that will not affect the overall patterns of floods, erosion, and deposition within the surrounding San Luis Rey River floodplain. The Proposed Action would not result in significant impacts to Earth resources and geology.

The overall topography of the upland and lowland areas within the site would remain the same. Long-term maintenance related impacts would be similar to Alternative 2. Potential impacts on Earth resources and geology would be less than significant. Environmental commitment identified for Alternative 2 would also be proposed for Alternative 3.

Alternative 4: Channel Overbank Flooding and Natural Scour Alternative (Preferred Alternative)

Alternative 4 would entail the removal of approximately 140,000 cubic yards of sediment throughout interior segments of the 19.2 acre project footprint. While most of the excavated material may be exported for a beach sand (92,000 cubic yards) replenishment project, the unusable material (approximately 50,000 cubic yards) will be used onsite to create native upland habitats that would typically buffer riparian areas. The rock rubble that is removed from the levee will be used to create between 10 and 20 small rubble mounds to serve as habitat for burrowing owls. The remaining rock rubble will be placed along the toe of slope where material was excavated for levee construction. Currently, the toe of slope is a steep escarpment. Excess rock rubble will be placed along the current toe and then capped with a minimum of 18" of soil, creating a gentler slope along the hillside and removing the steep grade brake towards the bottom.

Potential impacts to Earth resources and geology associated with Alternative 4 would be similar to Alternatives 2 & 3: localized topographical changes that will not affect the overall patterns of floods, erosion, and deposition within the surrounding San Luis Rey River floodplain. The Proposed Action would not result in significant impacts to Earth resources and geology.

The overall topography of the upland and lowland areas within the site would remain the same. Long-term maintenance related impacts would be similar to Alternative 2. Potential impacts on Earth resources and geology would be less than significant. Environmental commitment identified for Alternative 2 would also be proposed for Alternative 3.

5.5 Land Use

This section examines potential impacts associated with the alternatives on land use in the area of the Proposed Action. Land use impacts resulting from the Proposed Action area could be considered significant if they cause any of the following results:

- The creation of substantial incompatibilities between existing or planned uses, general plan policies or regulations;
- The creation of nuisance impacts, such as noise or dust, to nearby or adjacent land uses.

Alternative 1: No Action

The No-Action Alternative would not conflict with applicable land use plans or policies, or result in incompatibilities between existing or planned uses in the area. The No-Action Alternative would not create nuisance impacts for local residents and sensitive receptors. At this time, no

known land use impacts are anticipated to occur at the site from other planned projects. Based on available information, the No Action Alternative is not expected to result in impacts to land use.

Alternative 2: Channel and Overbank Flooding Alternative

Alternative 2 would not create incompatibilities between existing or planned uses within onsite or adjacent land uses. The Proposed Action would result in the improvement of degraded riparian habitat within the San Luis Rey River floodplain, which would be a benefit to wildlife and water quality. The proposed mitigation site lies within the City of Oceanside and is zoned as Open Space. Alternative 2 would maintain and enhance the rural character of the site by the restoration and habitat management activities. This would be consistent with the existing and planned uses and zoning of this site as identified in the County of San Diego General Plan.

Alternative 2 would also be consistent with the County's Conservation and Open Space Element. The proposed restoration and habitat management activities would promote the goals and policies for biological resources including contributing towards Inter-Connected Preserve System, Sustainability of the Natural Environment, and Protection and Enhancement of Wetlands. The Proposed Action would not conflict with the other goals or policies related to Water Resources; Agricultural Resources; Cultural Resources; Paleontological Resources and Unique Geologic Features; Mineral Resources; Visual Resources; Air Quality, Climate Change, and Energy; and Park and Recreation Facilities.

Alternative 2 may generate some nuisance impacts, such as temporary noise, dust, and interference with traffic to local residences adjacent to the project. Potential impacts would be temporary and not significant. See Section 5.6 Noise, Section 5.3 Air Quality, and Section 5.7 Transportation for a detailed discussion.

Future Maintenance

Future maintenance would be overseen by Corps' restoration biologists, and performed by the City of Oceanside. Maintenance would include habitat management activities such as weed control, supplemental watering, remedial planting, herbivory protection, trash removal, and access control. These activities would be consistent with existing or planned uses with nearby or adjacent land uses, and with the County of San Diego's General Plan's goals and policies. As with the initial restoration implementation, maintenance activities may generate some nuisance impacts, such as temporary noise, dust, and interference with traffic to local residences adjacent to the project. However, potential impacts would be limited in scale and duration, and not significant.

Environmental Commitments

LU-1 Activities likely to create noise and dust shall be restricted to the hours of 7 a.m. to 5 p.m. daily, and shall be preceded by notification by the Corps, City, or restoration contractor of nearby residences within at least a 24-hour period of commencement of activities. The notifications shall describe the character of the activities and their duration. This mitigation

measure is designed to enable local residents to modify their activities to reduce potential impacts.

Alternative 3: Natural Scour Alternative

Alternative 3 would not create incompatibilities between existing or planned uses with nearby or adjacent land uses. Alternative 3 would involve passive and active restoration as described for Alternative 2, but the removal of 1500 linear feet (600 running feet) of rock rubble levee would promote natural scour during flood events. Potential land use impacts associated with Alternative 3 would be similar to Alternative 2: this alternative would be consistent with existing or planned uses within onsite or adjacent land uses, and with the County of San Diego's General Plan's goals and policies. Long term maintenance related impacts would be similar to Alternative 2. Environmental commitment identified for Alternative 2 would also be proposed for Alternative 3.

Alternative 3 may generate some nuisance impacts, such as temporary noise, dust, and interference with traffic to local residences adjacent to the project. Potential impacts would be temporary and not significant. See Section 5.6 Noise, Section 5.3 Air Quality, and Section 5.7 Transportation for a detailed discussion.

Alternative 4: Channel Overbank Flooding and Natural Scour Alternative (Preferred Alternative)

Potential land use impacts associated with Alternative 4 would be similar to Alternative 2 and 3: the Preferred Alternative would be consistent with existing or planned uses within onsite and adjacent land uses, and with the County of San Diego's General Plan's goals and policies. Long term maintenance related impacts would be similar to Alternative 2 & 3, except that Alternative 4 has a larger project footprint (19.2 acres). Environmental commitments identified for Alternative 2 & 3 (Section 5.5.2) would also be proposed for Alternative 4.

Alternative 4 may generate some nuisance impacts, such as temporary noise, dust, and interference with traffic to local residences adjacent to the project. Potential impacts would be temporary and not significant. See Section 5.6 Noise, Section 5.3 Air Quality, and Section 5.7 Transportation for a detailed discussion.

5.6 Noise

Noise impacts would be considered significant if the alternative:

- Generates an ambient noise level above 50 dBA within 500 feet of a residential zone between the hours of 8:00 p.m. and 7:00 a.m. (City of Oceanside Noise Element, General Plan 2002).
- Results in the operation of construction equipment at a level in excess of 85 dBA at 100 feet from the source (City of Oceanside Noise Element, General Plan 2002).

- Exceeds the ambient noise level by more than 5 dBA between the hours of 6:00pm and 7:00am (City of Oceanside Noise Element, General Plan 2002).

Alternative 1: No Action

The No Action Alternative would not have any impacts associated with increases in noise in the area of the proposed project.

Alternative 2: Channel and Overbank Flooding Alternative

Construction

On-site noise during restoration and habitat management activities would occur primarily from diesel- and gasoline-powered equipment, such as the mowers, dozers, loaders, portable processors, various trucks, and hand equipment (i.e., chainsaws, line-trimmers, etc.). For invasive exotic plant eradication and planting activities, operation of the mower and hand equipment is expected to be in use for two to three weeks, while trucks may be in operation for four to six weeks. For channel excavation activities, operation of the dozer, loaders, portable processor, and trucks would be in operation for up to two weeks.

Noise levels from these pieces of equipment range from approximately 70 dBA to 78 dBA at a distance of 100 feet from noise source. Furthermore, noise levels typically decrease by 6 dBA with each doubling of distance from the source of noise. The closest distance from the sensitive receptors to the edge boundary of the proposed maintained areas is approximately 200 feet (western edge of Whelan Mitigation Site to adjacent residential development). Therefore, work at the edge of the site would result in 64 dBA to 72 dBA at adjacent residential developments.

The proposed activities would not be limited to the outer boundary of the site but would occur throughout the site. Furthermore, while operations would occur throughout the workday, equipment would not be operated at full power continuously and crew breaks would not result in continuous peak noise levels. Last, construction would be limited to working hours between 7 a.m. and 5 p.m. Upon completion of construction, noise levels would return to pre-project levels. Based on the above, construction associated with Alternative 2 would not result in significant impacts to noise.

Future Maintenance

Future maintenance would be performed periodically by the City of Oceanside and include habitat management activities such as weed control, supplemental watering, remedial planting, herbivory protection, trash removal, and access control. Potential impacts noise impacts as a result of maintenance activities would be less compared to levels produced during the initial restoration implementation, primarily because maintenance activities would be reduced in scale and duration. On-site sources may include diesel- and gasoline-powered equipment, such as a

mower, various trucks, and hand equipment (i.e., chainsaws, line-trimmer). Potential noise impacts during future maintenance would be minimal and not significant.

Environmental Commitments

N-1: The project operator shall insure that the contractor maintains proper mufflers on all internal combustion and vehicle engines used during initial restoration implementation and long term operation and maintenance activities to reduce noise to the maximum feasible extent.

Alternative 3: Natural Scour Alternative

Noise impacts for Alternative 3 would be similar to that characterized for Alternative 2. Alternative 3 would involve passive and active restoration as described for Alternative 2. Potential noise impacts associated with Alternative 3 would be of longer duration than Alternative 2 because of the additional noise from removing the 1,500 linear feet (600 running feet) of rock rubble levee and performing excavation between the San Luis Rey River and the pilot channel. Long term maintenance related impacts would be similar to Alternative 2. Environmental commitments identified for Alternative 2 would also be proposed for Alternative 3.

Alternative 4: Channel Overbank Flooding and Natural Scour Alternative (Preferred Alternative)

Noise impacts for Alternative 4 would be similar to that characterized for Alternative 2. Potential noise impacts associated with Alternative 4 would be of longer duration than Alternative 2 because of the additional noise from removing the 1,500 linear feet (600 running feet) of rock rubble levee, performing excavation between the San Luis Rey River and the pilot channel, and grading over a larger area. Long term maintenance related impacts would be similar to Alternative 2. Environmental commitments identified for Alternative 2 would also be proposed for Alternative 4.

5.7 Transportation

Transportation impacts would be considered significant if the alternative:

- Cause closures of major roadways; restrict access to or from adjacent land uses; or restrict the movement of emergency vehicles.

Alternative 1: No Action

No restoration or habitat management activities would occur under the No Action Alternative. Therefore, no transportation impacts are anticipated.

Alternative 2: Channel and Overbank Flooding Alternative

No roads would be closed to traffic as a result of the restoration and habitat management activities. Minimal traffic would be generated on roadways in the area of the proposed project from workers commuting to and from the site, trucks, and equipment delivery. It is anticipated

that approximately 6 to 9 workers would commute to and from the mitigation site each workday, and an additional 5 workers when channel excavation activities are underway. Workdays are estimated at 8 hours per day (restricted between 7:00 am and 5:00 pm), 5 days per week. Potential impacts to local traffic conditions associated with commuting workers would be less than significant.

The construction vehicles listed in Table 4.7-1 (see Section 4.7) will be transported through Marine Corps Base Camp Pendleton, with a singular ingress/egress at the start/conclusion of the proposed action. Routing the construction equipment through Camp Pendleton will eliminate any potential delays within the residential neighborhoods that are adjacent to the Whelan mitigation site. Potential impacts to local traffic conditions associated with a single ingress/egress through Camp Pendleton would be less than significant.

Future Maintenance

Future maintenance would be performed by the City of Oceanside and include habitat management activities such as weed control, supplemental watering, remedial planting, herbivory protection, trash removal, and access control. Potential impacts to local traffic conditions as a result of maintenance activities would be similar to the initial restoration implementation, but reduced in scale. Debris required for removal and disposal during the maintenance period is expected to be less than that required for the initial restoration implementation. Length of each maintenance period is anticipated to be less than the initial restoration implementation, but could last up to 4 weeks. Potential impacts to traffic circulation and systems would be minimal and not significant.

Alternative 3: Natural Scour Alternative

Traffic impacts for Alternative 3 would be similar to that characterized for Alternative 2.

Alternative 4: Channel Overbank Flooding and Natural Scour Alternative (Preferred Alternative)

Traffic impacts for Alternative 4 would be similar to that characterized for Alternative 2.

5.8 Cultural Resources

Alternative 1: No Action

Under the No Action Alternative that would be no mechanized earthmoving activities resulting in disturbance of land. As a result, there would be no impacts to cultural resources.

Alternative 2: Channel and Overbank Flooding Alternative

Under Alternative 2, there would be ground disturbing activities along the alignment of the proposed 1,500 foot-long low-flow channel, affecting approximately 5 acres of land. Per an updated reconnaissance survey was conducted by the Corps archeology staff, there were no historical or prehistoric resources eligible for the National Register of Historic Places (NRHP) present within the area of potential effects (APE) for the proposed undertaking. As a result, no

NRHP-listed cultural resources would be affected. A cultural resource site not eligible for listing on the NRHP would be avoided. In the event that previously unknown resources are found during ground disturbing operations, the Corps would stop construction until the requirements of 36 CFR 800.13 are met. Furthermore, a programmatic agreement (PA) was executed for the larger San Luis Rey Flood Control Project in 1989. Adherence to the terms and conditions of the PA would ensure compliance with Section 106 of the act (as implemented by 36 CFR 800).

Based on the above, Alternative 2 would result in less than significant impacts to cultural resources.

Future Maintenance

Future maintenance activities would not entail mechanized earthmoving activities that could affect cultural resources. Therefore, maintenance activities would not result in impacts to cultural resources.

Environmental Commitments

CR-1 In the event that previously unknown cultural resources are uncovered during construction, work in the immediate area shall cease until the requirements in 36 CFR 800.13 are complied with.

Alternative 3: Natural Scour Alternative

Under Alternative 3, there would be ground disturbing activities along the alignment of the 1,700 foot-long rock levee, affecting approximately 5 acres of land. Impacts to cultural resources would be similar to those characterized for Alternative 2.

Alternative 4: Channel Overbank Flooding and Natural Scour Alternative (Preferred Alternative)

Under Alternative 4, there would be ground disturbing activities affecting approximately 18 acres of land. Impacts to cultural resources would be similar to those characterized for Alternative 2.

5.9 Socioeconomics, Environmental Justice, and Growth Inducement

The following discussion identifies the potential socioeconomic effects of the Proposed Action activities on the communities within the vicinity of the Proposed Action activities. Based on the existing conditions discussed above, impacts would be considered significant if the alternative results in:

- A substantial shift in population, housing, and employment.
- Disproportionate environmental impacts to minority or low-income populations.

Alternative 1: No Action Alternative

The No Action Alternative would not involve any restoration or habitat management activities. The degraded habitat would not be improved and invasive non-native plants would likely expand in its coverage within the 18 acre site. Socioeconomic resources would remain unchanged.

Alternative 2: Channel and Overbank Flooding Alternative

- **Socioeconomics:** Under Alternative 2, work would be limited to the Whelan Mitigation Site adjacent to the San Luis Rey River. During the approximately 3 weeks of construction, an estimated 5 workers will be employed on the project. During the approximately 3 months of the planting phase, there will be 20-30 workers employed. There is the potential that local workers will be hired during the planting phase to augment the contracting staff. Alternative 2 would entail short-term construction work and would not attract a long-term working population to the project vicinity. Relative to the size of the local economy and the current and future expected rate of development, short-term construction work associated with the proposed restoration and habitat management would entail less than significant impacts.
- **Environmental Justice:** Alternative 2 entails short-term impacts to air quality, noise, and water quality. Furthermore, the median income levels and minority demographics of Oceanside and San Diego County are similar. Thus, minority or low-income communities would not be disproportionately affected by the implementation of Alternative 2.
- **Growth Inducement:** Alternative 2 entails construction of a mitigation site. The site would not induce economic or population growth or result in a direct population increase through the need for new employees or construction workers. Construction and operation of the site would not require construction of additional housing. Thus Alternative 2 would not result in growth inducing effects.

Future Maintenance

Proposed maintenance and habitat management activities would be limited to the local area, periodic, and short in duration. The work would not result in socioeconomic impacts within the adjacent communities; entail disproportionate impacts to minority or low-income communities; or induce growth.

Alternative 3: Natural Scour Alternative

The potential impacts from Alternative 3 are commensurate with those listed for Alternative 2. Impacts to socioeconomics, environmental justice, and growth inducement would be less than significant.

Alternative 4: Channel Overbank Flooding and Natural Scour Alternative (Preferred Alternative)

Under Alternative 4, approximately 10 workers would be required to the construction phase. The potential impacts from Alternative 4 are commensurate with those listed for Alternative 2. Impacts would be less than significant.

5.10 Hazardous and Toxic Materials

This section considers the impacts of the alternatives related to the existence of hazardous and toxic materials in the area of the Proposed Action. Based on the existing conditions discussed above, impacts would be considered significant if the alternative results in:

- Long-term exposure of humans, wildlife, wildlife habitat and the general environment to hazardous materials.

Alternative 1: No Action

No restoration, habitat management, or other actions would occur under the No Action Alternative. Therefore, there would not be impacts resulting from hazardous and toxic materials.

Alternative 2: Channel and Overbank Flooding Alternative

Alternative 2 is not anticipated to exposure of humans, wildlife, wildlife habitat and the general environment to hazardous materials. Equipment involved in restoration and habitat management activities would include the use of mowers, pick-up trucks equipped with a spray rig, stake-bed trucks, and trucks with roll-off containers, water trucks, and various hand equipment. Additionally, a dozer, loaders, portable processor, and trucks would be used for the proposed channel excavation component of the restoration action. Equipment maintenance during restoration activities could result in minor leaks and spills of potentially hazardous hydrocarbons, organic fluids or pesticides.

As was described in Section 4.10 (Hazardous & Toxic Materials), a review of environmental regulatory databases for potential contamination sites for the subject site and adjacent and nearby properties was completed. The proposed mitigation site was not listed on the databases reviewed, but there was one listing of a site approximately 1.1 miles southeast of the proposed site. However, the proposed restoration and habitat management activities would not contact this potentially contaminated site because the San Luis Rey River levees provide a physical barrier between the Whelan Mitigation Site and the ENVIROSTOR listed site. The ENVIROSTOR listed site is also situated at an up-gradient from the Whelan Mitigation Site. For these reasons, Alternative 2 is not expected to mobilize contaminants, nor expose workers or the public to contaminated or hazardous materials. No impacts would likely occur.

Future Maintenance

Future maintenance would include habitat management activities such as weed control, supplemental watering, remedial planting, herbivory protection, trash removal, and access

control. Maintenance activities are not expected to mobilize contaminants, nor expose workers or the public to contaminated or hazardous materials. No impacts would likely occur.

Alternative 3: Natural Scour Alternative

Potential impacts from Alternative 3 are commensurate with those listed for Alternative 2.

Alternative 4: Channel Overbank Flooding and Natural Scour Alternative (Preferred Alternative)

The potential impacts from Alternative 4 are commensurate with those listed for Alternatives 2.

5.11 Aesthetics

This section examines the impacts of the alternatives to the aesthetics of the Whelan Mitigation Site and surrounding area. The factors considered in determining impacts on aesthetic resources typically include: (1) scenic quality of the proposed site; (2) viewing distance and degree to which the Proposed Action would dominate the view of the observer; (3) resulting contrast of facilities related to the Proposed Action with existing visual resources; and, (4) the level of public interest in the existing landscape characteristics and concern over potential changes.

The criteria used to assess the significance of impacts on aesthetic resources resulting from the alternatives take into consideration the factors described above, as well as relevant policies and guidelines pertaining to aesthetic resources. Relevant policies and guidelines include those within the Conservation and Open Space Element of the County of San Diego General Plan. An impact is considered significant if it results in one or more of the following:

- Direct, permanent changes to important existing scenic characteristics of a landscape that is viewed by a large number of viewers and/or one or more residences
- The impairment of, or obstruction to, views from public gathering places of scenic resources

Alternative 1: No Action

The No Action Alternative would not degrade the visual resources of the area. No passive or active restoration would occur at the Whelan Mitigation Site. The general landscape at the proposed site would remain the same; however, vegetation cover may change over time as invasive exotic plants are likely to expand its coverage within the area in the absence of habitat management.

Alternative 2: Channel and Overbank Flooding Alternative

Alternative 2 consists of restoring degraded riparian forest and scrub habitat through passive and active techniques, excavation of a small channel, and long term habitat management. Thus, there would be temporary impacts to aesthetics during construction of the site due to earth moving activities. Passive and active restoration techniques would involve the eradication of invasive exotic plants and establishment of native plants, which would result in higher quality riparian habitat. Additionally, the proposed channel excavation is expected to increase the frequency of

overbank flooding during storm events, which would help to restore more natural hydrogeomorphic processes at the mitigation site and improve habitat quality for the least Bell's vireo. Excavated material may be stockpiled at the staging site for later re-use by the City or other entities. The stockpile of approximately 90,000 cy of sand for beach rejuvenation is expected to be removed by the City of Oceanside; however, if left in place the stockpile could detract from the scenic view of this natural open space. The site would still remain visible from vantage points at the San Luis Rey River Trail and residences to the west and south of the Whelan Mitigation Site. The project area is at a lower elevation than the surrounding landscape, and would not impair or obstruct views of the surrounding scenic resources. Aesthetic impacts would be temporary upon growth of planted vegetation. Overall, Alternative 2 would not result in a change in the scenic characteristic of the river floodplain. The improvement of habitat quality at the proposed site would be beneficial to visual resources.

Future Maintenance

Future maintenance would be overseen by the Corps, and performed by the City of Oceanside. Planned maintenance would include habitat management activities such as weed control, supplemental watering, remedial planting, herbivory protection, trash removal, and access control. Potential impacts to aesthetic resources would be minimal during maintenance activities. The site would support native riparian vegetation and would be shielded from view by vegetation in adjacent areas. Future maintenance actions would not result in significant impacts to visual resources.

Alternative 3: Natural Scour Alternative

The potential impacts from Alternative 3 are commensurate with those listed for Alternative 2 (Section 5.11.2).

Alternative 4: Channel Overbank Flooding and Natural Scour Alternative (Preferred Alternative)

The potential impacts from Alternative 4 are commensurate with those listed for Alternatives 2 & 3 (Section 5.11.2).

5.12 Public Safety

This section addresses the potential impacts of the alternatives in relation to public safety. An impact is considered significant if it results in one or more of the following:

- Increased risks for fire, flood, and potential vector borne illnesses.

Alternative 1: No Action

The No Action Alternative would result in no restoration, monitoring, or habitat management actions taking place at the proposed mitigation site. Site conditions would remain the same. Risk of public safety hazards such as flooding, fire and vector-borne diseases would not change in this area. Giant reed coverage is likely to expand within the site, increasing the fire fuel load

at the site; however, this would not result in an increased risk since the rate of giant reed expansion would not be altered from existing conditions.

Alternative 2: Channel and Overbank Flooding Alternative

Alternative 2 would involve habitat restoration at the proposed mitigation site through passive and active techniques and long-term management. Giant reed and other invasive exotic plant species would be eradicated from the site and replaced with native plant species through natural recruitment or active planting. Overall vegetative cover within the site may increase over time as native plant species establish and mature. Alternative 2 would also include the excavation of a small channel to provide connectivity between the main flows of the San Luis Rey River and the Whelan Mitigation Site, thereby increasing the frequency of overbank flooding onto the site.

The Whelan Mitigation Site is within the 100-year floodplain area (FEMA Zone A99). Although the proposed channel excavation would be expected to increase the frequency of overbank flooding on to the mitigation site during storm events, this alternative would not result in an overall change in topography of the site or elsewhere within the floodplain. Therefore, the overall drainage of the site and through this section of the river would not change. The proposed channel would not increase the risk of flooding in relation to the FEMA 100-year floodplain. The Whelan Mitigation Site, approximately 18.0 acres, is a small portion of the overall San Luis Rey River floodplain. The proposed channel would be small in size within the overall river floodplain and watershed. Planted vegetation would not impede the flow of the San Luis Rey River, which lies adjacent to the southern boundary of the proposed site.

Although the overall vegetative cover may increase over time as native plant species establish and mature, the eradication of invasive exotic plant species, particularly giant reed and weedy grasses, would offset the contribution of increased vegetation cover to fire fuel loads. The removal of giant reed and weedy grasses may even reduce the overall fuel load at the site. Last, removal of the giant reed would be beneficial since it is more combustible than native plants.

Ponding of water would only occur during, and immediately following rainfall events during the winter months. The ponding of water may pose a hazard as stagnant waters encourage the reproduction and spread of disease via vectors such as mosquitoes. Water from these ponds should recede and dissipate immediately following the conclusion of a rain event because the sandy loam soil types within the Whelan Mitigation Site are characterized by high infiltration capacities. Since mosquitoes require 3-5 days before hatching, the spread of disease via mosquitoes would be unlikely. Alternative 2 would not significantly change the characteristics of the site to increase this risk.

The proposed site does not overlap with public access or use areas. Coordination between the Corps and the Whelan Bird Sanctuary (immediately east of Whelan Mitigation Site) is requisite to ensure that bird watchers and Whelan Bird Sanctuary staff are aware of the ingress/egress of construction equipment at the start and termination of the Proposed Action. The Whelan Bird Sanctuary (G. Stuart, personal communication December 17, 2013) informed the Corps that

participants of the monthly bird walks would be informed by Whelan Bird Sanctuary staff to stay away from the Whelan Mitigation Site until construction activities are finished at the end of March 2014.

Personnel safety is also paramount during the restoration and habitat management activities. Appropriate environmental commitments are proposed and would be implemented during the restoration and habitat management activities to ensure safety to personnel.

Future Maintenance

Future maintenance would be overseen by the Corps, and performed by the City of Oceanside. Planned maintenance includes habitat management activities such as weed control, supplemental watering, remedial planting, herbivory protection, trash removal, and access control. Since maintenance activities would not change the overall topography, flood frequency, or soil characteristics of the site, Potential impacts to public safety would be less than significant.

Environmental Commitments

PS-1 The Corps, City of Oceanside, or restoration contractor shall provide appropriate notice via signs, newspapers, and direct communication to local residents at least one week prior to and during restoration activities. Access to the site will be restricted to active habitat restoration and management personnel.

PS-2 The contractor shall employ appropriate signaling and signage to accommodate interruptions in existing traffic flows. These measures are defined in the Traffic Control Plan (see Section 5.7)

PS-3 Prior to implementation of the Proposed Action, the City of Oceanside shall notify relevant fire, police, and other emergency service agencies of the proposed work, areas of potential congestion, and traffic management methods to be used to ensure access at all times.

PS-4 A Safety Plan, in accordance with applicable Corps standards, shall be developed and implemented by the contractor during all restoration activities to ensure safety of all personnel, including evacuation procedures from the channel with a forecast storm event. The Corps shall approve the Safety Plan prior start of restoration activities.

Alternative 3: Natural Scour Alternative

The potential impacts from Alternative 3 are commensurate with those listed for Alternative 2 (Section 5.12.2). Environmental commitments identified in Section 5.12.2 will be followed.

Alternative 4: Channel Overbank Flooding and Natural Scour Alternative (Preferred Alternative)

The potential impacts from Alternative 4 are commensurate with those listed for Alternatives 2 & 3 (Section 5.12.2). Environmental commitments identified in Section 5.12.2 will be followed.

5.13 Public Services and Utilities

This section considers the potential impacts of alternatives on the provision of public services and utilities in the area of the Proposed Action. An impact is considered significant if it results in one or more of the following:

- An increase in demand for service that could result in capacity constraints to existing public service and utility providers.
- Long-term disruption of utility services.

Alternative 1: No Action

The No Action Alternative would result in no restoration, monitoring, or habitat management actions taking place at the proposed mitigation site. Therefore no impacts related to restoration activities or temporary increases in public services or utility demand would occur.

Alternative 2: Channel and Overbank Flooding Alternative

Alternative 2 would not significantly affect utility services, including water, power, gas, and wastewater. Water will be supplied to portable water towers from a fire hydrant connected to the City of Oceanside's mainline in the residential community to the west of the project site. The portable water towers will be placed in a staging area within the project footprint.

An estimated 100,000 gallons per day of water would be required over a 20-day work period (2 million gallons, or 6.13 acre-feet total) during restoration activities for dust abatement, cleaning of equipment, and irrigation of planting areas. The City of Oceanside's Urban Water Management Plan (2010) projects 31,792 acre-feet per year (AF/Yr) total water delivery for all uses through the year 2015. Therefore, the Proposed Action would increase the annual demand on the City of Oceanside's water delivery rates by 0.00019%.

Any wastewater generated during the restoration activities would be limited to that generated by project personnel and would be accommodated by portable toilets brought to staging areas for the restoration crew. These portable toilets would be emptied into septic tanks or municipal sewage systems. If portable toilets are not brought on site, personnel would use other available facilities offsite.

Solid waste, largely vegetative material and debris would be generated from the restoration activities. The waste material would be hauled offsite to a waste collection center, located near the town center of Fallbrook. The exact amount of waste material is unknown; however, based on general estimates of non-native plant cover, the amount of waste produced during a day would be a small percentage of the overall waste received at the collection center. Therefore, the Proposed Action would not significantly impact the local demands at the disposal site.

There are no known utility lines that traverse the proposed mitigation site. According to a Preliminary Title Report dated 21 March 2008, an easement was granted to SDG&E in 1924 for poles, wires, and incidental purposes and appeared to be within the proposed project area (Corps

2011). SDG&E provided the Corps with a recorded copy of Quitclaim of Easement. Therefore, no impacts to utility lines, operations, or servicers are expected.

Future Maintenance

Future maintenance would be overseen by the Corps, and performed by the City of Oceanside. Planned maintenance includes habitat management activities such as weed control, supplemental watering, remedial planting, herbivory protection, trash removal, and access control. The supplemental watering will consist of deep watering events for a period of 1 to 2 years during the dry season (summer/fall), and will taper off as the container plants develop roots that tap into the shallow groundwater. Estimates of irrigation water usage are variable based on the duration and intensity of the dry season, but a 26 week dry season would require approximately 104,000 gallons per year (40,000 plants x 1 gallon/plant/week). The potential impacts are considered less than significant because the irrigation plan is limited in scope and is a temporary measure. Potential impacts related to future maintenance would be similar to impacts for the initial restoration implementation, but smaller in scale and scope. These activities would not result in a significant increase in demand for public or utility services.

Environmental Commitments

PS-1 Prior to implementation of the Proposed Action, the City shall notify relevant fire, police, and other emergency service agencies of the proposed work, areas of potential congestion, and traffic management methods to be used to ensure access at all times.

Alternative 3: Natural Scour Alternative

The potential impacts from Alternative 3 are commensurate with those listed for Alternative 2 (Section 5.13.2). Environmental commitment PS-4 would be followed.

Alternative 4: Channel Overbank Flooding and Natural Scour Alternative (Preferred Alternative)

The potential impacts from Alternative 4 are commensurate with those listed for Alternatives 2 & 3 (Section 5.13.2). Environmental commitment PS-4 would be followed.

5.14 Recreation

This section examines potential impacts associated with the alternatives on recreation in the area of the Proposed Action. An impact is considered significant if it results in one or more of the following:

- Substantial disruption to access and use of recreational facilities or areas.
- Construction or operational activities substantially conflict with recreational uses.

Alternative 1: No Action

There are no direct recreational opportunities at the proposed mitigation site. The No-Action Alternative would not conflict with the enjoyment of the open space, since no restoration activities are entailed in this alternative. Vegetation cover may change over time as invasive exotic plants are likely to expand its coverage within the area.

Alternative 2: Channel and Overbank Flooding Alternative

There is no public access or direct recreational opportunities at the proposed mitigation site. Therefore, the Proposed Action would not result in direct impacts to recreational access or use at the site. There are recreational opportunities within the surrounding area, including pedestrian use of the San Luis Rey River Trail (south of the Whelan Mitigation Site), and bird watching activities at the Whelan Bird Sanctuary (east of Whelan Mitigation Site). However, the proposed restoration activities would not affect these sites.

Therefore, Alternative 2 would not result in significant impacts to recreation access or use.

Future Maintenance

Future maintenance would be overseen by the Corps, and performed by the City of Oceanside. Planned maintenance includes habitat management activities such as weed control, supplemental watering, remedial planting, herbivory protection, trash removal, and access control. These activities would not degrade recreational uses of surrounding sites. Future maintenance actions would not result in significant impacts to recreation access or use.

Alternative 3: Natural Scour Alternative

The potential impacts from Alternative 3 are commensurate with those listed for Alternative 2 (Section 5.14.2). Environmental commitments listed in Section 5.6 Noise, Section 5.3 Air Quality, and Section 5.7 Transportation will be followed.

Alternative 4: Channel Overbank Flooding and Natural Scour Alternative (Preferred Alternative)

The potential impacts from Alternative 4 are commensurate with those listed for Alternatives 2 & 3 (Section 5.14.2). Environmental commitments listed in Section 5.6 Noise, Section 5.3 Air Quality, and Section 5.7 Transportation will be followed.

6.0 CUMULATIVE IMPACTS

Under NEPA, cumulative effects are those impacts on the environment which result "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 those other actions (40 CFR § 1508.7). The CEQA guidelines define cumulative impacts similarly, stating,

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

The intent is to identify impacts of other past, present and future projects that, when considered together with the Proposed Action, may significantly compound or increase environmental impacts. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. Infrastructure, industrial, commercial, residential, and other projects located in close proximity to the proposed mitigation site considered to have the potential for creating cumulative impacts in association with the proposed project activity are identified in Table 6-1. A summary listing of Clean Water Act Section 404 permits issued by the Corps Regulatory Division is also provided in Table 6-2.

Table 6-1. Project List

Project Name	Project Description	Project Location	Types of Impacts	Expected or Actual Completion Date
Infrastructure/Industrial				
State Route 76	SR-76 Expressway Expansion	Melrose to South Mission Road	Biological resources, archaeological resources, construction noise and dust, water resources, transportation	2012
State Route 76	SR 76 East Segment Improvements Project	South Mission Road to I-15	Biological resources, archaeological resources, construction noise and dust, water resources, transportation	2015
Fenton/Pala Sand Mine	Sandmining and reclamation	2 miles north of I-15	Sediment transport impacts, biological impacts, potential head-cutting downstream impacts to hab./infrastructure	1980 to 2011
San Diego County Water Authority Water Pipeline Crossing Construction and Maintenance	Utility Line Water Supply Line	2 miles west of I-15	Construction and O&M projects with restoration	1980 to 2014
Envirepel Fallbrook Renewable Energy Facility (FREF)	Multi-purpose energy facility converting biomass materials into thermal and electric energy with an ultra low emissions process	South of San Luis Rey River, east of Pankey Road	Environmental analysis not completed	2013
Residential/Hotel/Commercial				
San Luis Rey Mitigation Bank (Bank Prospectus under development in 2011)	Develop a Corps wetlands bank along the San Luis Rey River	3-4 miles on the main river upstream of College Blvd.	Agricultural lands, riverine sandy areas, Arundo donax-infested areas	Projected for 2012-2013
Meadowood	Approx. 886 multi-family and single family dwelling units on 389.5 acres, parks, open space, elementary school,	Intersection of SR-76 and I-15	Biological resources, archaeological resources, construction noise and dust, water resources, transportation	Projected for 2020

	infrastructure including a waste water treatment plant			
Palomar Community College - North Education Center	Development of extension community college campus on 85-ac site	Northeast of intersection of SR-76 and I-15	Biological resources, archaeological resources, construction noise and dust, water resources, transportation	Projected for 2015
Campus Park	Mixed use development on 416.1-ac with 751 single- and multi-family dwelling units, community center, retail and office space, recreational amenities	Intersection of SR-76 and I-15	Biological resources, archaeological resources, construction noise and dust, water resources, transportation	Projected for 2020
Campus Park West	355 Residental units, 450,000 square feet of commercial and 400,000 square feet of industrial space, open space on approx. 118-ac	Northeast of intersection of SR-76 and I-15	Biological resources, archaeological resources, construction noise and dust, water resources, transportation	Projected for 2020
Lake Rancho Viejo	Residental development; part of constructed project with 450 residences and community amenities constructed	Intersection of SR-76 and I-15	Environmental completed; Biological resources, traffic, dust, archaeological resources	2013
Brooks Hills	Major subdivision of 281-ac into 219 lots	1815 Via Monserate	No significant impacts identified	Not identified
Other				
San Luis Rey River Park Master Plan	Conceptual design of a 1,600 ac regional park along the San Luis Rey River; includes passive and active recreation, habitat preservation, and a multi-use trail system	Western Oceanside to I-15	Biological resources, archaeological resources, construction noise and dust, water resources, transportation	Projected for 2016

Source: County of San Diego (2011a), Caltrans (2010)

Table 6-2. Corps Regulatory Permit Types

Clean Water Act Sect. 404 permits and Section 10 of the Rivers and Harbors Act- Corps Regulatory Permit Types[1]				
Permit Type	**Number of Permits**	**Location**	**Acres and Linear Feet of direct fill or work in waters of the U.S.**	**Acres and Linear Feet of Corps Section 404 Mitigation**
Letters of Permisson (LOPs)	7 LOPs	Pacific Ocean to Lake Henshaw	0.4 acres; 0 LF	0 ac.; 0 LF
Nationwide Permits (NWPs)	337 NWPs	Pacific Ocean to Lake Henshaw	155 acres; 2,056 LF	8 ac.;1,219 LF
Regional General Permits (RGPs)	28 RGPs	Pacific Ocean to Lake Henshaw	7.2 acres; 399 LF	0.4 ac.; 900 LF
Standard or Individual Permits (SIPs)	64 SIPs (1 Corps FEIS done for Corps Phase I permit)	Pacific Ocean to Lake Henshaw	280 acres; 41,517 LF	188; 27,727 LF

[1] Actions issued from 1980 to 2011 (based on Corps Regulatory ORM search of database in December 2011)

Source: Corps Regulatory ORM Database (2012).

Residential projects in vicinity of the proposed mitigation area are rural, semi-rural, and estate-type residential developments. A number of larger projects are planned for the area near SR-76 and I-15, approximately 3 miles upstream of the proposed mitigation site. These projects include Campus Park, West Campus Park, Palomar Community College North Education Center, and Meadowood. These planned developments include mixed single and multi-family residential units, commercial and office space, recreational amenities, and related infrastructure in the case of the Meadowood project.

Major infrastructure projects in the vicinity include the expansion of SR-76 to a four-lane expressway with controlled access by Caltrans. SR-76 runs in an east-west direction just north of the Whelan Mitigation Site. The expansion project identifies the proposed alignment to expand slightly southward from its existing location at the entrance of the proposed mitigation site. This project would involve major construction operations adjacent to the proposed mitigation site. Additionally, Caltrans is proposing to widen the San Luis Rey River just upstream of the Whelan Mitigation Site for mitigation for the widening project.

The County of San Diego is undertaking development of a regional park, San Luis Rey River Park, for which they have completed a master plan (County of San Diego 2008). The proposed park generally spans across the river from the west end of Oceanside to the I-15, with a number of nodes identified for active recreational opportunities. The County of San Diego Parks and Recreation Department is identifying available properties for acquisition and is actively working with Caltrans as they develop and implement their acquisition plan for the SR-76 expansion project (M. Massen, personal communication, 2012). The County signed a Memorandum of Understanding (MOU) with Caltrans that allows the County of San Diego the first option for receipt of excess lands from the expansion project for the regional park. Currently, the County intends to manage those lands as part of the regional park system.

As shown in Table 6-2, the Corps Regulatory Division has issued 7 Letters of Permission, 337 Nationwide Permits, 28 Regional General Permits, and 64 Standard or Individual Permits from 1980 to 2011 within the San Luis Rey River watershed, which spans from Lake Henshaw to the Pacific Ocean. According to the Regulatory ORM database, a total of about 442.6 acres have been impacted by direct fill or work in waters of the U.S. A total of 196.4 acres have been mitigated for impacts under Section 404.

Analysis for individual resource areas are addressed under the appropriate subsections below.

Water Resources

Water quality in the downstream reaches (approximately 15 miles) of the San Luis Rey is impaired due to urban and agricultural land uses within the watershed. The Whelan Mitigation Site is located within the impaired downstream reaches.

Construction of the Proposed Action entails earth moving activities within a flood plain. As such, the first rainfall or flooding subsequent to construction would entrain unconsolidated

topsoil into the water column, temporarily increasing turbidity. Since the entrained topsoil would be composed primarily of sand, they are expected to quickly settle out of the water column. Furthermore, use of heavy equipment and vehicles during the restoration and habitat management activities could potentially result in the accidental release or discharge of pollutants such as oils, fuels, and other equipment fluids. Releases, if any, are expected to be minor.The Proposed Action is not expected to deplete groundwater supplies or interfere with groundwater recharge. The overall existing drainage pattern of the site and adjacent areas would remain the same. Long term erosion, siltation, or other flood-related damage on- and offsite are not expected. The planting of native plant species would reduce the risk of soil erosion where invasive exotic plants are controlled, which would reduce and minimize the rate and amount of surface runoff during significant rain events. The Proposed Action would not result in changes to the FEMA 100-year floodplain mapping.

Additional development projects in the watershed would increase impermeable surface area. This increase in impermeable surfaces would increase surface water runoff into the San Luis Rey River, which may impact water quality and increase overall water volume in the river during significant storm events. Impacts from these projects on surface water conditions are greater than the potential effects from the Proposed Action. Currently, there are no other actions identified that may result in fill into the area of the Proposed Action. Other developmental projects would be required to evaluate associated project impacts and comply separately with Section 404 of the CWA. The Proposed Action, in conjunction with other past, present, and reasonably foreseeable future actions, is not expected to result in significant cumulative impacts to water resources.

Biological Resources

Restoring the Whelan Mitigation Site over a period of several years through passive and active restoration methods will not cause additional impacts to the biological resources of the locale or region. Currently, there is another similar mitigation/restoration occurring immediately adjacent to the Whelan locale at the former Morrison Ranch property, which Caltrans is the lead agency as part of their SR-76 expansion project. Caltrans is also proposing to widening the San Luis Rey River just upstream of the Whelan Mitigation Site for mitigation for their widening project. With these restoration efforts as well as the efforts of the County of San Diego for their Regional San Luis Rey River Park, a substantial area of the San Luis Rey River would be protected for conservation and open space. This would be a benefit to biological resources.

Air Quality

Air emissions associated with construction activities would be below daily CEQA thresholds and the General Conformity de minimis thresholds. Air quality would return to pre-project conditions upon completion of construction. Operational emissions associated with maintenance of the site would be negligible. Furthermore, projects listed above would be subject to design and phasing modifications in order to comply with state and federal ambient air quality standards. Additionally, not all projects are scheduled to occur during the same period. Based on the above, cumulative impacts to air quality impacts are expected to be less than significant.

- **Green House Gases:** As discussed in Section 5.3, the Proposed Action would result in short-term, construction-related emissions of GHGs. However, there will be negligible emissions of GHGs during the operational phase. Based on the above, cumulative impacts to GHG emissions would be less than significant.

Earth Resources

The Proposed Action would not result in changes in the overall topography or geology at the site with the exception of the proposed channel. Planting of native plant species would reduce the risk of soil erosion where invasive exotic plants are controlled, which would create more stable conditions on site. The Proposed Action would result in a localized change in overbank flooding and resulting erosion and deposition at the Whelan site, but would not change overall patterns of floods, erosion, and deposition within the overall San Luis Rey River floodplain.

Development projects upstream of the proposed mitigation site may result in a reduction of sediment input to downstream locations. Additionally, the upstream development could increase river flows and may result in an increased risk of flooding and erosion downstream. Given the limited scope of the Proposed Action relative to the overall development within the watershed, the Proposed Action individually is not expected result in significant cumulative impacts.

Land Use

The Proposed Action would not significantly impact existing land uses since it would not create incompatibilities between existing or planned uses with nearby or adjacent land uses. To comply with conditions of the California Department of Fish and Game permits, the City would record a conservation easement or complete an analogous encumbrance to protect the mitigation site. Existing and adjacent land uses would remain unchanged. Therefore, the Proposed Action would not contribute cumulatively to impacts from projects that are scheduled to occur during or after completion of the Proposed Action.

Noise

Ambient noise levels are associated with specific land uses. The Proposed Action would result in temporary increases in noise levels during construction. On-site noise during restoration and habitat management activities would occur primarily from diesel- and gasoline-powered equipment, such as the mower, dozer, loaders, portable processor, various trucks, and hand equipment. However, noise impacts would be less than significant. Noise disturbances associated with operation and maintenance of the site would be minor given the distance between the site and nearby residential development. Since the site is circumscribed by developments that would remain unaffected by proposed developments listed above, ambient noise levels within the project area would remain unchanged. Furthermore, planned projects and developments would be required to comply with local noise ordinances. As a result, the Proposed Action would not result in cumulatively significant impacts to noise.

Transportation

The quantity of traffic associated with the Proposed Action would be minimal, temporary, and would not contribute to permanent changes in traffic volume. Given the short duration of the restoration and habitat management activities as well as the limited amount of additional traffic generated by the proposed activities, cumulative traffic impacts would be less than significant. The Proposed Action would not result in impacts to transportation that would be cumulatively considerable.

Cultural Resources

No historical or prehistoric resources are present within the area of potential effects. Therefore, no contribution to cumulative effects to cultural resources in the region would occur.

Socioeconomic Resources

The Proposed Action would result in temporary employment for construction workers. However, the project entails the construction of a mitigation site. As a result, there would be minimal operational impacts, and no growth inducing impacts. Therefore the Proposed Action would not result in appreciable long-term changes to socioeconomic trends. As such, the Proposed Action would not contribute to an incremental socioeconomic effect that would be cumulatively considerable.

Toxic and Hazardous Materials

The Proposed Action is not expected to mobilize contaminants, nor expose workers or the public to contaminated or hazardous materials, and therefore, no impacts are expected to occur. The Proposed Action would not contribute impacts that would be cumulatively considerable.

Aesthetics

The Proposed Action would improve the visual quality of the landscape with the improved habitat quality and would not result in significant impacts to aesthetic resources. Since the surrounding areas are already developed, the construction of the mitigation site would not result in cumulative impacts to aesthetics.

Public Safety

The Proposed Action would not result in increased risks to public safety and potential impacts would be short-term and not significant. Therefore, public safety risks associated with the Proposed Action would not result in a significant cumulative impact.

Public Services and Utilities

Potential impacts associated with the Proposed Action would be temporary and not significant. The Proposed Action would not contribute to an incremental impact on utilities that would be cumulatively considerable.

Recreation

Potential impacts associated with the Proposed Action would be temporary and not significant. The Proposed Action may increase passive recreational opportunities in adjacent areas indirectly

as a result of improved riparian habitat conditions. The Proposed Action would not contribute to an incremental impact on recreational opportunities that would be cumulatively considerable.

7.0 ENVIRONMENTAL COMMITMENTS

Following is a summary of the environmental commitments that have been developed for the environmental resources to reduce and minimize the impacts associated with the proposed project.

Water Resources

WQ-1 Construction and maintenance fluids (oils, antifreeze, fuels) shall be stored in closed containers (no open buckets or pans) and disposed of promptly and properly away from the channel to prevent contamination of the site.

WQ-2 Refueling of the mower and other equipment can be accomplished on site least 50 feet away from flowing water and with the use of liners. BMP's will be used and include such actions as having hazardous waste clean-up equipment and spill kits staged on-site, using the appropriate size and gauge drip pans and absorbent diapers. Spill kits shall be in close proximity to the fuel truck and mower in case of fuel or other fluid spills. Contractor equipment shall be checked for leaks prior to operation and repaired as necessary.

WQ-3 Fluids released because of spills, equipment failure (broken hose, punctured tank) or refueling should be immediately controlled, contained, and cleaned-up per Federal and state regulations. All contaminated materials should be disposed of promptly and properly to prevent contamination of the site. To reduce the potential for spills into the channel during refueling, refueling of portable equipment shall occur on shore. Where that is not possible, barriers shall be placed around the site where the fuel nozzle enters the fuel tank. The barriers shall be such that spills shall be contained and easily cleaned up. Someone shall be present to monitor refueling activities to ensure that spillage from overfilling, nozzle removal, or other action does not occur.

WQ-4 Actions such as equipment maintenance shall not take place within the active river bed or in areas that directly drain to these locations. These actions shall take place at designated staging sites away from open water or surface flow.

Biological Resources

B-1 Staging site must be located inside the mitigation site (avoidance).

B-2 Implementation of the passive and active restoration will be accomplished from 3 March 2014 to 11 April 2014 (minimization).

B-3 Ingress and egress is established through MCBCP and the Whelan Bird Conservancy existing dirt roads (avoidance).

B-4 Qualified knowledgeable and experienced least Bell's vireo biologists will monitor the entire construction (minimization) activities as well as planting activities. The qualified biologist shall monitor construction activities throughout the duration of the project to ensure that all practicable measures are being employed to avoid incidental disturbance of habitat and any

target species of concern outside the project footprint. The project biologist shall be empowered to halt work activity if necessary.

B -5 Construction employees shall strictly limit their activities, vehicles, equipment, and construction materials to the proposed footprint and designated staging areas and routes of travel. The construction area(s) shall be the minimal area necessary to complete the project and shall be specified in the construction plans. All people on site shall be instructed that their activities are restricted to the construction areas.

B-6 The removal of native vegetation shall be avoided and minimized to the maximum extent practicable. Temporary impacts shall be returned to pre-existing contours and revegetated with appropriate native species.

B-7 Vireo habitat that does not have to be grubbed and cleared will be left intact and not removed. Fencing, other markers, and daily pre-construction briefings will be used to keep these habitat patches from construction equipment.

B-8 To avoid attracting predators of the target species of concern, the project site shall be kept clean of debris as possible. All food related trash items shall be enclosed in sealed containers and regularly removed from the site.

B-9 Equipment storage, fueling and staging areas shall be located to minimize risks of direct drainage into riparian areas or other environmentally sensitive habitats. These designated areas shall be located in such a manner as to prevent runoff from entering sensitive habitats. All project related spills of hazardous materials shall be reported to appropriate entities including but not limited to the City of Oceanside, USFWS, and CDFG, RWQCB and shall be cleaned up immediately and contaminated sails removed to approved disposal areas.

B-10 Erodible fill material shall not be deposited into water courses. Brush, loose soils, or other similar debris material shall not be stockpiled within the stream channel or on its banks.

B-11 Stockpiling of materials and other aspects of construction staging shall be limited to designated areas, disturbed areas without native vegetation, areas to be impacted by project development or in non sensitive habitats.

B-12 "No-fueling zones" shall be established within a minimum of 10 meters (33 feet) from all drainages and fire sensitive areas.

Air Quality

AQ-1 Minimize amount of disturbed area and limit vehicle speeds to 15 mph or less within the work areas.

AQ-2 After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, or revegetating, or by spreading soil binders until work is completed so that dust generation will not occur.

AQ-3 Only heavy-duty diesel-powered construction equipment with engines meeting California Air Resources Board/U.S. EPA Tier 2 certification levels or engines manufactured after 2005 shall be used.

AQ-4 The engine size of construction equipment shall be the minimum practical size.

AQ-5 The number of pieces of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number are operating at any one time.

AQ-6 Construction equipment shall be maintained in tune per the manufacturer's specifications.

AQ-7 Catalytic converters shall be installed on gasoline-powered equipment, if feasible.

AQ-8 Diesel catalytic converters, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by U.S. EPA or California Air Resources Board shall be installed on equipment operating on-site.

AQ-9 Idling of heavy-duty diesel trucks during loading and unloading shall be limited to five minutes; auxiliary power units should be used whenever possible. State law requires drivers of diesel fueled commercial vehicles weighing more than 10,000 pounds:

- Shall not idle the vehicle's primary diesel engine for greater than 5 minutes at any location
- Shall not idle a diesel-fueled auxiliary power system (APS) for more than 5 minutes to power a heater, air conditioner, or any ancillary equipment on the vehicle if you have a sleeper berth and you are within 100 feet of a restricted area (homes and schools).
- Construction worker trips should be minimized by requiring carpooling and by providing for lunch onsite.

AQ-10 The restoration contractor shall be responsible for obtaining and complying with all applicable permits and permit conditions.

Earth Resources

ER-1 The Corps shall avoid grading and excavation activities within the San Luis Rey River to the maximum extent feasible, and shall not conduct grading and construction activities during a rain event. Removal of the rock rubble levee at the head and mouth of the low-flow pilot channel will take place during the final phase of construction to avoid water flows into the site during construction activities. The Corps shall prepare and implement an erosion and sedimentation control plan including both temporary and long-term best management practices

for channel excavation work. Prior to work conducted within the rainy season, extensive measures shall be implemented to avoid contamination of surface water. All requirements shall be shown on grading plans. Condition shall be adhered to throughout all grading and construction periods. The Corps shall retain a copy of erosion and sedimentation control plan on the construction site, and shall document compliance in monitoring reports.

ER-2 The Corps or construction contractor shall be responsible for obtain all applicable permits including any grading and/or stockpiling permits from the County of San Diego.

Environmental Commitment WR-1 would be implemented in addition to the measures identified above to minimize potential impacts to Earth Resources.

Land Use

LU-1 Activities likely to create noise and dust shall be restricted to the hours of 7 a.m. to 5 p.m. daily, and shall be preceded by notification by the Corps, City, or restoration contractor of nearby residences within at least a 24-hour period of commencement of activities. The notifications shall describe the character of the activities and their duration. This mitigation measure is designed to enable local residents to modify their activities to reduce potential impacts.

Noise

N-1 The project operator shall insure that the contractor maintains proper mufflers on all internal combustion and vehicle engines used in operation and maintenance activities to reduce noise to the maximum feasible extent.

Cultural Resources

CR-1 In the event that previously unknown cultural resources are uncovered during construction, work in the immediate area shall cease until the requirements in 36 CFR 800.13 are complied with.

Public Safety

PS-1 The Corps, City of Oceanside, or restoration contractor shall provide appropriate notice via signs, newspapers, and direct communication to local residents at least one week prior to and during restoration activities. Access to the site will be restricted to active habitat restoration and management personnel.

PS-2 The contractor shall employ appropriate signaling and signage to accommodate interruptions in existing traffic flows. These measures are defined in the Traffic Control Plan (see Section 5.7)

PS-3 Prior to implementation of the Proposed Action, the City of Oceanside shall notify relevant fire, police, and other emergency service agencies of the proposed work, areas of potential congestion, and traffic management methods to be used to ensure access at all times.

PS-4 A Safety Plan, in accordance with applicable Corps standards, shall be developed and implemented by the contractor during all restoration activities to ensure safety of all personnel, including evacuation procedures from the channel with a forecast storm event. The Corps shall approve the Safety Plan prior start of restoration activities.

Public Services and Utilities

Environmental Commitment PS-3 would be implemented to minimize potential impacts to Public Services and Utilities.

8.0 COMPLIANCE AND COORDINATION

8.1 Applicable Federal, State, and Local Statutes, Laws, and Guidelines

The following section provides a brief summary of the laws, regulations, Executive Orders, and other guidelines that are relevant to the proposed project activities and alternatives.

Federal

National Environmental Policy Act of 1969 (42 U.S. C. 4321 et seq)

NEPA is the nation's primary charter for protection of the environment. It establishes national environmental policy which provides a framework for Federal agencies to minimize environmental damage and requires Federal agencies to evaluate the potential environmental impacts of their proposed actions. NEPA requires that agencies of the Federal Government shall implement an environmental impact analysis program in order to evaluate "major federal actions significantly affecting the quality of the human environment." A "major federal action" may include projects financed, assisted, conducted, regulated, or approved by a Federal agency. Under NEPA, a Federal agency must prepare an Environmental Assessment (EA) or Environmental Impact Statement (EIS) describing the environmental effects of any proposed action that may have a significant impact on the environment. The EA or EIS must identify measures necessary to avoid or minimize adverse impacts resulting from the proposed action. NEPA specifically allows the integration of Federal and state environmental evaluations into a single, joint document (40 C.F.R. § 1506.2).

This Environmental Assessment (EA) has been prepared in accordance with the requirements of NEPA of 1969 (42 USC 43221, as amended) and the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500-1508).

Procedures for Implementing NEPA, Engineering Regulation (ER) 200-2-2, published at Title 33 CFR part 230, March 1988. This regulation provides guidance for implementation of the procedural provisions of the National Environmental Policy Act (NEPA) for the Civil Works Program of the Corps. It supplements the CEQ regulations in accordance with those regulations. Wherever the guidance in this regulation is unclear or not specific, the reader is referred to the CEQ regulations. This regulation is applicable to all Corps responsibility for preparing and processing environmental documents in support of civil works functions. This EA has been prepared in accordance with this regulation.

Planning Guidance Notebook, ER-1105-2-100, April 2000, as amended. The Planning Guidance Notebook, provides guidance for conducting Civil Works planning studies and related

programs by the Corps. Guidance provided in this regulation has been followed in the preparation of this document.

U.S. Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq)

This Act requires Federal agencies to coordinate with the USFWS and local State agencies when any stream or body of water is proposed to be impounded, diverted, or otherwise modified. The intent is to give fish and wildlife conservation equal consideration with other purposes of water resources development projects. Coordination under the Fish and Wildlife Coordination Act is ongoing for the Proposed Action.

The San Luis Rey River Flood Control Project was authorized and several environmental documents were completed. A Supplemental Environmental Assessment, in which an ESA Section 7 consultation was completed and a Coordination Act Report (CAR) was issued by the USFWS, completed consultation in 1988 prior to the onset of the flood control channel construction. Several Environmental Assessments (EAs) were developed to document slight changes which occurred during construction. The modified, double-sided levee project was constructed and completed in 2000. Due to the USFWS's final determination of least Bell's vireo critical habitat and other species concerns, and the subsequent growth of vegetation across the flood control channel, the Corps reinitiated ESA Section 7 consultation and received an amended Final Biological Opinion on February 14, 2006, and concurrence on further revisions on February 20, 2008.

A PADD/SEIS/EIR/PAC Report was prepared by the Corps in July 2007, which documents a change in the vegetation and sediment management of the O&M plan for the flood risk management channel. This change effectively reduces effects to listed species and critical habitat as compared with the original Authorized Plan per the 1988 CAR. During development of the PADD/SEIS/EIR/PAC Report, it was the opinion of the Corps and the USFWS that a revised CAR was not necessary.

The purpose of the proposed restoration and habitat management activities is to fulfill mitigation requirements of the California Department of Fish and Wildlife (CDFW) California Endangered Species Act (CESA) Permit issued to the City of Oceanside as well as Conservation Measure 20 of the amended Final Biological Opinion (concurrence letter dated February 20, 2008) for the overall flood risk management project. The Corps and City of Oceanside has continued coordination with the USFWS throughout development of this plan for restoration, including consideration and incorporation of USFWS proposed restoration concepts.

Endangered Species Act of 1973 (16 U.S.C. 1531 et seq)

The Endangered Species Act (ESA) protects threatened and endangered species, as listed by the USFWS, from unauthorized take, and directs Federal agencies to ensure that their actions do not

jeopardize the continued existence of such species. Section 7 of the ESA defines Federal agency responsibilities for consultation with the USFWS.

ESA Section 7. Section 7 of the ESA outlines the procedures for Federal interagency cooperation to conserve federally listed species and designated critical habitats. Section 7(a)(1) directs all Federal agencies to utilize their authorities in furtherance of the purposes of the Act by carrying out programs for the conservation of species listed pursuant to the Act. This section of the Act makes it clear that all Federal agencies should participate in the conservation and recovery of listed threatened and endangered species.

Section 7(a) (2) states that each Federal agency shall ensure, in consultation, that any action they authorize, fund, or carry out is not likely to jeopardize existence of a listed species or result in the destruction or adverse critical habitat. In fulfilling these requirements, each agency is to use the best scientific and commercial data available. This section of the Act defines the consultation further developed in regulations promulgated at 50 CFR §402.

ESA Section 9. Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt to engage in any such conduct. Harm is further defined by the USFWS to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering. Harass is defined by the USFWS as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement. The USFWS will not refer the incidental take of any migratory bird or bald eagle for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§ 668-668d), if such take is in compliance with the terms and conditions (including amount and/or number) specified herein. The Corps has a continuing duty to regulate the activity that is covered by an incidental take statement. If the Corps (1) fails to require the local sponsor and/or their contractors to adhere to the terms and conditions of the incidental take statement through enforceable terms, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

The proposed habitat management that will be performed by the City during the operational or maintenance phase of the Proposed Action will not require an application for a Section 10(a) permit. The Corps reinitiated ESA Section 7 consultation and received an amended Final Biological Opinion on February 14, 2006, and concurrence on further revisions on February 20,

2008 for the overall flood risk management project. The purpose of the proposed restoration and habitat management activities, the subject of this document, is to fulfill mitigation requirements of the CDFW CESA Permit issued to the City and Conservation Measure 20 of the amended Final Biological Opinion (concurrence letter dated February 20, 2008) for the overall flood risk management project. The Corps is coordinating closely with the USFWS on the proposed restoration plan and design and compliance with Section 7 of the ESA. The Corps is requesting an amendment to the Final Biological Opinion to address potential affects to the least Bell's vireo and critical habitat for the least Bell's vireo and southwestern willow flycatcher. The amendment would be obtain prior to commencement of the proposed restoration.

Environmental commitments identified in this document and the Final Biological Opinion amendment to be issued by the USFWS would be implemented and complied with. The Proposed Action will comply with the requirements of the Endangered Species Act.

Migratory Bird Treaty Act, as amended (16 USC 703-711)

The Migratory Bird Treaty Act requires management and protection of migratory birds. The Migratory Bird Treaty Act (1916; MBTA), agreed upon by the United States and Canada; the Convention for the Protection of Migratory Birds and Animals (1936), agreed upon between the United States and Mexico; and subsequent amendments to these Acts provide legal protection for almost all breeding bird species occurring in the United States. These Acts restrict the killing, taking, collecting, and selling or purchasing of native bird species or their parts, nests, or eggs. Certain game bird species are allowed to be hunted for specific periods determined by Federal and state governments. The intent of the Act is to eliminate any commercial market for migratory birds, feathers, or bird parts, especially for eagles and other birds of prey.

The Proposed Action would not affect or impact migratory bird breeding or nesting activity. The initial clearing and grubbing activity would commence prior to bird breeding or nesting activity at the site. The proposed restoration will benefit migratory birds as more available nesting habitat becomes available.

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

The Clean Water Act (CWA) governs discharge or dredge of materials in the waters of the United States and it governs pollution control and water quality of waterways throughout the U.S. Its intent, in part, is to restore and maintain the biological integrity of the nation's waters. The goals and standards of the CWA are enforced through permit provisions. Sections 404, 401 and 402 of the CWA pertain directly to the Proposed Action. Section 404 outlines the permit program required for dredging or filling the nation's waterways.

The Corps does not issue itself a permit for construction civil works projects. Instead the Corps documents compliance with the CWA. Based on the findings in Appendix C, the Whelan

Mitigation Site is not a water of the United States nor an adjacent wetland. Therefore, earthmoving activities landward of the rock levee would not be subject to Section 404 of the CWA. However, the lateral extent of waters United States is located approximately 25 feet riverward of the rock levee where there is a distinct change in vegetation from mulefat, a facultative species to cattails, an obligate species. Therefore, excavation of the entrance and exit points for the low flow channel could potentially discharge *de minimis* fill into waters of United States. However, the Proposed Action falls within the parameters of the Nationwide Permit (NWP) No. 27, Aquatic Habitat Restoration, Establishment, and Enhancement Activities, issued by the Corps on February 21, 2012, under Section 404 of the CWA and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403). The NWP No. 27 authorizes activities in waters of the U.S. associated with the restoration, enhancement, and establishment of, in this case, non-tidal wetlands and riparian areas and streams, provided these areas result in net increases in aquatic resource functions and services. The Corps will document compliance with NWP No. 27 prior to finalizing this EA.

If it is determined that future habitat management activities would result in discharges of fill to waters of the U.S., then the City of Oceanside would need to seek coverage under a separate NWP 27 permit or an individual permit through the Corps Regulatory Division. If conditions change or new endangered and threatened species are listed, the local sponsor will need to coordinate with the appropriate resource agencies regarding new species introduced in the project area and perform compliance with the environmental regulations, in coordination with implementation of the AHMP for the project.

Other relevant sections of the act include:

Section 401 requires Federal agencies to obtain state water quality certification for any Federal project, or federally permitted project, potentially affecting water quality. A Section 401 water quality certification (WQC, No. 07C-019) was issued to the Corps and City for the overall flood risk management project, with an amendment to extend the expiration date to February 15, 2015. The purpose of the proposed restoration action is to meet mitigation requirements of the flood risk management project environmental commitments and permits, including the Section 401 WQC. All conditions applicable to the proposed restoration activities would be complied with during implementation and long term maintenance. The Corps and City will continue to coordinate with the Regional Water Quality Control Board, San Diego Region on the proposed restoration action. Implementation of the Proposed Action will be in compliance with the Section 401 of the Act.

Section 402 establishes conditions and permitting for point-source discharges of pollutants under the National Pollution Discharge Elimination System (NPDES). Pursuant to NPDES requirements, a General Construction Activity Storm Water Permit may be required for project implementation. A Storm-Water Pollution Prevention Plan (SWPPP) must be prepared in order to obtain the NPDES permit. If applicable, the SWPPP will outline Best Management Practices

to minimize water contamination during construction. In addition, coverage may be needed under the State Water Resources Control Board Water Quality Order No. 2013-0002-DWQ, Statewide General NPDES Permit for Residual Aquatic Pesticide Discharges to Waters of the United States from Algae and Aquatic Weed Control Applications (NPDES General Permit No. CAG990005).

A Notice of Intent will be submitted to the California State Water Resources Control Board to comply with Section 402 of the CWA. A SWPPP will be prepared to meet the state requirements of the NPDES Storm Water Program prior to project construction. The restoration contractor will prepare the SWPPP and have it available on site.

Clean Air Act of 1970 (42 U.S.C. 7401 et seq.)

1977 Amendments to the Clean Air Act enacted legislation to control seven toxic air pollutants. USEPA adopted National Emission Standards for Hazardous Air Pollutants (NESHAP), which have been designed to control Hazardous Air Pollutants (HAP) emissions to prevent adverse health effects in humans.

1990 Amendments to the Clean Air Act determine the attainment and maintenance of NAAQS (Title I), motor vehicles and reformulation (Title II), hazardous air pollutant (Title III), acid deposition (Title IV), operating permits (Titles V), stratospheric ozone protection (Title VI), and enforcement (Title VII).

General Conformity. Under Section 176(c) of the Clean Air Act Amendments (CAAA) of 1990, the Lead Agency is required to make a determination of whether the Proposed Action "conforms" with the State Implementation Plan (SIP). Conformity is defined in Section 176(c) of the CAAA as compliance with the SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards. 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.

Total direct and indirect emissions from the Proposed Action are below the General Conformity Rule "*de minimis*" emission thresholds. Therefore, the Proposed Action conforms to the CAA as amended, and a General Conformity determination is not required.

National Historic Preservation Act (16 U.S.C. 460b, 470l-470n)

The NHPA requires that Federal agencies consider the effect of their undertakings on properties eligible for the National Register of Historic Places (NRHP). A Programmatic Agreement (PA) was executed for the San Luis Rey Flood Control Project in 1989. This document put the Corps

in compliance with Section 106 of the act (as implemented by 36 CFR 800). For this mitigation site reconstruction an updated reconnaissance survey was conducted by the Corps archeology staff to confirm the current status of the project area. No NRHP resources were identified. The Corps is in compliance with the PA.

National Flood Insurance Program

The National Flood Insurance Program (NFIP) is administered by the Federal Emergency Management Agency's (FEMA's) Flood Insurance Administration. The proposed site is within an area identified as an area of special flood hazard, Zone A99, areas to be protected from 1% annual chance flood event (ACE) (100-year flood event) by a Federal flood protection system under construction. The Proposed Action would not increase the risk of flooding for the 1% ACE through this section of the river. The Proposed Action would not result in changes to the FEMA 100-year floodplain mapping.

Federal Water Project Recreation Act of 1965, as amended

This Act requires that any Federal water project must give full consideration to opportunities afforded by the project for outdoor recreation and fish and wildlife enhancement. The purpose of the Proposed Action is restoration and preservation of habitat for the endangered southwestern willow flycatcher within the San Luis Rey River floodplain to meet project mitigation requirements. No recreational activities are supported at the site and no new recreational opportunities are proposed. The restored lands at this proposed mitigation site would provide wildlife habitat that would support passive recreational opportunities in nearby areas.

Executive Order 11988, Floodplain Management, May 24, 1977

Signed May 24, 1977, this order requires that government agencies, in carrying out their responsibilities, provide leadership and take action to restore and preserve the natural and beneficial values served by floodplains. Before proposing, conducting, supporting or allowing an action in the floodplain, each agency is to determine if planned activities will affect the floodplain and evaluate the potential effects of the intended action on its functions. In addition, agencies shall avoid locating development in a floodplain to avoid adverse effects in the floodplains. The eight-step process outlined in ER 1165-2-26, para. 8, General Procedures was followed. The purpose of the proposed project is to include in and restore 2.11 acres of southwestern willow flycatcher habitat and adjacent riparian habitat, consistent with the Biological Opinion (BO), CDFW permits, and Section 401 WQC for the project. To meet the BO and permit requirements for flycatcher and riparian habitat and function, selection of the proposed project location within the floodplain is a necessity as flycatchers naturally inhabits riparian vegetation within floodplains. As described in Chapter 3 of the EA/MND, the Whelan Mitigation Site was selected based on criteria identified in coordination with resource agencies. The proposed action complies with state and local flood plain protection standards. The action

does not negatively affect the natural and beneficial values of the flood plain. The proposed action does not induce floodplain development or increase risks to public safety. The proposed action minimizes potential harm within the flood plain as there are no non-floodable structures in any element of the proposed project. Environmental commitments for the implementation include leaving the river channel in the event of a forecast storm and the preparation and implementation of a Safety Plan including evacuation procedures. The proposed project is in compliance with this Executive Order.

Executive Order 11990, Protection of Wetlands

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 will have no permanent adverse effect on wetlands. The purpose of the Proposed Action is to restore degraded riparian and floodplain habitat at the proposed mitigation site for the endangered southwestern willow flycatcher, least Bell's vireo, and other riparian species. The Proposed Action would benefit wetlands. The Proposed Action is in compliance with the Executive Order.

Executive Order 12898, Environmental Justice Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, February 11, 1994

Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority and Low-Income Populations) was signed on February 11, 1994. This order was intended to direct Federal agencies "To make achieving environmental justice part of its mission by identifying and addressing... disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the [U.S.]..." No minority or low-income communities would be disproportionately affected by implementation of the Proposed Action. The Proposed Action is in compliance with the Executive Order.

Executive Order 12088, Federal Compliance with Pollution Control Standards

Federal Agencies are responsible for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution with respect to Federal facilities and activities under control of the agency. To ensure responsible prevention, control, and abatement of potential environmental pollution associated with project activities, the environmental commitments listed in Sections 5.1 and 5.4 would be integrated into the proposed project activities. The proposed project would be consistent with this Order.

Executive Order 13112 Invasive Species

Federal agencies are to expand and coordinate efforts to prevent the introduction and spread of invasive plant species and to minimize the economic, ecological, and human health impacts that invasive species may cause. The proposed project would result in the eradication of invasive non-native plant species and long term habitat management. The proposed project would be consistent with this Order.

Executive Order (EO) 11514, Protection and Enhancement of Environmental Quality, amended by Executive Order 11991, Relating to Protection and Enhancement of Environmental Quality

This EO mandates that the Federal government provide leadership in protecting and enhancing the quality of the nation's environment to sustain and enrich human life. Federal agencies must initiate measures needed to direct their policies, plans and programs so as to meet national environmental goals. Corps regulations advocate early NEPA preparation and require impact statements to be concise, clear, and supported by evidence that agencies have made the necessary analyses. This EA/MND has been prepared in compliance with NEPA, ER 200-2-2 (Procedures for Implementing NEPA), and CEQA, in coordination with resource agencies. The proposed project is consistent with Order.

State

Compliance with state and local laws and regulations are addressed below for the City for CEQA purposes.

California Environmental Quality Act (CEQA) (Public Resources Code 22,000 et seq.)

CEQA establishes requirements and procedures for state and local agency review of the environmental effects of projects proposed within their jurisdictions. It further requires that agencies, when feasible, avoid or reduce the significant environmental impacts of their decisions. CEQA requires the preparation of an Initial Study (IS) to determine whether a Negative Declaration or Environmental Impact Report should be prepared by a state or local agency for projects that may significantly impact the environment. In some cases, a joint document is prepared to comply with both NEPA and CEQA for projects that are cost-shared by Federal and non-Federal agencies. This document (EA/MND) has been prepared in compliance with the goals, policies, and requirements of CEQA. Information and analysis to meet CEQA requirements are included within this EA/MND for each resource.

In accordance with the provisions of CEQA, reasonable alternatives to the Proposed Action have been considered during the planning process and potential environmental effects have been included in the evaluation of the project. An IS has been prepared and is provided in Appendix D. A detailed impact analysis of applicable environmental resources is located in Section 5.0 of this document. Environmental commitments are proposed to avoid or reduce environmental

impacts and are described in Section 5.0 and 7.0. This document meets the goal, policies, and requirements of CEQA.

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

Provides for the protection of rare, threatened, and endangered plants and animals, as recognized by the CDFW, and prohibits the unauthorized taking of such species. As a responsible agency, the CDFW has regulatory authority over state-listed endangered and threatened species. State agencies are required to consult with the CDFW on actions that may affect listed or candidate species.

A California Endangered Species Act (CESA) Incidental Take Permit has been issued by the CDFW to the City for the overall flood risk management project. Since the proposed restoration 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 has been coordinating with the CDFW, including several field meetings, telephone conference calls, and emails in 2011 through 2014. The Corps and City will continue coordinating with the CDFW to ensure the proposed restoration action is in compliance with the CESA.

California Fish and Game Code Section 1600 et seq (Streambed Alteration Agreement)

Under Chapter 6 of the California Fish and Game Code, CDFW is responsible for protecting and conserving the state's fish and wildlife resources. Sections 1600 et seq. of the Code define the responsibilities of CDFW, 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 CDFW 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 1602, but the City of Oceanside is a participant in the project. The City of Oceanside obtained a Streambed Alteration Agreement (SAA) for the overall flood risk management project (Notification No. 1600-2007-0173-R5). In coordination with CDFW, the existing SAA would be amended by CDFW to include the Proposed Action (restoration and habitat management at the mitigation site) since this action is part of the overall project (pers. comm.., Ms. Marilyn Fluharty, CDFW, January 25, 2012; email correspondence, Ms. Fluharty, September 18, 2013). The Corps and City of Oceanside will continue to coordinate with the CDFW. The Proposed Action will comply with the Code.

Porter-Cologne Water Quality Control Act of 1967 (Water Code Section 13000 et seq.)

The Porter-Cologne Water Quality Control Act of 1967, Water Code Section 13000 et seq., requires the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) to adopt water quality criteria to protect state waters. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. The Porter-Cologne Water Quality Control Act also requires the SWRCB and the nine RWQCBs to ensure the protection of water quality through the regulation of waste discharges to land. Such discharges are regulated under Title 23, California Code of Regulations, Chapter 9, Division 3. These regulations require that the RWQCB issue a Waste Discharge Requirement regarding the discharge of waste (soil) into surface waters resulting from land disturbance. The Waste Discharge Requirement regarding the protection of water quality by appropriate design, sizing, and construction of erosion and sediment controls is covered under the California Water Code, Sections 13260 -13269. The San Luis Rey River, which lies within the San Diego Region 9 RWQCB, is subject to the policies set forth in the San Diego RWQCB or Basin Plan. The Corps has been in coordination with the RWQCB. A CWA Section 401 Water Quality Certification (WQC) and General Waste Discharge Requirements (WDR) were issued to the Corps and City of Oceanside for the overall flood risk management project on February 15, 2008, amended February 15, 2013, which included requirements for compensatory mitigation for permanent and temporary impacts to waters of the U.S. and state from the flood risk management project. The proposed restoration and habitat management activities at the proposed mitigation site would fulfill part of the mitigation requirement. Conditions identified in the WQC and WDR would be followed. The Corps and City will continue coordination with the RWQCB to ensure implementation of the proposed restoration activities are in compliance with the Act.

Cal/OSHA

The California Occupational Safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings. Implementation of the proposed action will be in compliance with this act.

Local

Oceanside Subarea Habitat Conservation Plan/ Natural Communities Conservation Plan

The City of Oceanside has prepared a Oceanside Sub-area Habitat Conservation Plan (HCP)/Natural Communities Conservation Plan (NCCP) that addresses how the City of Oceanside, California will conserve natural biotic communities and sensitive plant and wildlife species pursuant to the California Natural Community Conservation Planning (NCCP) Act and the U.S. ESA. It will aid considerably in conserving the region's biodiversity, and in enhancing the overall quality of life for residents of the southern coastal region of California. In addition,

the plan addresses potential impacts to natural habitat and rare, threatened or endangered species stemming from projects within the City of Oceanside.

Congress authorized the San Luis Rey River Flood Control project on 17 December 1970 under provision of Section 201 of the Flood Control Act of 1965 (P.L. 89-298; 79 Stat 1073). The project is cost-shared with the local sponsor, the City of Oceanside, and governed by a local cooperation agreement (LCA). That is, the agreement governing the construction, operation, and maintenance of the flood control channel pre-dates the development of the Subarea HCP. The Corps and the City of Oceanside initiated construction in 1990 and completed the construction of the project in January 2000. The vegetation preserved or planted within the flood risk management project boundaries, both within the channel and in the detention/compensation ponds, as well as the proposed restoration activities identified in this document, serve as mitigation for the overall flood risk management project. The Subarea HCP is currently in draft form and is anticipated to be final within the next few years. An Adaptive Habitat Management Plan for the overall flood risk management project, which will include the proposed mitigation site, is currently in development. Once it is finalized, the City of Oceanside will incorporate the plan by reference into the HCP Sub-Area Plan and coordinate with the appropriate resource agencies.

Air Quality

The Proposed Action is within the San Diego County Air Pollution Control District (SDCAPD) jurisdiction. The SDCAPD is responsible for planning, implementing, and enforcing federal and State ambient standards within the county of San Diego. The regulations of this agency are primarily focused on stationary sources; therefore, most of the local agency regulations are not relevant to this project. However, the air quality analysis performed for this project compares potential project emissions with those identified by the County of San Diego. Total direct and indirect emissions from the Proposed Action are below CEQA the emission thresholds. As a result, air emissions from the construction of the proposed project would be in compliance with rules and regulations of the SDCAPD.

8.2 Coordination with Resource Agencies

U.S. Fish and Wildlife Service

Coordination on the original project development and construction is discussed earlier in this EA. Informal discussions with USFWS began in 1999 on changes to the operation and maintenance plan for the overall flood risk management project. The Corps reinitiated ESA Section 7 consultation and received an amended Final Biological Opinion on February 14, 2006, and concurrence on further revisions on February 20, 2008 for the overall flood risk management project. A detailed description of coordination efforts with the USFWS for the overall flood risk

management project can be found in Chapter 8 of the PADD/SEIS/EIR/PAC Report (Corps 2007).

The purpose of the proposed restoration and habitat management activities, the subject of this document, is to fulfill commitments made with the UWFWS and mitigation requirements of the CDFW CESA Permit and SAA, and Section 401 WQC for the overall flood risk management project. The Corps coordinated with the USFWS/Carlsbad Office with several field meetings, telephone conference calls, and emails. Informal Section 7 consultation is continuing, discussing avoidance and minimizations measures for the least Bell's vireo.

California Department of Fish and Wildlife (CDFW)

Informal discussions with CDFW regarding changes to the operation and maintenance of the flood control project have occurred since 2001. More intensive coordination efforts occurred throughout 2003, and in 2005 through 2014. Discussions included concerns of potential impacts to Federal and state listed species occurring within the project area and their habitat. A detailed description of coordination efforts with the CDFW for the overall flood risk management project can be found in Chapter 8 of the PADD/SEIS/EIR/PAC Report (Corps 2007).

Federal agencies are exempt from Section 1602, but the City of Oceanside is a participant in the project. The City of Oceanside obtained a Streambed Alteration Agreement (SAA) for the overall flood risk management project (Notification No. 1600-2007-0173-R5). In coordination with CDFW, the existing SAA would be amended by CDFW to include the Proposed Action (restoration and habitat management at the mitigation site) since this action is part of the overall project (pers. comm.., Ms. Marilyn Fluharty, CDFW, January 25, 2012; email correspondence, Ms. Fluharty, September 18, 2013). The Corps and City of Oceanside will continue to coordinate with the CDFW. The Proposed Action will comply with the Code.

A CESA Incidental Take Permit has been issued by the CDFW to the City for the overall flood risk management project. Since the proposed restoration 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 has been coordinating with the CDFW, including several field meetings, telephone conference calls, and emails in 2011 through 2014 on the proposed restoration action. The Corps and City will continue coordinating with the CDFW to ensure the proposed restoration action is in compliance with the CESA.

San Diego Regional Water Quality Control Board (RWQCB)

The Corps initiated coordination with the RWQCB in 2003 on the revised operation and maintenance of the flood risk management project and on exotic plant control within the flood risk management project area. A more detailed description of coordination efforts associated

with the overall flood risk management project can be found in Chapter 8.0 of the PADD/SEIS/EIR/PAC Report (Corps 2007). A CWA Section 401 WQC and WDR were issued by the San Diego RWQCB to the Corps and City of Oceanside for the overall flood risk management project on February 15, 2008, amended February 15, 2013. The proposed restoration and habitat management activities at the proposed mitigation site would fulfill part of the mitigation requirement identified in the Section 401 WQC. Conditions identified in the WQC and WDR would be followed. The Corps and City will continue coordination with the RWQCB to ensure implementation of the proposed restoration activities are in compliance with the Section 401 WQC and WDR.

State Historic Preservation Officer (SHPO)

A Programmatic Agreement (PA) was executed for the San Luis Rey Flood Control Project in 1989. This document put the Corps in compliance with Section 106 of the National Historic Preservation Act (as implemented by 36 CFR 800). For this mitigation site, a records search and field survey was conducted by the Corps archeology staff. No NRHP resources were identified. These findings will be transmitted to the California State Historic Preservation Officer for their concurrence with the PA.

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Appendix B

Air Quality Calculations

Off-road Equipment - zzz

Off-road Equipment - zzz

Off-road Equipment - zzzz

Off-road Equipment - zz

2.0 Emissions Summary ALTERNATIVE 2

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.04	0.33	0.20	0.00	0.06	0.02	0.08	0.03	0.02	0.05	0.00	32.97	32.97	0.00	0.00	33.04
Total	**0.04**	**0.33**	**0.20**	**0.00**	**0.06**	**0.02**	**0.08**	**0.03**	**0.02**	**0.05**	**0.00**	**32.97**	**32.97**	**0.00**	**0.00**	**33.04**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.04	0.33	0.20	0.00	0.06	0.02	0.08	0.03	0.02	0.05	0.00	32.97	32.97	0.00	0.00	33.04
Total	**0.04**	**0.33**	**0.20**	**0.00**	**0.06**	**0.02**	**0.08**	**0.03**	**0.02**	**0.05**	**0.00**	**32.97**	**32.97**	**0.00**	**0.00**	**33.04**

Off-road Equipment - zzz

Off-road Equipment - zzz

Off-road Equipment - zzzz

Off-road Equipment - zz

ALTERNATIVE 3

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.02	0.19	0.11	0.00	0.05	0.01	0.06	0.03	0.01	0.03	0.00	19.00	19.00	0.00	0.00	19.04
Total	**0.02**	**0.19**	**0.11**	**0.00**	**0.05**	**0.01**	**0.06**	**0.03**	**0.01**	**0.03**	**0.00**	**19.00**	**19.00**	**0.00**	**0.00**	**19.04**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.02	0.19	0.11	0.00	0.05	0.01	0.06	0.03	0.01	0.03	0.00	19.00	19.00	0.00	0.00	19.04
Total	**0.02**	**0.19**	**0.11**	**0.00**	**0.05**	**0.01**	**0.06**	**0.03**	**0.01**	**0.03**	**0.00**	**19.00**	**19.00**	**0.00**	**0.00**	**19.04**

Construction Off-road Equipment Mitigation -

2.0 Emissions Summary

ALTERNATIVE 4

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.12	1.04	0.47	0.00	0.06	0.04	0.10	0.01	0.04	0.05	0.00	115.66	115.66	0.01	0.00	115.87
Total	**0.12**	**1.04**	**0.47**	**0.00**	**0.06**	**0.04**	**0.10**	**0.01**	**0.04**	**0.05**	**0.00**	**115.66**	**115.66**	**0.01**	**0.00**	**115.87**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.12	1.04	0.47	0.00	0.03	0.04	0.07	0.01	0.04	0.05	0.00	115.66	115.66	0.01	0.00	115.87
Total	**0.12**	**1.04**	**0.47**	**0.00**	**0.03**	**0.04**	**0.07**	**0.01**	**0.04**	**0.05**	**0.00**	**115.66**	**115.66**	**0.01**	**0.00**	**115.87**

Appendix C

Clean Water Act Section 404 Compliance

Whelan Mitigation Site

Delineation of Waters of the United States

1.0 INTRODUCTION & METHODS

An evaluation of the lateral extent of the ordinary high water mark (OHWM) at Murrieta Creek was conducted on January 8, 2014 by the following Corps staff:

- Tiffany Bostwick - Senior Biologist, Planning Division
- Justin Denelsbeck - Biologist, Planning Division
- Kenneth Wong - Supervising Physical Scientist, Planning Division

The ordinary high water mark (OHWM) is a defining element for identifying the lateral limits of non-wetland waters of the United States. Regulations at 33 CFR Part 328.3(e) site specific physical parameters that constitute OHWM:

> "The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area. "

In addition to the regulatory guidance, the evaluation utilized the following technical guide:

- A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States (ERDC/CRREL TR-08-12).

The Corps utilized the 1987 Wetland Delineation Manual to evaluate whether wetlands were present within the project area adjacent to Haskell Creek. To qualify as a wetland, an evaluated area needs to exhibit evidence of hydric soils, wetland hydrology, and wetland vegetation. Other technical guides utilized in the evaluation include:

- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ERDC/EL TR-08-28
- Field Indicators of Hydric Soils in theUnited States: A Guide for Identifying and Delineating Hydric Soils, Version 7.0, 2010, USDA/NRCS
- Arid West 2012 Final Regional Wetland Plant List, ERDC/CRREL TR-12-11

The Whelan Mitigation Site as well as an approximately 25 foot wide swath of the flood plain riverward of the rock levee was evaluated for the presence of OHWM to determine whether the site is within the lateral limits of non-wetland waters of the United States. In addition, the Whelan Mitigation Site was evaluated for the presence of wetlands to determine whether the site is a wetland waters of United States or a wetland adjacent to waters the United States. A total of four points were sampled for hydric soils at locations indicated on the attached map.

2.0 RESULTS

2.1 Waters of the United States

Mulefat and cottonwood trees are present throughout the mitigation site which is located within the floodplain as well as the river. However, geomorphic indicators of OHWM such as sediment sorting or incised banks were absent from the mitigation site as well as a portion of the floodplain riverward of the rock levee. Also absent were other indicators of OHWM such as staining, exposed root wads, or debris racks. Therefore, it was not possible to delineate the floodplain from the active channel based on the presence of mulefat, a facultative species. Proceeding along a transect perpendicular to the channel, there is a dramatic change in vegetation from facultative species composed of mulefat and cottonwood to obligate species such as cattails and bulrush. This change in vegetation occurs approximately 25 feet riverward of the rock levee. Therefore, the lateral extent of waters of the U.S. most likely extends to the mulefat-cattails boundary as shown in the sketch and aerial photograph below.

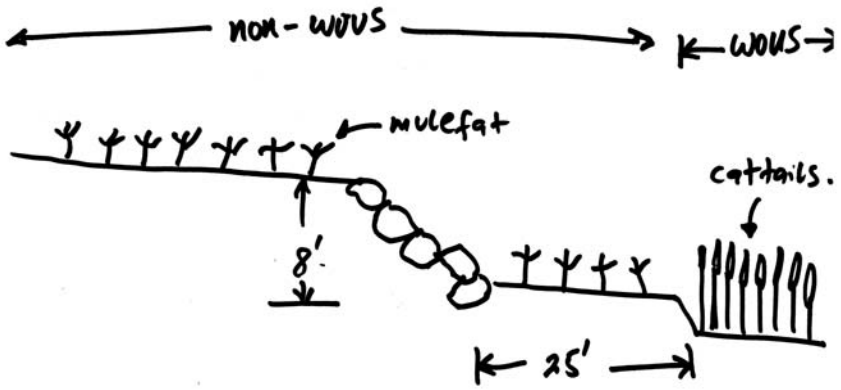

Figure 1: A non-scaled sketch indicating extent of waters of the United States based on a distinctive vegetation boundary between mulefat (FAC) and cattails (OBL) species

Figure 2: Representative aerial view of a portion of the mitigation site showing the lateral extent of waters of the United States based on a distinctive vegetation boundary between mulefat (FAC) and cattails (OBL) species

2.1 Wetland waters of the United States

Hydric soils, hydrophytic vegetation, and hydrology were evaluated at 4 sampling locations indicated in Figure 3. The samples locations were located approximately 20 feet landward of the rock levee.

Hydric Soils

The soil texture ranged from sandy to sandy-loamy. Matrix colors were fairly consistent as shown below:

Sample	Depth (inches)	Matrix Color	Redox Present?
1	12	10 YR 5/2	No
2	10	10 YR 4/2	No
3	12	10 YR 4/2	No
4	10	10 YR 4/3	No

Colors are within range for glayed soils but require 2% redox conenations to quality as hydric. However, soils are sandy and porous. As a result, redox features are absent. Thus, soils did not qualify as hydric.

Hydrophytic Vegetation

Percent cover of riparian vegetation consisting of cottonwood trees and mulefat scrub ranged from 70% to 90% indicating presence of hydrophytic vegetation.

Hydrology

Indicators of OHWM such as sediment sorting or incised banks were absent from the mitigation site as well as a portion of the floodplain riverward of the rock levee. Also absent were other indicators of OHWM such as staining, exposed root wads, or debris racks.

3.0 CONCLUSION

The Whelan Mitigation Site is not a water of United States based on the absence of OHWM indicators. The site does not qualify as an adjacent wetland due to the absence of hydrology and hydric soils.

Appendix D

Cultural Resources Supplemental Information

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

REPLY TO
ATTENTION OF

January 17, 2014

Office of the Chief
Planning Division

Dr. Carol Rolan-Nawi, Ph.D.
State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, California 95816

Dear Dr. Roland-Nawi:

The U.S. Army Corps of Engineers, Los Angeles District (Corps) is preparing cultural resources documentation for the proposed reconstruction of the Whelan Lake Mitigation Site which is located in the City of Oceanside, San Diego County (enclosure 1). This action is a feature of the San Luis Rey Flood Control Project (OHP Project #COE870721A). A Programmatic Agreement was executed for the project in 1989 (enclosure 2). The purpose of this letter is to notify your office of the proposed action, and describe our compliance with the PA. Construction will commence in February of 2014.

The Whelan Lake mitigation site was constructed in the early 1990s by the Corps as mitigation for levee construction along the lower portions of the San Luis Rey River. Initially, the mitigation project was on target for success as native vegetation was establishing. After a series of heavy storm events in 1992-1993, the mitigation site flooded. In response to this occurrence, the Corps decided to construct a small rock rubble levee to prevent the mitigation site from further flooding. Flood events, however, are a natural process and benefit the development of riparian systems. The establishment of the 3 to 4 foot tall rubble levee cut off the mitigation site from flood events, which prevented erosion and protected the newly planted vegetation, but did not allow for beneficial effects. There was also a build-up of silt behind the rubble levee which ultimately led to the deterioration of habitat quality at the Whelan mitigation site.

The original construction of the mitigation site was coordinated with your office. On February 5, 1992 you concurred with our determination that the proposed project would not affect historic properties. In addition, actual construction did not uncover any previously unknown resources. The current reconstruction project description does not change that determination.

The purpose for redesigning and reconstructing the Whelan mitigation site is to improve the mitigation sites' hydrologic connectivity to the San Luis Rey River by removing portions of the rock rubble levee, and installing additional native plantings. The native plantings will help restore the habitat to favorable conditions for the endangered birds that were once present on site. The removal of portions of the rock rubble levee will help restore pre-project hydrologic conditions and improve natural sustainability.

The Whelan Lake mitigation site reconstruction has a project footprint of 19.2 acres and would entail restoring 18 acres of riparian and riverine habitat, benefitting federally listed threatened and endangered

species such as the southwestern willow flycatcher and the least Bell's vireo. Restoration activities could include manual, mechanical, and/or chemical control of invasive exotic plant populations. The project will also include removal of approximately 1,500 linear feet of the rock rubble "levee," excavation to the historic (pre 1938) riverbed to allow for natural scour to occur, and excavation of a river channel to provide connectivity between the main San Luis Rey River thalweg and interior portions of the mitigation site. The proposed channel would allow for flood flows to reach the northern interior areas of the site during 2-year or greater storm events. The banks and terrace above the riparian habitat will be restored through natural recruitment (passive restoration) after invasive exotic weeds have been eradicated, and by allowing for overbanking flooding to occur. The areas being graded would be planted with appropriate riparian vegetation suitable for least Bell's vireo and southwestern willow flycatcher. The project's area of potential effects (APE) consists of areas directly affected by construction, and associated staging areas as depicted on the enclosed maps (enclosure 3).

The Corps requested an updated Sacred Lands File search, and a Native American contact list from the Native American Heritage Commission (NAHC) and information on potential sacred sites. The NAHC did not indicate the presence of Native American "cultural places" in the area. In addition, an updated reconnaissance of the property confirmed the current status of the property. The project site is in an area that is very disturbed from an archeological perspective as construction of the original mitigation site completely disturbed the ground surface. If any buried historic or prehistoric remains had once been present they would have been severely impacted. Construction of the original mitigation site did not uncover any buried resources in the early 1990s. None are expected by this reconstruction.

Based on a consideration of the above information, the Corps has determined that there would not be any new effects to historic properties by this reconstruction of the Whelan Lake mitigation site, and we are in compliance with the PA.

Please review the enclosed information and respond if you have any concerns. Construction will commence February 15, 2014. If you have any further questions on this project, please call Mr. Stephen Dibble, Senior Archeologist at (213) 452-3849. He may also be reached by e-mail at David.S.Dibble@usace.army.mil.

Sincerely,

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

Enclosure(s)

STATE OF CALIFORNIA Edmund G. Brown, Jr., *Governor*

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Boulevard, Suite 100
West Sacramento, CA 95691
(916) 373-3715
Fax (916) 373-5471
www.nahc.ca.gov
e-mail: ds_nahc@pacbell.net

August 1, 2013

Mr. Stephen S. Dibble, Archaeologist
U.S. Army Corps of Engineers – Los Angeles District
915 Wilshire Boulevard
Los Angeles, CA 90017

Sent by FAX to 213-452-4204
No. of Pages: 2

RE: NEPA document; draft NEPA Environmental Document for the **"Whelan Lake Mitigation Site: San Luis Rey Flood Control Project;"** located near Camp Pendleton Marine Corps Base at the south end and north of the City of Oceanside; San Diego County, California

Dear Mr. Dibble:

The Native American Heritage Commission (NAHC) has reviewed the above referenced project. The National Environmental Policy Act (NEPA 42 U.S.C 4321-43351) and Section 106 of the National Historic Preservation Act (16 U.S.C 470 *et seq.*) and 36 CFR Part 800.14(b) require consultation with culturally affiliated Native American tribes to determine if the proposed project may have an adverse impact on cultural resources. To adequately comply with this provision and mitigate project-related impacts on archaeological resources, the Commission recommends the following actions be required:

Contact has been made to the Native American Heritage Commission (NAHC) for:

- A list of appropriate and culturally affiliated Native American Contacts for consultation concerning the project site has been provided and is attached to this letter.
- A Sacred Lands File search failed to identify Native American traditional cultural places. Note that lack of surface evidence of archeological resources does not preclude their subsurface existence once ground-breaking activity begins. If that occurs, the NAHC suggests that inadvertent discoveries of human remains comply with California Health & Safety Code 7050.5 and Public Resources Code Section 5097.98 and coordinate with the NAHC.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Dave Singleton
Program Analyst
(916) 373-3715

Native American Contacts
San Diego County
August 1, 2013

Pala Band of Mission Indians
Historic Preservation Office/Shasta Gaughen
35008 Pala Temecula Road, Luiseno
Pala , CA 92059 Cupeno
PMB 50
(760) 891-3515
sgaughen@palatribe.com
(760) 742-3189 Fax

Pauma Valley Band of Luiseño Indians
Bennae Calac
P.O. Box 369 Luiseno
Pauma Valley CA 92061
bennaecalac@aol.com
(760) 617-2872
(760) 742-3422 - FAX

Pauma & Yuima Reservation
Randall Majel, Chairperson
P.O. Box 369 Luiseno
Pauma Valley CA 92061
paumareservation@aol.com
(760) 742-1289
(760) 742-3422 Fax

Rincon Band of Mission Indians
Bo Mazzetti, Chairperson
1 West Tribal Road Luiseno
Valley Center, CA 92082
bomazzetti@aol.com
(760) 749-1051
(760) 749-8901 Fax

Pechanga Band of Mission Indians
Paul Macarro, Cultural Resources Manager
P.O. Box 1477 Luiseno
Temecula , CA 92593
(951) 770-8100
pmacarro@pechanga-nsn.
gov
(951) 506-9491 Fax

San Luis Rey Band of Mission Indians
Cultural Department
1889 Sunset Drive Luiseno
Vista , CA 92081 Cupeno
760-724-8505

760-724-2172 - fax

Rincon Band of Mission Indians
Vincent Whipple, Tribal Historic Preationv. Officer
1 West Tribal Road Luiseno
Valley Center, CA 92082
jmurphy@rincontribe.org
(760) 297-2635
(760) 297-2639 Fax

La Jolla Band of Mission Indians
Lavonne Peck, Chairwoman
22000 Highway 76 Luiseno
Pauma Valley CA 92061
rob.roy@lajolla-nsn.gov
(760) 742-3796
(760) 742-1704 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed **Whelan Lake Mitigation Site of the San Luis Rey Flood Control District Project; located in North County, San Diego County, California for which a Sacred Lands File search and Native American Contnacts list were requested.**

Appendix E

CEQA Environmental Checklist Form

Appendix G

Environmental Checklist Form

1. Project title:
   Whelan Mitigation Site, Habitat Restoration, San Luis Rey River Flood Risk Management Project

2. Lead agency name and address:

   City of Oceanside, Planning Department, 300 N. Coast Highway, Oceanside, CA 92054

3. Contact person and phone number:
   Marisa Lundstedt, Planning Department, (760) 435-3535

4. Project location:
   San Diego County, California

5. Project sponsor's name and address:

   Marisa Lundstedt, Planning Department, City of Oceanside, 300 N. Coast Highway, Oceanside,

   CA 92054

6. General plan designation: _____ 7. Zoning: Open Space

8. Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)

   The project entails construction of a 18-acre mitigation site within the flood plain of the San Luis Rey River and future maintenance of vegetation within the site. Construction would entail earth moving activities such as grading and excavation followed by placement native riparian plants and irrigation. Maintenance activities would include application of herbicides, mowing, and weeding of non-native vegetation within the site. Please refer to Chapter 3 of the EA/MND for a detailed project description.

9. Surrounding land uses and setting: Briefly describe the project's surroundings:

   The project site is adjacent to single family residential developments to the southwest, south, and east. . Lands to the immediate northeast of the project site contain Whelan Lake and the San Luis Rey Wastewater Plant. The lands to the north and west of the site are within the boundaries of Camp Pendleton.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or

participation agreement.)

The project would require approvals from the San Diego Regional Water Quality Control Board, the California Department of Fish and Wildlife, and the US Fish and Wildlife Service.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture Resources	☐ Air Quality
☒ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Hazards & Hazardous Materials	☒ Hydrology/Water Quality	☐ Land Use/Planning
☐ Mineral Resources	☐ Noise	☐ Population/Housing
☐ Public Services	☐ Recreation	☐ Transportation/Traffic
☐ Utilities/Service Systems	☐ Mandatory Findings of Significance	

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
	1/22/14

Printed Name	For
Marisa Lundstedt	

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR

Marisa Lundstedt

or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

a) Earlier Analysis Used. Identify and state where they are available for review.

b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

a) the significance criteria or threshold, if any, used to evaluate each question; and

b) the mitigation measure identified, if any, to reduce the impact to less than significance

SAMPLE QUESTION

Issues:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒
II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) 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 which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
IV. BIOLOGICAL RESOURCES -- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal,	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
filling, hydrological interruption, or other means?				
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	❒	❒	❒	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	❒	❒	❒	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	❒	❒	❒	☒
V. CULTURAL RESOURCES -- Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	❒	❒	❒	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	❒	❒	❒	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	❒	❒	❒	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	❒	❒	❒	☒
VI. GEOLOGY AND SOILS -- Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	❒	❒	❒	☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	❒	❒	❒	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
VII. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒
VIII. HYDROLOGY AND WATER QUALITY -- Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
river, in a manner which would result in substantial erosion or siltation on- or off-site?				
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒
IX. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. MINERAL RESOURCES -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
XI. NOISE -- Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

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XII. POPULATION AND HOUSING -- Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	❒	❒	❒	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	❒	❒	❒	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	❒	❒	❒	☒
XIII. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	❒	❒	❒	☒
Police protection?	❒	❒	❒	☒
Schools?	❒	❒	❒	☒
Parks?	❒	❒	❒	☒
Other public facilities?	❒	❒	❒	☒
XIV. RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	❒	❒	❒	☒

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b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	❒	❒	❒	☒
XV. TRANSPORTATION/TRAFFIC -- Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	❒	❒	❒	☒
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	❒	❒	❒	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	❒	❒	❒	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	❒	❒	❒	☒
e) Result in inadequate emergency access?	❒	❒	❒	☒
f) Result in inadequate parking capacity?	❒	❒	❒	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	❒	❒	❒	☒
XVI. UTILITIES AND SERVICE SYSTEMS -- Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	❒	❒	❒	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	❒	❒	❒	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	❒	❒	❒	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	❒	❒	❒	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	❒	❒	❒	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	❒	❒	☒	❒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	❒	❒	❒	☒
XVII. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	❒	☒	❒	❒
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental	❒	❒	☒	❒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?				
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	❒	❒	◪	❒

Note: Authority cited: Sections 21083 and 21087, Public Resources Code. Reference: Sections 21080(c), 21080.1, 21080.3, 21082.1, 21083, 21083.3, 21093, 21094, 21151, Public Resources Code; Sundstrom v. County of Mendocino, 202 Cal.App.3d 296 (1988); Leonoff v. Monterey Board of Supervisors, 222 Cal.App.3d 1337 (1990).