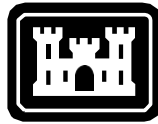


**SANTA ANA RIVER MAINSTEM PROJECT:
LOWER NORCO BLUFFS TOE PROTECTION**

County of Riverside, California

**DRAFT
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT AND
ENVIRONMENTAL IMPACT REPORT ADDENDUM**



**US Army Corps
of Engineers®**

Los Angeles District

April 2020

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List of Acronyms	
ABC	Aggregate Base Course
ACS	American Community Survey
APE	Area of Potential Effect
ASTM	American Society for Testing of Materials
BMP	Best Management Practice
BNSF	Burlington Northern Santa Fe
BO	Biological Opinion
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQ	Center for Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response Cleanup and Liability Act
CESA	California Endangered Species Act
CNPS	California Native Plant Society
DG	Decomposed Granite
EA	Environmental Assessment
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	United States Environmental Protection Agency
ER	Engineering Regulation
GDM	General Design Memorandum
GHG	Green House Gas
GSA	U.S. General Services Administration
HTRW	Hazardous, Toxic, Radioactive Waste
I-15	Interstate 15
LADUSACE	U.S. Army Corps of Engineers, Los Angeles District
LRR	Limited Reevaluation Report
MSHCP	Multi-Species Habitat Conservation Plan
NED	National Economic Development
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
OCFCD	Orange County Flood Control District
OCPW	Orange County Public Works
OCWD	Orange County Water District
OHWM	Ordinary High Water Mark
OMRRR	Operation, Maintenance, Repair, Replacement, Rehabilitation
PBF	Physical and Biological Features
PCA	Project Cooperation Agreement
RCFC&WCD	Riverside County Flood Control and Water Conservation District
RCRA	Resource Conservation and Recovery Act
RCRCD	Riverside-Corona Resource Conservation District
RDF	Reservoir Design Flood
ROG	Reactive Organic Gases
RWQCB	Regional Water Quality Control Board
SEA	Supplemental Environmental Assessment

SEIS	Supplemental Environmental Impact Statement
SARMP	Santa Ana River Mainstem Project
SAWA	Santa Ana Watershed Association
SAWPA	Santa Ana Watershed Project Authority
SBCFCD	San Bernardino County Flood Control District
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SEA	Supplemental Environmental Assessment
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SR-91	State Route 91
SWPPP	Stormwater Pollution Prevention Plan
TCE	Temporary Construction Easement
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
WRDA	Water Resources Development Act

1 INTRODUCTION

This draft Supplemental Environmental Assessment (SEA) and Environmental Impact Report (EIR) Addendum for the Lower Norco Bluffs Toe Protection (Lower Norco Bluffs) portion of the Santa Ana River Mainstem Flood Control Project (SARMP) has been prepared by the U.S. Army Corps of Engineers (Corps) as a supplement to the Final Supplemental Environmental Impact Statement (SEIS)/EIR for Prado Basin Vicinity, dated November 2001 (hereinafter referred to as the 2001 SEIS/EIR). The 2001 SEIS/EIR addressed several components of SARMP within the downstream of Prado Basin, including toe protection at Lower Norco Bluffs, and assessed impacts to environmental resources related to both implementation and future maintenance. Alternatives were described in Chapter 4 of the 2001 SEIS/EIR, which is incorporated here by reference. This current draft SEA includes the preferred alternative described in the 2001 SEIS/EIR, which is now considered the “No Action” alternative, and proposed modifications (the Proposed Action). The “No Construction” alternative was also evaluated in the 2001 SEIS/EIR. This SEA/EIR Addendum satisfies requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) documentation.

The purpose of the SARMP is to provide flood risk reduction to areas susceptible to flooding within the counties of San Bernardino, Riverside, and Orange. The Corps is the lead agency for compliance with NEPA, and Orange County Public Works (OCPW) (referred to as Orange County Flood Control District [OCFCD] in previous USACE SARMP documents), one of the three SARMP local sponsors, is the lead agency for compliance with CEQA. Other local sponsors for the SARMP include the Riverside County Flood Control and Water Conservation District (RCFC&WCD) and San Bernardino County Flood Control District (SBCFCD). The OCPW is responsible for operation, maintenance, repair, replacement, and rehabilitation of many of the SARMP features, including Norco Bluffs. Other agencies (i.e., cooperating, responsible, and trustee agencies) that may use this SEA/EIR Addendum in the decision-making or permit process will consider the information in this combined document along with other information that may be presented during the NEPA/CEQA process. Other responsible and trustee agencies were identified in the 2001 Final SEIS/EIR and are listed as follows:

- California Department of Fish and Game (now California Department of Fish and Wildlife),
- California Department of Parks and Recreation,
- City of Corona,
- Orange County Water District,
- Santa Ana Regional Water Quality Control Board, and
- United States Fish and Wildlife Service

Major flood control improvements, including raising Prado Dam, have been approved as part of the SARMP. In conjunction with raising Prado Dam, the OCPW was responsible for acquiring all property rights located between the 556-ft. and the 566-ft. elevation lines. This elevation band represents the added area that is susceptible to inundation during the Reservoir Design Flood (RDF). Within the Norco Bluffs area, directly upstream of Prado Basin, the 566-ft elevation line has been continually migrating due to erosion of the south bank of the Santa Ana River. The greatest amount of erosion has occurred during storm events when lateral migration of the Santa Ana River has caused erosional undercutting of the toe of the bluffs, resulting in sloughing of the bluff.

After the storms of 1969, USACE constructed 2,100 ft. of pile, rock, and rubble revetment upstream of Interstate 15 (I-15) (within Zone 2 of Norco Bluffs) to keep smaller, more frequent floods from

undercutting the toe of the bluffs. By 1974, the revetment was no longer controlling the migration of the Santa Ana River. Undercutting of the bluff was occurring behind the revetment, leaving it ineffective and isolated within the channel bed. In 2004, the USACE completed stabilization of the bank within Zones 1 and 2 of Norco Bluffs. This was not part of the SARMP, but was separately authorized and funded as a stand-alone project. Potential erosion is now limited to the area between Prado Basin and I-15 (Zones 3-5).

Under a 190-year flood event, storm water could inundate areas behind Prado Dam up to elevation 566-ft., subsequent to the proposed raising of the dam and spillway. As stated above, the OCPW was required to acquire all property rights within the Prado Basin up to elevation 566-ft through purchase or obtainment of a flood easement due to the potential for storm water to inundate areas up to elevation 566-ft. Property acquisition would not be required in cases where the development or infrastructure would be protected by one of the dikes or embankments that were proposed to be constructed around the perimeter of Prado Basin, as described in the 2001 SEIS.EIR and/or subsequent SEAs. Since the Lower Norco Bluffs have historically retreated, and the 566-ft elevation contour is located along the toe of the bluffs, this elevation line could extend farther south. If the 566-ft elevation contour extends farther south, OCPW would be required to acquire more land in fee or through acquisition of an easement. The erosion and subsequent acquisition requirements could involve numerous homes and properties (at least 80 residences). Instead, the OCFCD, in coordination with the Corps, is proposing to stabilize the bluff toe at the Lower Norco Bluffs so that the 566-ft elevation contour remains within the existing riverbed.

The SEA/EIR addendum is necessary to document and evaluate the impacts of design refinements on environmental resources, and to document changed conditions in the project area. The changes to the Lower Norco Bluffs Project design, include modifications to the composition of the embankment structure, location and length of access roads, and addition of drainage features.

1.1 PROJECT LOCATION

The Lower Norco Bluffs Project is located in the city of Norco, Riverside County (**Figure 1.1-1**), adjacent to the Santa Ana River. The Santa Ana River is an approximately 100-mile long waterway that runs from the San Bernardino Mountains to Huntington Beach in southern California. The Lower Norco Bluffs Project construction would occur along an approximate 1.54-mile reach of the Santa Ana River near the northwest boundary of the City of Norco. The project area is approximately 8 miles north of Prado Dam Embankment and about 40 miles southeast of Los Angeles. The site of the Proposed Action is located along the southern bank of the Santa Ana River, southwest of I-15, and comprises three reaches. The three reaches are classified as Zones 3, 4, and 5 for design reference purposes. Zone 3 is located downstream of Hammer Avenue Bridge. Zones 4 and 5 are located immediately downstream of Zone 3, in succession.

Figure 1.1-2 shows the entire watershed of the Santa Ana River, and **Figure 1.1-3** shows the vicinity of the subject Lower Norco Bluffs Project along with the estimated implementation schedule.

Santa Ana River: Lower Norco Bluffs Toe Protection

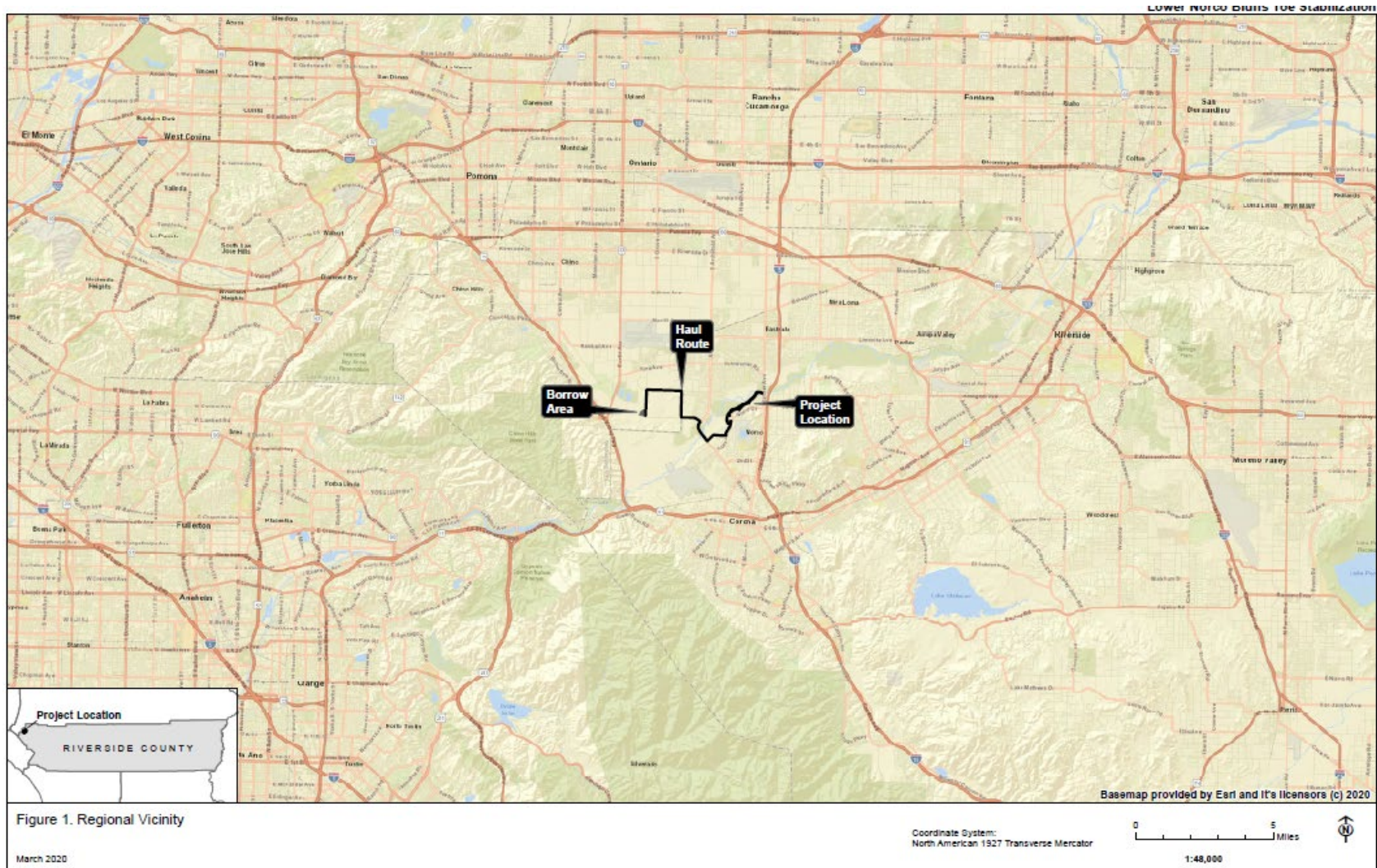


Figure 1.1-1 Lower Norco Bluffs Regional Map

Santa Ana River: Lower Norco Bluffs Toe Protection

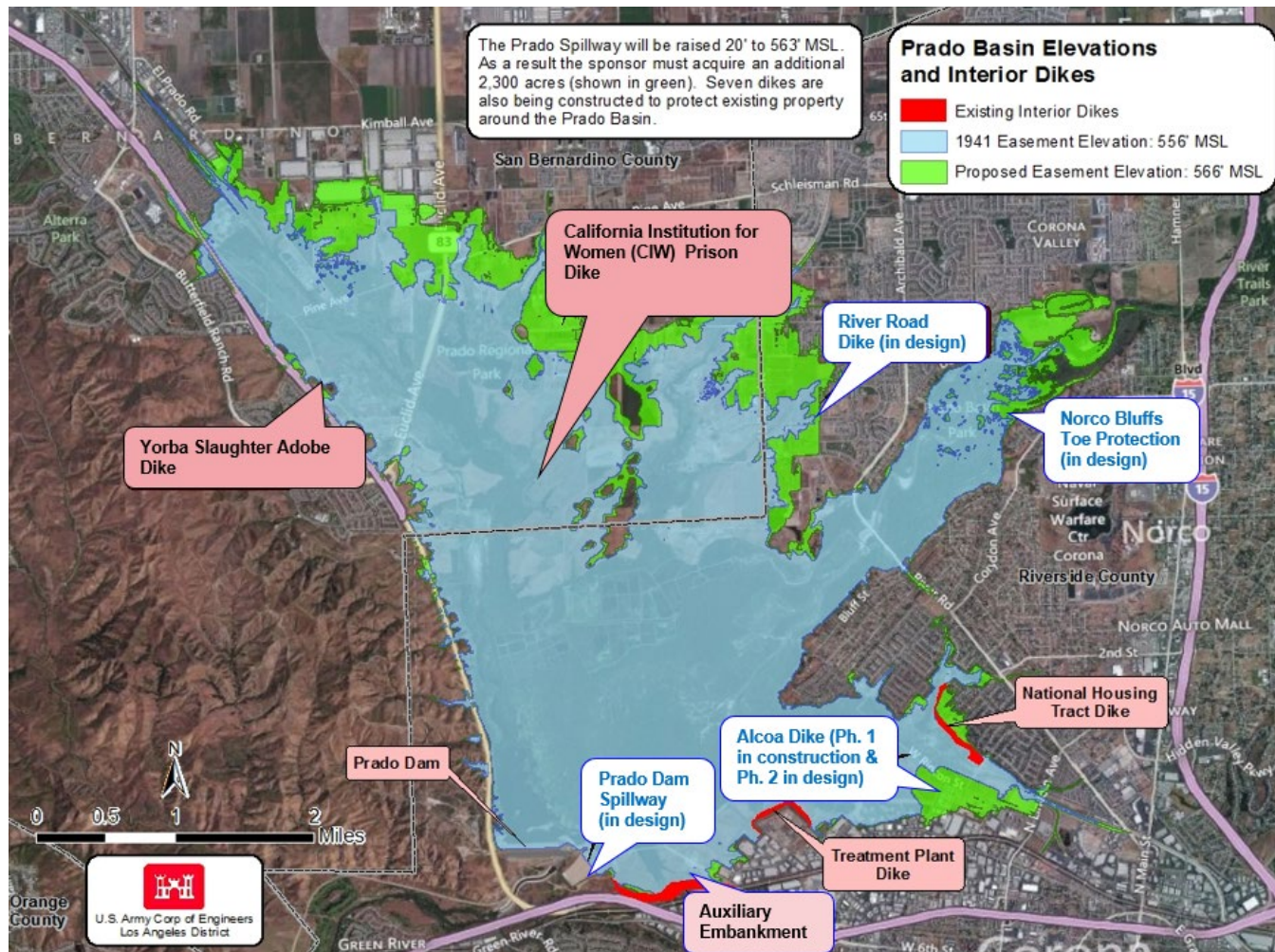


Figure 1.1-2 Existing and Proposed Projects in Project Vicinity

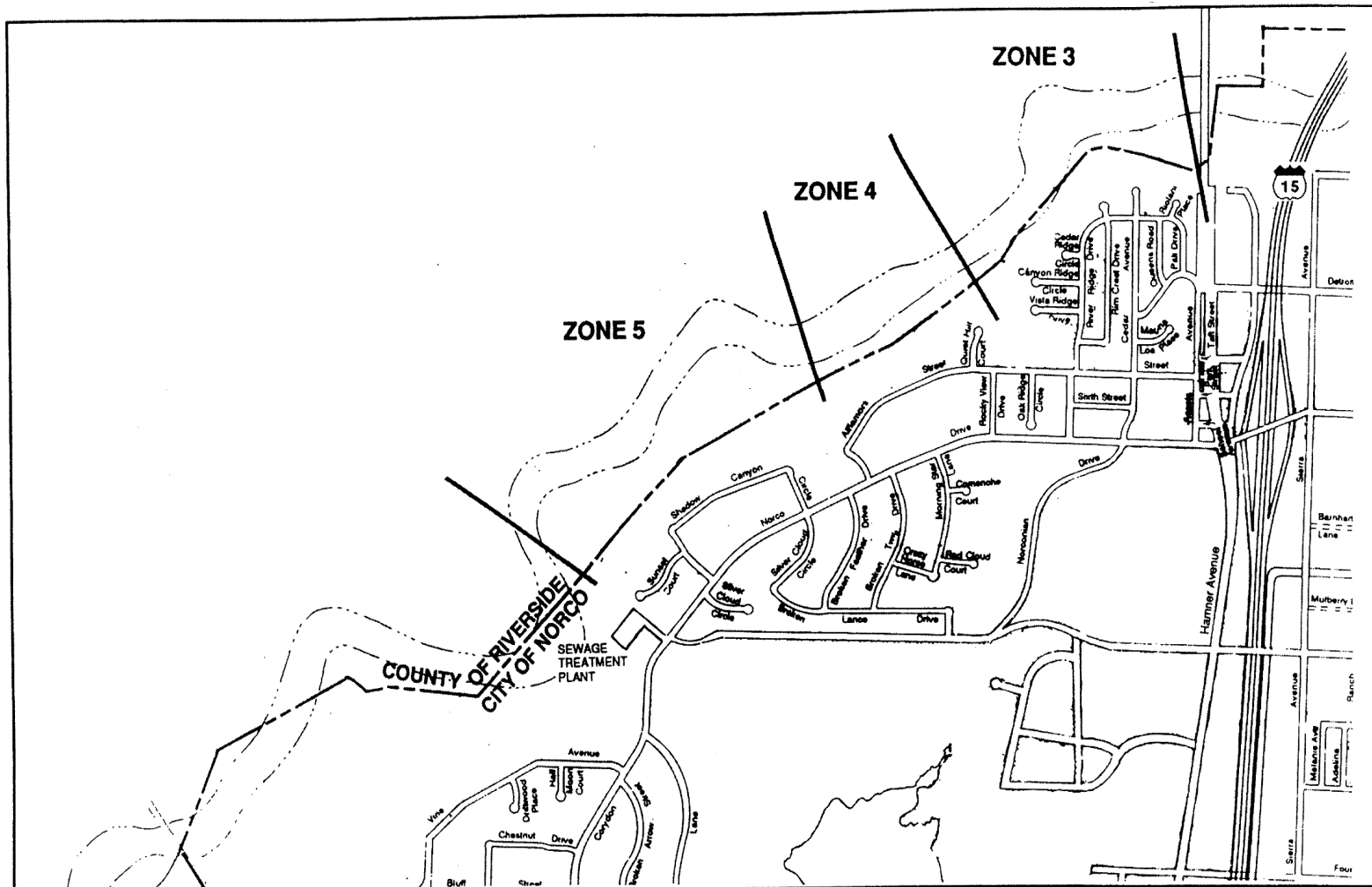


Figure 1.1-3 Lower Norco Bluffs Vicinity Map

1.2 PROJECT AUTHORITY

The SARMP is located along a 75-mile reach of the Santa Ana River in Orange, Riverside, and San Bernardino Counties, California. The SARMP is a comprehensive flood risk management system that was authorized for construction by Section 401(a) of the Water Resources Development Act (WRDA) of 1986.

The recommended plan for the SARMP is contained in the Phase I General Design Memorandum (GDM) for the SARMP (Corps 1980) and included eight elements, which were subsequently reevaluated in the Phase II GDM (Corps 1988). The Phase II GDM modified the SARMP by redefining the authorized SARMP features and clarifying that the Standard Project Flood term referred in most cases to the 190- year flood event. Construction of the SARMP commenced in fiscal year 1989.

In 2001, the Corps prepared an SEIS/EIR that addressed additional and modified features or elements in the vicinity of Prado Dam, including the addition of the Norco Bluffs stabilization feature. The Corps also prepared a Limited Reevaluation Report (LRR) entitled Prado Dam Separable Element, Prado Basin & Vicinity, including Stabilization of Bluff Toe at Norco Bluffs Santa Ana River Basin, California, dated September 2001 pursuant to Section 309(a) of WRDA of 1996. The LRR recognized, consistent with the Phase I GDM and Phase II GDM, that the purpose of the proposed Prado Dam improvements was to increase the reservoir storage capacity from 217,000 acre-feet to 362,000 acre-feet and to be able to release 30,000 cubic feet per second (cfs) flows from Prado Dam into the downstream channels. In accordance with the determination in the LRR to construct Prado Dam as a separable element, the Prado Dam component was removed from the definition of the project in the Project Cooperation Agreement (PCA) by a second modification to the PCA dated February 24, 2003. A PCA for the Prado Dam feature as a separable element was signed on February 11, 2003, with OCPW as the non-Federal sponsor.

1.3 PREVIOUSLY PREPARED DOCUMENTS

Below is a list of the relevant environmental documents that have been completed for the SARMP. Throughout the analysis of this SEA/EIR Addendum, the following documents may be referenced:

- Survey Report and Environmental Impact Statement, United States Army Corps of Engineers, Los Angeles District, 1975.
- Phase I General Design Memorandum and Supplemental Environmental Impact Statement, United States Army Corps of Engineers, Los Angeles District, 1980.
- Upstream Dam Alternatives Supplemental Environmental Impact Statement, United States Army Corps of Engineers, Los Angeles District, 1985.
- Santa Ana River Mainstem including Santiago Creek. Phase II General Design Memorandum and Supplemental Environmental Impact Statement (GDM/SEIS), United States Army Corps of Engineers, Los Angeles District, 1988.
- Reconnaissance Report, Norco Bluffs, Riverside County, California, United States Army Corps of Engineers, Los Angeles District, April 1993.
- Santa Ana River Mainstem, Prado Basin, Norco Bluffs. United States Army Corps of Engineers, Los Angeles District, January 1994.
- The Norco Bluffs (Zone 2) Feasibility Study and Final Environmental Impact Report. United States Army Corps of Engineers, Los Angeles District 1996.

- Final Environmental Assessment for Norco Bluffs Stabilization. United States Army Corps of Engineers, Los Angeles District, February 1999.
- Prado Basin and Vicinity, Including Reach 9 and Stabilization of the Bluff Toe at Norco Bluffs SEIS/EIR, United States Army Corps of Engineers, Los Angeles District, 2001.
- Reinitiation of Formal Section 7 Consultation on the Prado Mainstem and Santa Ana River Reach 9 Flood Control Projects and Norco Bluffs Stabilization Project, Orange, Riverside, and San Bernardino Counties, 2012 Biological Opinion (BO) Amendment (FWS-SB/WRIV/OR-08B0408-11F0551). The Service has issued a series of BOs (including, but not limited to, Service 1980, 1989, 2001, 2004, 2005, 2012, 2013, 2015, 2017) addressing the effects of constructing, operating, and maintaining the SARMP on federally listed species and their designated critical habitat.

1.4 SUMMARY OF CHANGES FROM THE 2001 SEIS/EIR

- The embankment structure will be comprised of launchable rock, rip-rap and fill rather than soil cement. Effects of this modification on environmental resources have been analyzed.
- A system of v-ditches, catch basins, side drains, and culverts have been added to the design to facilitate drainage. Effects of this modification on environmental resources have been analyzed.
- A new staging area would be located south of and adjacent to the previous staging area, off of Corydon Avenue. Effects of this modification on environmental resources have been analyzed.
- The Temporary Construction Easement was modified to include the Corydon Equestrian Staging Area. The resulting TCE would extend from approximately 450 ft. downstream of Hamner Avenue to the Corydon Equestrian Staging Area off of Corydon Avenue. Effects of this modification on environmental resources have been analyzed.

1.5 OBJECTIVES, PURPOSE, AND NEED

In accordance with 40 CFR 1502.13, this section provides an explanation of the “underlying purpose and need to which the [Corps] is responding in proposing the alternatives including the Proposed Action.”

The federal objective of water and related land resources project planning is to contribute to national economic development (NED). Such contributions are considered increases in the net value of the national output of goods and services expressed in monetary units. These contributions are to be consistent with the protection of the nation’s environment, pursuant to applicable executive orders and other federal planning programs, including the consideration of state and local concerns. The NED objective of the approved SARMP is to provide flood risk management for portions of Orange, Riverside, San Bernardino Counties, while maximizing contributions to NED.

The Lower Norco Bluffs Project is part of the Prado Basin flood control improvement separable element of the SARMP. The project was analyzed in the 2001 Final SEIS/EIR. During preparation of the project’s Plans and Specifications, the design of the Lower Norco Bluffs Project (Proposed Action or proposed project) was further refined.

In conjunction with raising Prado Dam, the OCPW is responsible for acquiring all property rights located between the 556-ft and the 566-ft elevation lines. This elevation band represents the added area that is susceptible to inundation during the RDF. Within the area of Norco Bluffs, the 566-ft elevation line has been continually migrating due to stormwater erosion of the bluffs (**Figure 1.5-1**). The talus is a slope in

which debris piles up to a characteristic angle of repose. The talus is removed when the river is at flood stage.

The main objective of the Proposed Action would be the same as the previously approved Lower Norco Bluffs Project, which is to prevent further erosion of the bluff toe and, thus, preventing the movement of the Prado Dam 566-ft elevation line. Impinging river flow causes undercutting of the toe of the bluffs, which leads to destabilization of the bluff face. Without a toe protection project, there is potential for the bluff erosion to affect the location of the 566-ft elevation line, which would require additional real estate acquisition involving numerous homes and properties.

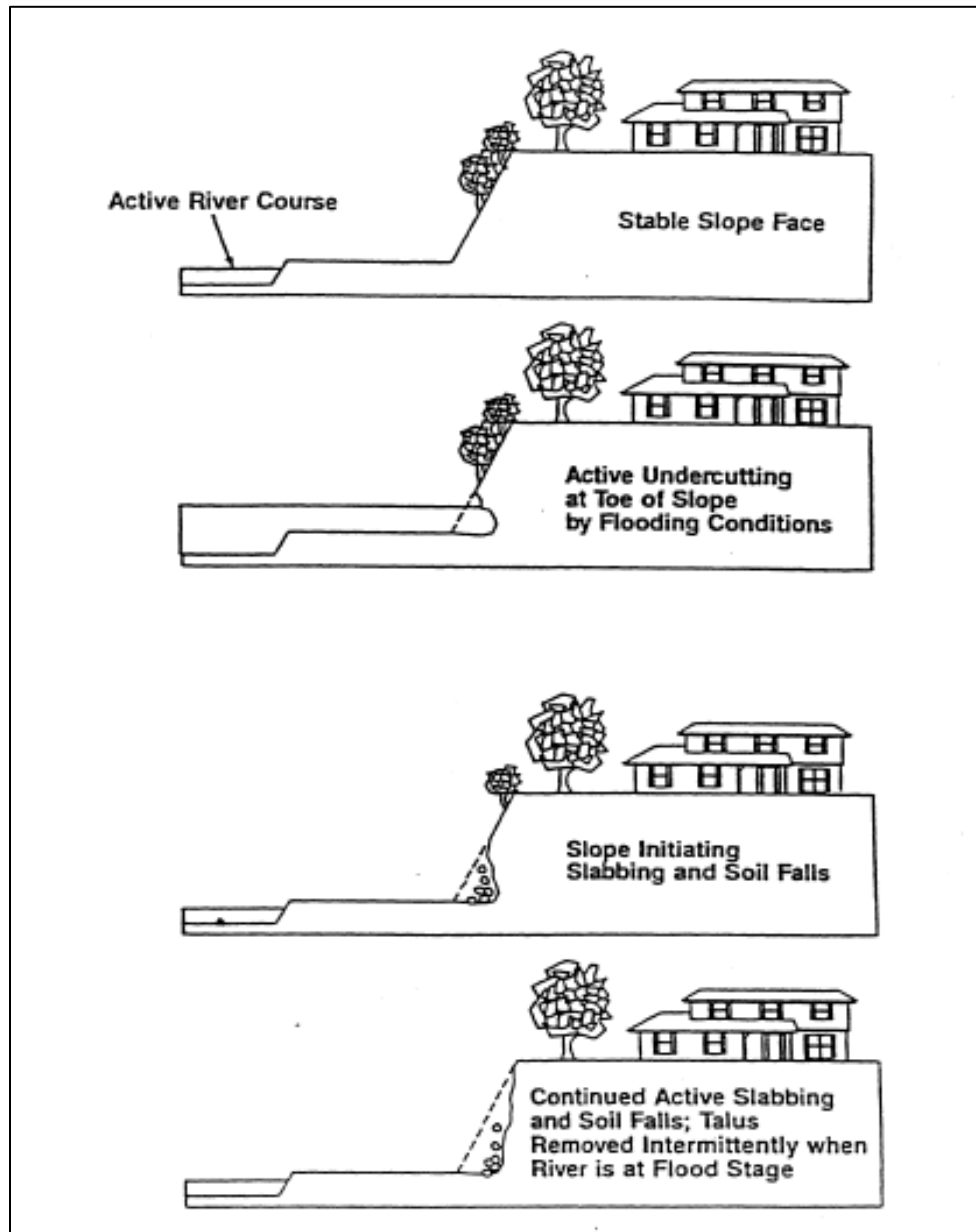


Figure 1.5-1 Schematic of Bluff Erosion Process

Statement of Need

As discussed in the 2001 SEIS/EIR, previous Corps investigation have focused on stabilization of the toe bluff, which has been subject to erosion during storm events that cause lateral migration of the river and results sloughing of the bluff top. Impinging flows of the Santa Ana River directly causes the retreat of the bluffs. The impinging river flow causes undercutting of the toe of the bluffs, which leads to destabilization of the bluff face. The purpose of this project is to stabilize the toe of the bluff.

This document addresses design refinements and other changes made to the temporary and permanent construction footprint since the 2001 SEIS/EIR. Modification to the 2001 design was deemed necessary to avoid environmental, cost, and timing consequences associated with temporarily diverting and dewatering the primary stream flow of the Santa Ana River and constructing an embankment comprised of soil cement.

Statement of Purpose

The purpose of the Proposed Action is to stabilize the toe of the bluff within the project area so that the 566-ft elevation line is stabilized, thereby avoiding the need for additional real estate acquisition.

2 PROPOSED ACTION AND ALTERNATIVES

2.1 COMPARISON OF PREVIOUSLY APPROVED DESIGN AND PROPOSED ACTION

A comparison of the Previously Approved Design and the Proposed Action is shown below in **Table 2-1**.

Table 2-1 Differences between Previously Approved Design and Proposed Action

PREVIOUSLY APPROVED DESIGN	PROPOSED ACTION
Construction Duration	
Approximately 9 months	Approximately 2 years
Project Feature	
An approximately 1.5-mile long embankment structure comprised of soil cement and extending about 15 ft. below the riverbed to the 100-year flood level at a 1:1 angle (project feature)	An approximately 1.5-mile long embankment structure comprised of launchable rock, riprap, bedding material, and fill measuring and extending about 2.5 ft. below the riverbed to the top of bank protection of 100-year water surface elevation at a 2:1 angle (project feature)
Drainage	
Filling of four side canyon areas along the project length to ensure proper drainage	Filling of one side canyon and a system of v-ditches, catch basins, side drains, and culverts at 3 canyon areas.
Staging Areas	
An approximately 1-acre staging area would be located within an abandoned wastewater treatment plant site, located off of Corydon Avenue	An approximately 1.5-acre staging area would be located just south of abandoned wastewater treatment plant site, located off of Corydon Avenue.
Project Access	
A permanent maintenance road would be placed in the vicinity to allow for periodic maintenance of the structural enhancements.	A permanent maintenance road would be constructed on top of the project access road off of Shadow Canyon Circle and extend along the top of the embankment. In addition, a temporary access ramp would be constructed at the toe of the bluff and adjacent to the staging area at the southern end of the project area.
Construction Methods	
Diversion and dewatering of the primary stream flow of the Santa Ana River	No diversion or dewatering of the primary stream flow of the Santa Ana River
Temporary Construction Easement (TCE)	
The TCE would include approximately 75 acres and extend from approximately 450 ft. downstream of Hamner Avenue to the abandoned wastewater treatment plant off of Corydon Avenue.	The modified TCE would also measure approximately 75 acres, however the Corydon Equestrian Staging Area would be included instead of the abandoned wastewater treatment plant. The resulting TCE would extend from approximately 450 ft. downstream of Hamner Avenue to the Corydon Equestrian Staging Area off of Corydon Avenue.

2.2 ALTERNATIVES EVALUATED AND ELIMINATED

No Construction Alternative

The No Construction Alternative was addressed in the 2001 SEIS/EIR, along with the Preferred Alternative (the previously approved design) and one other design alternative. Therefore, the No Construction Alternative is not carried forward for further analysis in this SEA/EIR Addendum.

2.3 PROJECT ALTERNATIVES (ALTERNATIVES CONSIDERED FOR ENVIRONMENTAL ANALYSIS)

Two alternatives have been carried forward for detailed analysis in this draft SEA and EIR addendum. These alternatives are:

- Previously Approved Design Alternative, i.e. the No Action Alternative.
- Proposed Action

2.3.1 PREVIOUSLY APPROVED DESIGN ALTERNATIVE

The Previously Approved Design Alternative is defined as constructing the Lower Norco Bluffs Project according to the plan presented in the 2001 SEIS/EIR and adopted by the Corps. The alternative would provide approximately 1.5 miles of bluff stabilization along the Santa Ana River, downstream of the I-15 bridge in Norco, California. The area had been designed as zones 3, 4, 5 in the 1996 Feasibility Report for Norco Bluffs, but is included in Phase II of the Prado Dam project in order to stabilize the 566- ft. elevation line of the dam. The design consists of soil cement toe protection with a top elevation equal to the 100-year water surface elevation. The soil cement embankment structure would be located between the toe and the riverbed. The structure would be approximately 8 ft. thick and extend from approximately 15 ft. below the riverbed to the 100-year flood level at a 1:1 angle. The soil cement would be formed through a mixture of soil and cement with water, and it dries to a concrete-like hardness. Compacted fill would be located between the soil cement structure and bluff slope at the 100-year flood elevation. The majority of the toe stabilization structure below the riverbed is expected to require dewatering of the Santa Ana River. In Zone 3, dewatering and diversion of the primary stream flow of the Santa Ana River would be required. In addition, fill would be placed within four side canyon areas along the project length in order to ensure proper drainage from these areas. A permanent maintenance road would be placed in the vicinity to allow for periodic maintenance of the structural enhancements.

A staging area for construction equipment would be located within an abandoned wastewater treatment plant site that is located approximately 1440 ft. downstream of the toe stabilization improvements for Zone 5. A temporary access road and construction easement would extend from the staging area along the river bed adjacent to the bluff toe in Zones 3, 4, and 5.

This alternative would require approximately 300,000 cubic yard (cy) of soil fill and soil cement for the toe stabilization structure. Any offsite fill material would be obtained from the northern portion of the Prado Basin, referred to as Borrow Area No. 2. in the 2001 SEIS/EIR, which is located at the confluence of Mill Creek and Chino Creek near the southern terminus of Cucamonga Avenue. The environmental effects related to utilization of Borrow Area No. 2 were previously analyzed by the USACE in the Final Environmental Assessment for Norco Bluffs Stabilization, prepared in February 1999, and in the 2001 Final

SEIS/EIR.

The total construction time for this alternative was estimated to be approximately 18 months. Subsequent to construction activities, periodic maintenance would be required within the river channel to ensure continued integrity of the structural enhancements. Anticipated maintenance activity would involve:

- Periodic weed abatement of soil cement and access road areas
- Repair of access roads, as required
- Repair of soil cement structure and associated fill, as required
- Maintenance of access road gate and fencing
- Any emergency activities, as may be required

2.3.2 PROPOSED ACTION ALTERNATIVE

The Proposed Action Alternative is similar to the previously approved design alternative and associated local sponsor real estate actions of road and utility relocations except for the changes identified in Table 2.1-1 above. Environmental commitments associated with the Proposed Action are described in Section 6 of this SEA/EIR addendum. Impact evaluation will be based on inclusion of these minimization, avoidance, and offsetting measures.

Similar to the previously approved design alternative, the Proposed Action would be located on federal, city and county land, and would be adjacent to the Santa Ana River downstream of the I-15 bridge in Norco, California. Design modifications including the incorporation of launchable rock and riprap rather than soil cement would eliminate the need for diversion or dewatering of the primary stream flow of the Santa Ana River. Some dewatering within the floodplain, outside of the main channel, may be required. However, operations are expected to be minimal, should they occur. The embankment would measure approximately 1.5 miles (7,920 ft.) in length (**Figure 2.3-1**). Excavation would occur to approximately 2.5 ft. of the existing grade. The toe of the embankment would be approximately 2.5 ft. from the existing grade and would be comprised of existing fill. The slope face of the embankment would be lined with bedding material (1.5 ft. thick) and riprap (3.5 ft. thick). Launchable stone (width varies between 5 ft. – 25 ft., measured horizontally from the toe of riprap) would be placed at the toe of the embankment, in front of the riprap slope, to provide scour protection. The average width from the face of the bluff fill line to the toe of the launchable rock would be approximately 120 ft. The fill and riprap protection would start 2.5 ft. below the riverbed and extend at a 2H:1V slope to the top of bank protection of 100-year water surface elevation. Launchable stone would start 2.5 ft. below the riverbed and extend at a 2H:1V from the riprap toe to a vertical height of approximately 9 ft. (**Figure 2.3-2**).

For maintenance purposes, a permanent, asphalt maintenance road would run the length of the embankment. Five asphalt turnaround areas would be located on top of the embankment along the permanent maintenance road. A permanent ramp would also be constructed from the top of the embankment to the river channel to allow access to the toe of the structure.

One side canyon would be filled to facilitate drainage. A network of concrete v-ditches and side drains would also be constructed on top of the embankment.

Santa Ana River: Lower Norco Bluffs Toe Protection

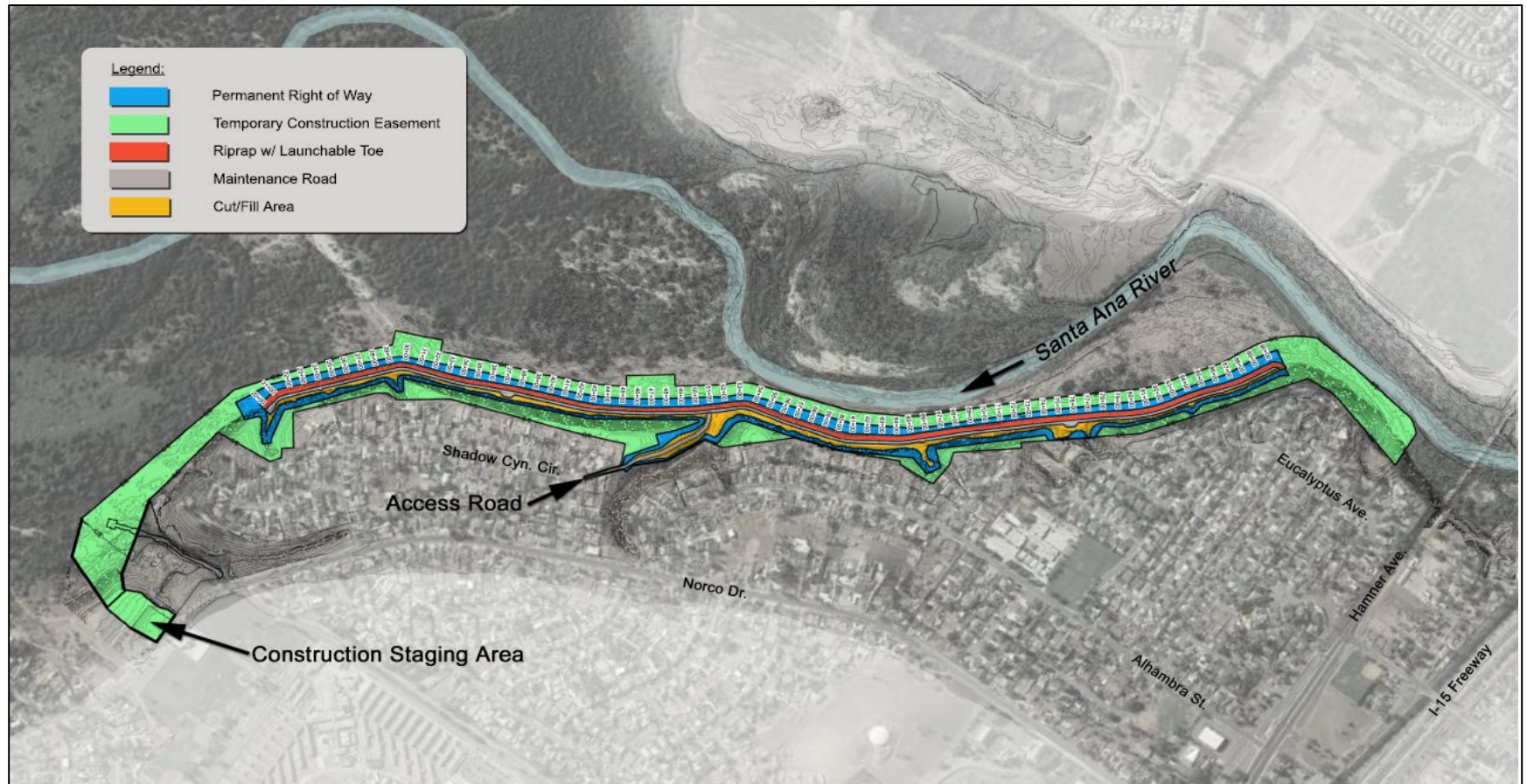


Figure 2.3-1. Lower Norco Bluffs Project Map and TCE Boundary

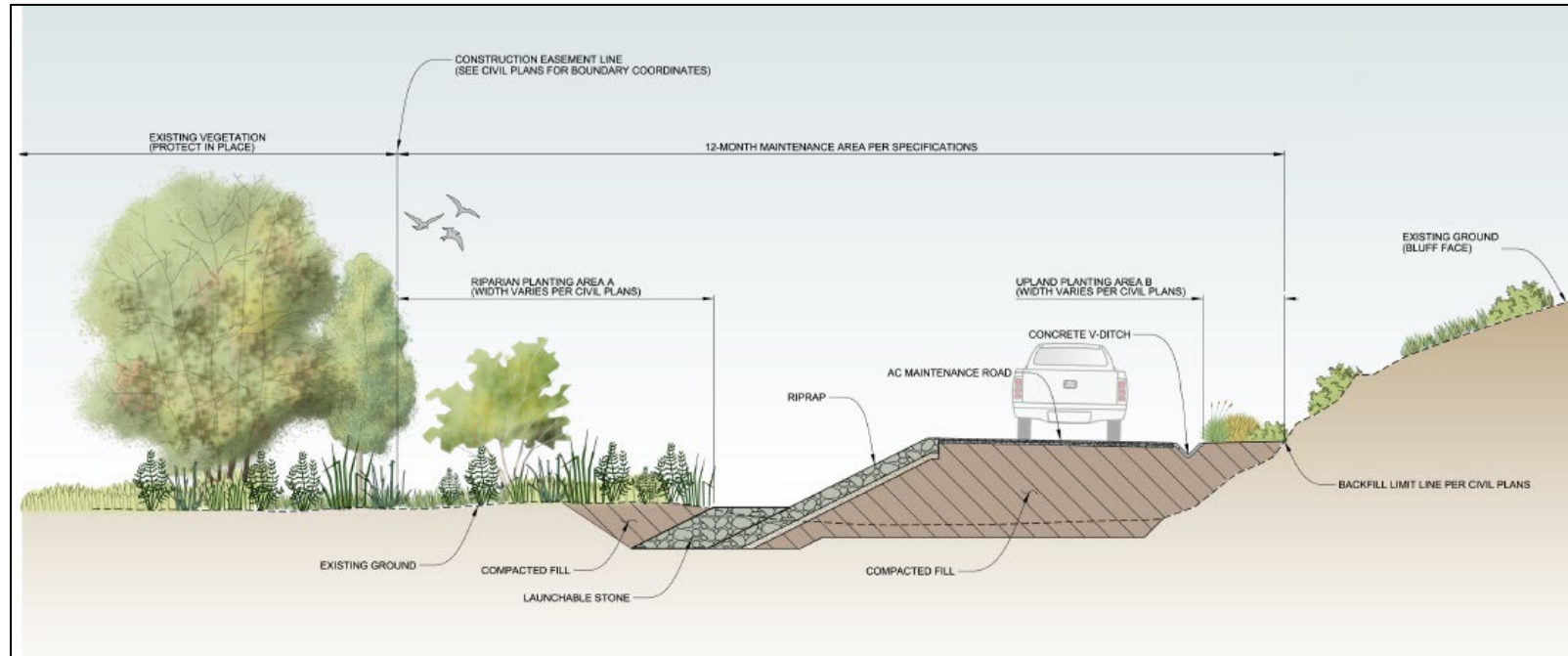


Figure 2.3-2 Typical Cross-Section of Project Feature

2.3.2.1 *Staging Areas*

One staging area is proposed and located off of Corydon Avenue at the southern end of the project site. The Corydon Equestrian Staging Area measures approximately 1.5 acres. The staging area is currently owned by the city of Norco and is used as an equestrian staging area, trailhead, and overflow parking lot for the adjacent Wayne-Makin Shearer Sports Complex (**Figure 2.3-3**).



Figure 2.3-3. Proposed Staging Area

2.3.2.2 *Project Access*

Construction vehicles would access the site from the Corydon Avenue Staging Area and Shadow Canyon Circle. The access road from Shadow Canyon Circle would extend to the top of the project feature.

From the Corydon Equestrian Staging Area, a temporary access ramp comprised of fill would be constructed to join the staging area and temporary construction access road. The contractor would submit the design of the temporary ramp to the Corps for review. **Figure 2.3-4** shows an example of a potential footprint for the temporary ramp.

From Shadow Canyon Circle, one 15-ft wide permanent maintenance road would be constructed and extend to the top of the embankment (**Figure 2.3-5**). The maintenance road would be comprised of a 12-ft. wide Aggregate Base Course (ABC) road and 10 ft. decomposed granite (DG) path. The ABC maintenance road and DG trail will be separated by a 6-inch concrete mow curb. A 6-ft. chainlink fence will line the perimeter of the permanent access road along the bluff slope and extend to the top of the embankment. **Figure 2.3-6** shows a typical cross-section of the permanent maintenance road.

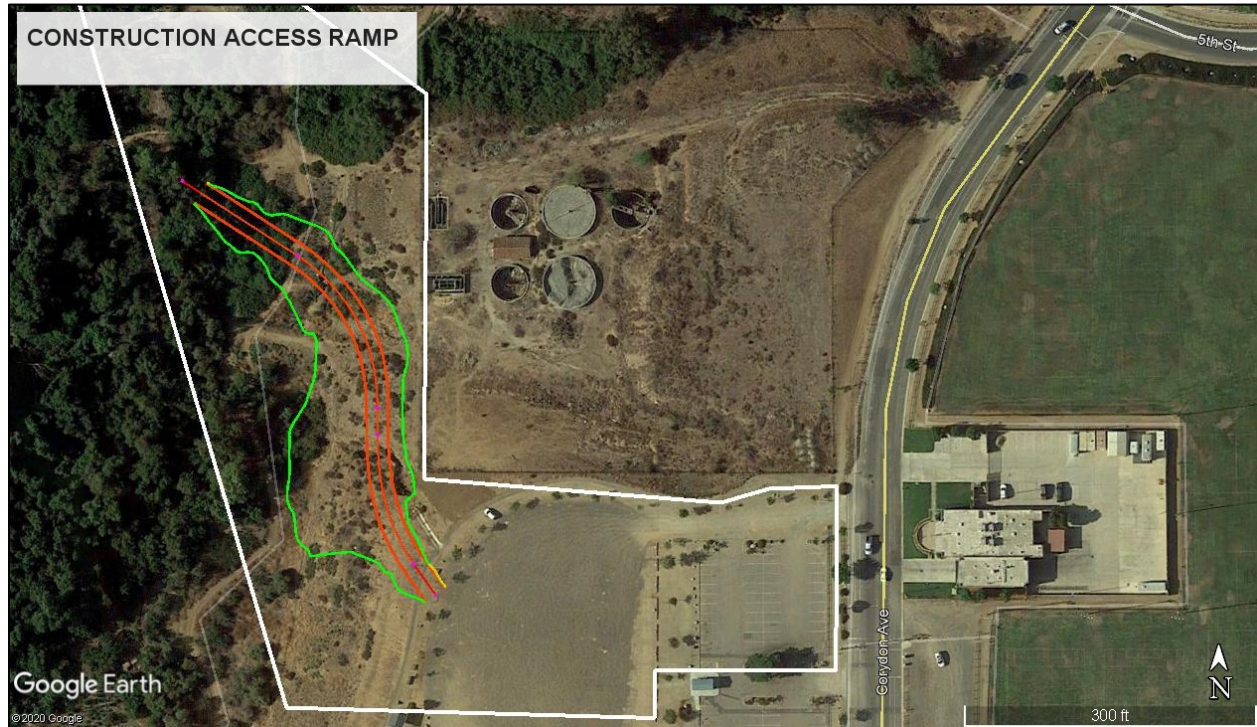


Figure 2.3-4. Example of a design for the temporary construction access ramp. Green lines indicate the width of the toe of the ramp. Orange lines indicate the footprint of the top of the ramp. The red line indicates footprint the temporary access road. White lines indicate the TCE.

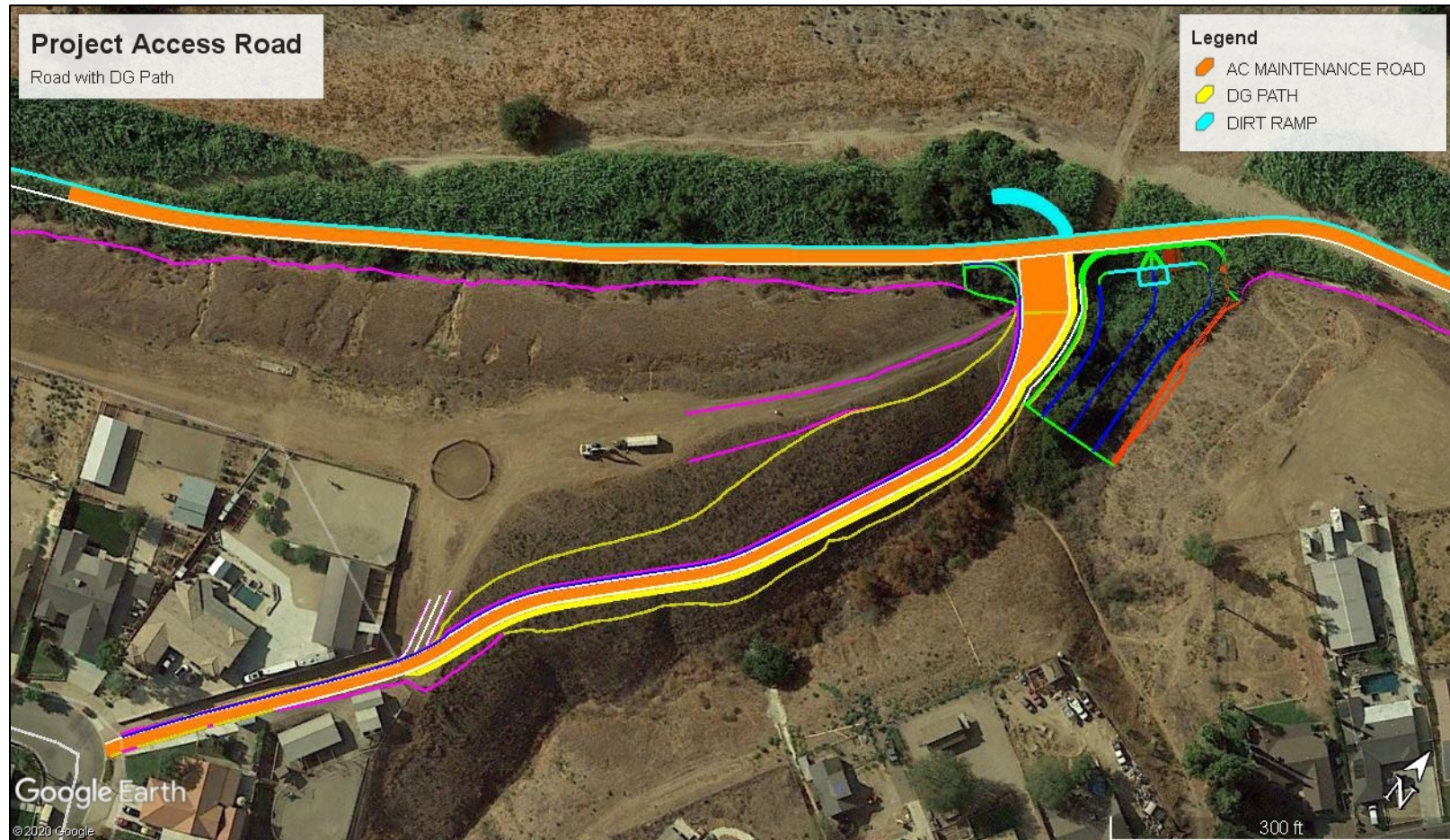


Figure 2.3-5. Footprint of Permanent Maintenance Road

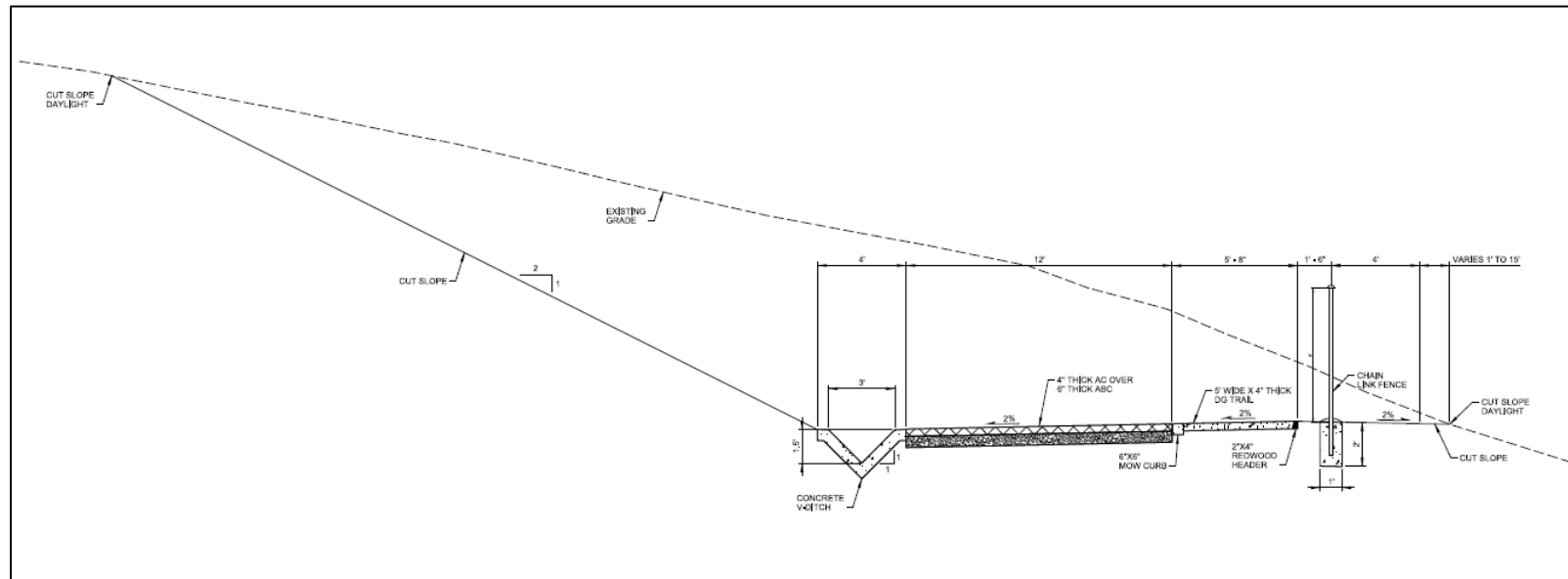


Figure 2.3-6. Cross-Section of Permanent Maintenance Road

2.3.2.3 Haul Routes

Haul roads and vehicular access roads would be needed during construction of the embankment. The haul route would be used to transport equipment, stone, fill material, and other construction materials from the borrow site, commercial quarries, or the staging area. The primary haul route to the project site begins at the borrow area located approximately 3 miles west of the project site. The route moves from west to east and would utilize existing roadways (**Figure 2.3-7**).

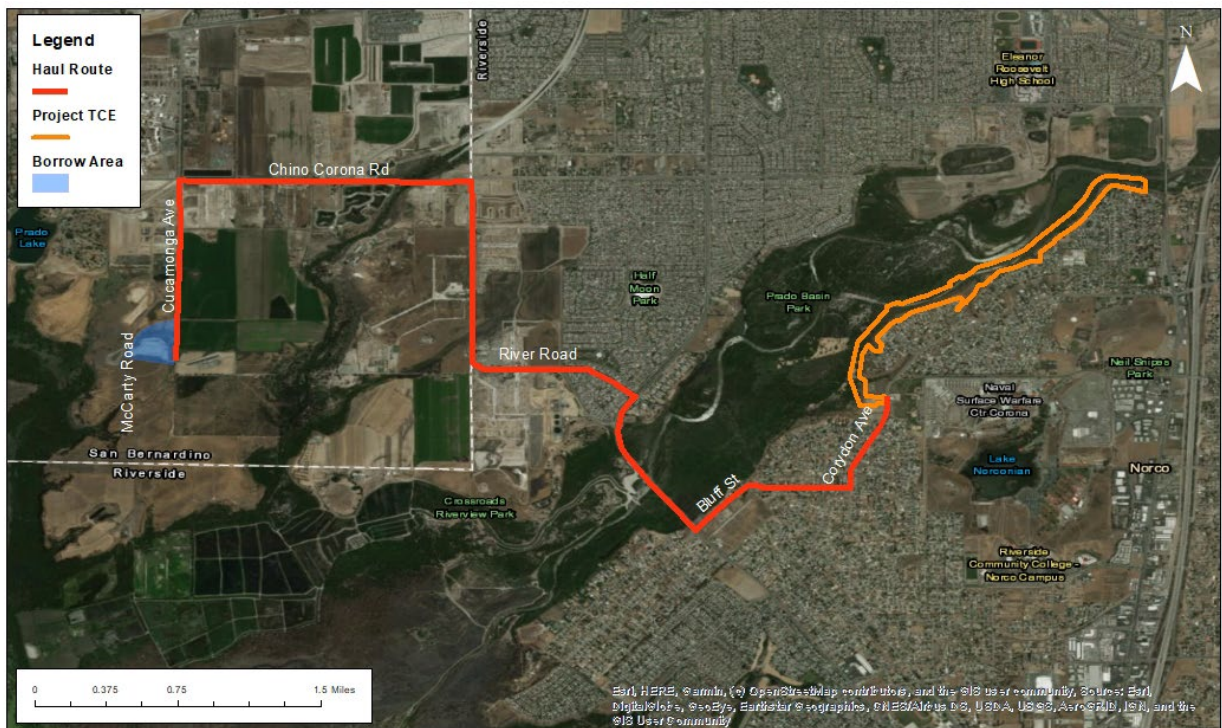


Figure 2.3-7 Haul Route from Proposed Borrow Area to Proposed Action Site

The primary haul route will be used to access the southern portion of the project site and the bottom of the embankment, construction equipment and haul trucks would utilize existing roadways and traverse an approximately 15-ft wide temporary construction access road that would extend approximately 2,100 feet from a staging area to the start of the project footprint.

Haul routes from Shadow Canyon Circle would be used less frequently and would primarily occur during construction of the permanent maintenance road. To access the northern portion of the project site and the top of the embankment, construction equipment and haul trucks would utilize existing roadways and traverse an approximately 15-ft wide permanent access road that would extend approximately 2,100 feet from the access point located on Shadow Canyon Circle to the start of the project footprint and along the top of the embankment.

2.3.2.4 Disposal Sites

Construction of the Proposed Action would produce organic, inorganic, and unsuitable construction materials which must be disposed of in the manner and areas specified below so that the project site would be restored after completion of construction.

Organic materials, trees, shrubs, and abandoned timber structures would be disposed of by hauling to a local commercial site. Topsoil containing organic material may not be disposed of at a commercial site, but may be stockpiled and spread on embankment slopes or borrow areas as a part of site restoration. Disposal of these materials by burning or burying at the project site would not be permitted. Inorganic materials would include, but are not limited to, broken concrete, rubble, asphaltic concrete, metal, and other types of construction materials. These materials would also be taken to a commercial landfill.

2.3.2.5 *Source of Material*

Approximately 38,500 cy of riprap and 28,100 cy of launch stone would be required for the construction of the embankment, and approximately 640 tons of ABC would be required for the access roads. Riprap would be imported from a local quarry. For the purposes of this analysis, it is assumed that the nearest quarry would likely be used.

Approximately 116,000 cy of onsite excavation and approximately 100,000 cy of imported fill would be required for the embankment. Approximately 250,000 cy of fill will be imported from a borrow site located approximately 3 miles west of the project site in the City of Chino (**Figure 2.3-7**). The borrow area was previously identified in the 2001 EIS as Borrow Site 2. It is located south of McCarty Road and west of Cucamonga Avenue. Only a portion of the borrow area will be used.

2.3.2.6 *Water Source*

The construction contractor would determine and acquire a water source for construction of the proposed project.

2.3.2.7 *Construction Equipment*

Construction equipment would likely include a combination of water trucks, waste trucks, haul trucks, scrapers, excavators, front end loaders, medium and light dozers, skip loaders, vegetation chipper, vibratory rollers and pickup trucks.

2.3.2.8 *Construction Duration and Phasing*

Construction is scheduled to commence in October 2020 and last approximately 18 months. It is possible that the proposed project would be built in stages, with multiple start dates and construction periods for various sections of the proposed project depending on land acquisition and utility relocations schedule, environmental windows and weather delays. Construction phasing may result in an extension of the overall project duration beyond spring 2022, i.e. beyond the approximate duration of 18 months.

Proposed construction hours would be 7:00 a.m. to 6:00 p.m., Monday through Friday. Occasional overtime work may be required to maintain the construction schedule, but would be in compliance with local noise ordinances.

2.3.2.9 *Utilities*

The project area is served by utility and service systems located in Riverside County and within the City of

Norco. A variety of local purveyors in these areas provide and maintain utility and service system facilities associated with electricity, water, stormwater and wastewater, solid waste, and natural gas. Data on location of utilities within the project vicinity was collected by the Corps in 2019 (**Figure 2.3-8**). Any utilities within and vicinity of project limits would either be relocated or removed prior to or during construction (by the utility owner or local sponsor), or protected in place.



Figure 2.3-8. Known Utilities within the Project Vicinity

2.4 FUTURE OPERATION, MAINTENANCE, REPAIR, REPLACEMENT, AND REHABILITATION

Maintenance, including routine inspections and minor repairs, of the Lower Norco Bluffs embankment and its associated project features, would be required after construction is completed. The following activities may occur:

- Routine and special inspection and patrol with pickup trucks and sport utility vehicles, as needed, and up to daily during flood events;
- Mobilizing dump trucks to haul stones and use of hydraulic excavators to place stones along eroded areas of the embankment to protect and reinforce the embankment, as necessary,

during flood fight activities;

- Periodic weeding and patching stone and asphalt maintenance road pavement;
- Periodic clearing of debris around drainage structures; and
- Periodic mending of fencing and painting metal gates.

Rarely, following large and erosive flood flows, larger-scale maintenance and repairs may be required along the toe of the bluffs, which could require access and use of heavy equipment within the floodplain adjacent to the structure. Equipment would need to traverse the embankment riprap to access the bottom of the embankment. A temporary work area may need to be established around repair sites. The local sponsor would be required to obtain emergency or standard permits from regulatory agencies, including Corps Regulatory, who would coordinate and consult, if needed, with the U.S. Fish and Wildlife Service (USFWS). These permits would likely require active habitat restoration of temporary construction areas and access roads. It is likely that a storm event large enough to damage the embankment structure would also have removed vegetation in the immediate area, but specific impacts cannot be evaluated until or unless damage occurs and repair work is defined. Therefore, this scenario is not evaluated further within this document.

3 AFFECTED ENVIRONMENT

The affected environment and existing conditions within the Lower Norco Bluffs Project area remain similar to that described in the 2001 SEIS/EIR, with a few exceptions that will be described further in this document. This applies to all resource categories.

Below is a list of the relevant environmental documents that have been completed for the SARMP. Throughout the analysis of this SEA/EIR Addendum, the following documents may be referenced:

- Santa Ana River Mainstem including Santiago Creek. Phase II General Design Memorandum and Supplemental Environmental Impact Statement (GDM/SEIS), United States Army Corps of Engineers, Los Angeles District, 1988.
- Prado Basin and Vicinity, Including Reach 9 and Stabilization of the Bluff Toe at Norco Bluffs SEIS/EIR, United States Army Corps of Engineers, Los Angeles District, 2001.
- Reinitiation of Formal Section 7 Consultation on the Prado Mainstem and Santa Ana River Reach 9 Flood Control Projects and Norco Bluffs Stabilization Project, Orange, Riverside, and San Bernardino Counties, 2012 BO Amendment (FWS-SB/WRIV/OR-08B0408-11F0551). The Service has issued a series of BOs (including, but not limited to, Service 1980, 1989, 2001, 2004, 2005, 2012, 2013, 2015, 2017) addressing the effects of constructing, operating, and maintaining the SARMP on federally listed species and their designated critical habitat.

3.1 WATER RESOURCES AND HYDROLOGY

As described in the 2001 SEIS/EIR, the Corps and the OCPW previously determined that the Lower Norco Bluffs component of the SARMP would have no significant effects related to water resources and hydrology. For the purposes of this SEA/EIR Addendum, this section provides updated information on the affected environment for water resources and hydrology in the project area. This discussion is based

on the 2001 SEIS/EIR, as well as other relevant resources and agency materials, and updated information and data, where applicable.

The project area is located entirely along the Santa Ana River, just north of the Prado Flood Control Basin. The Prado Flood Control Basin is a flood improvement project on the mainstem of the Santa Ana River. The Prado Basin is located within the Santa Ana River Basin, which encompasses parts of Orange, San Bernardino, and Riverside Counties (the project area is located in Riverside County). This area is within the jurisdiction of the Santa Ana Regional Water Quality Control Board (RWQCB) and is included in the Water Quality Control Plan (Basin Plan) for the Santa Ana Region.

The climate in this area is Mediterranean with hot, dry summers, and cooler, wetter winters. Most precipitation occurs between November and March and is characteristically in the form of rainfall, although snow may occur at higher elevations. Under natural conditions, much of the Santa Ana River and its tributaries would be intermittent with little or no flow in the summer months, except in areas with high groundwater. The urbanization of the valley areas of the Santa Ana River Basin has significantly increased runoff into the river and tributaries. Rainfall occurring over an urbanized part of the basin generates higher peak discharges with a shorter peaking time and a greater volume than if it occurred over the natural basin. Water from the upper Santa Ana River contributes to municipal and domestic supply, agriculture, groundwater recharge, hydropower generation, water contact and noncontact recreation, as well as fresh water and associated habitats.

3.1.1 HYDROLOGY

The Santa Ana River Basin is the largest watershed in southern California, with a drainage area of about 2,670 square miles. The watershed is separated into an upper and a lower basin divided by Prado Dam and Reservoir. The project area is located primarily along the Santa Ana River, just north of the Prado Basin Reservoir upstream of the Prado Dam embankment. Prado Dam was constructed at the convergence of Chino Creek, Cucamonga Creek, Temescal Wash, and the Santa Ana River. The basin behind Prado Dam includes these watercourses and storage capacity upstream of the dam to the current elevation of 556 ft., comprising an overall area of approximately 11,600 acres. The Santa Ana River, downstream of Prado Dam, is currently being prepared to allow for release of up to 30,000 cfs.

The Santa Ana River originates in the San Bernardino Mountains and travels southwest approximately 60 miles where it reaches the Pacific Ocean near Huntington Beach. Urban runoff and effluent from wastewater treatment plants, as well as naturally occurring high groundwater levels, contribute substantially to the perennial flow that occurs in the Prado Basin and in the project area.

The Santa Ana River serves several major purposes to the economic well-being and environmental values of the region. It provides extremely important wildlife habitat and supports aquatic organisms and several endangered species. All of these beneficial uses have influenced the design of projects that have been planned and constructed to manage the flows in the river.

Approximately half of the base flow of the Santa Ana River receives treatment using artificial wetlands upstream from Prado Dam to remove nitrogen and other contaminants. On average, approximately 200,000 acre- feet per year of natural stream flow passes through Prado Dam into Orange County. Historically, the Santa Ana River has been considered one of the greatest flood hazards in the west due to the potential property damage that would occur in response to a levee breach. New flood protection improvements recently constructed and underway have aimed at reducing the risk of flooding.

Upstream of the Lower Norco Bluffs project area, the Santa Ana River has a drainage area of approximately 870 mi². The majority of the watershed draining to the Norco Bluffs area lies within the San Gabriel and San Bernardino Mountains.

Since 2001, average stream-flows near Norco Bluffs have been approximately 182 cfs from October through February and approximately 113 cfs from March through May. Flows during the summer months (June through September), averaging around 60 cfs, are usually unconstrained base flows (average based on flow records from USGS). These values are averages and do not fully represent the maximum range of flows. The channel capacity allows for higher flows. The maximum flow, since 2001, was >40,000 cfs in December 2010.

3.1.2 SURFACE WATER QUALITY

Surface water quality within and downstream of Prado Basin is determined by various contributors, including: Cucamonga Creek, Chino Creek, Temescal Creek, Santa Ana River, rising groundwater, municipal wastewater treatment plant effluent, mountain and lowland runoff, storm discharge, State Water Project discharges, and non-point sources such as urban and agricultural runoff. Per the National Water Quality Assessment (NWQA) Program, administered by the U.S. Geological Survey (USGS), the quality of surface and ground water in the Santa Ana Basin becomes progressively poorer as water moves along “hydraulic flow-paths,” with the highest quality water associated with tributaries flowing from surrounding mountains and ground water recharged by these streams. Water quality may be altered by a variety of factors including but not limited to: consumptive use, importation of water high in dissolved solids, runoff from urban and agricultural areas, and the recycling of water within the basin.

Waterways in the Santa Ana River Basin are listed on the 2006 Clean Water Act Section 303(d) List of Water Quality Limited Segments Requiring Total Maximum Daily Loads for the following pollutants: pathogens (Chino Creek, Reach 1 and Reach 2; Mill Creek, Prado Area; Santa Ana River, Reach 3; Prado Park Lake), high coliform count (Chino Creek, Reach 2; Cucamonga Creek, Valley Reach), and nitrate (Santa Ana River, Reach 3). These pollutants most likely originate from non-point agricultural and urban sources that commonly occur throughout the watershed.

3.1.3 GROUNDWATER

Groundwater is the main source of water supply in the Santa Ana River watershed, providing about 66 percent of the consumptive water demand. Inland aquifers underlie roughly 1,200 square miles of the watershed upstream of Prado Dam, which coastal aquifers underlie roughly 400 square miles downstream of Prado Dam. Thickness of these aquifers ranges from several hundred to more than 1,000 feet. Depth to ground water ranges from several hundred feet below ground surface near the mountains to near land surface along rivers, wetlands, and in the coastal plain.

The project area is underlain by the Inland Santa Ana Basin Subunit (Inland Basin). This area contains upwards of 1,000 ft. of mostly recent alluvial deposits covering the irregular bedrock floor. In the region around the City of Norco, where the project area is located, alluvium has been derived mostly from the Santa Ana Mountains. The sediments were laid down on alluvial fans and plains by streams draining the highland areas and consist generally of stringers and lenses of sand and gravel separated by layers of silt and clay.

The Inland Basin is characterized by an unconfined aquifer system in which high- quality recharge is distributed over a broad area near the mountain front. As groundwater moves toward areas of discharge, water quality is determined by overlying land use activities. Other factors that influence groundwater quality in this area include interaction with the Santa Ana River, discharge of recycled wastewater to the river, and use of imported water in the basin.

Groundwater levels in the stream channel of the Santa Ana River are at or near the surface of the streambed. Based on studies completed by USACE, groundwater is also within a 10-m (35 ft.) depth at some locations along the bluff top; however, this may represent perched intervals. Groundwater resources contribute to the water supply of the City of Norco. There are several wells within the City boundaries, all of which meet federal and state drinking water standards.

3.1.4 JURISDICTIONAL WATERS AND WETLANDS

A jurisdictional delineation was conducted in the project area by Aspen Environmental Group on November 27, 2018. The project area is located within the floodplain of the upper Santa Ana River and is comprised of alluvial deposits that have eroded from the surrounding mountain ranges over time. Results of the delineation determined both wetland and non-wetland “waters of the U.S.” as well as “waters of the State” and CDFW jurisdictional waters present. Several small ephemeral drainages are also present near the bluff that meet the criteria for non-wetland “waters of the U.S.” as well as “waters of the State” and CDFW jurisdictional waters.

For the purposes of this document, the limits of the ordinary high water mark (OHWM), as determined by changes in physical and biological features such as bank erosion, deposited vegetation or debris, and vegetative characteristics, have been used to describe non-wetland waters of the U.S.

“Waters of the U.S.”

Section 404 of the Clean Water Act provides the U.S. Environmental Protection Agency (EPA) and the Corps regulatory and permitting authority over activities that result in the discharge of dredged or fill material into “navigable Waters of the United States.” “Waters of the U.S.” are defined by the Clean Water Act as “rivers, creeks, streams, and lakes extending to their headwaters and any associated wetlands.” The limits of Corps jurisdiction under Section 404, as defined in 33 CFR Section 328.4 are as follows: (a) Territorial seas: three nautical miles in a seaward direction from the baseline; (b) Tidal waters of the U.S.: high tide line or to the limit of adjacent non-tidal waters; (c) Non-tidal waters of the U.S.: OHWM or to the limit of adjacent wetlands; (d) Wetlands: to the limit of the wetland.

“Waters of the State”

The Dickey Water Pollution Act of 1949 and Porter Cologne Act of 1969 established the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCB) in the State of California. The SWRCB and each RWQCB regulate activities in “Waters of the State” which include “Waters of the U.S.” “Waters of the State” are defined by the Porter-Cologne Act as “any surface water or groundwater, including saline waters, within the boundaries of the state.”

Wetlands

The USACE has defined the term “wetlands” as follows:

Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. (33 CFR 328.3)

The three parameters listed in the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (U.S. Army Corps of Engineers 2006) that are used to determine the presence of wetlands are: (1) hydrophytic vegetation, (2) wetland hydrology, and (3) hydric soils. According to the Manual:

“...Evidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil, and vegetation) must be found in order California Department of Fish and Wildlife (CDFW) to make a positive wetland delineation.”

CDFW Jurisdictional Waters

The CDFW jurisdiction is defined as the bed, bank and channel of rivers, lakes and streams to the landward edge of riparian vegetation. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation.

In the project area, the total jurisdictional non-wetland waters is 4.86 acres, and the total jurisdictional wetland waters is 1.63 acres.

3.2 AIR QUALITY

The 2001 SEIS/EIR is a reference for historical air emission in the project area. This report is hereby incorporated by reference, as per 40 CFR 1502.21.

The project area is entirely within the larger Prado Dam Reservoir basin area and is located in the central part of the South Coast Air Basin (SCAB) of California, an approximate 6,600 square mile (mi²) area encompassing Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. SCAB is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east.

Air quality in the SCAB is regulated by Federal, state, and regional control authorities, including the EPA; the California Air Resources Board (CARB), which is part of the California Environmental Protection Agency (Cal EPA); the South Coast Air Quality Management District (SCAQMD) and the Southern California Association of Governments (SCAG).

3.2.1 NATIONAL AMBIENT AIR QUALITY STANDARDS

To protect the public health and welfare, the Federal government identified a number of criteria air pollutants and established ambient air quality standards through the Federal Clean Air Act for each. The air pollutants for which Federal standards have been promulgated via the National Ambient Air Quality Standards (NAAQS) include ozone (O₃), carbon monoxide (CO), suspended particulate matter (PM), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), and lead (Pb). PM emissions are regulated in two size classes: Particulates up to 10 microns in diameter (PM₁₀) and particulates up to 2.5 microns in diameter (PM_{2.5}).

A region is given the status of “attainment” or “unclassified” if the NAAQS have not been exceeded. A status of “nonattainment” for particular criteria pollutants is assigned if the NAAQS have been exceeded. Once designated as nonattainment, attainment status may be achieved after three years of data showing non-exceedance of the standard. When an area is reclassified from nonattainment to attainment, it is designated as a “maintenance area,” indicating the requirement to establish and enforce a plan to maintain attainment of the standard. Federal attainment status designations for the SCAB are summarized in **Table 3-1**.

3.2.1.1 **GENERAL CONFORMITY RULE**

Section 176(c) of the federal Clean Air Act states that a federal agency cannot issue a permit for, or support an activity within, a nonattainment or maintenance area unless the agency determines it will conform to the most recent U.S. Environmental Protection Agency-approved State Implementation Plan (SIP). Thus, a federal action must not:

- Cause or contribute to any new violation of a NAAQS.
- Increase the frequency or severity of any existing violation.
- Delay the timely attainment of any standard, interim emission reduction, or other milestone.

A conformity determination is required for each criteria pollutant or precursor where the total of direct and indirect emissions of the criteria pollutant or precursor in a nonattainment or maintenance area caused by the federal action would equal or exceed rates specified in 40 C.F.R. 93.153.

Table 3-1. NAAQS Attainment Designation and General Conformity Applicability Rates

Pollutant	NAAQS Attainment Designation	Applicable Emission Rates (tons/year)
Ozone (VOC as precursor)	Nonattainment (Extreme)	10
Ozone (NO _x as precursor)	Nonattainment (Extreme)	10
Carbon Monoxide (CO)	Maintenance	100
Nitrogen Dioxide (NO ₂)	Maintenance	100
Particulate Matter (PM ₁₀)	Maintenance	100
Particulate Matter (PM _{2.5})	Nonattainment (Moderate)	100
Lead (Pb)	Nonattainment	25
Sources: 40 CFR 93.53(b)(1) and 40 CFR 93.53(b)(2) VOC = Volatile Organic Chemical		

The SCAB is currently in extreme nonattainment for ozone (precursors: VOC or NO_x); nonattainment for PM_{2.5}; attainment/maintenance for PM₁₀; attainment/maintenance for NO₂; and attainment/maintenance for CO; and nonattainment for lead. Based on the present attainment designation for the SCAB, a Federal action would conform to the SIP if annual emissions are below 100 tons of PM_{2.5}, 10 tons of VOC or NO_x, or 25 tons of lead.

GREENHOUSE GAS EMISSIONS

Gases that trap heat in the atmosphere are often called greenhouse gases (GHG). GHGs are emitted by

natural processes and human activities. Examples of GHGs that are produced both by natural processes and industry include carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). Currently, there are no Federal standards for GHG emissions and no Federal regulations have been set at this time. The CEQ issued guidance on the consideration of GHG emissions, entitled Final Guidance for Federal Departments and Agencies on the Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews, dated August 1, 2016, which established a recommended reference point of 25,000 metric tons of annual CO₂ emissions as warranting further review. Pursuant to Executive Order 13783, Promoting Energy Independence and Economic Growth, signed on March 28, 2017, the CEQ withdrew its guidance on April 5, 2017.

There are currently no Federal GHG emission thresholds. Therefore, a GHG significance threshold to assess impacts is not proposed. Rather, in compliance with NEPA implementing regulations, the anticipated emissions are disclosed for each alternative without expressing a judgment as to their significance.

3.2.2 SCAQMD Daily Construction Thresholds

The SCAQMD has developed mass daily emission rates of criteria pollutants for construction (**Table 3-2**). The daily construction emission thresholds represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable Federal or state ambient air quality standard in the SCAB.

Table 3-2. SCAQMD Daily Emission Construction Thresholds

Pollutant	NAAQS Attainment Designation	Construction Emission Rates (lb./day)
Nitrogen Oxide (NO _x)	Nonattainment (Extreme)	100
Reactive Organic Gas (ROG or VOC)	Nonattainment (Extreme)	75
Particle Pollution (PM ₁₀)	Maintenance	150
Particle Pollution (PM _{2.5})	Maintenance	55
Sulfur Oxides (SO _x)	Maintenance	150
Carbon Monoxide (CO)	Nonattainment (Moderate)	550
Lead	Nonattainment	3
1. Source: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2		
2. ROG and VOC are used interchangeably for the purpose of comparing to significance thresholds.		

Baseline air quality in the project area can be determined from ambient air quality measurements conducted by the SCAQMD at the Pomona and Rubidoux stations, which are the closest monitoring stations to the Prado Dam Reservoir. While both Federal and state air quality standards for several air pollutants continue to be exceeded, recent data indicates overall improving air quality. Criteria pollutants and the levels at which they occur in the project area include:

- **Ozone (O₃) and O₃ precursors [Reactive Organic Gases (ROG)].** The project area is within a non-attainment area for state and national ozone standards.
- **Carbon Monoxide (CO).** Prado basin is within an area classified as a non-attainment area for the

national and state carbon monoxide standards. Riverside and San Bernardino Counties are in attainment for Federal CO standards.

- **Nitrogen Dioxide (NO₂).** The state nitrogen dioxide standards were exceeded only once in 1993 and the Federal standards were not exceeded on any occasion. However, until the SCAQMD requests a re-designation, the Prado basin area is still in non-attainment of the Federal nitrogen dioxide air quality standard. The area surrounding Prado basin is designated as a non-attainment area for both state and national nitrogen dioxide standards.
- **Suspended Particulate Matter (PM) 10 and 2.5.** PM₁₀ and PM_{2.5} levels regularly exceed the national standard in Los Angeles, Riverside, San Bernardino, and Orange counties. The more stringent state PM₁₀ standard is exceeded in all four counties. The area surrounding Prado basin is designated as non-attainment for PM₁₀ and PM_{2.5} standards.
- **Sulfur Dioxide (SO₂) and Lead (Pb).** Sulfur dioxide and lead levels in areas surrounding Prado basin are below national and state standards. The entire Prado basin region is in attainment for these pollutants.
- **Greenhouse Gases and Climate Change.** Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. These gases are emitted as a result of natural processes and human activities. The accumulation of GHGs in the atmosphere regulates Earth's temperature and scientific evidence indicates a trend of increasing global temperature over the past century due to an increase in GHGs.

3.3 EARTH RESOURCES

For the purposes of this SEA/EIR Addendum, the following section provides information on the affected environment for earth resources (including geology, soils, and seismicity), with respect to the project area.

The Corps has conducted numerous geotechnical and field investigations in the Prado Basin since the 1930s and as recent as 2019, including mapping of the various geologic formations and exploring the subsurface to determine the nature and extent of soil and bedrock materials, as well as the character of local faults. Prado Basin is situated at the southwestern edge of the Upper Santa Ana Valley, a broad inland alluvial plain which is part of the larger South Coastal Basin of southern California. This area is bounded to the north and northeast by the San Gabriel and San Bernardino Mountains, to the south by the San Timoteo Badlands, a series of granitic hills, and a low bedrock plateau, and to the west and southwest by the Chino Hills and Santa Ana Mountains.

The project area is located entirely within the Prado Flood Control Basin of Riverside County, California. The proposed borrow area is located approximately 2 miles west of the project area. Bedrock does not outcrop within the limits of the borrow areas.

Soils in the Prado Basin are largely derived from the alluvial materials that dominate the valley floor and slopes. Consequently, they are generally light, sandy, highly permeable, and easily eroded. As such, the alluvium which characterizes the streambed of the Santa Ana River has been laid down over periods of river meandering and floodplain functions. The upper portions of the Santa Ana River streambed are rocky, with soils consisting of finer sands and silts throughout the middle and lower portions of the river. Soils of the coastal plain are similar to those of the middle and lower portions of the Santa Ana River. Soils

in the project area are derived from the alluvial materials that dominate the valley floor and slopes. These soils are not considered prime farmland within the project area (USACE 2001).

The Norco Bluffs are composed of non-marine river terrace sediment deposited by the ancient Santa Ana River. These sediments consist mainly of clay, silt, sand, and gravel, with occasional cobbles and boulders. At depths of 100 ft. or more, they are underlain by igneous rock (mostly granite). The granite is occasionally exposed at river-level (near Hamner Avenue Bridge), and protects the toe of the slope from erosion at this point.

Groundwater is within a 35-ft. depth at some locations, but this may represent perched intervals. The groundwater table plunges downward towards the toe of the slopes and does not affect the sloughing or calving of the bluff. However, some surface water that is conveyed to the bluffs may percolate downward through the sediments, dissolving some of the cementing materials and, thus, accelerate sloughing. The geomorphic prominence in the most upstream 1,000 ft. of the project footprint is characterized by crystalline bedrock, known locally as the La Sierra Tonalite. Bank protection is not needed in this area since bedrock will continue to impede bank-cutting scour erosion.

Seismic faults are plane-like surfaces on which movement of the earth's rock formations and soils can occur. Faults generally cut through multiple stratigraphic formations at angles. When movement occurs, fault planes propagation of seismic waves occurs; such seismic events introduce a certain risk of infrastructure damage due to earthquakes that are caused by the fault movements.

The seismic environment in southern California is largely defined by the San Andreas Fault, which trends in a northwest-southeast alignment. Land to the west of the San Andreas Fault is drifting north, which builds stresses throughout the region. These stresses are eventually relieved by movement along the San Andreas and other southern California faults. The regional stress accumulated is not equally distributed among faults, as some move more frequently than others. Other major northwest-southeast trending faults in the area include the San Jacinto, Whittier-Elsinore, and Newport-Inglewood. Many smaller and considerably less active or apparently inactive faults exist among the aforementioned larger faults. The seismic environment relevant to the Proposed Action is dominated by two fault zones, the San Andreas and the Whittier-Elsinore. The project area is located within a zone of potential surface fault offsets and ground cracking that could be triggered by an event along the Whittier-Elsinore fault zone.

Research into earthquake probabilities by the Corps determined that important seismic characteristics of the Whittier fault zone the following:

- Maximum probable earthquake is 6.9 M (earthquake magnitude);
- Could cause up to 19 feet of horizontal offset;
- Maximum site acceleration from an earthquake estimated is 0.55 g (g is the force of gravity; an acceleration of 1 g is equal to a force of 32 feet/second/second); and
- Maximum measured site acceleration was 0.08 g (USACE 2001).

Overall, the project area has a 10 percent probability in 50 years of exceedance of 0.5 to 0.6 g from an earthquake event of M 6.8. Such an event most likely would occur on either the Whittier or Chino-Central Avenue Faults.

Although the project is located in a seismically active region, this area is generally characterized by diffuse and non-significant, low-magnitude seismicity. The *1988 Phase II GDM/SEIS* describes that four ancient

landslides have been identified along the eastern slopes of the Chino Hills, located at the western edge of Prado Basin. These landslides are fairly limited in size, varying from 200 – 800 ft. in width and 300 – 800 ft. in length (USACE 2008 [Appendix B]).

3.4 BIOLOGICAL RESOURCES

This section includes information on biological resources, including descriptions of plant and animal species, natural communities, and special- status species that have been observed or have the potential to occur within the project area. This discussion is based on the 2001 SEIS/EIR, as well as other relevant resources and agency materials and updated information obtained from recent surveys, literature reviews, and coordination with regulatory agencies and technical experts.

The project area and adjacent habitat have been surveyed by biologists from the Santa Ana Watershed Association (SAWA), Orange County Water District (OCWD), and Aspen Environmental Group to document the presence and locations of biological resources and sensitive species. Sensitive species occurrences in the project area were determined by reviewing CDFW, USFWS, and California Native Plant Society (CNPS) databases. United States Geological Service (USGS) quads, Corona North 7.5' quadrangle and Prado Dam 7.5' quadrangle, were used for database searches. Potential special-status species and habitats within the project area were classified as "Not Expected," "Low," "Moderate," "High," or "Detected." These classifications were determined by comparing existing habitats within and near the project and borrow area to the habitat preferred by the species. This section summarizes results from database searches and field surveys in order to present an updated description of the existing conditions.

3.4.1 VEGETATION COMMUNITIES AND COVER TYPES

Past vegetation surveys within the project area were described in the 2001 SEIS/EIR. Supplemental surveys were conducted in spring and fall of 2019, and in January 2020 within the project area. Results from recent vegetation mapping were consistent with the previous findings. *Arundo donax* has been managed for several years within and adjacent to the project area. Since the 2001 SEIS/EIR, the river has changed course, damaging some riparian habitat. These areas have since regrown to early successional riparian woodland and are comprised of several willow species. The native and nonnative vegetation communities are interspersed amongst each other, therefore breaks in community type are determined based on dominant species type and professional judgment of the biologist. There are a total of 10 cover and broad vegetation types within the project area, including the borrow site (**Figures 3.4-1 to Figure 3.4-5**). Ornamental landscape, trails, and parks have been included in the developed/disturbed cover type. The vegetation types were referenced in the Manual of California Vegetation (Sawyer et al. 2020), and the map was created using ArcGIS with recent basemap imagery. The project area lies within the riparian habitat of the Santa Ana River floodplain, and the upland habitat of the Norco bluffs. The borrow area is located in a disturbed grassland area that has been used as a borrow area for previous SARM projects in the last several years. **Table 3-3** provides the acreage of the vegetation and cover types for the project area and borrow area

Table 3-3 Vegetation and Cover Types in the Project and Borrow Area

Vegetation and Cover Type	Total Acres	Percent of Total Acres
Project Area		
Southern riparian woodland	10.12	13.3%
Disturbed southern riparian woodland (enhancement)	15.11	19.8%
Disturbed mulefat scrub	1.50	2.0%
Arundo Riparian Scrub	21.20	27.8%
Ruderal	20.60	27.0%
Nonnative Woodland	0.82	1.1%
Sandy Wash	1.59	2.1%
Disturbed coastal sage scrub	1.27	1.6%
Developed or Disturbed	4.06	5.3%
Total	76.26*	100%
Borrow Area		
Disturbed Annual Grassland	22.45	100%
Total	22.45	100%
*rounding each type causes 0.01 difference in total		

Southern Riparian Woodland

Southern riparian woodland is comprised of winter-deciduous trees that require water near the soil surface. Black willow (*Salix goodingii*), red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*) and Fremont cottonwood (*Populus fremontii*) form a dense, medium height woodland or forest in moist canyons and drainage bottoms. Associated understory species include mule fat (*Baccharis salicifolia*), stinging nettle (*Urtica dioica* ssp. *holosericea*), and wild grape (*Vitis girdiana*).

Disturbed Southern Riparian Woodland (Mitigation Area)

This vegetation type contains the same species composition as southern riparian woodland, except that there is recent disturbance from restoration activities. Nonnative vegetation removal and treatment has led to patches of sparsely vegetated areas. Mature riparian trees are well-established in this habitat type, but the full canopy cover has not recovered. Recent observations of the establishment of native vegetation throughout areas once occupied by nonnative species suggest the mitigation area is returning to southern riparian woodland. The mitigation site is currently being maintained, and it is receiving focused treatment for nonnative regrowth, as needed. **Figure 3.4-6** shows the overlap of the TCE and the mitigation areas.

Disturbed Mulefat Scrub

This vegetation type is described as a shrubby riparian scrub community comprised of mulefat (*Baccharis salicifolia*), elderberry (*Sambucus nigra*), small willows and palms, and is commonly found near intermittent drainages and along floodplains. The community is sustained by seasonal flooding followed by dry periods, but relies on a shallow water table. The community is considered disturbed because of the high presence of nonnative species. Dominant, nonnative species include poison hemlock (*Conium maculatum*), bristly ox-tongue (*Helminthotheca echioides*) and shortpod mustard (*Hirschfeldia incana*).

Arundo Riparian

This vegetation type is dominated by giant reed (*Arundo donax*). Within the Action Area large patches or swaths of mature giant reed mixed with native riparian species such as willows and cottonwood. Where giant reed patches occur, there is little to no understory. In areas where open space occurs species such as wild grape, poison oak (*Toxicodendron diversilobum*) and wild rose (*Rosa californica*) are typically present.

Disturbed Coastal Sage Scrub

This vegetation type contains typical coastal sage species such as buckwheat (*Eriogonum fasciculatum*), California sage (*Artemisia californica*), goldenbush (*Isocoma menziesii*), California encelia (*Encelia californica*) and brittlebush (*Encelia farinosa*). Annual native species include fiddleneck (*Amsinckia menziesii*) and horseweed (*Erigeron canadensis*). The level of disturbance in this vegetation community is high. Nonnative weed cover is made up of many species such as mustards, nonnative grasses (*Bromus madritensis*, *Bromus diandrus* and *Hordeum* sp.), tocalote (*Centaurea melitensis*) and tree tobacco (*Nicotiana glauca*). This vegetation community takes place along the less steep southern portion of the Action Area. Moving north within the Action Area this community transitions to almost all nonnative grasses and ruderal species.

Ruderal

This cover type is found on top of the steep bluff near the residential housing and adjacent horse trail. Weedy annuals and grasses dominate the community and there is regular disturbance from recreational use. Species commonly observed include mustards, tree tobacco, horseweed (*Erigeron bonariensis*), sow thistle (*Sonchus* sp.), brome (*Bromus* sp.), tocalote, Russian thistle (*Salsola* sp.), and various ornamental species.

Nonnative Woodland

This vegetation type represents the areas that are dominated by nonnative and ornamental trees. Eucalyptus (*Eucalyptus* sp.) is the dominant species in this cover type, which is generally found on the edge of the residential area located on the top of the bluff. Other species observed include Peruvian pepper tree (*Schinus molle*) and bougainvillea (*Bougainvillea* sp.). The understory is mostly ruderal or ornamental grasses and forbs.

Sandy Wash

This vegetation type is found in dry, secondary stream channels that have recently been scoured by floods or avulsion flows. Sandy wash runs along the bottom of the bluff and may carry flows through small canyons that drain from the top of the bluff. This cover type typically supports low densities of plant cover; however, in the absence of scouring flows or inundation, these areas may develop more complex vegetation communities.

Developed / Disturbed

This cover type represents the areas that have been developed by buildings, or other similar developments, and landscaped vegetation for residential and recreational purposes. There are numerous

developed areas in the Project area including roads, parking lots, residential areas, and areas cleared of vegetation, such as horse trails.

Disturbed Annual Grassland

This vegetation type is located at the borrow area. This borrow area has been recently used for other projects within Prado Basin, and it has been seeded with native species by the contractor. The land surrounding the borrow area is very disturbed with nonnative grasses and ruderal species, such as Russian thistle (*Salsola* sp.) and sowthistle (*Sonchus* sp.). Although native seed was applied to the site in fall 2019, the existing, nonnative seed bank is expected to cause high cover of exotic species onsite.

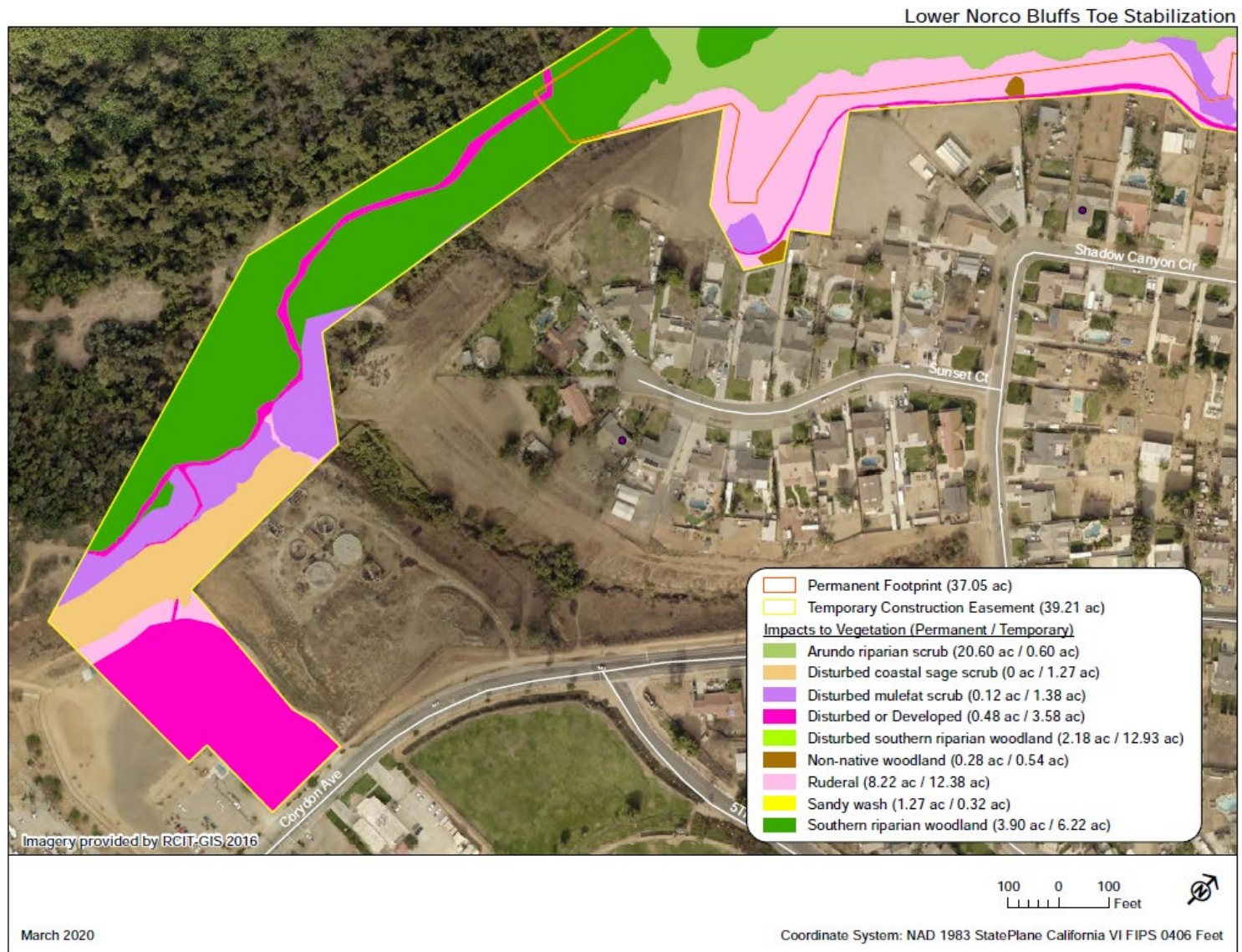


Figure 3.4-1 Vegetation Cover within Project Area

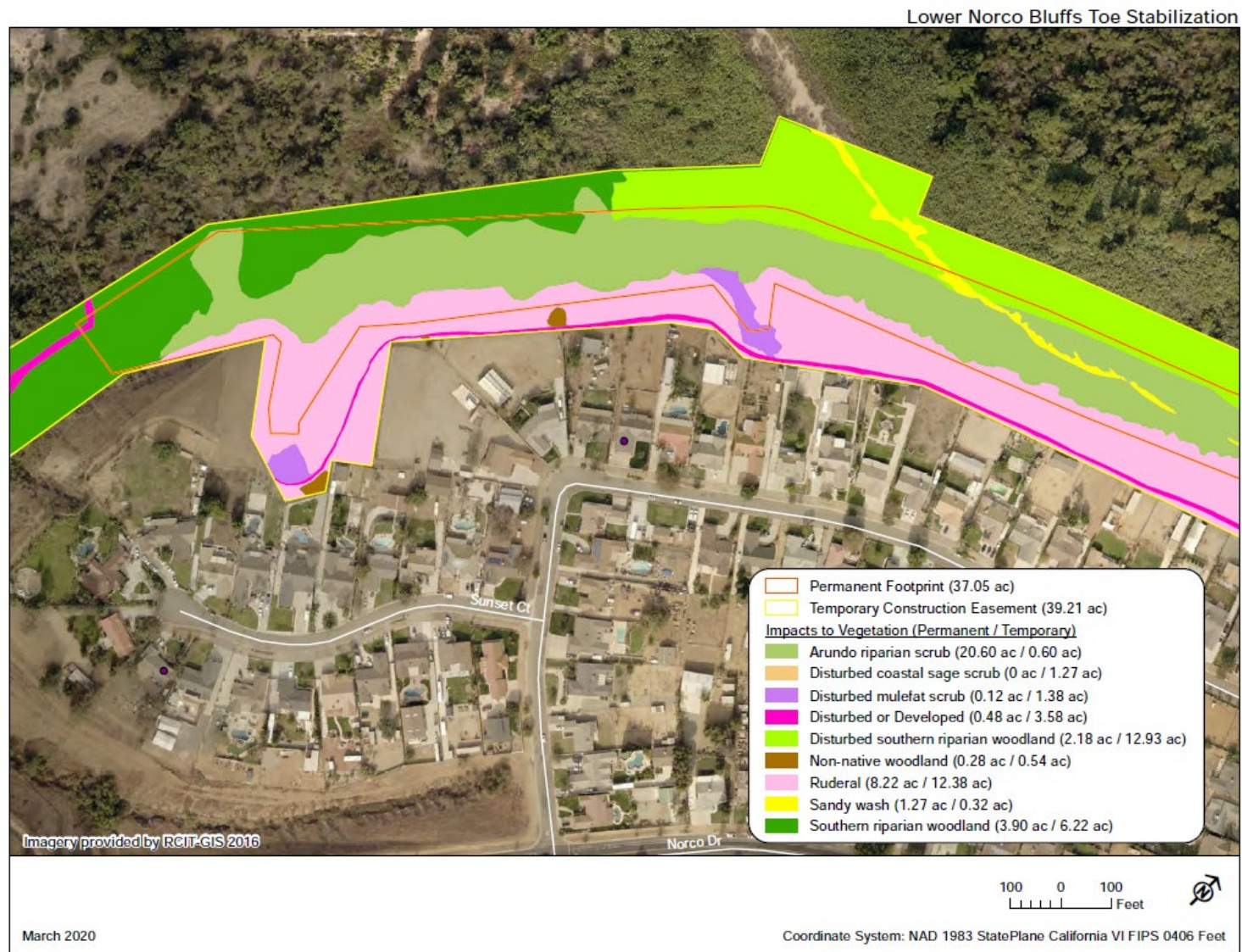


Figure 3.4-2 Vegetation Cover within Project Area

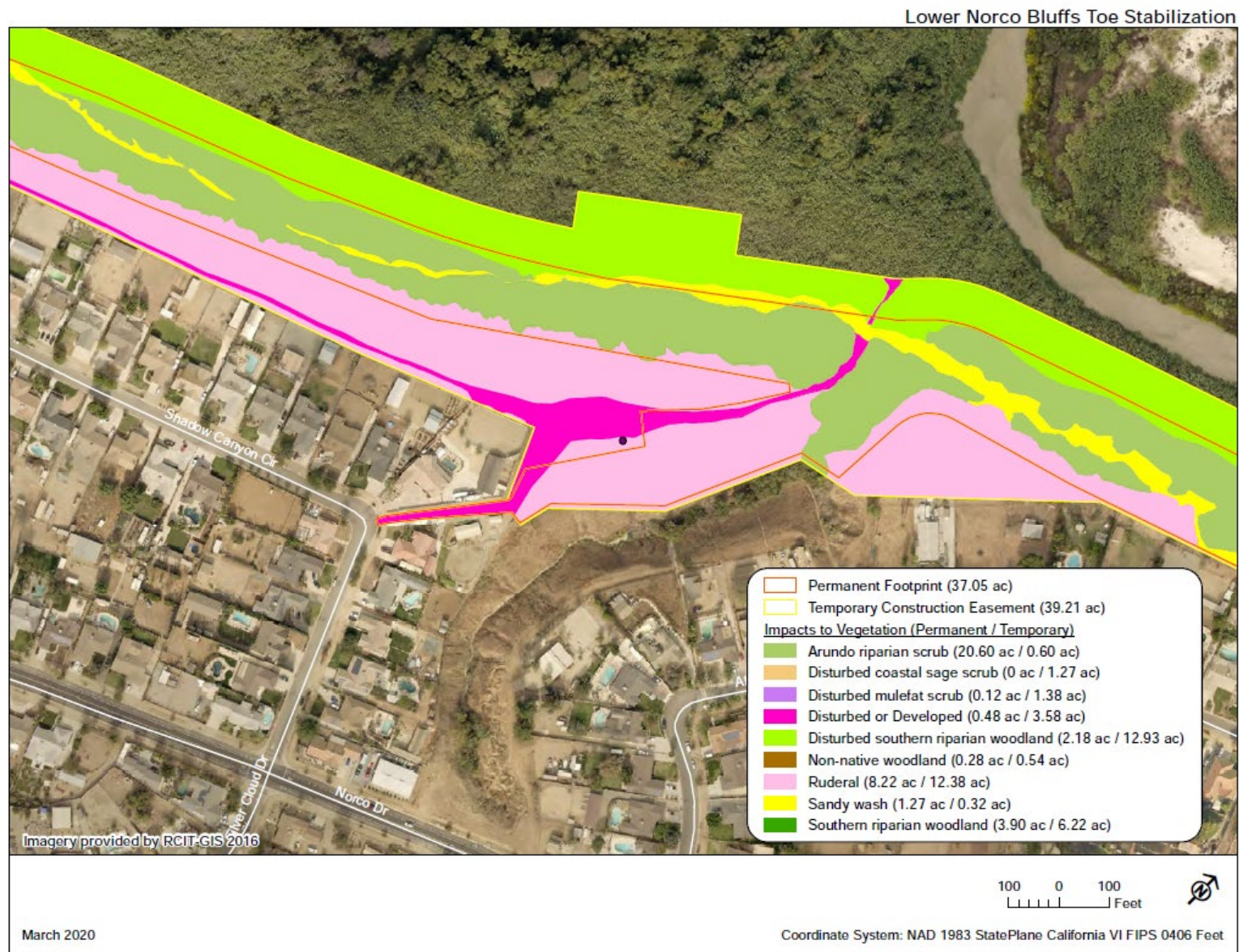


Figure 3.4-3 Vegetation Cover within Project Area

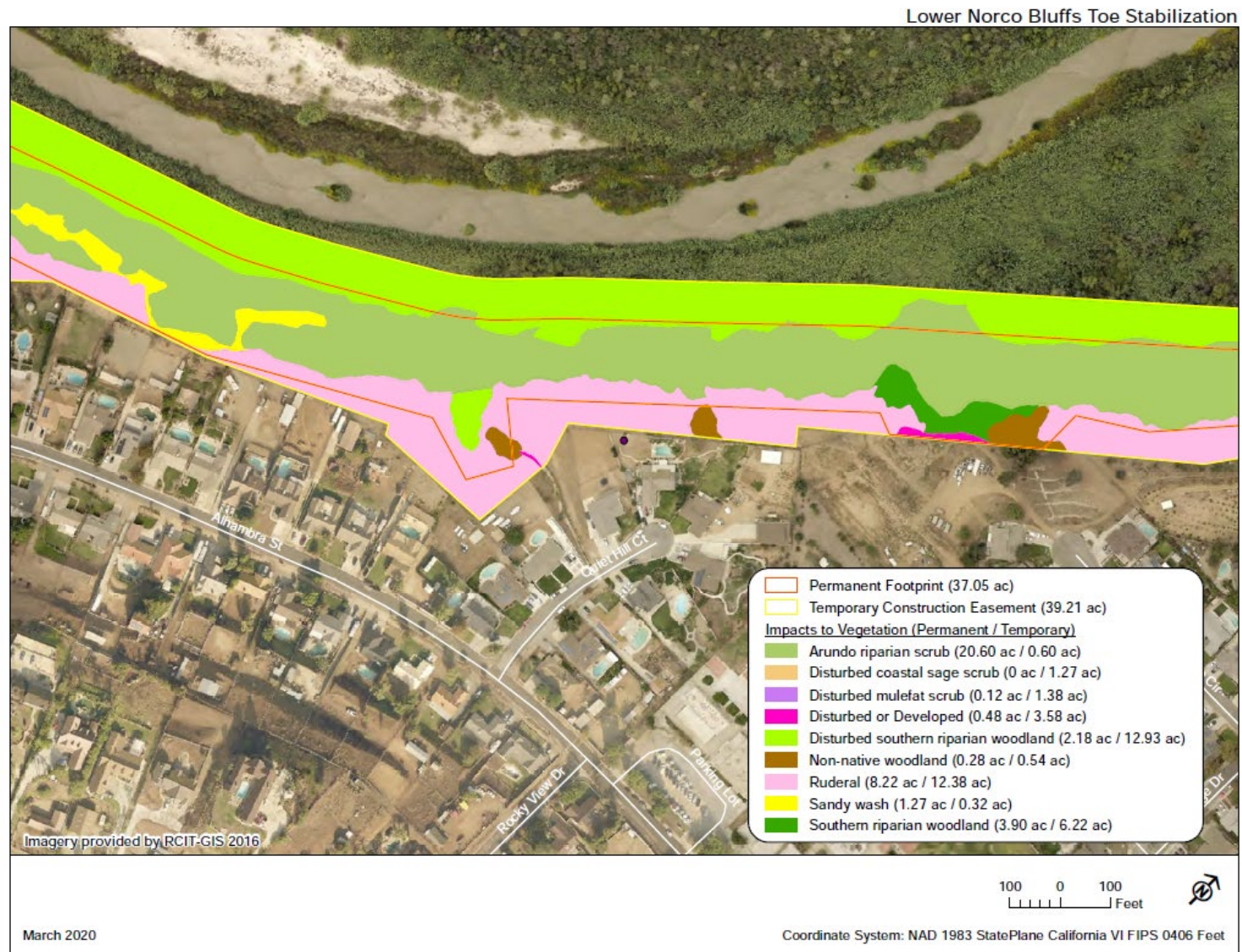


Figure 3.4-4 Vegetation Cover within Project Area

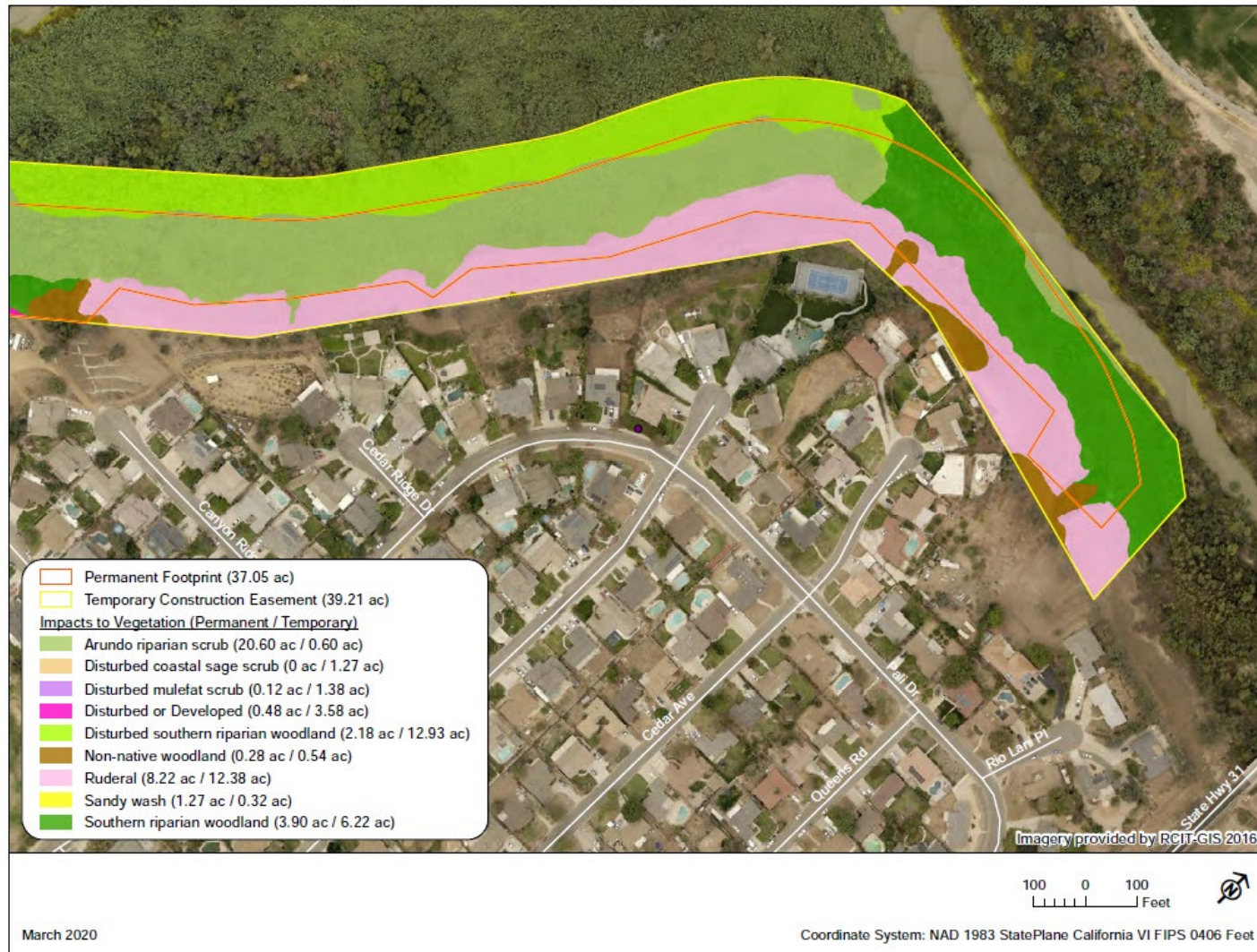


Figure 3.4-5 Vegetation Cover within Project Area

Santa Ana River: Lower Norco Bluffs Toe Protection

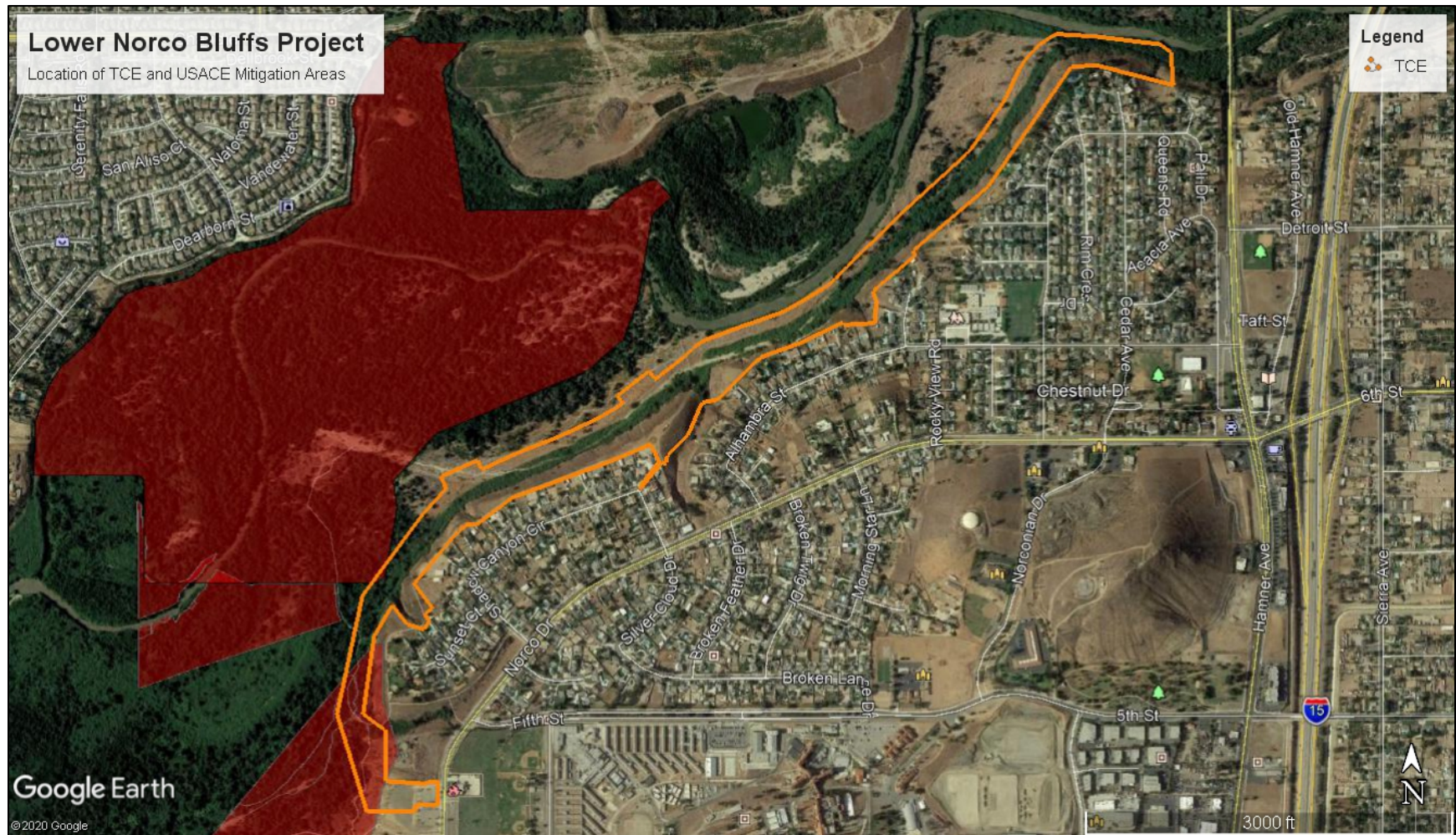


Figure 3.4-6 Overlap of TCE and USACE Mitigation Sites

3.4.1.1 ***SPECIAL-STATUS PLANT SPECIES***

A complete list of the special-status plant communities with the potential to occur in the project area is provided in **Table 3-4**. The table includes scientific nomenclature, regulatory status, habitat requirements, and the potential to occur. To ensure the most up-to-date data was obtained, CNDDDB and CNPS queries were rerun in February 2020 (CDFW 2020). In addition, species lists were obtained from the USFWS Information for Planning and Consultation (IPaC) website. Aerial imagery was also reviewed at varying scales on Google Earth (2018) to determine the potential vegetation communities and land cover types that may be encountered.

Special-status plants considered in this draft SEA/EIR addendum include species listed as threatened or endangered under the Federal or California Endangered Species Acts, species proposed for listing, species included in the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP), and other unique and rare species identified by the USFWS, CDFW, or local jurisdictions. The CNPS listing is sanctioned by CDFW and serves as the list of candidate plant species for state-listing. CNPS's California Rare Plant Ranks (CRPR) (formerly CNPS List) 1B and 2 species are considered eligible for state -listing as endangered or threatened. Species were assessed for their potential to occur within the proposed project area, and species that were determined not likely to occur are not discussed further in this document.

Table 3-4 Special Status Plants and their Probability to Occur Within the Project Area

Scientific Name	Common Name	Conservation Status	Habitat and Distribution	Flower season	Occurrence Potential
<i>Abronia villosa</i> var. <i>aurita</i>	Chaparral sand verbena	Fed: none Calif: none MSHCP: none CRPR: 1B.1	Perennial herb; sand, mostly alluvial fans and benches below about 5000 ft. elev.; San Jacinto Mtns., Inland Empire, adj. Colorado Des., Orange & San Diego cos.	Feb - Jul	Moderate. Habitat present.
<i>Astragalus brauntonii</i>	Braunton's milk vetch	Fed: END Calif: none MSHCP: none CRPR: 1B.1	Subshrub or perennial herb; scattered patches in Ventura, LA, & Orange cos.; foothills below about 2100 ft. elev.; chaparral, often on carbonate soils; often follows fire or soil disturbance	Jan - Aug	Not Likely to Occur. No suitable habitat
<i>Atriplex coulteri</i>	Coulter's saltbush	Fed: none Calif: none MSHCP: none CRPR: 1B.2	Perennial herb; coastal dunes, bluffs, alkaline flats; coastal S Calif and Baja Calif, inland to Encinitas area; sea level to about 1500 ft. elev.	Mar - Aug	Not Likely to Occur. No suitable habitat
<i>Brodiaea filifolia</i>	Thread-leaved brodiaea	Fed: END Calif: END MSHCP: covered CRPR: 1B.1	Bulb; chaparral, cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools; often clay soils; about 80 – 4000 ft. elev.	Mar - Jun	Not Likely to Occur. No suitable habitat
<i>Calochortus catalinae</i>	Catalina mariposa lily	Fed: none Calif: none MSHCP: none CRPR: 4.2	Bulb; chaparral, valley grassland, foothill woodland and coastal sage scrub; Ventura to Orange Cos., inland to Riverside and San Bernardino Cos.; about 65-2400 ft. elev.	Feb - Jun	Not Likely to Occur. No suitable habitat
<i>Calochortus weedii</i> var. <i>intermedius</i>	Weed's mariposa lily	Fed: none Calif: none MSHCP: covered CRPR: 1B.2	Perennial herb; shrublands, grassland, various soils, about 600 - 2800 ft. elev.; coastal southern Calif., inland to western Riverside Co.	May - Jul	Not Likely to Occur. No suitable habitat
<i>Calystegia felix</i>	Lucky morning-glory	Fed: none Calif: none MSHCP: none CRPR: 1B.1	Annual rhizomatous herb; historically associated with wetland and marshy places, but also can be found in drier areas; meadows, seeps and riparian scrub.	May - Jul	Low. Riparian scrub present, not found during surveys.
<i>Camissonia lewisii</i>	Lewis' evening-primrose	Fed: none Calif: none MSHCP: none CRPR: 3	Annual herb found in sandy or clay soils from 0 – 250 feet within coastal bluff scrub, cismontane woodland, coastal dune, coastal scrub, or valley and foothill grassland.	Mar – May	Not Likely to Occur. No suitable habitat; outside elevation range.

Santa Ana River: Lower Norco Bluffs Toe Protection

<i>Centromadia pungens</i> <i>ssp. laevis</i>	Smooth tarplant	Fed: none Calif: none MSHCP: covered CRPR: 1B.1	Annual herb; found in alkaline soils at 330 – 2000 feet elev. within chenopod scrub, meadows, seeps, playas, riparian woodlands, valley and foothill grassland.	Apr - Sep	Moderate. Habitat present, not found during surveys but previously found near the project.
<i>Convolvulus simulans</i>	Small-flowered morning-glory	Fed: none Calif: none MSHCP: none CRPR: 4.2	Annual herb; clay and serpentine seeps within open chaparral, coastal scrub and valley and foothill grassland at 115 – 2820 feet elev.	Mar - Jul	Not Likely to Occur. No suitable habitat.
<i>Deinandra paniculata</i>	Paniculate tarplant	Fed: none Calif: none MSHCP: none CRPR: 4.2	Annual herb; coastal scrub, vernal pools, and grasslands about 50 – 3000 feet elev.	Mar - Dec	Moderate. Habitat present, not found during surveys.
<i>Dodecahema leptoceras</i>	Slender-horned spineflower	Fed: END Calif: END MSHCP: covered CRPR: 1B.1	Annual herb; mature chaparral, cismontane woodland, coastal scrub; about 650 – 2500 feet elev.	Apr - Jun	Not Likely to Occur. No suitable habitat.
<i>Dudleya multicaulis</i>	Many-stemmed dudleya	Fed: none Calif: none MSHCP: covered CRPR: 1B.2	Perennial herb; heavy soils or sandstone outcrops; grassland or shrubland below about 2600 ft. elev.; LA to SD Co, inland to San Gabriel Mtn foothills and W Riv Co.	Apr - Jul	Not Likely to Occur. No suitable habitat.
<i>Eriastrum densifolium</i> <i>ssp. sanctorum</i>	Santa Ana River woollystar	Fed: END Calif: END MSHCP: covered CRPR: 1B.1	Subshrub; alluvial fans and plains; endemic to Santa Ana River watershed (mainly San Bern. Co. but rarely in Riverside & Orange cos.), below about 2000 ft. elev.	May - Sep	Moderate. Habitat present but rare for this area, not found during surveys.
<i>Juglans californica</i> <i>var. californica</i>	So. California black walnut	Fed: none Calif: none MSHCP: covered CRPR: 4.2	Tree or large shrub; woodland, coastal sage scrub, chaparral, below about 3000 ft. elev.; Ventura, LA, Orange, San Bernardino cos.	Mar - Aug	Moderate. Habitat present, but not found during surveys.
<i>Lepidium virginicum</i> var. <i>robinsonii</i>	Robinson's pepper-grass	Fed: none Calif: none MSHCP: none CRPR: 4.3	Ephemeral spring annual; shrublands; sea level to about 2900 ft. elev.; LA Co, most Channel Islands, inland to W Riv & San Bern cos, S to Baja Calif	Jan - Jul	Low. Habitat present, but not found during surveys.
<i>Monardella australis</i> <i>ssp. jokerstii</i>	Jokerst's monardella	Fed: none Calif: none MSHCP: none CRPR: 1B.1	Perennial rhizomatous herb; lower montane coniferous forest, meadows and seeps, vernal pools; about 4000 – 5000 ft. elev.	Jul - Sep	Not Likely to Occur. (no suitable habitat; outside elevation range)

Santa Ana River: Lower Norco Bluffs Toe Protection

<i>Pseudognaphalium leucocephalum</i>	White rabbit-tobacco	Fed: none Calif: none MSHCP: none CRPR: 2.2	Perennial herb; 100 - 7000 ft. elev.; sandy and gravelly chaparral, cismontane woodland, coastal scrub and riparian woodland	Jul - Dec	Moderate. Habitat present but not found during surveys.
<i>Romneya coulteri</i>	Coulter's matilija poppy	Fed: none Calif: none MSHCP: covered CRPR: 4.2	Perennial rhizomatous herb; Chaparral, coastal scrub; often in burns; 30 - 4500 ft. elev.	Mar – Aug	Not Likely to Occur. No suitable habitat.
<i>Sidalcea neomexicana</i>	Salt spring checkerbloom	Fed: none Calif: none MSHCP: none CRPR: 2B.2	Perennial her; alkaline or mesic soils in chaparral, coastal scrub, lower montane coniferous forest, mojavean desert scrub or playas at 50 – 3000 ft. elev.	Mar – Jun	Not Likely to Occur. No suitable habitat.
<i>Symphytotrichum defoliatum</i>	San Bernardino Aster	Fed: none Calif: none MSHCP: covered CRPR: 1B.2	Perennial rhizomatous herb; near ditches, streams, springs, cismontane woodland, coastal scrub, lower montane coniferous forest, meadows, seeps, marshes, swamps and valley and foothill grassland; 1500 – 5800 ft. elev.	Jul – Dec	Not Likely to Occur. Outside of elevation range.
VEGETATION COMMUNITIES					
Southern Sycamore Alder Riparian Woodland		CNDDDB	Tall deciduous streamside woodland that is dominated by western sycamore and occasional white alders. Seldom form closed canopies and appear as scattered trees.		Not present.
Southern California arroyo chub/Santa Ana sucker stream		CNDDDB	Streams ranging in size and flow but containing suitable spawning or sheltering habitat for both or one native fish species found in southern California.		Present just outside of the TCE. Sandy wash exists within TCE.
Southern Willow Scrub		CNDDDB	Consists of dense, broadleaved, winter-deciduous stands of trees dominated by willows, mulefat and scattered emergent cottonwood and sycamore trees. Typically experiencing periodic flooding.		Present.
California Walnut Woodland		CNDDDB	Consists of mainly California walnut trees with a semi open canopy that allows for a grassy understory. Typically occurs in relatively moist areas with fine textured soils near slopes.		Not present.

Federal- and State-Listed Plant Species

Four federal- and/or state-listed species were identified. These species are: slender-horned spineflower (*Dodecahema leptoceras*), thread-leaved brodiae (*Brodiaea filifolia*) and Branton's milk vetch (*Astragalus brauntonii*) and Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*). Of these species, only Santa Ana River woollystar had the potential to occur.

Santa Ana River Woollystar

The Santa Ana River Woollystar (*Eriastrum densifolium* ssp. *sanctorum*) is a federal- and state-listed endangered plant that has moderate potential to occur in the proposed project. This species is a sub-shrub plant that typically grows to a maximum of 3 feet in height. Santa Ana River woollystar has funnel shaped bright blue flower and grey-green pointed leaves and stems. This species is endemic to California and thrives in open areas that receive large amounts of sunlight. It prefers sandy soils and periodic flooding for germination and seed dispersal. While the project lies partly within the active floodplain of the Santa Ana River, the sandy areas are minimal and are often shaded by large trees and stands of giant reed. It is more common in San Bernardino County, but some populations have been found in Riverside County.

California Rare Plant Ranked Species, and MSHCP-Covered Species

Seven special-status plants have a potential to occur in the project area based on suitable habitat, soil types, and known ranges. These include:

- paniculate tarplant (*Deinandra paniculata*) – Moderate
- lucky morning-glory (*Calystegia felix*) – Low
- smooth tarplant (*Centromadia pungens* ssp. *laevis*) – Moderate
- chaparral sand verbena (*Abronia villosa* var. *aurita*) – Moderate
- southern California black walnut (*Juglans californica* var. *californica*) – Moderate
- Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*) – Low
- white-rabbit tobacco (*Pseudognaphalium leucocephalum*) – Moderate

Paniculate tarplant

Paniculate tarplant has a CRPR ranking of 4.2 and has a limited distribution in California. This species is common in open, grasslands (including weedy annual grasslands) in much of western Riverside County and in parts of Orange and San Diego Counties. This species is known to occur within the vicinity, but has not been detected in the project area. Given the suitable habitat present within the borrow area, this species has a moderate potential to occur within the project area.

Lucky morning-glory

Lucky morning-glory has a CRPR ranking of 1B.1 and is considered endangered in California. This species is known to exist in both wetland and marshy areas, as well as drier habitats. Several observations have been made in the city of Chino, but none are within 5 miles of the project area or borrow area. Given the known occurrences of the species and habitat present within the project areas, this species has a low potential to occur.

Smooth tarplant

Smooth tarplant has a CRPR ranking of 1B.1 and is considered endangered in California. This species is covered under the Western Riverside County MSHCP. This species can occupy riparian woodlands and grasslands. A recent observation was documented near the project site, therefore this species has a moderate potential to occur.

Chaparral sand verbena

Chaparral sand verbena has a CRPR ranking of 1B.1 and is considered rare in California. This verbena generally occurs in sandy, alluvial soils in western Riverside County, in the vicinity of Whitewater in the Banning Pass, and in Garner Valley within the San Jacinto Mountains. The most recent observation occurred in 2019 and was within a mile of the project area. The project area supports suitable habitat and is downstream of historic occurrences; therefore, this species has a moderate potential to occur.

Southern California black walnut

The southern California black walnut has a CRPR ranking of 4.2, has a limited range in California, and is covered under the Western Riverside County MSHCP. This species is a low-growing hardwood tree that is endemic to southern California. The range for southern California black walnut extends from San Luis Obispo County to the southeast along the Santa Ana River, and eastward through Riverside County. With the exception of a few areas where walnut-dominated woodlands occur, this species is generally associated with a mixture of other trees, particularly oaks and riparian vegetation. In riparian corridors, this species prefers dryer slopes that are rarely prone to flooding and erosional activity, yet are in proximity to ground water and/or seasonal surface water. Given the habitat present within the project area and the proximity to known occurrences this species has a moderate potential to occur.

Robinson's pepper-grass

Robinson's pepper-grass has a CRPR/CNPS ranking of 4.3 and has a limited distribution in California. This species is an annual herb that typically blooms in early spring and generally occurs in chaparral and coastal sage scrub. It can be found in western California, from Santa Cruz County to Baja California, and inland to western Riverside and San Bernardino Counties. Its primary habitat includes slightly sheltered, open soils in shrublands. It is often located on south-facing slopes and around cobble-sized rocks or at the margins of shrubs, which may provide some moisture runoff. This pepper-grass does not compete well with other annual herbs. It is generally not found in annual grasslands, dense mustard stands, or north-facing slopes, which tend to support a denser herb cover. Due to habitat being present within the project area, this species has a low potential to occur.

White rabbit-tobacco

White rabbit-tobacco has a CRPR ranking of 2.2. This species is distributed along coastal habitats of southern California, from southwestern Riverside County north to San Luis Obispo County. White rabbit-tobacco is a perennial herb that typically occurs in sandy to gravelly soils within chaparral, cismontane woodland, coastal scrub, and riparian woodland habitats. Although white rabbit-tobacco has not been reported near the project area, suitable habitat exists within the project area, and the project area is within the known distribution for this species. Therefore, there is a low potential for white rabbit-tobacco to occur.

Survey Results

Surveys for special-status plant species were conducted in spring and fall of 2019. No Federal- or State-listed or rare species were identified during the surveys. **Table 3-5** provides a list of the species observed within the project area. The borrow area is currently being used for an ongoing project and was inaccessible for surveys. However, previous surveys have described the borrow area as a disturbed grassland mixed with many weedy species. Hydroseeding for site restoration took place in winter of 2019. In 2019, patchy vegetation that contained a mix of ruderal species from the existing seed bank and native grasses was observed. Considering the hydroseeding that occurred in 2019, the area is expected to contain more native grasses in the future as weeding and other maintenance activities continue and until success criteria are achieved.

Table 3-5 Observed Plants Species List

Eudicots	
Muskroot Family	Adoxaceae
blue elderberry	<i>Sambucus nigra</i> ssp. <i>Caerulea</i>
Fig-Marigold Family	Aizoaceae
small-flowered iceplant	<i>Mesembryanthemum nodiflorum</i> *
Amaranth Family	Amaranthaceae
tumbling pigweed	<i>Amaranthus</i> sp.* (dried)
Sumac Family	Anacardiaceae
Peruvian pepper tree	<i>Schinus molle</i> *
poison oak	<i>Toxicodendron diversilobum</i>
Carrot Family	Apiaceae
common celery	<i>Apium graveolens</i> *
common poison hemlock	<i>Conium maculatum</i> *
Sunflower Family	Asteraceae
bur-sage	<i>Ambrosia acanthicarpa</i> (seedling on bluff)
California sagebrush	<i>Artemisia californica</i>
Douglas' or California mugwort	<i>Artemisia douglasiana</i>
coyote brush or chaparral broom	<i>Baccharis pilularis</i>
mule fat	<i>Baccharis salicifolia</i> ssp. <i>salicifolia</i>
California brickellbush	<i>Brickellia californica</i>
calendula	<i>Calendula officinalis</i> *
Italian thistle	<i>Carduus pycnocephalus</i> var. <i>pycnocephalus</i> *
tocalote/Maltese star thistle	<i>Centaurea melitensis</i> *
common horseweed	<i>Erigeron canadensis</i>
Australian brass-buttons	<i>Cotula australis</i> *
California encilia	<i>Encelia californica</i>
grassland goldenbush	<i>Ericameria palmeri</i> var. <i>pachylepis</i>
gazania	<i>Gazania linearis</i> *
western sunflower	<i>Helianthus annuus</i>
bristly ox-tongue	<i>Helminthotheca echioides</i> *
coastal goldenbush	<i>Isocoma menziesii</i>
white everlasting	<i>Pseudognaphalium microcephalum</i>
Spanish sunflower	<i>Pulicaria paludosa</i> *
common groundsel	<i>Senecio vulgaris</i> *
common sow thistle	<i>Sonchus oleraceus</i> *
common dandelion	<i>Taraxacum officinale</i> *
earless crown beard	<i>Verbesina encelioides</i> ssp. <i>exauriculata</i> *
spiny clotbur	<i>Xanthium spinosum</i>
Borage Family	Boraginaceae
common fiddleneck	<i>Amsinckia intermedia</i>
rigid fiddleneck	<i>Amsinckia menziesii</i>
slender pectocarya	<i>Pectocarya linearis</i> ssp. <i>ferocula</i>
common phacelia	<i>Phacelia distans</i>
Mustard Family	Brassicaceae
sahara mustard	<i>Brassica tournefortii</i> *
shepherd's purse	<i>Capsella bursa-pastoris</i> *

shortpod mustard	<i>Hirschfeldia incana</i> *
white water cress	<i>Nasturtium officinale</i> *
London rocket	<i>Sisymbrium irio</i> *
Cactus Family	Cactaceae
Indian fig	<i>Opuntia ficus-indica</i> *
Goosefoot Family	Chenopodiaceae
Australian saltbush	<i>Atriplex semibaccata</i> *
Russian thistle	<i>Salsola tragus</i> *
Morning-Glory Family	Convolvulaceae
common morning-glory	<i>Ipomoea purpurea</i> *
Stonecrop Family	Crassulaceae
sand pigmy-stonescrop/pygmy-weed	<i>Crassula connata</i>
Gourd Family	Cucurbitaceae
chilicothe/wild cucumber	<i>Marah macrocarpa</i>
watermelon	<i>Citrullus lanatus</i>
Spurge Family	Euphorbiaceae
rattlesnake spurge	<i>Euphorbia albomarginata</i>
California croton	<i>Croton californicus</i>
doveweed / turkey mullein	<i>Croton setiger</i>
castor bean	<i>Ricinus communis</i> *
Legume Family	Fabaceae
coastal deerweed	<i>Acmispon glaber</i>
arroyo lupine	<i>Lupinus succulentus</i>
California burclover	<i>Medicago polymorpha</i> *
white sweetclover	<i>Melilotus albus</i> *
Geranium Family	Geraniaceae
red-stemmed filaree	<i>Erodium cicutarium</i> *
Mint Family	Lamiaceae
common horehound	<i>Marrubium vulgare</i> *
Mallow Family	Malvaceae
cheeseweed	<i>Malva parviflora</i> *
Montia Family	Montiaceae
red maids	<i>Calandrinia ciliata</i>
Figwort Family	Scrophulariaceae
prostrate myoporum	<i>Myoporum parvifolium</i> *
Myrtle Family	Myrtaceae
gum	<i>Eucalyptus</i> sp.*
Four-O'clock Family	Nyctaginaceae
bougainvillea	<i>Bougainvillea</i> sp.*
Olive Family	Oleaceae
velvet ash/Arizona flowering-ash	<i>Fraxinus</i> sp.
Lopseed Family	Phrymaceae
seep monkeyflower	<i>Erythranthe guttata</i>
Buckwheat Family	Polygonaceae
California buckwheat	<i>Eriogonum fasciculatum</i>
willow smartweed	<i>Persicaria lapathifolia</i>
sheep sorrel	<i>Rumex acetosella</i> *

willow dock	<i>Rumex sp. (seedling)</i>
Rose Family	Rosaceae
toyon / christmas berry	<i>Heteromeles arbutifolia</i>
California rose	<i>Rosa californica</i>
California blackberry	<i>Rubus ursinus</i>
Willow Family	Salicaceae
Fremont cottonwood	<i>Populus fremontii</i> ssp. <i>fremontii</i>
red willow	<i>Salix laevigata</i>
arroyo willow	<i>Salix lasiolepis</i>
Nightshade Family	Solanaceae
tree tobacco	<i>Nicotiana glauca</i> *
white horse-nettle	<i>Solanum elaeagnifolium</i> *
Tamarisk Family	Tamaricaceae
Mediterranean tamarix	<i>Tamarix ramosissima</i> *
Nettle Family	Urticaceae
hoary nettle	<i>Urtica dioica</i> ssp. <i>holosericea</i>
dwarf nettle	<i>Urtica urens</i> *
Vervain Family	Verbenaceae
lantana	<i>Lantana sp.</i> *
Mistletoe Family	Viscaceae
big leaf mistletoe	<i>Phoradendron leucarpum</i> ssp. <i>macrophyllum</i>
Grape Family	Vitaceae
desert wild grape	<i>Vitis girdiana</i>
Monocots	
Palm Family	Arecaceae
Canary Island palm	<i>Phoenix canariensis</i> *
Mexican fan palm	<i>Washingtonia robusta</i> *
Sedge Family	Cyperaceae
tall umbrella-sedge	<i>Cyperus eragrostis</i> (? No inflorescence)
sedge	<i>Scirpus sp. (seedling)</i>
Iris Family	Iridaceae
fortnight lily	<i>Dietes sp.</i> *
Grass Family	Poaceae
giant reed	<i>Arundo donax</i> *
slender wild oat	<i>Avena spp.</i> *
ripgut grass	<i>Bromus spp.</i> *
bermuda grass	<i>Cynodon dactylon</i> *
smilo grass / millett ricegrass	<i>Stipa miliacea</i> var. <i>miliacea</i> [<i>Piptatherum miliaceum</i>]*
Cattail Family	Typhaceae
broad-leaved cattail	<i>Typha latifolia</i>
<p>*Non-native species **Special-status species Other species may have been overlooked or inactive/absent because of the season. Plants were identified using keys, descriptions, and illustrations in Baldwin et al (2012) and other regional references. Wildlife taxonomy and nomenclature generally follow Stebbins (2003) for amphibians and reptiles, AOU (1998) for birds, and Wilson and Ruff (1999) for mammals.</p>	

3.4.2 WILDLIFE

Riparian communities support diverse assemblages of wildlife because they provide access to water, shade, and cover. Riparian systems and wetlands are frequently considered one of the most productive forms of wildlife habitat in North America. The Prado Basin, which occurs adjacent to the project area, supports extensive riparian and aquatic habitat. Many bird species are wholly, or at least partially, dependent on riparian plant communities (Warner et.al., 1984). Riparian vegetation provides necessary foraging and nesting habitat for many bird species (Rottenborn 1999, Bolger et al 1997); even relatively disturbed areas that are adjacent to existing riparian vegetation can be important to a suite of common and sensitive wildlife. The adjacent floodplain and upland vegetation is also critical to many wildlife species as many aquatic and semi-aquatic species rely on adjacent terrestrial habitats to complete their life cycles (Semlitsch and Bodie 2003, Spinks et al. 2003, Burke and Gibbons 1995). Wildlife that occur at or adjacent to existing mitigation sites in the area may periodically use these areas for foraging, dispersal, or other important behaviors.

The riparian and upland community types that occur in the Santa Ana River watershed provide habitat for a variety of resident and migratory wildlife species including several special-status species. Of particular importance are riparian and streambed areas that provide potential habitat for the federally-threatened Santa Ana sucker (*Catostomus santaannae*), federally- and state-endangered least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii eximius*), and various raptor species.

The project lies almost entirely within the Santa Ana River floodplain, but only on the south side of the main perennial channel. Due to development surrounding the majority of the project, the Santa Ana River's riparian and upland habitats function as a movement corridor and/or dispersal habitat for a number of wildlife species. Continuous riparian riverine habitat is upstream and downstream from the project alignment, increasing the likelihood of wildlife presence within and adjacent to the project area. Some species, such as mourning dove and northern mockingbird, are positively-correlated with urbanization, but most species are negatively-correlated with urbanization and prefer to inhabit undeveloped spaces. Factors associated with urbanization that are expected to contribute to lower species richness and densities in riparian zones near developed areas include an increase in the number of domestic cats (Rottenborn 1997), an increase in people recreating in riparian areas, noise, collisions on roads, and movement of people and domestic animals (Rottenborn 1999). The frequency of human visitation on the bluffs and in the Santa Ana River floodplain may adversely affect wildlife use in the project area to some degree. Several studies have documented the effects of pedestrian traffic on birds (Nowakowski 1994, Fernandez-Juricic 2000, Miller and Hobbs 2000), but, as with development generally, species vary in their sensitivity to this type of disturbance.

Table 3-6 includes all wildlife species listed in the state and federal database searches and covered under the Western Riverside MSHCP. Only those species that have potential to occur and are federally-or state-listed are discussed in further detail in the document. A complete list of the wildlife species identified during surveys is presented in **Table 3-7**. Special-status species are indicated by an asterisk. This list includes only species detected on the site during surveys.

Table 3-6 Special Status Wildlife and their Probability to Occur Within the Project Area

Scientific Name	Common Name	Conservation Status	Habitat and Distribution	Occurrence Probability in Project Area
INVERTEBRATES				
<i>Bombus crotchii</i>	Crotch bumble bee	Fed: none Calif: Candidate END MSHCP: none	Inhabits open grassland and scrub habitats in CA. nesting occurs underground.	Low. Habitat quality is less than ideal for this species to occur.
<i>Rhaphiomidas terminatus abdominalis</i>	Delhi sands flower-loving fly	Fed: END Calif: none MSHCP: covered	Remnant sandy soils (Delhi series) with sparse native vegetation including buckwheat, telegraph weed, croton; endemic to Colton and surrounding area. Summer	Not Likely to Occur: Endemic to the Colton Dunes. Inhabits areas with Delhi soil series. No suitable habitat occurs within the Project area.
FISH				
<i>Catostomus santaanae</i>	Santa Ana sucker	Fed: THR Calif: none MSHCP: covered	Major cismontane stream systems in S Calif. incl. Sta Ana Riv., formerly below 3000 ft. elev.; extant populations near Riverside and downstream. Year-round	Low. This species is known to inhabit (spawn and forage in) portions of the Santa Ana River where suitable habitat occurs above the Prado Dam, and non-breeding individuals have the potential to occur within the Basin or downstream. Species is not expected to inhabit the area immediately adjacent to the project area. Potentially could be present during times of heavy flows if washed downstream from occupied habitat; however, perennial flows are not present within the project area.
<i>Gila orcutti</i>	Arroyo chub	Fed: none Calif: SSC MSHCP: covered	Slow-flowing sections or backwaters, cismontane stream systems in S Calif. incl. Sta Ana Riv.; extant populations near Riverside and down-stream; introduced populations occur outside historic native range Year-round	Low. Known from Corona North USGS quad in isolated sections of the Santa Ana River from Riverside and San Bernardino county line downstream to the Prado Dam. Historical record exists from the pool located within Temescal Wash which is over two miles as the crow flies from the project.
<i>Oncorhynchus mykiss irideus pop. 10</i>	Steelhead	Fed: END Calif: SSC MSHCP: covered	Occurs in rivers with good coastal access, and able to tolerate warmer temperatures. Once was found throughout California.	Not Likely to Occur. Considered possibly extirpated from the area due to development, channelization and dams.
AMPHIBIANS				
<i>Spea hammondi</i>	Western spadefoot	Fed: none Calif: SSC MSHCP: covered	Breeds in quiet streams, temporary ponds, vernal pools, burrows in sand during dry season; sea level to about 4500 ft. elev.; Central Val to N Baja. October-April	Moderate. Ponded water, such as vernal pools or road pools, or slow moving streams are required for breeding. Ponding within the floodplain could provide suitable habitat, sandy areas for shelter are present.

Table 3-6 Special Status Wildlife and their Probability to Occur Within the Project Area

Scientific Name	Common Name	Conservation Status	Habitat and Distribution	Occurrence Probability in Project Area
REPTILES				
<i>Aniella stebbinsi</i>	California legless lizard	Fed: none CA: SSC MSHCP: none	Sandy or loose loamy soils under sparse vegetation; soil moisture is essential; prefer soils with high moisture content.	Moderate. Although scattered records occur for this subspecies throughout western Riverside County, the project area supports only marginal habitat, at best due to its isolation, frequent flooding and surrounding disturbance; not identified during surveys.
<i>Aspidoscelis hyperythra</i>	Orange-throated whiptail	Fed: none Calif: SSC MSHCP: covered	Inhabits low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats; prefers washes and other sandy areas with patches of brush and rocks; perennial plants necessary to support major food source of termites.	Low: Habitat is marginal for this species within the Project area. Known occurrences nearby have been in upland habitat.
<i>Coleonyx variegatus abbotti</i>	San Diego banded gecko	Fed: none Calif: SSC MSHCP: none	Found in rocky outcrops or granitic soils in coastal scrub or chaparral habitats	Not likely to occur: The project area does not support suitable habitat.
<i>Crotalus ruber ruber</i>	Red diamond rattlesnake	Fed: none Calif: SSC MSHCP: covered	Coastal sage scrub, chaparral, desert scrub; SW Calif, Baja Calif.; sea level to about 5000 ft. elev.	Not likely to occur. The project area is located within the known geographic distribution for this species, but does not contain habitat preferred by this species.
<i>Emys marmorata</i>	Western pond turtle	Fed: none Calif: SSC MSHCP: covered	Perennial ponds, streams; breed & overwinter in adjacent uplands; coastal S and cent. Calif., NW Baja Calif., below about 4800 ft. elev.	Not likely to occur. This species was not observed during surveys and the site does not provide deep pools or basking sites.
<i>Phrynosoma blainvillii</i>	Coast horned lizard	Fed: none CA: SSC MSHCP: covered	Sandy soils, forest, shrubland or grassland; W Calif. from LA Co through Baja Calif., below about 6000 ft. elev.	Not likely to occur: This species has been known to occur in a variety of habitats but is known in this region to be near foothills and open areas, which are lacking within the project area.
BIRDS				
<i>Accipiter cooperii</i>	Cooper's hawk	Fed: none Calif: SSC MSHCP: covered	Nests and hunts in forest & woodland, also forages in open areas; most of US, Central and S America.	Present: This species was last observed flying over and foraging in the project area during surveys. Nesting habitat is available within and near the project area; however, no active nests have been found or reported.
<i>Accipiter striatus</i>	Sharp-shinned hawk	Fed: none Calif: SSC MSHCP: covered	Nests in conifer and riparian forests, preferably on north facing slopes near water. Forages in many habitats in winter and migration.	Moderate: This species was observed flying over and foraging in the project area during the recent surveys. Breeding habitat does not occur in the project area.
<i>Aechmophorus</i>	Clark's grebe	Fed: none	Forage and nest on large freshwater lakes and	Not Likely to Occur. No suitable habitat.

Table 3-6 Special Status Wildlife and their Probability to Occur Within the Project Area

Scientific Name	Common Name	Conservation Status	Habitat and Distribution	Occurrence Probability in Project Area
<i>clarkii</i>		CA: none MSHCP: none	marshes and are found on the coast during non-breeding season.	
<i>Agelaius tricolor</i>	Tricolored blackbird	Fed: none Calif: THR MSHCP: covered	Nests in conifer and riparian forests, preferably on north facing slopes near water. Forages in many habitats in winter and migration.	Not Likely to Occur. No suitable habitat.
<i>Aimophila ruficeps canescens</i>	Southern California rufous-crowned sparrow	Fed: none Calif: SSC MSHCP: covered	Valley foothill-hardwood, hardwood conifer forest, chaparral, valley-foothill riparian forest, coniferous forest, wet meadows	Not Likely to Occur. No suitable habitat.
<i>Ammodramus savannarum</i>	Grasshopper sparrow	Fed: none Calif: SSC MSHCP: covered with specific objectives	Dense grasslands on rolling hills, lowland plains; in valleys and on hillsides on lower mountain slopes; favors native grasslands with a mix of grasses, forbs, and scattered shrubs.	Not Likely to Occur. No suitable habitat.
<i>Aquila chrysaetos</i>	Golden eagle	Fed: none Calif: FP, CSC MSHCP: covered	Uncommon resident in southern California; nests primarily located in rugged, isolated mountain areas	Low. No suitable habitat within project area, the borrow area is closer to Prado wetlands and open space that it more suitable for this species to forage.
<i>Artemisiospiza belli belli</i>	Bell's sage sparrow	Fed: none Calif: SSC MSHCP: covered	Uncommon to fairly common localized breeder in dry chaparral and coastal sage scrub habitats.	Not Likely to Occur. No suitable habitat.
<i>Ardea Herodias</i>	Great blue heron	Fed: none Calif: none MSHCP: covered	Rookery sites typically occur in groves of large trees within proximity to aquatic foraging areas of streams, wetlands, and grasslands	Moderate. Nesting site habitat does not occur; however, this species may utilize the project area for foraging opportunities.
<i>Asio otus</i>	Long-eared owl	Fed: none Calif: SSC MSHCP: none	Dense, riparian and live oak vegetation often adjacent to grasslands or meadows. Forages in grassland, open areas and agriculture fields.	Not Likely to Occur. No suitable habitat.
<i>Athene cunicularia</i>)	Burrowing owl	Fed: none Calif: SSC (burrow sites) MSHCP: covered (addl. survey)	Open, dry perennial or annual grasslands, deserts, and scrublands characterized by low-growing vegetation; subterranean nester, dependent upon burrowing mammals, particularly California ground squirrels	Present. Permanent resident is known within 300 feet of borrow area, staging area contains rubble and old concrete opening that could be used for shelter.
<i>Botaurus lentiginosus</i>	American bittern	Fed: none Calif: SA MSHCP: covered	Found almost exclusively in emergent habitat of freshwater marshes and vegetated borders of ponds and lakes	Not Likely to Occur. No suitable habitat.
<i>Buteo swainsoni</i>	Swainson's	Fed: none	Breeds in interior valleys and high desert with	Low: Although this species was formerly common in

Table 3-6 Special Status Wildlife and their Probability to Occur Within the Project Area

Scientific Name	Common Name	Conservation Status	Habitat and Distribution	Occurrence Probability in Project Area
	hawk	Calif: THR MSHCP: covered	scattered large trees or riparian woodland corridors surrounded by open fields, desert scrub or agriculture.	southern California, it no longer breeds in the region; this species has been reported from the Prado Basin, where it likely occurs during spring migrations.
<i>Carduelis lawrencei</i>	Lawrence's goldfinch	Fed: none Calif: none MSHCP: covered	Nests in open oak or other arid woodland and chaparral near water; nearby herbaceous habitats used for foraging; closely associated with oaks	Low. Although streamside this species is associated with the presence of oaks which are not present in or near the project area.
<i>Cathartes aura</i>	Turkey vulture	Fed: none Calif: none MSHCP: covered	Throughout US and Cent. America; forages widely over many habitats; roosts communally in open trees; nests on cliffs or steep mountainsides in sheltered shrubby or rocky sites.	Present: Common in the region; the project area does not support suitable nesting habitat; however, this species is known to fly through and forage in the project area.
<i>Campylorhynchus brunneicapillus sandiegensis</i>	Cactus wren	Fed: none Calif: SSC MSHCP: covered	Species require tall opuntia cactus for nesting and roosting.	Not Likely to Occur. No suitable habitat.
<i>Circus cyaneus</i>	Northern harrier	Fed: none Calif: SSC (nesting only) MSHCP: covered	Prefer open country, grasslands, steppes, wetlands, meadows, agriculture fields; roost and nest on ground in shrubby vegetation often at edge of marshes	Present. Species was observed during surveys, it has been recently recorded in project area; this species does not nest in the project area but may utilize the area for foraging.
<i>Coccyzus americanus occidentalis</i>	Western yellow-billed cuckoo	Fed: THR Calif: END MSHCP: covered	Strongly associated with large complex riparian woodlands.	Low. This species was not detected during surveys of the proposed project area, it has been previously recorded in the Prado Basin in 2011; this species is not expected to use the project area as it is not as continuous as the species prefers.
<i>Coturnicops noveboracensis</i>	Yellow rail	Fed: none Calif: SSC MSHCP: none	Prefer open country, grasslands, steppes, wetlands, meadows, agriculture fields; roost and nest on ground in shrubby vegetation often at edge of marshes	Not Likely to Occur. No suitable habitat.
<i>Elanus leucurus</i>	White-tailed kite	Fed: none Calif: FP MSHCP: covered	Typically nests at lower elevations in riparian trees, including oaks, willows, and cottonwoods; forages over open country	Present. This species was observed during surveys; breeding habitat is present as well as foraging habitat at both the project site and borrow area.
<i>Empidonax traillii extimus</i>	Southwestern willow	Fed: END Calif: END	Riparian obligate. Breeds in willow riparian forests & shrublands at scattered locations in	Low. Known from three surrounding USGS quads. Successful nesting was documented in the Prado Basin

Table 3-6 Special Status Wildlife and their Probability to Occur Within the Project Area

Scientific Name	Common Name	Conservation Status	Habitat and Distribution	Occurrence Probability in Project Area
	flycatcher	(nesting) MSHCP: covered	SW US and N Baja; winters in Cent. Amer.; threatened by habitat loss and cowbird parasitism.	from 1988 to 2007; not detected in the project area during previous annual surveys.
<i>Icteria virens</i>	Yellow-breasted chat	Fed: none Calif: SSC (nesting) MSHCP: covered	Summer resident; inhabits riparian thickets of willow and other brushy tangles near water courses; nests in low, dense riparian vegetation; nests and forages within 10 feet of ground	High. Although not observed within the project area this species is known to occur in and near riparian habitat; project area supports suitable nesting habitat.
<i>Falco columbaris</i>	Merlin	Fed: none Calif: SSC (wintering) MSHCP: covered	Seacoasts, tidal estuaries, open woodlands, savannahs, edges of grasslands and deserts, farms and ranches; require clumps of trees or windbreaks for roosting in open country.	Not Likely to Occur. No suitable habitat.
<i>Falco mexicanus</i>	Prairie falcon	Fed: none Calif: SSC (nesting) MSHCP: covered	Rare in southern California; nests along cliff faces or rocky outcrops; forages over open spaces, agricultural fields	Not Likely to Occur. No suitable habitat.
<i>Falco peregrines</i>	American peregrine falcon	Fed: none Calif: FP MSHCP: covered	Prefers coastal estuaries and other wetlands; occurs in S. California as a rare migrant	Not Likely to Occur. No suitable habitat.
<i>Haliaeetus leucocephalus</i>	Bald eagle	Fed: none Calif: FP MSHCP: covered	Breed in large trees, usually near major rivers or lakes; winters more widely; wide but scattered distribution in N America; esp. coastal regions. Winter	Not Likely to Occur. No suitable habitat.
<i>Laterallus jamaicensis coturniculus</i>	California black rail	Fed: none Calif: THR MSHCP: none	In California this species is found in wet meadows and marshes with shallow water with bulrush, American glasswort and alkali seaheath.	Not Likely to Occur. No suitable habitat
<i>Melospiza lincolnii</i>	Lincoln's sparrow	Fed: none Calif: none MSHCP: specific obj (breeding)	Breeds in montane wetlands, meadows, and riparian scrub; fairly common and widespread in winter at lower elev. winter	Moderate: Known from the surrounding riparian forests. Suitable habitat exists within the project area. May be an uncommon winter visitor.
<i>Pandion haliaetus</i>	Osprey	Fed: none Calif: SSC	Breeds in variety of habitats with shallow water and large fish, including boreal forest ponds,	Not Likely to Occur. May fly over the project area, although foraging opportunities are extremely limited. No

Table 3-6 Special Status Wildlife and their Probability to Occur Within the Project Area

Scientific Name	Common Name	Conservation Status	Habitat and Distribution	Occurrence Probability in Project Area
		MSHCP: covered	desert salt-flat lagoons, temperate lakes, and tropical coasts. Winters along large bodies of water containing fish.	suitable nesting habitat exists within the project area.
<i>Phalacrocorax auritus</i>	Double-crested cormorant	Fed: none Calif: SSC MSHCP: covered	Require lakes, rivers, reservoirs, estuaries, or ocean for foraging; nests in tall trees, wide rock ledges on cliffs, or rugged slopes near aquatic environments	Present. Observed during surveys as a fly over; the project area does not support suitable nesting or foraging habitat.
<i>Picoides pubescens</i>	Downy woodpecker	Fed: none Calif: none MSHCP: covered	Forests and woodlands, esp. riparian areas in So. Calif; also wooded suburbs and parks; builds nests in dead trees. year-around	Present. This species was observed within the project area. Suitable breeding habitat occurs in the project area.
<i>Poliophtila californica californica</i>	Coastal California gnatcatcher	Fed: THR Calif: SSC MSHCP: covered	Obligate, permanent resident of coastal sage scrub below 2500 ft in southern California; low scrub in arid washes, on mesas and slopes	Low: This species was not observed during surveys, only small patches of disturbed coastal sage scrub occur within the project site, but some scrub habitat is present that could be used for foraging. Not observed during ongoing surveys.
<i>Pyrocephalus rubinus</i>	Vermillion flycatcher	Fed: none Calif: SSC MSHCP: none	Scrub, desert, cultivated lands and riparian woodlands.	Moderate. Although not observed within the project area this species is known to occur in the Prado Basin. Suitable habitat occurs in the project area.
<i>Setophaga petechia</i>	Yellow warbler	Fed: none Calif: SSC (nesting) MSHCP: covered	Riparian plant associations; prefers willows, cottonwoods, aspens, sycamores, and alders for nesting and foraging	High. Species was not detected in the project area. The project area supports suitable foraging and nesting habitat.
<i>Vireo bellii pusillus</i>	Least Bell's vireo	Fed: END Calif: END MSHCP: covered	Summer resident of southern California in low riparian habitats in vicinity of water or dry river bottoms; found below 2000 ft; nests placed along margins of bushes or on twigs projecting into pathways, usually willow, mesquite, baccharis	Present. This species has been documented breeding in and adjacent to the project area (SAWA, 2019).
MAMMALS				
<i>Canis latrans</i>	Coyote	Fed: none Calif: none MSHCP: covered	Opportunistic predators; many habitats throughout US, Mexico & S Canada, where cover & prey available.	Present. Coyotes are regularly observed on the project site; project area is located in the vicinity of known movement corridors.
<i>Dipodomys</i>	Stephens	Fed: END	Primarily annual and perennial grasslands, but	Not Likely to Occur. This species is only likely to occur in

Table 3-6 Special Status Wildlife and their Probability to Occur Within the Project Area

Scientific Name	Common Name	Conservation Status	Habitat and Distribution	Occurrence Probability in Project Area
<i>stephensi</i>	kangaroo rat	Calif: THR MSHCP: covered	also occurs in coastal scrub and sagebrush with sparse canopy cover; prefers buckwheat, chamise, brome grass, and filaree; will burrow into firm soil	transience. There has been no recent recorded evidence (i.e. inter-related burrows, runways, sufficient open forb-rich habitat) in the project area.
<i>Eumops perotis californicus</i>	Western mastiff bat	Fed: none Calif: SSC MSHCP: none	Prefers deciduous and coniferous woodlands; primarily roosts in tree foliage	High. This subspecies was identified in the nearby the Project. Suitable habitat occurs nearby and foraging habitat is within the project areas.
<i>Lasiurus xanthinus</i>	Western yellow bat	Fed: none Calif: SSC MSHCP: none	Prefers riparian woodland habitat, particularly where palm trees are found.	High. There is suitable foraging and roosting habitat within the project area.
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	Fed: none Calif: SSC MSHCP: covered	Intermediate canopy stages of shrub habitats and shrub, tree, herbaceous edges; primarily coastal sage scrub habitats	Moderate. This subspecies is known from the Prado Basin; project area supports suitable habitat.
<i>Lynx rufus</i>	Bobcat	Fed: none Calif: none MSHCP: covered	Opportunistic predators; many habitats throughout US, Mexico & S Canada, where cover & prey available.	High: Species is relatively common within riparian corridors, but rarely observed
<i>Mustela frenata</i>	Long-tailed weasel	Fed: none Calif: none MSHCP: covered	Generalist predator, mainly on small mammals; many habitats, US, Mexico, S Canada (excl. deserts).	High: Species is relatively common within riparian corridors, but rarely observed.
<i>Felis concolor</i>	Mountain lion	Fed: none Calif: none MSHCP: covered	Large areas where prey (mainly deer) is available; throughout W N Amer; vulnerable to habitat fragmentation.	Moderate: Known from the nearby Prado Basin and Chino Hills State Park. Cover is sparse for this species in the project area but species likely uses the project area as a movement corridor and possibly even for foraging.
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	Fed: none Calif: SSC MSHCP: covered	Arid shrublands, esp. around rocky outcrops & crevices; cismontane Calif from San Luis Obispo to San Diego Co, and NW Baja Calif. Year-around	Not Likely to Occur. No suitable habitat.
<i>Nyctinomops femorosaccus</i>	Pocketed free-tailed bat	Fed: none Calif: SSC MSHCP: none	Variety of arid areas in southern California, including pine-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian; rocky areas with high cliffs	Moderate. This is a rare species in CA, but suitable roosting is found in a nearby bridge and foraging habitat is present within the project area.
<i>Perognathus longimembris</i>	Los Angeles pocket mouse	Fed: none Calif: SSC	Open shrublands, grasslands; often sandy alluvial benches; S Calif. valleys, LA, SW San	Low. No records exist for the area but suitable occurs within the project area.

Table 3-6 Special Status Wildlife and their Probability to Occur Within the Project Area

Scientific Name	Common Name	Conservation Status	Habitat and Distribution	Occurrence Probability in Project Area
<i>brevinasus</i>		MSHCP: covered	Bernardino and W Riverside Cos.	
<i>Sylvilagus bachmani</i>	Brush rabbit	Fed: none Calif: none MSHCP: covered	Dense shrublands (as cover); largely feeds on grasses; West coast (W Washington through Baja Calif.). Year-around	Low: Although this species was observed in the city of Chino, the project area supports only marginal habitat.

3.4.2.1 ***SPECIAL-STATUS WILDLIFE SPECIES***

Special-status wildlife for this SEA include those listed as threatened or endangered under the federal or California Endangered Species Acts, species proposed for listing, species of special concern and other species which have been identified by the USFWS, CDFW. Each of these species was assessed for its potential to occur within the Lower Norco Bluffs feature area. Updated survey efforts, occurrence information, distribution maps, literature, and correspondence with local experts have been utilized to refine the list of special-status species either present or with a potential to occur in the proposed project area. Twenty-four special-status species have potential to occur within the project area. Other species that are present or have potential to occur within the project area include Crotch bumble bee, coyote, bobcat, long-tailed weasel, mountain lion, and brush rabbit.

The 2001 SEIS/EIR identified a number of special-status wildlife that occur or potentially could occur in the project area. However, the 2001 SEIS/SEIR documented the presence of mostly bird species with few native fish, reptiles, amphibians or mammals. Special-status species observed were Santa Ana sucker, arroyo chub, white-tailed, red-shouldered hawk, Cooper's hawk, yellow-breasted chat, least Bell's vireo and southwester willow flycatcher. The least Bell's vireo was listed as endangered in 1986. It is a common summer breeding resident in the Santa Ana River Watershed and the project area. As such, this species has been a major focus in previous documents. The southwestern willow flycatcher, another summer breeding resident in the greater Prado Basin, is much less common. It was afforded protection under the federal Endangered Species Act nine years later in 1995. The bald eagle was formally listed in 1978 however it was delisted in 2007. This species is an occasional winter visitor to the Prado Basin, but is not known to breed Norco Bluffs area. In 2000, the Santa Ana sucker was listed as a federal Threatened Species. The arroyo southwestern toad was listed as Endangered in 1995; however, it has never been recorded in the project area. The California red-legged frog was listed as Threatened in 1996 and was formerly a resident in the Prado Basin, but is not expected to occur in the project area. The 2001 SEIS/EIR also analyzed two additional species, western yellow-billed cuckoo (federally threatened and state endangered) and Swainson's hawk (state threatened). The California gnatcatcher was listed as Threatened in 1993. They have been expanding their range in the past several years, however habitat suitability within the project area poor. A small very disturbed coastal sage scrub exists near foraging habitat for this species but during avian and vegetation surveys this species was determined to have a low potential to occur.

Santa Ana Sucker (Catostomus santaanae)

The Santa Ana sucker is federally threatened, a California species of special concern, and a Western Riverside MSHCP covered species. The Santa Ana sucker historically occurred in small, shallow, low-elevation streams in the Los Angeles, San Gabriel, and Santa Ana River systems (Swift et al., 1993). They also historically occurred in the upper Santa Ana River, on Cajon and City Creeks in the foothills of the San Bernardino Mountains, and in Santiago Creek in the foothills of the Santa Ana Mountains (Moyle, 1995). Currently, the Santa Ana sucker is restricted to 3 noncontiguous populations: the lower Big Tujunga Creek, the East, West and North Forks of the San Gabriel River and the lower and middle Santa Ana River (USFWS 2000, 2010). Introduced populations are present in the Santa Clara River and tributaries (Sespe Creek, Hybridization with the Owens sucker had been a problem in the Sespe Creek and lower Santa Clara River populations. The Santa Ana sucker is known to occur in patches throughout the Santa Ana River where habitat is suitable. Most populations have been found where the substrate is sandy or gravelly. OCWD conducts regular monitoring for sucker around the River Road area, approximately 1.5 miles downstream of the project area. There have been no detections of sucker in this stretch of the main channel of the Santa Ana River main channel in the past 10 years (Bonnie Johnson correspondence 2020).

Critical habitat was re-designated for the species in 2010. This most recent modification to designated critical habitat includes a total of approximately 9,331 acres located within three units (Units 1-3). Unit 1 is located along portions of the Santa Ana River and is further divided into three separate units (Subunits A-C). Unit 2 includes portions of the San Gabriel River and Unit 3 encompasses sections of Gold Canyon, Big Tujunga Wash, Delta Canyon, and Stone Canyon. The entire project area falls within critical habitat Subunit 1B (Santa Ana River). A total of 52.96 acres of designated critical habitat is located within the project area. This subunit totals approximately 4,771 acres and is located near the City of Rialto in San Bernardino County and extends to the city of Corona in Riverside County. Approximately 22 miles of the Santa Ana River's main stem is included in this subunit from near Tippecanoe Avenue to the Prado Dam and Flood Control Basin. This subunit also includes sections of the Rialto Drain and Sunnyslope Creek. Although there are numerous impacts such as barriers and altered hydrology which threaten essential features for the species, surveys in during the critical habitat update period found that suckers occupied various locations in the mainstem of the Santa Ana River. Discharges from water treatment plants and groundwater upwelling normally provide stream volume and velocity necessary for the species during the dry season within currently occupied areas. Therefore the riverine environment essential feature is present in well-established patches within the subunit. However, the flows are not great enough to move coarse sediment downstream. As the project area is outside of the main channel of the Santa Ana River in which the species occurs, there is low potential for sucker to be found within the project area.

Arroyo Chub (Gila orcutti)

The arroyo chub is a CDFW Species of Special Concern and a Western Riverside MSHCP covered species. This species occurs within the coastal streams of Ventura, Los Angeles, Orange and San Diego Counties. It is currently only present in abundant numbers only along the West Fork of the San Gabriel River in Los Angeles County. The arroyo chub occurs in slow-moving or backwater sections of warm to cool streams with mud or sand substrates. Spawning occurs in pools or in quiet edge waters (Moyle, 1995). The arroyo chub is a relatively small, short-lived member of the minnow family (Cyprinidae). This species reaches a maximum length of no more than 3.5 inches and lives no more than four years (McGinnis, 2006). The arroyo chub reaches sexual maturity at one year and spawns more or less continuously from February to August. Algae, insects, and small crustaceans comprise the primary diet of this species. This species is known from Corona North USGS quad in isolated sections of the Santa Ana River from Riverside and San Bernardino county line downstream to the Prado Dam (Swift, 2001). As the project area is outside of the main channel of the Santa Ana River, there is low potential for the species to occur within the project.

Western Spadefoot Toad (Spea hammondi)

The western spadefoot toad is a CDFW Species of Special Concern and a Western Riverside MSHCP covered species. This species is endemic to California and northern Baja California. Although the species primarily occurs in lowlands, it also occupies foothill and mountain habitats. Within its range, the western spadefoot toad occurs from sea level to 1,219 meters (4,000 feet), but mostly at elevations below 910 meters (3,000 feet) (Stebbins, 2010). Riparian habitats with suitable water resources may also be used.

The western spadefoot toad is almost completely terrestrial, remaining underground eight to 10 months of the year and entering water only to breed (Jennings and Hayes, 1994; Holland and Goodman, 1998). The species aestivates in upland habitats near potential breeding sites in burrows approximately one meter in depth (Stebbins, 2010) and adults emerge from underground burrows during relatively warm rainfall events to breed. While adults typically emerge from burrows from January through March, they

may also emerge in any month between October and April if rain thresholds are met (Morey and Guinn, 1992; Jennings and Hayes, 1994; Holland and Goodman, 1998).

Western spadefoot toads likely do not move far from their breeding pool during the year (Zeiner et al., 1988), and it is likely that their entire post-metamorphic home range is situated around a few pools. However, opportunistic field observations indicate that they readily move up to at least several hundred meters from breeding sites. Ponded water, such as vernal pools or road pools, or slow moving streams are required for breeding. Within the project area, habitat is considered suitable for the western spadefoot toad. This species was not observed during recent surveys. As such, they are presumed to be absent from the site, and impacts to the species are not discussed further in this document.

California Legless Lizard (Aniella stebbinsi)

The California legless lizard is a CDFW Species of Special Concern. This species is found in a broader range of habitats than any of the other species in the genus. Often locally abundant, specimens are found in coastal sand dunes and a variety of interior habitats, including sandy washes and alluvial fans (Stebbins 2012). Occurs in moist warm loose soil with plant cover. Moisture is essential for this species to survive. Typically occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Leaf litter under trees and bushes in sunny areas and dunes stabilized with bush lupine and mock heather often indicate suitable habitat. Often can be found under surface objects such as rocks, boards, driftwood, and logs. Can also be found by gently raking leaf litter under bushes and trees. Sometimes found in suburban gardens in Southern California. Within the project area, habitat is considered suitable for the California legless lizard. This species was not observed during recent surveys. As such, they are presumed to be absent from the site, and impacts to the species are not discussed further in this document.

Orange-throated Whiptail (Aspidoscelis hyperythra)

The orange-throat whiptail is a CDFW Species of Special Concern and is covered under the Western Riverside MSHCP. The geographic range for orange-throat whiptail extends from extreme southern California west of the crest of the Peninsular Ranges to the southern tip of Baja California. Orange-throat whiptail primarily occurs in coastal sage scrub, and to a lesser extent, chaparral communities. Highest densities of this species are typically associated with floodplains and streamside terraces (Jennings and Hayes, 1994). Within the project area, habitat is considered suitable for the western orange-throat whiptail. This species was not observed during recent surveys. As such, they are presumed to be absent from the site, and impacts to the species are not discussed further in this document.

Cooper's Hawk (Accipiter cooperii)

The Cooper's hawk is a CDFW Species of Special Concern and is covered under the Western Riverside MSHCP. This species is found in variety of habitats including quiet neighborhoods and parks. Their main source of prey are other birds. Cooper's hawks build nests typically 25-50 feet high in trees. This species was observed within the project area.

Golden Eagle

The golden eagle is a CDFW Fully-Protected species and is covered under the Western Riverside MSHCP. The breeding range for golden eagle extends across western North America from Alaska south to northern

Baja California and east to central Tennessee, Pennsylvania, and Maine (Johnsgard, 1990). This species winters in North America from southern Alaska south through its western breeding range. Throughout California, with the exception of the floor of the Central Valley, golden eagles are an uncommon permanent resident and migrant. It is considered more common in southern California than in the northern half of the state. This species is known to nest within the Prado Basin. Marginal nesting habitat exists near the project area due to surrounding development, but the species may fly over or forage within the project area. There is a low potential for this species to occur in the project area.

Sharp-shinned Hawk (Accipiter striatus)

The sharp-shinned hawk is a CDFW Species of Special Concern and is covered under the Western Riverside MSHCP. In California, sharp-shinned hawks breed throughout the state, including the mountains of southern California, but the majority probably breed in the northern half of the state. Sharp-shinned hawks in California typically nest in coniferous forests, often within riparian areas or on north-facing slopes. Nest stands are typically dense patches of small-diameter trees; these patches are cool, moist, and well shaded with little groundcover. Nest stands often occur near water and are typically in close proximity to open areas (Zeiner et al., 1990).

Sharp-shinned hawks forage in a wide variety of habitats, including forest canopy and subcanopy, shorelines, urban and suburban settings, smaller forest patches, and transitional habitats. This species is known from within the Prado Basin. Both nesting and foraging habitat is available nearby and within the project area, therefore there is a moderate potential for this species to occur.

Burrowing Owl (Athene cunicularia)

The burrowing owl is covered under the Western Riverside MSHCP and is a CDFW Species of Special Concern. This species breeds from southern interior British Columbia, southern Alberta, southern Saskatchewan, and southern Manitoba, south through eastern Washington, central Oregon, and California to Baja California, east to western Minnesota, northwestern Iowa, eastern Nebraska, central Kansas, Oklahoma, eastern Texas, and Louisiana, the southern portion of Florida, and south to central Mexico. The species is also locally distributed throughout suitable habitat in Central and South America to Tierra del Fuego, and in Cuba, Hispaniola, the northern Lesser Antilles, Bahama Islands, and in the Pacific Ocean off the west coast of Mexico (County of Riverside 2008). The western subspecies, western burrowing owl, occurs throughout North and Central America west of the eastern edge of the Great Plains south to Panama (County of Riverside 2008). The winter range of the western burrowing owl is much the same as the breeding range, except that most individuals apparently vacate the northern areas of the Great Plains and the Great Basin (County of Riverside 2008). A burrowing owl is present within 300 feet of the borrow area. Within the project area, there is the presence of ground squirrels and grassy ruderal habitat that is considered suitable for this species. However, due to frequent human and domestic animal presence, there is moderate to low potential for this species to occur within the project area.

Golden Eagle (Aquila chrysaetos)

The golden eagle (*Aquila chrysaetos*) is a CDFW Fully-Protected species and is covered under the Western Riverside MSHCP. The breeding range for golden eagle extends across western North America from Alaska south to northern Baja California and east to central Tennessee, Pennsylvania, and Maine (AOU, 1998; Johnsgard, 1990). This species winters in North America from southern Alaska south through its western

breeding range (Johnsgard, 1990). Throughout California, with the exception of the floor of the Central Valley, golden eagles are an uncommon permanent resident and migrant. It is considered more common in southern California than in the northern half of the state. This species is known to nest within the Prado Basin and has been observed within the nearby USACE Auxiliary Dike Project area. Marginal nesting habitat exists near the project area and species may fly over or forage within the project area. There is a moderate potential for this species to occur in the project area.

Swainson's Hawk (*Buteo swainsoni*)

The Swainson's hawk is listed as State threatened and is a Western Riverside MSHCP covered species. Swainson's hawk inhabits grasslands, sage-steppe plains, and agricultural regions of western North America during the breeding season, and winters in grassland and agricultural regions from Central Mexico to southern South America (England, 1997; Woodbridge, 1995). The North American breeding range extends north from California to British Columbia east of the Sierra Nevada and Cascade Ranges, east to Saskatchewan, and south to northern Mexico. Several disjunct populations occur throughout the breeding range, including populations in Alaska, western Missouri, and the Sacramento and San Joaquin Valleys of California (England, 1997). This species occurs in southern California as a rare to uncommon transient with breeding mostly confined to valleys in the northern interior of the state. Along the coast, the Swainson's hawk is a rare spring and fall migrant. Swainson's hawks have been observed on several occasions in the Prado Basin during spring migration and can reasonably be expected to forage within the project area. Nesting habitat is present throughout the Prado Basin and in the Project area but they have not nesting in the region in recent years and are not expected to in the future. There is a low potential for this species to occur in the project area.

Northern Harrier (*Circus cyaneus*)

The northern harrier is a CDFW Species of Special Concern and is covered under the Western Riverside MSHCP. This species is found throughout the northern hemisphere. In the North America, they breed from Alaska and the southern Canadian provinces south to Baja California, New Mexico, Texas, Kansas, and North Carolina (Dechant, 2002). The northern harrier breeds and forages in emergent wetlands and nearby open grasslands, and fallow fields. It also forages in agricultural fields and desert scrub. Northern harriers primarily feed on small mammals, but will also take reptiles, amphibians, birds, and invertebrates. Predation on adults is rare; most predation occurs on nestlings and eggs. Predators include mammals such as coyotes, foxes, skunks, minks, raccoons, squirrels, and crows; birds such as ravens, crows, and owls; and reptiles such as snakes. The species was observed within the project area during recent surveys. Nesting habitat does not occur within the project area, however there is foraging habitat present.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

The southwestern willow flycatcher is both federally and state endangered and is a Western Riverside MSHCP covered species. The willow flycatcher species is a riparian obligate that is present in the United States only during the summer months. The historic breeding range for southwestern willow flycatcher included southern California, much of Arizona and New Mexico, western Texas, southwestern Colorado, southern Nevada and Utah, and northern portions of Sonora and Baja California, Mexico. Currently, breeding is only known from southern California, extreme southern Nevada, Arizona, New Mexico, and western Texas (Browning, 1993; Hubbard, 1987; Sedgwick, 2000; Unitt, 1987). This subspecies typically requires a relatively complex vegetative structure that includes flowing or open water (occasionally very moist soils that support insect breeding may suffice), a moderate to tall canopy (i.e. young, regenerating

vegetation is not favored), open areas for foraging (especially for males), and areas where the canopy is separated from an understory (the shaded, open region favored by females for foraging). The study area includes lands that are designated critical habitat for the flycatcher. The primary constituent elements for the flycatcher are thickets of riparian shrubs and small trees with adjacent surface water such as willows, cottonwoods, mulefat, and other wetland plants. The surface water must be available from May to September during breeding season.

In southern California, this subspecies is a very rare and local summer resident that is known to breed at very few locations. Documented breeding sites in the general region include the San Bernardino Mountains to the east, the Mojave River to the northeast, and the Santa Clara River to the northwest (USFWS, 2002). On a more local scale, the nearby Prado Basin has in recent years harbored the species in small numbers and nesting has been documented as recently as 2007. Since the species was first recorded in the Prado Basin in 1987, up to nine territorial (i.e. adult male) southwestern willow flycatchers have been reported between 1992 through 2006 (Pike, 1992). Individuals have been observed in the Prado Basin as early as late April and early May. Willow flycatchers were observed at four locations along the edge of Prado Basin by Lynn Stafford of Aspen Environmental Group while monitoring construction activities in 2005. Nesting flycatchers were also observed by Stafford in 2007 north of the borrow site for the nearby Auxiliary Dike Project, located near the Prado Spillway. This is likely the same nesting location documented by OCWD in 2007. Subsequent surveys along the Santa Ana River conducted annually by OCWD did not result in positive detections. All known flycatcher territories within or near the Prado Basin have been located in proximity to surface water, which is consistent with the biology of the species. Additionally, there are report that territories in the Prado Basin have incorporated overgrown clearings with at least a few moderately tall, often dense willow trees. These habitat features, as mentioned above, are thought to be favored for foraging. Breeding willow flycatchers have been documented primarily in the southern portions of the Prado Basin, where 19 of 29 nests occurring throughout the basin were documented between 1996 and 2004. 4.72 acres of critical habitat for southwestern willow flycatcher is within the project area.

Several factors contribute to the limited potential for willow flycatcher breeding and nesting activities in the project area, including the narrow breadth of the riparian corridor through the area, patchiness of optimal breeding habitat, narrow or absent buffer, and proximity to human development. However, the nearby (historical) presence of southwestern willow flycatchers makes the project area a potential location for transient use, including more focused use for foraging and/or dispersal. If the Prado Basin continues to harbor a breeding population of the subspecies, it is probable that the project area will occasionally support individuals; however, breeding potential would remain limited. Therefore, there is a low potential for this species to occur.

Yellow-breasted Chat (Icteria virens)

Yellow-breasted chat is a CDFW species of special concern and is a Western Riverside MSHCP covered species. This species is found throughout the United State and Mexico but is an uncommon breeder in Southern California. This species is typically found in dense riparian scrub along the edges of streams or ponds. This species is commonly found in the area and potential for it to be present within and adjacent to the project area is high

Coastal California Gnatcatcher (Polioptila californica californica)

The coastal California gnatcatcher is listed as federally threatened and is a Western Riverside MSHCP

covered species. The coastal California gnatcatcher is primarily restricted to coastal sage scrub habitats of coastal Southern California and northern Baja California. This subspecies sometimes occurs in other habitats adjacent to coastal sage scrub, including grasslands, chaparral, and riparian habitat. Although breeding territories have been reported in non-sage scrub habitats, these habitats are most commonly used during nonbreeding seasons for foraging and/or dispersal (Atwood, 1990; Campbell et al., 1998; Rotenberry and Scott, 1998). The project site is near a few patches of very disturbed coastal sage scrub. This species was not detected during several surveys within the project area and habitat suitability is low, therefore there is a low potential for this species to occur.

Yellow Warbler (Setophaga petechial)

The yellow warbler is a CDFW Species of Special Concern and is a Western Riverside MSHCP covered species. In southern California, this species breeds in riparian woodlands situated within the lowlands and canyons (Garrett and Dunn, 1981). Suitable habitat typically consists of riparian forests containing sycamores, cottonwoods, willows, and/or alders. This species was not observed during project area surveys, but due to suitable habitat there is a moderate potential for the species to occur.

Western Yellow-billed Cuckoo (Coccyzus americanus occidentalis)

The western yellow-billed cuckoo is federally-listed as threatened (Western DPS) and state-listed as endangered. This species is also covered under the Western Riverside MSHCP. It inhabits extensive riparian woodlands, especially those dominated by cottonwood and willow. It is a very rare and localized summer resident in California with only a few breeding stations for this species in the state are currently known. From one to several territorial cuckoos have been present in the Prado Basin in most years (as of the preparation of the 2001 SEIS/EIR) since 1983 (USACE, 2001). Historically pairs have been occasionally observed in the Basin. No western yellow-billed cuckoos have been observed in the project area, however they were observed as recently as 2011 within Prado Basin (CDFW 2017). Marginally suitable habitat is present within and adjacent to the project area.

Critical habitat for the western yellow-billed cuckoo was proposed in 2014 (USFWS 2014). Presently, the USFWS revised critical habitat for the species on February 27th, which does not include the Prado Basin. Therefore, no critical habitat is within the project area and as the species hasn't been observed is several years. Surveys in 2019 did not detect the species, therefore yellow-billed cuckoo is considered absent from the project area and is not discussed further in this document.

White-tailed kite (Elanus leucurus)

The white-tailed kite is a CDFW Fully Protected Species and is covered under the Western Riverside MSHCP. The white-tailed kite is a resident in California, southern Texas, Washington, Oregon, and Florida. It also occurs as a resident from Mexico into parts of South America (Dunk, 1995). In California, this species inhabits coastal and valley lowlands and is typically found in agricultural areas. It has increased population numbers and range in recent decades (Zeiner et al, 1990). This species occurs regularly in habitat of the nearby USACE Auxiliary Dike Project area. Breeding is strongly suspected though not confirmed in the area. The white-tailed kite is a known year round visitor. There is a high potential for this species to occur in the project area.

Double-crested Cormorant (Phalacrocorax auritus)

The double-crested cormorant is on the CDFW Species of Special Concern and is a Western Riverside MSHCP covered species. This species is a yearlong resident along the entire coast of California and on inland lakes and estuarine waters. Double-crested cormorants require lakes, rivers, reservoirs, estuaries, or ocean environments for foraging. This species nests in tall trees, wide rock ledges on cliffs, or rugged slopes near aquatic habitats.

Although observed during surveys, this species likely occurs in transience only and the project area does not support suitable nesting or foraging habitat.

Vermillion Flycatcher (Pyrocephalus rubinus)

The vermilion flycatcher is a California Species of Special Concern and is known as a common breeder in southern Arizona, New Mexico, and Texas (Wolf and Jones 2000). In California, the vermilion flycatcher was formerly considered a more common and widespread breeder along the lower Colorado River, Imperial Valley, Coachella Valley, upper Mojave River drainage, and San Diego County (Garrett and Dunn 1981), but its breeding range has declined throughout this area. Currently, in California, there are some isolated breeding populations in the lowlands in the south central and southeast portions of the state, including San Bernardino, Riverside, San Diego, Santa Barbara, Ventura, and Kern counties. Although not observed within the project area this species is known to occur in the Prado Basin. Suitable breeding habitat occurs in the project area, therefore there is moderate potential for the species to occur.

San Diego Black-tailed Jack Rabbit (Lepus californicus bennettii)

The San Diego black-tailed jackrabbit is a CDFW Species of Special Concern and is covered under the Western Riverside MSHCP. The San Diego black-tailed jackrabbit occurs on the coastal side of the southern California Mountains. This subspecies has been recorded on Mt. Pinos and well as in Ventura, Los Angeles, Orange, and San Diego Counties, and into Baja California, Mexico (Hall, 1981). The black-tailed jackrabbit occurs in a variety of open habitats including grasslands, agricultural fields, or sparse coastal sage scrub.

This subspecies is known from the Prado Basin and was recently observed within the nearby USACE Auxiliary Dike project. The project area supports suitable habitat, and therefore there is a moderate potential for the species to occur.

Los Angeles Pocket Mouse (Perognathus longimembris)

The Los Angeles pocket mouse is a California Species of Special Concern and is covered under the Western Riverside MSHCP. This species is a subspecies of the little pocket mouse that historically occurred in the Los Angeles Basin. Historic records of this species occur from San Fernando (Los Angeles County) east to the City of San Bernardino (San Bernardino County) and the San Geronimo Pass (Riverside County), and southeast to Hemet and Temecula.

The Los Angeles pocket mouse is small-bodied and soft-furred with grayish yellow hairs (Ingles, 1965). It inhabits open habitats with fine, sandy soils and is restricted to lower elevation grassland and coastal sage scrub habitats (Patten et al. 1992). In the San Bernardino Valley, this species was captured in sandy areas of chaparral, coastal sage scrub, alluvial fan sage scrub, desert scrub, and washes. This species is noted for its close association with sandy soils, particularly those associated with intermittent washes and dune

formations. No records exist for the area but suitable occurs within the project area. There is low potential for this species to occur.

Western Mastiff Bat (Eumops perotis californicus)

The western mastiff bat is a CDFW Species of Special Concern. The western mastiff bat occurs in two populations; one from the southwestern United States to central Mexico and the other from the northern and central portions of South America (Harvey et al., 1999). The western or California mastiff bat subspecies primarily occurs from low to mid elevations in southern and central California southeast to Texas and south to central Mexico.

The western mastiff bat utilizes a variety of habitat types including desert scrub, chaparral, mixed conifer forest, giant sequoia forests, and montane meadows (Philpott, 1997). In southern California this bat typically roosts in semiarid areas with low-growing chaparral that does not obstruct cliffs or rock outcrops (Best et al., 1996). Because of its large wingspan, this bat requires roosts that have at least 2 m of free space to drop from to initiate flight. These bats utilize natural crevices in granitic and sandstone cliffs as well as crevices in buildings for roosting. The western mastiff bat is the largest bat in the United States. Colonies typically consist of less than 100 individuals (NatureServe, 2009). Western mastiff bats are primarily insectivorous, and the diet contains a high proportion of moths. Suitable habitat occurs throughout the project area. There is a high potential this species would forage within the project area.

Pocketed Free-tailed Bat (Nyctinomops femorosaccus)

The pocketed free-tailed bat is a CDFW species of special concern found in Riverside, San Diego, and Imperial Counties. It is rare in California, but more common in Mexico. Pocketed free-tailed bats typically occur in a variety of habitats, including pinyon-juniper woodlands, desert scrub, desert succulent scrub, desert riparian, desert wash, and palm oases. The pocketed free-tailed bat is a swift, high-flying species that feeds on insects that are detected by echolocation over ponds, streams, or desert habitats. Moths are the principal prey source. This species prefers rock crevices in cliffs for roosting sites, where it typically gathers in small groups. Reproduction, usually occurring in July and consisting of one young per year, takes place in rock crevices, caverns, or buildings. Foraging bouts occur well after sunset, after solar radiation has ceased. Suitable foraging habitat is present within the project area. There is a high potential for the species to forage within the project area.

Western Yellow Bat (Lasiurus xanthinus)

The western yellow bat is a CDFW Species of Special Concern. This species is known to occur throughout southern California and is believed to have expanded its range as with the spread of Mexican fan palms. This species prefers to roost in dead palm fronds near riparian areas with running water. Considered a medium sized bat, the species is known to have yellowish to light brown fur and shorter than typical ears. The coloring may be the reason why the species prefers to roost in palm trees. There are palms within the project area and surrounding vicinity. There is a high potential for the species to occur due to the presence of roosting and foraging habitat.

Survey Results

Special-status wildlife species habitat assessment surveys were conducted in 2019. **Table 3-7** provides a full list of the species observed within the project area by Aspen Environmental. The borrow area has

currently been in use for an ongoing project and was unable to surveyed, but previous surveys have identified a resident burrowing owl within 300 feet of the borrow site. Raptors are also known to forage in the area. The current condition of the borrow area is considered highly disturbed with patchy vegetation and ongoing disturbance.

Table 3-7 Observed Wildlife Species List

COMMON NAME	SCIENTIFIC NAME
VERTEBRATE ANIMALS	
AMPHIBIANS	AMPHIBIA
Treefrogs and Allies	Hylidae
California treefrog	<i>Pseudacris cadaverina</i>
REPTILES	REPTILIA
Spiny Lizards, Horned Lizards, etc.	Phrynosomatidae
Western fence lizard	<i>Sceloporus occidentalis</i>
BIRDS	AVES
Cormorants	Phalacrocoracidae
** double-crested cormorant	<i>Phalacrocorax auritus</i>
Hérons and Bitterns	Ardeidae
** great egret	<i>Ardea alba</i>
Vultures	Cathartidae
** turkey vulture	<i>Cathartes aura</i>
Geese and Ducks	Anatidae
Mallard	<i>Anas platyrhynchos</i>
Hawks, Eagles and Kites	Accipitridae
** white-tailed kite	<i>Elanus leucurus</i>
** northern harrier	<i>Circus hudsonius</i>
** Cooper's hawk	<i>Accipiter cooperii</i>
red-shouldered hawk	<i>Buteo lineatus</i>
red-tailed hawk	<i>Buteo jamaicensis</i>
Falcons	Falconidae
American kestrel	<i>Falco sparverius</i>
Gulls and Terns	Laridae
California gull	<i>Larus californicus</i>
Pidgeons and Doves	Columbidae
mourning dove	<i>Zenaida macroura</i>
Cuckoos and Roadrunners	Cuculidae
greater roadrunner	<i>Geococcyx californianus</i>
Owls	Strigidae
great horned owl	<i>Bubo virginianus</i>
Hummingbirds	Trochilidae
Anna's hummingbird	<i>Calypte anna</i>
Woodpeckers	Picidae
Nuttall's woodpecker	<i>Dryobates nuttallii</i>
downy woodpecker	<i>Dryobates pubescens</i>
Northern flicker	<i>Colaptes auratus</i>
Tyrant Flycatchers	Tyrannidae
black phoebe	<i>Sayornis nigricans</i>
Say's phoebe	<i>Sayornis saya</i>

Cassin's kingbird	<i>Tyrannus vociferans</i>
Vireos	Vireonidae
** least Bell's vireo	<i>Vireo bellii pusillus</i>
Jays and Crows	Corvidae
California scrub-jay	<i>Aphelocoma californica</i>
American crow	<i>Corvus brachyrhynchos</i>
common raven	<i>Corvus corax</i>
Bushtits	Aegithalidae
bushtit	<i>Psaltiriparus minimus</i>
Wrens	Troglodytidae
Bewick's wren	<i>Thryomanes bewickii</i>
house wren	<i>Troglodytes aedon</i>
Kinglets	Regulidae
ruby-crowned kinglet	<i>Regulus calendula</i>
Bluebirds and Thrushes	Turdidae
Western bluebird	<i>Sialia mexicana</i>
Wrentits	Timaliidae
wrentit	<i>Chamaea fasciata</i>
Mockingbirds and Thrashers	Mimidae
Northern mockingbird	<i>Mimus polyglottos</i>
California thrasher	<i>Toxostoma redivivum</i>
Wood Warblers	Parulidae
orange-crowned warbler	<i>Oreothlypis celata</i>
yellow-rumped warbler	<i>Setophaga coronata</i>
common yellowthroat	<i>Geothlypis trichas</i>
Towhees and Sparrows	Emberizidae
spotted towhee	<i>Pipilo maculatus</i>
California towhee	<i>Melospiza crissalis</i>
song sparrow	<i>Melospiza melodia</i>
white-crowned sparrow	<i>Zonotrichia leucophrys</i>
golden-crowned sparrow	<i>Zonotrichia atricapilla</i>
Blackbirds and Orioles	Icteridae
hooded oriole	<i>Icterus cucullatus</i>
Finches	Fringillidae
house finch	<i>Haemorhous mexicanus</i>
lesser goldfinch	<i>Spinus psaltria</i>
MAMMALS	MAMMALIA
Hares and Rabbits	Leporidae
desert cottontail	<i>Sylvilagus audubonii</i>
Squirrels	Sciuridae
California ground squirrel	<i>Ostospermophilus beecheyi</i>
Pocket Gophers	Geomyidae
Botta's pocket gopher (burrows)	<i>Thomomys bottae</i>
Dogs, Wolves and Foxes	Canidae
* domestic dog	<i>Canis familiaris</i>
coyote (scat, tracks)	<i>Canis latrans</i>
Raccoons	Procyonidae
common raccoon (tracks)	<i>Procyon lotor</i>

Skunks	Mephitidae
striped skunk	<i>Mephitis mephitis</i>
Horses	Equidea
* domestic horse	<i>Equus caballus</i>
Pigs	Suidae
feral pig	<i>Sus scrofa</i>

* Non-native species

**Special-status species

Other species may have been undetected or inactive/absent because of the season (amphibians are more active during/after rains, reptiles during summer, some birds (and bats) migrate out of the area for summer or winter, some mammals hibernate etc.), or because of the time of the survey (some species are strictly nocturnal). Wildlife taxonomy and nomenclature generally follow Stebbins (2003) for amphibians and reptiles, AOU (1998) for birds, and Wilson and Ruff (1999) for mammals.

3.4.3 WILDLIFE MOVEMENT

Habitat linkages and movement corridors facilitate regional animal movement and are generally centered near waterways, riparian corridors, flood control channels, contiguous habitat, and upland habitat. Drainage ways generally serve as movement corridors because they are natural elements in the landscape that guide animal movement (Noss, 1991; Ndubisi et al., 1995; R. Walker and Craighead, 1997, in Hilty et al., 2006). Larger river and stream riparian corridors provide the best remaining option for sustaining and improving ecological connectivity in much of the state, and in particular southern California (Spencer 2010). Corridors also offer wildlife unobstructed terrain for foraging and for dispersal of young individuals. It is also necessary to consider spatial and temporal scales when analyzing potential corridors. Species may require varying spatial scales to fulfill their life history requirements and use of corridors can be important on temporal scales ranging from time periods as short as hours to as long as generations, depending on the desired use of the corridor.

Undisturbed landscapes contain a variety of movement corridors, habitat linkages, travel routes, wildlife crossings and other features that facilitate wildlife movement through the landscape and contribute to population stability. The relative size and characteristics of these features are different for each species that uses them. When human activities fragment landscapes, movement corridors, habitat linkages, travel routes, and wildlife crossings may be altered or eliminated. Continued use of these features by wildlife depends on their ability to find adequate space, cover, food, and water, in the absence of obstacles or distractions (e.g., man-made noise, lighting) that might interfere with wildlife movements.

Impacts to wildlife movement have been analyzed in areas west of the project area (primarily downstream of Prado Basin and in areas closer to the Prado Dam Embankment). The analysis primarily considered movement to/from the Cleveland National Forest and Chino Hills State Park. There has been no known analysis conducted within the Lower Norco Bluffs project area to assess whether it is a corridor for wildlife movement. However, the Santa Ana River, and its associated uplands, are recognized as vital pathways for wildlife movement. Several migratory songbirds utilize the riparian vegetation within the Santa Ana River corridor for breeding, nesting, and foraging, or, at a minimum, as transient rest sites during migration. In addition, large, wide-ranging animals, such as mountain lion, bobcat, and coyote have been documented within the Santa Ana River watershed and may utilize the Santa Ana River corridor in search of prey, water resources, or cover.

Habitat fragmentation is also an important issue impacting wildlife. At both small and large scales, several studies have documented the negative effects on population structure, home range size, and genetic connectivity resulting from seemingly innocuous features traversing formerly undisturbed habitat (Mader

1984; Swihart and Slade 1984; Dunning et al. 1992). Within the Prado Basin, very little habitat remains undisturbed by anthropogenic activities. For example, historically suitable native fish habitat has been fragmented by barriers, changes in substrate and introduction of predators that has caused populations to be genetically isolated from one another. However, even singular habitat types restored or preserved as only minimally disturbed can serve as corridors in the present and future.

No known anthropogenic barriers to dispersal for ground-dwelling wildlife and plants were observed within the project area.

3.5 CULTURAL RESOURCES

Cultural resources are locations of past human activities on the landscape. The term generally includes any material remains that are at least 50 years old and are of archaeological or historical interest. Examples include archaeological sites such as lithic scatters, villages, procurement areas, resource extractions sites, rock shelters, rock art, shell middens; and historic era sites such as trash scatters, homesteads, railroads, ranches, and any structures that are over 50 years old. Under the National Historic Preservation Act (NHPA), federal agencies must consider the effects of federal undertakings on cultural resources that are listed in or eligible for listing in the National Register of Historic Places (National Register). Cultural resources that are listed in or eligible for listing in the National Register are referred to as historic properties.

The NHPA also requires that federal agencies define the area of potential effect (APE) for an undertaking. The APE is the geographic area within which historic properties may be directly or indirectly affected by an undertaking. In this case, the Corps consulted with the California State Historic Preservation Officer regarding the APE for the entire Santa Ana River Mainstem Project.

Previous Studies and Existing Conditions

A records search was performed at the Eastern Information Center located at the University of California, Riverside. The Norco Bluffs' portion of the APE was surveyed in 1977, 1985, and 1988 by qualified archeologists for the presence of historic and prehistoric resources. There are two recorded archeological sites, CA-RIV-1042 and -1043, within the Norco Bluffs project area. Both sites were originally recorded in 1975 and are described as sparse lithic scatters. Site CA-RIV-1042 also exhibited ground stone fragments. Neither site was evaluated for eligibility for listing in the National register of Historic Places. According to the 2001 EIS/EIR, an archeologist from the Corps resurveyed the Norco Bluffs' portion of the APE in October 1998, including recorded locations of sites CA-RIV-1042 and -1043. No artifacts were observed at the alleged site locales or anywhere else within the project's APE. Substantial development has taken place since the sites were first recorded. A copy of a report documenting this 1998 survey or consultation letters with the State Historic Preservation Office have not been located.

Additional surveys are scheduled to occur in Spring 2020. Based on the previous archaeological investigations and the development of housing in the area since 1988, the survey results will likely be negative. Results from findings will be disclosed in the Final Draft of the SEA.

3.6 LAND USE

The Lower Norco Bluffs are located at the northwestern limits of the City of Norco, south of I-15 and

Hamner Avenue and directly adjacent to the Santa Ana River. Upstream of the project area, the Santa Ana River has a drainage area of approximately 870 mi² and thus provide important flood control uses for the local and regional area. The Santa Ana River corridor north of the bluffs contains significant areas of open space, wildlife habitat, and recreation, mainly in the form of informal equestrian trails.

Immediately surrounding land uses directly south of the Lower Norco Bluffs Project area consist mainly of single-family residential, recreational sports fields, and passive open space uses. There are approximately 70 dwelling units along the bluffs within the project area. This equates to a population of approximately 224 along the bluff, based on an average of 3.2 persons per household. Thirty-one dwelling units along Reach 4 (Quiet Hill court along Alhambra Street to Norco Drive), and 39 dwelling units along Reach 5 (along Norco Drive and Shadow Canyon Circle). In portion of the project area along Reach 4, property lines are within a few feet of the edge of the bluff face. An elementary school is located on Alhambra Street between Rocky View Drive and Oak Ridge Circle.

Land uses in the City of Norco are summarized in the Land Use Element of the City of Norco General Plan. The zoning designations in the project vicinity are shown in **Figure 3.6-1**. Current land uses are consistent with the designated land uses. Adjacent to the project area, land is zoned as follows: Open Space (OS); Agricultural Estate (AE); Agricultural Low Density (A1-1-20) with a 20,000-square-foot minimum lot size requirement; and Residential Single Family (R-1-10) with a 10-acre minimum lot size requirement.

The Open Space land use comprises a majority of the project area. According to the City of Norco's Land Use Plan, Open Space within the project area is characterized as lands for the preservation of resources, which possess significant natural or man-made value. The Santa Ana River and bluffs area typifies the type of open space for natural resources. Significant man-made resources include areas that contain significant archeological or historical aspects of the City's past.

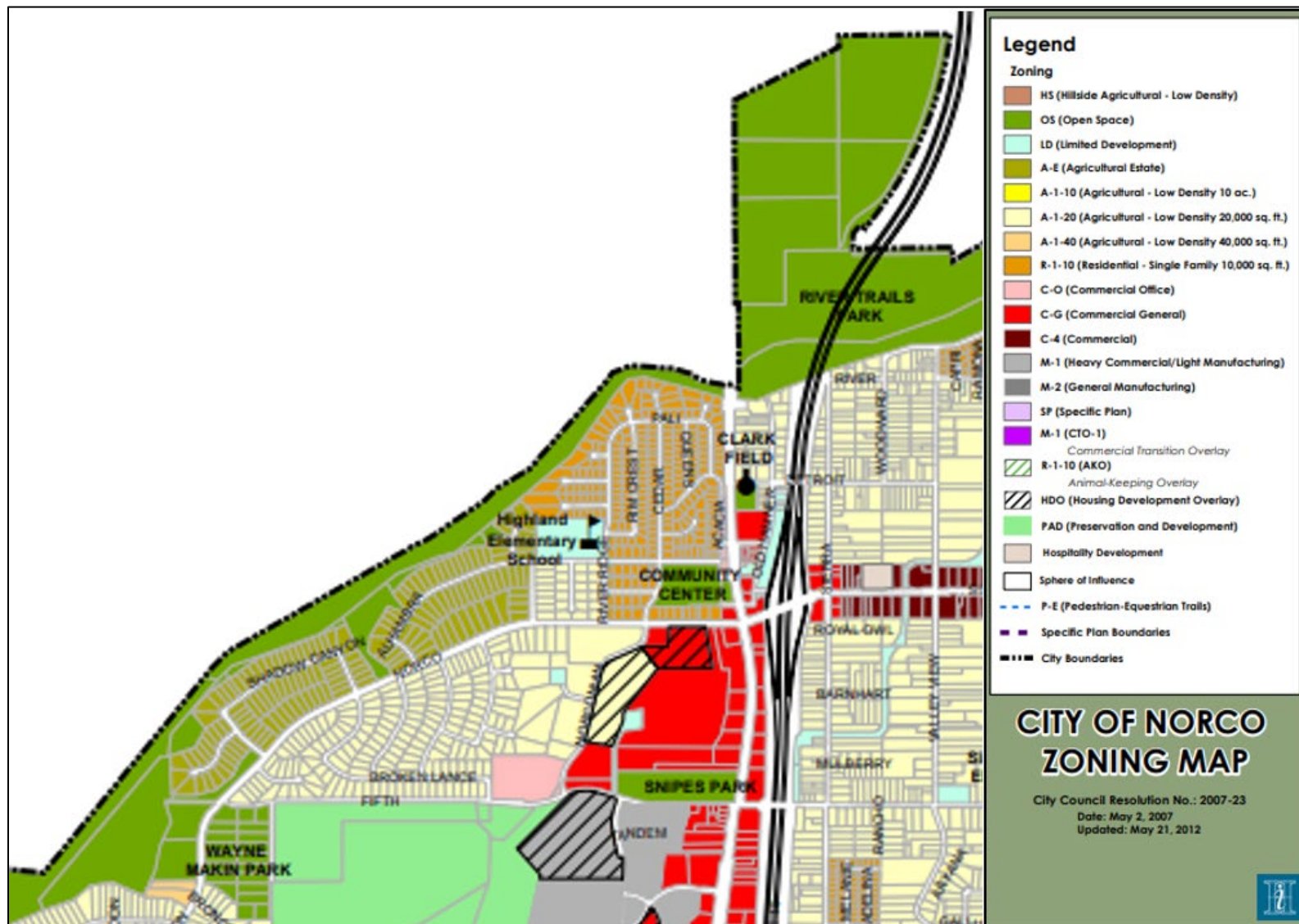


Figure 3.6-1 Norco Bluffs Zoning Designations

3.7 AESTHETICS

The project lies within the Santa Ana River corridor, which is comprised of open space recreational land uses and bordered by residential development to the south. The northern boundary of the project encompasses a scenic vista of undeveloped riparian areas along the Santa Ana River and the surrounding open space areas that feature varying topography and prominent ridgelines. The northern terminus of the project lies about 1,000 ft. from Hamner Avenue and about 2,000 ft. from I-15.

3.8 RECREATION

Recreational uses within the project area include formal and informal equestrian and bike trails, sports complexes, and parks. Non-designated equestrian trails within an unimproved open space area of the City of Norco connect with existing designated equestrian trails that are located along Alhambra Street, Shadow Canyon Circle, and Norco Drive (**Table 3-8**) These existing designated trails connect with the Santa Ana River Trail regional system. This system is currently continuous in the immediate project vicinity, but not continuous through the City of Norco. Recreational uses within 2 miles of the Proposed Action area (project vicinity) include Wayne-Makin Shearer Sports Complex, Corydon Equestrian Staging Area, Norco Community Center Complex, SilverLakes Equestrian and Sports Park, and Eastvale Community Park.

Table 3-8 lists the amenities available at each of the parks and recreation facilities listed above in the vicinity of the project area.

Table 3-8 Recreation Facilities and Amenities in Project Vicinity

Facility	Amenities
Wayne-Makin Shearer Sports Complex	Athletic fields and snack bar
Corydon Equestrian Staging Area	Equestrian staging, parking, benches, trails, and restrooms
Community Center Complex	Gym, baseball field, the Norco Children's Center, meeting halls, classrooms, and banquet facilities
SilverLakes Equestrian and Sports Park	Sports Complex
Eastvale Community Park	Trails, soccer field, and green space
Clark Field	Baseball field
Neil Snipes Park	Playground, benches, and green space
Riverwalk Park	Disc golf course, playground, walking paths, and picnic pavilion

Equestrian Trail System

The City of Norco was incorporated to preserve an equestrian and animal-keeping lifestyle. The City of Norco has worked to facilitate this lifestyle through the development of a nearly 104-mile trail system, improving trail segments to form a large recreational and transportation network. **Figure 3.8-1** shows known, existing formal and informal equestrian trails and amenities within the project area.

The Corydon Equestrian Staging Area falls within the project area and part of the facility is proposed for staging equipment and supplies during Lower Norco Bluffs Project construction.

Sports Complexes

A number of sports fields and complexes are located within the project vicinity. The Makin/Shearer sport

complex is the closest park to the project area and is located on the corner of Fifth Street and Corydon Avenue and is the youth sports center for the city of Norco. Parking for the complex is available on the eastern side of the athletic fields off of Western Avenue and at an overflow parking lot located on the western side of the fields off of Corydon Avenue.

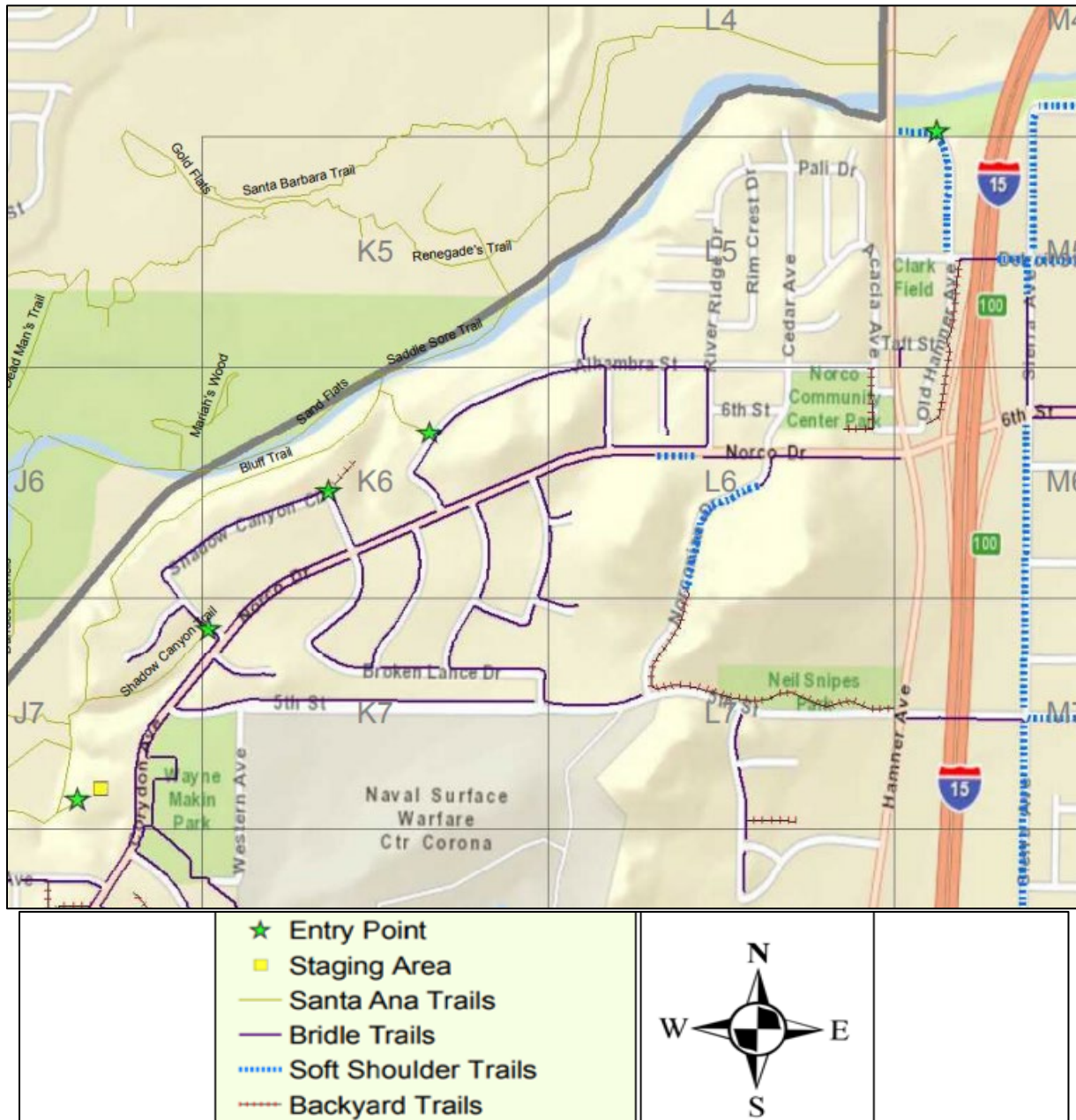


Figure 3.8-1. Known Existing Equestrian Trails within Project Area (2018 City of Norco Comprehensive Trail Master Plan). Both formal and informal equestrian trails are represented.

3.9 NOISE

The area surrounding the project site is characterized by a wide variety of ambient noise sources. Just east of the project site is the I-15 freeway where noise levels are generally high. These levels drop off

substantially towards western side of the Lower Norco Bluffs site, which is open space. Residential use to the north and south is expected to typically generate noise levels associated with personal vehicle and outdoor use activities. The primary noise sources within the Lower Norco Bluffs project area includes: traffic on I-15 to the south and traffic on Hamner Avenue to the east and Corydon Avenue to the south.

Sensitive Receptors in the Proposed Action Area

Some land uses are considered more sensitive to elevated noise levels because of the purpose and intent of the use. Places where people are meant to sleep, or places where a quiet environment is necessary for the function of the land use, are normally considered sensitive. For instance, residential areas, schools, places of worship, and hospitals are more sensitive to noise than are commercial and industrial land uses. Areas with animal keeping can also be considered as a sensitive receptor. Horses can be easily scared by sudden, loud noises.

The nearest sensitive receptors to the Lower Norco Bluffs site include residential development (with and without animal keeping) located adjacent to the southeast side of the project site. Additional sensitive receptors are located south of this residential area, including Highland Elementary School, which are located approximately 800 ft. south of the project site.

3.10 SOCIOECONOMICS

Socioeconomics were not explicitly described in the 2001 EIR/EIS, however an environmental justice analysis was conducted (see Appendix O in USACE 2001). The analysis included information similar to what is described in this section. An updated Environmental Justice Analysis is provided in Appendix E.

The Proposed Action area would be located within the City of Norco. For the purposes of this discussion of Socioeconomics, demographic data for the City is presented below, in **Table 3-9**.

Table 3-9 Demographic Data for the City of Norco

	Subject	2020 Estimate
Population	Total Population	26,610 (2010-2016 US Census Bureau)
	Families	5,733
	Median Age	39.8
Housing	Total Housing Units	7,198
	Average Household Size	3.24
Employment and Income	Average Household Income	\$121,138
	Median Household Income	\$95,441 (ACS 2018, 5-year estimate)
	Persons in Poverty (%)	7.6% (ACS 2018, 5-year estimate)
Ethnicity	White	78.8% (ACS 2018, 5-year estimate)
	Black or African American	4.2% (ACS 2018, 5-year estimate)
	American Indian and Alaska Native	0.5% (ACS 2018, 5-year estimate)
	Asian	3.9% (ACS 2018, 5-year estimate)
	Native Hawaiian and Other Pacific Islander	0.1% (ACS 2018, 5-year estimate)
	Two or more races	4.7% (ACS 2018, 5-year estimate)
	Persons of Hispanic or Latino Origin (Any Race)	31.2% (ACS 2018, 5-year estimate)

Source: City of Norco website, unless otherwise noted

The data presented above is based on ESRI forecasts for 2020 and was informed by data collected by the U.S. Census Bureau in 2010. Data from the American Community Survey (ACS) performed by the U.S. Census Bureau was also referenced. These estimates are based on data collected between 2013 and 2018, and do not represent a single point in time.

Population

The City of Norco has an estimated population of 26,610, representing 1.1 percent of the Riverside County population. In addition, the median age in the City is 39.8, which is slightly higher than the County median age of 35.3 (2016 American Community Survey 1-year estimate). This difference may be attributable to the lower number of persons under 18 years residing in the City of Norco.

Housing

The 2020 ESRI forecasts estimated that 7,198 housing units were located in the City of Norco, while a total of 7,019 housing units were noted in the 2000 Census. This represents a 2.6 percent increase in housing units since 2000.

Income and Poverty

The median household income is \$72,309 in the City, as opposed to the County's median which is \$63,948.

The poverty rate for the City of Norco is estimated to be 7.6 percent. In comparison, the Riverside County unemployment rate is 12.7 percent (ACS, 5-year estimate). The Census Bureau's definition for poverty uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. If a family's total income is less than the family's threshold, then that family and every individual in it is considered in poverty. The

higher median income and lower poverty rate suggest that the City of Norco is more affluent than Riverside County as a whole (US Census, 2010).

Ethnicity

According to the 2018 ACS 5-year estimate, the ethnic makeup of the City of Norco consists of Whites at 78.8 percent and Hispanics at 31.2 percent. These totals are greater than 100 percent because Hispanics may be of any race, and therefore, are also included in other applicable race categories. Otherwise, the ethnic makeup of the City of Norco consists of African-Americans at 4.2 percent, Asians at 3.9 percent, American Indian and Alaskan Native at 0.5 percent, and Native Hawaiian and Other Pacific Islander at 0.1 percent.

3.11 PUBLIC SERVICES AND UTILITIES

Due to the project's location in the City of Norco, the project area includes the typical array of municipal public services and utilities that support residential, commercial, and industrial uses. Public services and utilities serving the area include:

- Fire protection
- Police protection
- Electricity
- Waste water
- Schools
- Natural gas
- Water
- Waste disposal and recycling

Public Services

Fire Protection

The City of Norco contracts with the Riverside County Fire Dept./Cal Fire for all city fire services, and it provides a full range of fire protection services to the citizens of Norco. There are currently 3 fire stations located within the City of Norco. Norco Fire Station #57, located at 3367 Corydon Avenue is the closest to the project area.

Police Protection

The City of Norco contracts with the Riverside County Sheriff's Department for city sheriff services, which provide complete law enforcement services to the city population. The City of Norco Sheriff Department is commanded by a Lieutenant and supported by the Norco Citizens Patrol, a trained volunteer group.

Schools

The Corona-Norco Unified School District serves the school needs for the City of Norco. The School District has 47 schools (K-12) and has over 53,000 students enrolled. None of these schools are located within the project area.

Utilities and Service Systems

The project area is served by utility and service systems located in Riverside County and within the City of Norco. A variety of local purveyors in these areas provide and maintain utility and service system facilities

associated with electricity, water, stormwater and wastewater, solid waste, and natural gas. Municipally-operated lines provide sewer services in the area. Similarly, stormwater flows are conveyed by the flood control facilities within the City of Norco. Underground Service Alert (also known as USA or “Dig Alert”), a non-profit organization supported by utility firms, provides specific information on the location of underground utilities to contractors upon request, prior to construction. **Table 3-10** summarizes the utilities providers serving the project area.

Table 3-10. Utility and Service Providers by Jurisdiction

Jurisdiction	Utility or Service System Provider
City of Norco	Natural Gas – Southern California Gas Company Electricity –Southern California Edison Water – City of Norco Public Works – Water Utilities Division and City of Corona Utilities Wastewater – City of Norco Public Works – Sewer Maintenance Division Solid Waste and Recycling – Waste Management Landfills Used – El Sobrante Landfill

Data on location of utilities within the project vicinity was collected by the Corps in 2019. Several entities were coordinated with, including Southern California Edison, Jurupa Community Services, So Cal Gas, and AT&T. Any utilities within project limits will either need to be relocated prior to or during construction, or protected in place.

3.12 TRANSPORTATION

Major roadways providing regional access to the Lower Norco Bluffs Project area include State Route 91 (SR-91) and I-15. These roadways are maintained by Caltrans. Local access to the site would be provided by Corydon Avenue and Norco Drive, which has on/off ramps to I-15 directly east of the Lower Norco Bluffs area. Construction vehicles would access the site from Corydon Avenue from the south and Norco Drive from the north. These local roadways are maintained by the City of Norco Public Works Department. The following summarizes the lane configurations and directional configuration of roadways providing both regional and local access to the Lower Norco Bluffs Project area:

- **SR-91** is a fourteen lane east-west freeway south of the project site.
- **I-15** is an eight lane north-south freeway merging with SR-91 to the east of the project site.
- **Norco Drive** is a two-lane east-west roadway connecting with Hamner Avenue and eventually transitioning to Corydon Drive. From the north, it provides access to the southern portion of the site and access to the toe of the bluff.
- **Corydon Avenue** is a two-lane north-south roadway connecting with Bluff Street and eventually transitioning to Norco Drive. From the south, it provides access to the southern portion of the site and access to the toe of the bluff.
- **Shadow Canyon Circle** is a residential street that connects to Norco Drive. It provides access to the top of the project and central access to the site.
- **Cucamonga Avenue, Chino Corona Road, Hellman Avenue, River Road, Bluff Street** are two-lane

roadways that will be used as the primary haul route to transport material from the Borrow Site to the construction site via Corydon Avenue.

Average daily traffic (ADT) and Annual average daily traffic (AADT) volumes measured for State Routes and local roadways in the vicinity of the Lower Norco Bluffs Project area are presented in **Table 3-11**.

Table 3-11 Annual Average Daily Traffic on Selected Roadways in the Project Area

Location	1998 ADT
SR-91 west of I-15	233,000 ¹
Corydon Avenue, River Road to Norco Drive	1,435
Norco Drive, Bluff Street to Fifth Street	5,085
Norco Drive, Fifth Street to Hamner Avenue	2,800
River Road, South of city boundary	7,230

¹ Year 2010 AADT

Source: City of Norco 2000, Caltrans 2016

Other transportation related land uses in the vicinity include Corona Municipal Airport, located approximately 2.5 miles southwest of the site, and the BNSF Railroad lines aligned east-west 3 miles south of the site. Besides freight operations, Metrolink commuter trains also utilize this rail line. The Proposed Action is located 3.5 miles from the Metrolink North Main Corona Station at 250 East Blaine Street. This rail line is also currently used by Amtrak commuter carrier's Southwest Chief train, although the train does not stop at this station. The Riverside Transit Agency is a bus service in the vicinity responsible for providing transit service to all citizens in western Riverside County.

According to the Riverside County General Plan, one regional trail is currently being proposed north of the project area (Riverside County 2015). The City of Corona is currently planning a 22-mile multi-use recreational trail segment of the regional "crest to coast" Santa Ana River Trail in the Lower Norco Bluffs Project vicinity.

3.13 HAZARDOUS MATERIALS

This section focuses on existing public health and safety issues with regard to hazardous materials. A hazardous, toxic, radioactive wastes (HTRW) report was prepared by the USACE in March 2020 (Appendix F). The purpose of the report was to identify and list potential HTRW impacts to the Proposed Action.

The analysis was based on the summarized environmental pollutant information found and gathered only from the California State Water Resources Control Board (SWRCB) internet "Geotracker" environmental database and from the USACE Los Angeles District (LADUSACE) Real Estate Division's disclosure of HTRW distressed property. The analysis only considered known project-area HTRW impacts from HTRW releases onto those properties/sites listed on the Geotracker database and from the real estate HTRW disclosure that may pose a threat to human health or the environment. It is important to note that there may be unknown HTRW or pollutant impacts to the study area, which were not fully disclosed and listed from Geotracker database or the LADUSACE.

The HTRW analysis focused on the known residual and active releases of HTRW into the adjacent property

and environment within a ¼ mile distance of the study area. The analysis does not include evaluation of hazardous materials stored or used at or near the study area. Generally, hazardous materials are not considered part of HTRW impacts, unless or until they have been released to the environment, at which point they would be considered a hazardous substance or waste, according to CERCLA and Resource Conservation and Recovery Act (RCRA). Further details on how hazardous materials, hazardous waste and hazardous substances are regulated by law and addressed in Federal and State or Local environmental regulations and laws.

The current land use is a flood impoundment basin behind Prado Dam, a river floodplain and an open natural drainage basin of the Santa Ana River. The eastern perimeter of the river is bounded by medium to light industrial land use and heavy residential use and California State Highway 91 and U.S. Interstate 15 and the large properties of the CDC Rehabilitation and U.S. Navy Norco Sea Systems Command. The land use history of the study area indicates that HTRW impacts would be moderate primarily because of the light industrial activities.

A cursory review of the Geotracker environmental database and LADUSACE Real Estate Division HTRW disclosure was performed, and listed HTRW sites (properties) of potential concern were evaluated for significance according to type of HTRW active/residual releases and their impacts to human health and the environment.

The listed sites/properties of concern were moved forward for recommendation for either a follow up American Society for Testing of Materials (ASTM) Phase I or Phase II Environmental Site Assessment HTRW survey. The Phase I Environmental Site Assessment would include the full commercial environmental database review; historical topographic map and aerial map review; Sanborn Map and City Directory review; land/title search and could include a property owner interview and site visit as applicable. Low to medium impact RECs properties are typically not recommended for follow up Phase II Environmental Site Assessment survey, but may require some additional monitoring, inspection and/or site visit or property owner survey.

The Phase II Environmental Site Assessment site investigation is typically reserved only after conducting a full Phase I Environmental Site Assessment. However, it could be implemented if RECs from the AAI screening are conclusively evident enough to preclude or skip the use of a Phase I Environmental Site Assessment. In such case, the Phase II would involve additional steps of providing a field work plan and performing an actual environmental HTRW field site assessment. A Phase II site assessment would involve the collection and laboratory analysis of environmental samples to confirm the presence, extent and concentration of hazardous substances believed to have been released into the environmental media such as soil, sediment, groundwater, air and surface water.

The following table below shows the Geotracker listings and LADUSACE Real Estate Division's disclosures of all known CERCLA/RCRA type environmental records and data from potential HTRW sites or properties, with addresses that could be mapped within approximately ¼ mile distance of the project study area (**Table 3-12**). It contains only those listings that have HTRW impact to the project.

This search yielded a list of approximately two properties that are considered as having a potential HTRW

impact to the project. Both of these properties have had releases of hazardous substances or other pollutants into the environment and were being managed as contaminated properties by environmental regulatory agencies of either the CA DTSC and/or RWQCB. Both of these properties have undergone previous HTRW investigations equal to either an ASTM Phase II or Phase I Environmental Site Assessment. Both of the properties have also undergone some form of remedial action to reduce or remove the pollutants from the environment. Analysis of the releases, past and present and future property use indicates that one of the sites has more of a potential HTRW impact to the study project than the other site. One of the two is of low HTRW impact and the other is of high impact. The low HTRW impact property is the California Department of Corrections Rehabilitation Center. The high HTRW impact property is the U.S. General Service Administration open lot property. Both impacted HTRW properties are shown on Map Figure 1 in the HTRW report.

Table 3-12 Results of the Geotracker Database and LADUSACE Real Estate Division Disclosure/Search

Database	Brief Database and/or Disclosure Description	Records Found
SWRCB and DTSC Geotracker	California Department of Toxic Substances Control and Santa Ana Regional Water Control Board Listed:	
	<input type="checkbox"/> California Department of Corrections Rehabilitation Center, at the southwest corner of 5 th Street and Western Avenue, Norco, CA 91760. includes 6 LUST sites) (Low Impact)	1
LADUSACE Real Estate Division	<input type="checkbox"/> U.S. General Services Administration open lot property at the west side corner of Corydon Avenue and 5 th Street, Norco Ca 91760 (High Impact)	1
Total Mapped and Listed Records Found		2

4 ENVIRONMENTAL CONSEQUENCES

The Proposed Action is similar to the previously approved design alternative and associated sponsor real estate actions, except for the changes identified in **Table 2-1**. Therefore, a new impact would only occur if it is associated with the project modifications, or as a result of a changed environmental conditions. Effects to various environmental aspects are addressed more specifically to provide an updated accounting of potential effects. The information is based on recent surveys, literature review, and coordination with regulatory agencies and technical experts.

4.1 WATER RESOURCES AND HYDROLOGY

The affected environment for water resources and hydrology is presented in Section 3.1 and does not include any substantially different conditions than were present when the Lower Norco Bluffs Project was previously approved.

As described in **Table 2-1**, the following are the primary differences between the Previously Approved Design and the Proposed Action, as relevant to water resources and hydrology: reduced extension of the embankment below the riverbed of approximately 12.5 ft.; modified composition of the embankment to include launchable rock instead of soil cement; filling of one side canyon and construction of a system of v-ditches, catch basins, side drains, and culverts to assist drainage; and no diversion or dewatering of the primary stream flow of the Santa Ana River is required. For the purposes of the SEA/EIR Addendum, analysis of potential water resources and hydrology impacts associated with project modification under the Proposed Action is provided below.

4.1.1 HYDROLOGY

This section evaluates the potential for the Proposed Action to affect hydrological characteristics within the floodplain, including surface water elevation, flow velocity, channel capacity and configuration.

SIGNIFICANCE THRESHOLD

Impacts would be considered significant if the alternative caused:

- Substantial changes to the capacity or characteristics of the main flow path(s) of the river or capacity of the overall floodplain
- Changes in velocity that could affect existing erosional/depositional patterns, or the ability of the river to move across the floodplain.

4.1.1.1 ENVIRONMENTAL CONSEQUENCES

Proposed Action Alternative

During Construction

Under the Proposed Action Alternative, the embankment would retain the approximate location, configuration, and aboveground dimension of the Previously Approved Design. However, unlike the Previously Approved Design, the Proposed Action would establish a shallower toe and not require diversion or dewatering of the primary stream flow of the Santa Ana River. Because excavation of approximately 2.5 ft. below the existing grade would be required and because groundwater in the floodplain is known to occur starting at depths between 2-5 feet, some dewatering in the floodplain (outside of the main channel) may be required. However, the operation, if any, would be expected to be minimal in comparison to what would be required for the Previously Approved Design, and water encountered would be discharged within the floodplain for percolation or evaporation.

Post-Construction

The addition of the structure in the river channel would decrease the existing capacity of the Santa Ana River channel, however the decrease would be nominal due to the extensive width of the channel (approximately 1300 ft.) and capacity of the river channel. Even in the narrowest part of the floodplain (approximately 500 ft. across) in the upstream portion of the project, the permanent structure would encroach on approximately 100 ft., or 20% of the available floodplain. The permanent structure would be located outside of the current, primary channel of the Santa Ana River. It would be expected that, primarily during large storm events, the primary channel would expand to include part of the permanent

structure. The permanent structure would encompass approximately 37 acres of the 380 acres available within the floodplain of the immediate project area. For perspective, the entire Santa Ana River watershed is approximately 1,696,000 acres. No work is proposed within the currently active, low flow channel. Additionally, the Proposed Action would not alter the velocity or location of flows, except flows would no longer be able to undercut the toe of the south bank. The Proposed Action would also reduce bluff face sloughing or erosion. Although bluff face sloughing would likely have a nominal contribution to the existing sediment that is carried downstream deposited within Prado Basin, it could still reduce the likelihood of impacts to water storage capacity in Prado Basin.

Future Operations and Maintenance

Future maintenance of the Proposed Action Alternative would include routine inspections and minor repairs, of the Lower Norco Bluffs embankment and its associated features after construction is completed (see Section 2.4 for a detailed list of future maintenance activities). Periodic emergency repairs would likely be required and would entail the discharge of launchable rocks to replace those that have been dislodged. Given the extensive width of the Santa Ana River floodplain through the project area, it is unlikely that the discharge of rocks to stabilize portions of the embankment would significantly affect river hydrology.

No Action Alternative (Previously Approved Design)

Effects of the No Action Alternative were analyzed and disclosed in the 2001 SEIS/EIR. Effects related to hydrology, including the diversion of water flow and dewatering, would be temporary and, therefore, considered less than significant. Additionally, potential effects to the channel capacity would be considered less than significant given the large width of the floodplain.

4.1.1.2 SUMMARY OF SIGNIFICANCE THRESHOLDS RELATED TO THE PROPOSED ACTION

The Proposed Action would not affect a vast majority of the floodplain or reduce flow or channel capacity since the permanent structure would occupy a small area compared to what is available in the floodplain immediately within the project area and in the larger Santa Ana River watershed. Additionally, no work is being proposed in the currently-active low flow river channel. Therefore, impacts on hydrology are considered less than significant.

4.1.2 SURFACE WATER

SIGNIFICANCE THRESHOLD

Impacts would be considered significant if the alternative results in:

- Substantial increases in the rate or amount of surface runoff resulting in flooding on-site or off-site, or contributing to runoff water that would exceed the capacity of an existing or planned stormwater drainage system;
- An increase in the demand for surface water in areas with existing shortages; and/or
- Long-term violation of RWQCB water quality standards or objectives or impairment of beneficial uses of water

4.1.2.1 ENVIRONMENTAL CONSEQUENCES

Proposed Action Alternative

Compared to the Previously Approved Design, the Proposed Action Alternative would increase permanent impacts by 16.7 acres, and temporary impacts would increase by 14.8 acres (**Table 4-1**).

Table 4-1 Temporary and Permanent Impacts Comparison between the Proposed Action Alternative and the No Action Alternative (Previously Approved Design).

	Proposed Action Alternative (acres)	Previously Approved Design (acres)	Difference in Impacts (acres)
Temporary Impacts (Easements)	39.2	24.4	14.8
Permanent Impacts (Impermeable surfaces)	37.1	20.4	16.7

During Construction

Construction activities that occur during the winter months would be subject to runoff from the drainage areas coming from the top of the bluffs, east of the project area. The contractor would be responsible for protecting the worksite from flooding. Protective measures could include the installation of culverts and construction of berms to provide sufficient protection against adverse flooding effects. The contractor would also be responsible for securing their own water source and there would be no increase in the demand for surface water in the area. Although no activities are planned to occur within the active river channel, construction activities include soil-disturbing activities that could result in soil erosion and sedimentation that may subsequently cause and/or contribute to water quality degradation, particularly if a precipitation event occurs while soils are actively disturbed. The potential also exists for impacts to surface water quality to result from accidental leaks or spills of potentially hazardous materials, including fuels and lubricants required for operation of construction vehicles and equipment.

To protect against potential negative effects to water quality, there are several design criteria and environmental commitments in place, including:

- Human waste and other pollutant or hazardous material discovered during construction would be removed from the site.
- Temporary impact areas would be actively restored through vegetation plantings after construction.
- Permanent impact areas with drains, such as maintenance roads, would be designed to avoid or minimize the potential of the drain to increase fine-grained sediment delivery to nearby water bodies.
- As stated in the 2001 SEIS/EIR, the contractor would be required to develop and implement a Stormwater Pollution Prevention Plan (SWPPP), which would include Best Management Practices (BMPs), and an Erosion and Sedimentation Control Plan to reduce impacts to water quality during project construction.
- Sound walls would be designed to not block streamflow and, therefore, avoid causing local scour or breaking during a storm event and colliding with downstream infrastructure. The walls would also be designed to be easily removed prior to a forecasted storm event.

Additionally, the increase in disturbed and impermeable area relative to the total area of disturbed and

impermeable surface in the watershed would be nominal, and the effect of pollutant transport would be immeasurable with BMPs implemented.

Post-Construction

The Proposed Action includes a system of v-ditches, catch basins, side drains, and culverts at three canyon areas. Additionally, vegetation would be planted on the existing earthen ramp behind Shadow Canyon Circle, which would minimize erosion from surface water runoff. These features would collectively facilitate drainage from the top of the bluff and the embankment. The project area would also be re-vegetated after construction, which would minimize erosion from surface water runoff throughout the project area. Therefore, the Proposed Action would not cause or result in substantial flooding.

Future Operations and Maintenance

Future maintenance of the Proposed Action would include routine inspections and minor repairs, of the Lower Norco Bluffs embankment and its associated features after construction is completed (see Section 2.4 for a detailed list of future maintenance activities). Future maintenance activities would not alter the overall surface water and drainage patterns. Although future maintenance may introduce potential water quality impacts associated with the use of motorized vehicles and equipment and soil-disturbing activities, potential impacts would be avoided or minimized through the implementation of the BMPs and design criteria described above.

No Action Alternative (Previously Approved Design)

Effects of the No Action Alternative were analyzed and disclosed in the 2001 SEIS/EIR. The Proposed Action differs from this alternative primarily in the design modifications related to drainages, including the reduction in side canyons being filled (from four to one) and the addition of a system of v-ditches, catch basins, side drains, and culverts in the side three remaining side canyons. Short-term impacts to surface water quality were found to be potentially significant primarily because of the construction activities required within the river channel, including dewatering and channel diversion. A number of mitigation measures were proposed to address the impacts. Long-term potential impacts to surface water quality during construction and future maintenance were found to be less than significant.

4.1.2.1 SUMMARY OF SIGNIFICANCE THRESHOLDS RELATED TO THE PROPOSED ACTION

The Proposed Action would include implementation of BMPs and measures to minimize or avoid potential short- or long-term effects related to flooding, surface runoff, and water quality. Additionally, the drainage system design and planting of vegetation during the site restoration phase would minimize the amount of surface runoff and risk of on- and off-site flooding. There will be no increase for surface water in areas within existing shortages. Therefore, potential effects on surface water are considered less than significant.

4.1.3 GROUNDWATER

Interference with groundwater recharge could occur if project implementation withdraws groundwater in quantities that cause the underlying basin to be affected by overdraft conditions, and/or if the project reduces infiltration rates in the area by introducing substantial, new impermeable areas.

SIGNIFICANCE THRESHOLD

Impacts would be considered significant if the alternative caused a:

- Substantial reduction in the ability to recharge the underlying aquifer, or causes substantial groundwater contamination or substantial groundwater depletion

4.1.3.1 ENVIRONMENTAL CONSEQUENCES

Proposed Action Alternative

During Construction

Under the Proposed Action Alternative, a water source would be secured by the contractor, and no new groundwater well(s) would be installed. The Proposed Action would require excavation of approximately 2.5 ft. deep from the existing grade, and depths to groundwater within the project area have been found to occur between two and five feet. Therefore, it is possible construction activities could come into contact with some groundwater, but likely not enough to require substantial dewatering. If groundwater is encountered the contractor would pump it to another area within the floodplain for percolation or evaporation. Additionally, the contractor would be required to obtain the appropriate discharging permits from the RWQCB and conduct any required monitoring and testing. Upon the completion of construction, the excavated site would be backfilled with previously excavated native material, and groundwater recharge would not be compromised. The potential exists for impacts to groundwater quality to result from accidental leaks or spills of potentially hazardous materials, including fuels and lubricants required for operation of construction vehicles and equipment. However, BMPs would be implemented to reduce the risk of accidental leaks and spills, and appropriate clean up protocol would be developed to minimize potential impacts.

Post-construction

The Proposed Action would introduce new, impervious surfaces to the project area; however, this would not substantially affect groundwater recharge, which predominantly occurs through natural infiltration and managed groundwater recharge by the OCWD and other agencies that comprise the Santa Ana Watershed Project Authority (SAWPA). The concrete maintenance road on top of the embankment would not be permeable. However, since the embankment would not encroach a substantial distance into the floodplain, impacts to groundwater recharge would be less than significant.

Future Operations and Maintenance

Future maintenance of the Proposed Action would include routine inspections and minor repairs, of the Lower Norco Bluffs embankment and its associated features after construction is completed (see Section 2.4 for a detailed list of future maintenance activities). Future maintenance activities would not alter groundwater, but may introduce potential water quality impacts associated with the use of motorized vehicles and equipment and activities that require excavation into the riverbed. BMPs would be implemented to reduce the risk of accidental leaks, spills, and groundwater contamination.

No Action Alternative (Previously Approved Design)

Effects of the No Action Alternative were analyzed and disclosed in the 2001 SEIS/EIR. Under the Previously Approved Design, the embankment would be comprised of fill and soil cement, and construction would require deep dewatering and river diversion. Construction activities, including dewatering efforts, have the potential to introduce contaminants into the groundwater system. Similarly, maintenance activities may require excavation into the riverbed, which would create the potential for groundwater contamination. Best Management Practices (BMPs) would be implemented to reduce the risk of accident leaks, spills, and groundwater contamination. Additionally, effects related to the diversion of water flow and dewatering would be temporary, and, therefore, long-term effects were considered less than significant.

4.1.3.1 SUMMARY OF SIGNIFICANCE THRESHOLDS RELATED TO THE PROPOSED ACTION

The Proposed Action would not substantially reduce the ability to recharge the underlying aquifer since the area of new, impermeable surfaces would only account for a small proportion of the floodplain and other areas impacted would be backfilled with native material. Implementation BMPs and environmental commitments would allow for the avoidance or minimization of potential effects to groundwater quality. Therefore, potential effects on groundwater were considered less than significant.

4.1.4 JURISDICTIONAL HABITATS AND WETLANDS

The discussion below describes how the proposed modifications would impact jurisdictional wetlands and waters within the project area. This SEA/EIR Addendum provides an updated accounting and description of impacts on and identifies avoidance/minimization measures for riparian and wetland areas. An updated 404(b)(1) evaluation can be found in Appendix B. An updated 401 certification permit pursuant to the Corps' Clean Water Act implementing regulations (33 CFR 336.1[a][1]) will be provided in the Final SEA/EIR Addendum.

SIGNIFICANCE THRESHOLD

Impacts would be considered significant if the alternative caused a:

- Violation of any applicable toxic effluent standard or prohibition (under section 307 of the Clean Water Act and NPDES) in Waters of the U.S.
- Jeopardizes the continued existence of endangered or threatened species under ESA or results in likelihood destruction or adverse modification of designated critical habitat
- Violation of any applicable water quality standard (federal water quality standards and Section 401 Water Quality Certification state standards) in Waters of the U.S.

4.1.4.1 ENVIRONMENTAL CONSEQUENCES

Proposed Action

Potential impacts to jurisdictional resources were assessed in the 2001 SEIS/EIR. However, the specific acreages that would be subject to direct and indirect effects were not identified at that time, to the current level of detail. The modified design differs from the previously approved design in that it no longer requires diversion or dewatering of the primary stream flow of the Santa Ana River. The modified design

also employs the use of launchable rock extending 10-20 feet out from the hardened embankment structure on the toe of the slope (**Figure 2.3-2**). The design would require excavation of approximately 2.5 ft. below the existing grade.

Implementation of the Proposed Action would result in approximately 3.18 acres of permanent impacts and 1.68 acres of temporary impacts to Waters of the U.S. (federal waters) and 1.68 acres of permanent impacts 0.59 acres of temporary impacts to jurisdictional wetlands (**Table 4-2**).

Table 4-2 Total Impact Acreage of Jurisdictional Wetlands/Waters

USACE, RWQCB/CDFW Jurisdictional Habitat (Joint Jurisdiction)						
	USACE/RWQCB Potential Jurisdictional Non-wetland Waters of the U.S.		USACE/RWQCB Total Potential Jurisdictional Wetland Waters of the U.S.		CDFW Potential Jurisdictional Waters of the State (Riparian)	
	Permanent Impacts (acres)	Temporary Impacts (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)
Total	3.18	1.68	1.04	0.59	27.13	20.64

The Proposed Action would result in potential effects to wetland vegetation through vegetation clearing and ground-disturbing activities. Vegetation clearing and grading activities are expected to occur throughout the TCE to prepare the site for construction of the embankment structure, site access, and drainage systems. Areas would also be cleared to create room for stockpiles of material.

To reduce potential effects related to ground disturbance, grading activities would be kept at a minimum, and root structures would be left intact to allow regrowth. To limit the effects of vegetation removal and ground-disturbing, construction activities would be limited to the TCE and delineated by visible boundaries. Additionally, dust control measures would be implemented to reduce excessive dust emissions. Excessive dust can decrease or limit plant survivorship by decreasing photosynthetic output, reducing transpiration, and adversely affecting reproductive success. Additionally, erosion control measures, such as berms and silt fences, would be implemented to prevent potential effects to existing topography and hydrological regimes that could impact the health of vegetation communities. Upon construction completion, the site would be restored to pre-project conditions, and areas temporarily disturbed would be revegetated with native species. The construction contractor would also be required to develop and implement a SWPPP. Adherence to identified environmental commitments, including BMPs, would reduce potential impacts.

A series of offsetting measures were assessed and included in the 2001 SEIS/EIR to address potential impacts to riparian and wetland habitats. Requirements for remaining SARMP features, including the Lower Norco Bluffs Project, were updated in the 2012 BO. Although specific acreages of jurisdictional habitat were not identified or delineated by jurisdiction in the previous documents, the riparian habitats were assumed to fall within Waters of the U.S. and Waters of the State. Offsite mitigation is occurring in advance of impacts, as required by the 2012 BO, and will compensate for impacts to wetlands and waters of the U.S.

Effects related violations of applicable toxic effluent standard or prohibition are analyzed and discussed in Section 4.13. There will be no violations as a result of the Proposed Action. Effects related to federally listed species and designated critical habitat are discussed in Section 4.4 and summarized in the Biological

Assessment in Appendix D. Effects are expected to be considered less than significant considering measures implemented and mitigation proposed.

Future Operations and Maintenance

Future maintenance of the Proposed Action would include routine inspections and minor repairs, of the Lower Norco Bluffs embankment and its associated features after construction is completed (see Section 2.4 for a detailed list of future maintenance activities). Any excavation required for the replacement of launch stone would implement the appropriate BMPs to prevent or minimize erosion and/or siltation. Future maintenance activities would not alter the overall geologic characteristics of the area and is not expected to cause substantial flooding, erosion or siltation expose people or structures to major geologic hazards; or result in unstable earth conditions or changes in geologic substructure.

No Action Alternative (Previously Approved Design)

Under the Previously Approved Design, project modifications included under the Proposed Action would not be implemented, and the project would be constructed as described in the 2001 SEIS/EIR. Effects of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on earth resources would be less than significant, as described in the 2001 SEIS/EIR.

4.1.4.1 SUMMARY OF SIGNIFICANCE THRESHOLDS RELATED TO THE PROPOSED ACTION

As described in previous sections, the Proposed Action would include implementation of BMPs and measures to minimize or avoid potential short- or long-term effects related to water quality. Therefore, avoiding violations of any applicable water quality standard in Waters of the U.S. Additionally, the drainage system design and planting of vegetation during the site restoration phase would minimize the amount of surface runoff and risk of on- and off-site flooding. There would be no violation of any applicable toxic effluent standard or prohibition, as further discussed in Section 4.13. The proposed action would not jeopardize the continued existence of federally listed species or result in significant destruction or adverse modification of designated critical habitat, as further discussed in Section 4.4. Therefore, potential effects on jurisdictional habitats and wetlands are considered less than significant.

4.2 AIR QUALITY

The affected environment for air quality is presented in Section 3.2 and does not include any substantially different conditions than were present when the Lower Norco Bluffs Project was previously approved.

As described in **Table 2-1**, the following are the primary differences between the Previously Approved Design and the Proposed Action, as relevant to air quality: an increase in construction duration from nine months to two years; reduced extension of the structure below the riverbed of approximately 12.5 ft.; modified composition of the embankment to include launchable rock instead of soil cement; filling of one side canyon and construction of a system of v-ditches, catch basins, side drains, and culverts to assist drainage; and no diversion or dewatering of the primary stream flow of the Santa Ana River is required. For the purposes of the SEA/EIR Addendum, analysis of potential air quality impacts associated with project modification under the Proposed Action is provided below.

4.2.1 SIGNIFICANCE THRESHOLD

Impacts would be considered significant if the alternative:

- Exceeds General Conformity Rule de minimis thresholds; and
- Exceeds SCAQMD daily construction thresholds

4.2.2 ENVIRONMENTAL CONSEQUENCES

4.2.2.1 *Proposed Action Alternative*

During Construction

Emissions were estimated based on both on-road and off-road equipment using EMFAC 2007 emission factors. The daily emissions were based on the 52 week (252 days) work duration. However, since the General Conformity Applicability Rates are calculated on an annual basis, the total estimated emissions for the project were equally divided by three years (estimated duration for project construction and site restoration) and compared to the General Conformity Applicability Rates.

Construction is scheduled to begin in the Fall of 2020 and end in the Spring 2022. Proposed hours of operation for the processing phase are from 7 a.m. to 6 p.m., Monday through Friday.

The Proposed Action would require a variety of equipment for each construction activity. Estimated number of equipment for each construction activity is summarized in **Table 4-3**.

Table 4-3 Construction Equipment for Proposed Action

Construction Activity	Equipment	Quantity	Hours/Day	Total Work Days¹	Emission Type
Clearing and Grubbing	Loader	1	8	14	On-road
	Dozer	1	8	14	On-road
	Chipper	1	8	13	On-road
	Water Truck	1	8	1	Off-road
	Pickup Trucks	1	8	1	Off-road
	16 CY Dump Truck	2	8	14	Off-road
Sound Wall	Loader	1	8	4	On-road
	Dozer	1	8	14	On-road
	Manlift	1	8	11	On-road
Excavation	Dozer	1	8	182	On-road
	Grader	1	8	182	On-road
	Excavator	2	8	32	On-road
	16 CY Dump Truck	20	8	288	Off-road
Backfill	Dozer	2	8	150	On-road
	Loader	2	8	73	On-road
	Scrapers	2	8	128	On-road
	Excavator	2	8	228	On-road
	Roller	1	8	228	On-road
	Grader	1	8	58	On-road
	Water Truck	1	8	228	Off-road
	16 CY Dump Truck	20	8	172	Off-road
Riprap	Loader	1	8	120	On-road
	Dozer	1	8	12	On-road
	Roller	1	8	17	On-road
	Grader	1	8	22	On-road
	Water Truck	1	8	17	Off-road
	Excavator	1	8	144	On-road
Grouted Stone	Concrete Pump	1	8	3	On-road
	Excavator	1	8	2	On-road
	Loader	1	8	2	On-road
Concrete V-Ditch	Excavator	1	8	3	On-road
	Concrete Vibrator	1	8	10	On-road
	Grader	1	8	5	On-road
6' Chain Link Fence	Manlift	1	8	22	On-road
	Concrete Pump	1	8	39	On-road
Maintenance Road	Vibratory Roller	1	8	24	On-road
	Grader	1	8	8	On-road
	Asphalt Paver	1	8	16	On-road
	Water Truck	1	8	5	Off-road
Concrete Ramp and	Concrete Pump	1	8	1	On-road

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Inlet Structure Access	Concrete Vibrator	1	8	1	On-road
	Vibratory Roller	1	8	1	On-road
	Grader	1	8	1	On-road
Catch Basins	Concrete Vibrator	1	8	4	On-road
	Concrete Pump	1	8	4	On-road
	Skid Steer	1	8	4	On-road
	Excavator	1	8	8	On-road
	Dozer	1	8	4	On-road
	Loader	1	8	4	On-road
	Water Truck	1	8	4	Off-road
	Vibratory Roller	1	8	8	On-road
	Crane	1	8	4	On-road
	16 CY Dump Truck	1	8	4	Off-road
Culvert, Inlet and Outlet	Loader	1	8	3	On-road
	Crane	1	8	1	On-road
	Skid Steer	1	8	1	On-road
	16 CY Dump Truck	1	8	1	Off-road
Project Access Road	Vibratory Roller	1	8	5	On-road
	Grader	1	8	4	On-road
	Dozer	1	8	11	On-road
	Excavator	1	8	12	On-road
	Asphalt Paver	1	8	2	On-road
	Water Truck	1	8	3	Off-road
	16 CY Dump Truck	5	8	12	Off-road
Construction Access Road	Vibratory Roller	1	8	1	On-road
	Grader	1	8	1	On-road
	Dozer	1	8	1	On-road
	Loader	1	8	1	On-road
	Water Truck	1	8	1	Off-road
	16 CY Dump Truck	5	8	1	Off-road
Borrow Area Restoration	Grader	1	8	10	On-road
Landscape, Irrigation and Maintenance	Tractor	1	8	1	On-road
	Water Truck	1	8	1	Off-road
Geotechnical Instrumentation	Drill, Rotary	1	8	4	On-road
For Duration of Project	Pickup Trucks	5	3	1095	Off-road

1 Total work days was based on the assumption of an 8-hour work day, 5-day work week.

Emissions from equipment that generally stays on-site would constitute off-road emissions. On-road emissions would include emissions from haul trucks and water trucks as well as the workers' vehicles (pickup trucks).

The following assumptions were used to calculate on-road emissions: a maximum of 79,040 round trips at 42 miles per round trip for dump trucks, a maximum of 16,622 round trips at 20 miles per round trip

for pickup trucks commuting, 8,058 on-site worker (pickup truck) round trips at 4 miles per round trip, and 3,843 on-site water truck round trips at 4 miles per round trip.

Estimates of lead emissions were not calculated. Lead emissions from mobile sources have significantly decreased due to the near elimination of lead in fuels. Thus, EMFAC 2007 does not provide estimated emissions for lead. Little to no quantifiable and foreseeable lead emissions would be generated by any of the alternatives.

Ozone (O₃) formation is driven by two major classes of directly emitted precursors: nitrogen oxides (NO_x) and volatile organic compounds (VOC). The relation between O₃, NO_x and VOC is driven by complex nonlinear photochemistry. Due to the variability in rates of ozone formation, EMFAC2007 does not provide estimates for ozone. Instead, the emissions associated with ozone precursors (i.e., VOC and NO_x) are calculated and used as a surrogate for reporting ozone emissions.

General Conformity Rule makes a distinction between NO_x as an ozone precursor and NO₂ for reporting purposes. EMFAC2007 has emission factors for NO_x, but not for NO₂. Because NO₂, a form of NO_x, forms the majority of NO_x emission from internal combustion engines, estimated emissions of NO_x are used as a surrogate for NO₂ emissions.

Under the Proposed Action, on-road and off-road emissions would include equipment summarized in **Table 4-3**. The equipment will operate 8 hours per day for approximately 783 days over three years. Operations may not be continuous. Fugitive emissions of PM_{2.5} and PM₁₀ would occur from use of unpaved roads and material handling. Fugitive emissions of PM_{2.5} and PM₁₀ would be minimized through implementation of dust control BMPs described below.

As shown in **Table 4-4**, estimated annual emissions would not exceed any of the Clean Air Act General Conformity de minimis applicability rates, except for NO_x in 2022. NO_x emissions are estimated to exceed the annual Clean Air Act General Conformity de minimis applicability rates by approximately 5 tons in 2022. As a result, applicable mitigation measures AQ-1 through AQ-23 were developed to reduce impacts to air quality. Pursuant to Clean Air Act regulations at 40 CFR 932.158(a)(5)(v), emissions of ozone (i.e., VOC and NO_x – the precursors to ozone) or NO₂ are deemed to be in compliance with applicable SIP for projects where the action involves regional water and/or wastewater projects. Furthermore, as indicated in Section 4.4.4 of the 2001 SEIS/EIR, the project is sized to meet the population projection in the SIP. As a result, emissions of VOC, NO_x, and NO₂ are deemed to be in compliance with the SIP and a conformity analysis is not required for these pollutants. Additionally, impacts as a result of the Proposed Action would be temporary and would not result in substantial long-term air quality impacts.

Estimated daily emissions would not exceed the SCAQMD daily construction thresholds (**Table 4-5**). Therefore, the Proposed Action would have less than significant impacts to air quality. Estimated GHG emissions are shown in **Table 4-6**.

Fugitive emissions of PM_{2.5} and PM₁₀ associated with the use of unpaved roads and material handling would be minimized through implementation of air quality environmental commitments. Air quality emissions calculations and assumptions are provided in **Appendix C**.

Table 4-4. Comparison of Annual Estimated Emissions to Applicable General Conformity Rates

Pollutant	NAAQS Attainment Designation	General Conformity Rates (tons/year)	Estimated Annual Emissions 2020 (tons/year)	Estimated Annual Emissions 2021 (tons/year)	Estimated Annual Emissions 2022 (tons/year)
Ozone (VOC as precursor)	Nonattainment (Extreme)	10	0.04	1.92	0.05
Ozone (NOx as precursor)	Nonattainment (Extreme)	10	0.27	15.25	0.29
Carbon Monoxide (CO)	Maintenance	100	0.18	8.32	0.27
Nitrogen Dioxide (NO ₂)	Maintenance	100	0.27	15.25	0.29
Particulate Matter (PM ₁₀)	Maintenance	100	0.01	0.67	0.01
Particulate Matter (PM _{2.5})	Nonattainment (Moderate)	100	0.01	0.55	0.01
Lead (Pb)	Nonattainment	25	not calculated	not calculated	not calculated

Table 4-5 Comparison of Daily Estimated Emissions to SCAQMD Emission Thresholds

Pollutant	Construction Emission Thresholds (lb./day)	Estimated Daily Emissions (lb./day)
Nitrogen Oxide (NOx)	100	40.40
Reactive Organic Gas (ROG or VOC)	75	5.13
Particle Pollution (PM ₁₀)	150	1.77
Particle Pollution (PM _{2.5})	55	1.47
Sulfur Oxides (SOx)	150	0.12
Carbon Monoxide (CO)	550	22.40
Lead	3	not calculated

Table 4-6 Estimated Emission of Green House Gasses

Estimated Annual Emissions 2020 (tons CO ₂ e/year)	Estimated Annual Emissions 2021 (tons CO ₂ e/year)	Estimated Annual Emissions 2022 (tons CO ₂ e/year)
71.74	4745.91	91.33

Post-Construction

Any air quality impacts occurring after construction would be related to future maintenance activities. See section below.

Future Operations and Maintenance

Future maintenance of the Proposed Action Alternative would include routine inspections and minor repairs, of the Lower Norco Bluffs embankment and its associated features after construction is

completed (see Section 2.4 for a detailed list of future maintenance activities). Use of maintenance vehicles and equipment would impact air quality, however impacts are expected to be nominal given routine inspections would typically occur monthly, except during flood fighting events. During flood fighting events vehicles and equipment may be needed more frequently, and inspections could occur up to daily. During more severe flood events, launch stone may need to be replaced, which would require additional maintenance equipment outside of what would be used for routine inspections and minor repairs. The number and type of maintenance equipment needed during severe flood events would be dependent on repairs needed. Because these events are expected to occur infrequently, effects on air quality from future maintenance activities would be less than significant.

4.2.2.2 *No Action Alternative (Previously Approved Design)*

Under the Previously Approved Design Alternative, project modifications included under the Proposed Action would not be implemented, and the project would be constructed as described in the 2001 SEIS/EIR. Construction-related emissions of NO_x were found to be significant for the combination of SARMP features that were included in that “Prado and Vicinity” environmental document, including the Previously Approved Design. Most of those features have since been constructed. For the Norco Bluffs feature, daily NO_x emissions were found to be 5 times the threshold level for the SCAB. The construction-related emissions of this pollutant would be significant. As a result, applicable mitigation measures AQ-1 through AQ-23 were developed (see Environmental Commitments in Section 6).

4.2.3 SUMMARY OF SIGNIFICANCE THRESHOLDS RELATED TO THE PROPOSED ACTION

The Proposed Action would not exceed SCAQMD daily construction thresholds. The Proposed Action would not exceed General Conformity Rule de minimis thresholds, except for NO_x in 2022. Pursuant to Clean Air Act regulations at 40 CFR 932.158(a)(5)(v), emissions of ozone (i.e., VOC and NO_x – the precursors to ozone) or NO₂ are deemed to be in compliance with applicable SIP for projects where the action involves regional water and/or wastewater projects. Furthermore, the project is sized to meet the population projection in the SIP. As a result, emissions of VOC, NO_x, and NO₂ are deemed to be in compliance with the SIP and a conformity analysis is not required for these pollutants. Although NO_x emissions would be in compliance with the SIP, mitigation measures would still be implemented to address any potential air quality effects. Potential air quality effects related to future maintenance would be nominal. Any potential air quality effects as a result of the Proposed Action would be temporary and would not result in substantial long-term air quality impacts. Therefore, potential effects to air quality are considered less than significant.

4.3 EARTH RESOURCES

The affected environment for earth resources is presented in Section 3.3 and does not include any substantially different conditions than were present when the Lower Norco Bluffs Project was previously approved.

As described in **Table 2-1**, the following are the primary differences between the Previously Approved Design and the Proposed Action, as relevant to earth resources: modified composition of the embankment to include launchable rock instead of soil cement; filling of one side canyon and a system of v-ditches, catch basins, side drains, and culverts to assist drainage; and the addition of a temporary access ramp at the southern end of the project. For the purposes of the SEA an EIR Addendum, analysis of potential earth

resources impacts associated with project modification under the Proposed Action is provided below.

4.3.1 SIGNIFICANCE THRESHOLD

Impacts would be considered significant if the alternative:

- Causes substantial flooding, erosion, or siltation
- Exposes people or structures to major geologic hazards; and/or
- Results in unstable earth conditions or changes in geologic substructure.

4.3.2 ENVIRONMENTAL CONSEQUENCES

4.3.2.1 *Proposed Action Alternative*

During Construction

The project area would be prepared for construction by clearing and grubbing, cutting vegetation, and grading. Clearing activities would likely require the use of a loader or bulldozer to scrape topsoil, which would be stockpiled for subsequent project use, including material for backfill or to supplement plantings in areas temporarily impacted by project activities. The removal of topsoil would be temporary, and backfill after construction would replenish topsoil removed during clearing and grubbing operations. The excavation footprint would require approximately 38,500 cy of substrate to be excavated. Excavated material would also be temporarily stored at the project site for later use during construction.

The construction contractor would be responsible for protecting the worksite from adverse flooding effects. Protective measures could include the installation of culverts and the construction of berms. As described in Section 4.1.2 of this SEA/EIR Addendum, a SWPPP would be prepared and include BMPs and an Erosion and Sedimentation Control Plan would be developed and implemented prior to and during construction.

Post-Construction

Following construction, some loss of unconsolidated substrate could occur during initial storm flows. However, the borrow area and other temporary construction work areas would be re-seeded and re-vegetated, thereby minimizing and/or avoiding potential erosion- or siltation-related effects associated with soil disturbance. Under the Proposed Action, design aspects would serve to prevent flooding, including a system of v-ditches, catch basins, side drains, and culverts.

In the event of earthquake shaking and high flood pool, failure of the proposed Lower Norco Bluffs Project could re-expose the toe of the bluff to impinging flows and cause bluff erosion. Due to the potentially high groundwater table, as well as alluvial nature of the basin fill, liquefaction potential was also considered in the design of project components. While the embankment materials are not expected to settle due to liquefaction, the alluvial materials the embankment is founded on is expected to settle under seismic loads. The settlement is accounted for in the final design grade elevation. Because the embankment would be highly compacted, the materials used would not substantially lose strength under the design earthquake loading and would not liquefy during strong shaking. In addition, the development of a flood pool occurring simultaneously with a design earthquake that would introduce the potential for

downstream flooding if the embankment were to fail is highly improbable due to the infrequent occurrence of design floods and the relatively short pool duration.

The foundation of the proposed Lower Norco Bluffs Project may exhibit a small amount of settling during the construction period. Total estimated post-construction settlement of the embankment and foundation is expected to be less than 24 inches. The Proposed Action would result in no earth resources and geology impacts associated with landslides.

Future Operations and Maintenance

Future maintenance of the Proposed Action Alternative would include routine inspections and minor repairs, of the Lower Norco Bluffs embankment and its associated features after construction is completed (see Section 2.4 for a detailed list of future maintenance activities). Any excavation required for the replacement of launch stone would implement the appropriate BMPs to prevent or minimize erosion and/or siltation. Future maintenance activities would not alter the overall geologic characteristics of the area and is not expected to cause substantial flooding, erosion or siltation expose people or structures to major geologic hazards; or result in unstable earth conditions or changes in geologic substructure.

4.3.2.2 No Action Alternative (Previously Approved Design)

Under the Previously Approved Design, project modifications included under the Proposed Action would not be implemented, and the project would be constructed as described in the 2001 SEIS/EIR. Effects of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on earth resources would be less than significant, as described in the 2001 SEIS/EIR.

4.3.3 SUMMARY OF SIGNIFICANCE THRESHOLDS RELATED TO THE PROPOSED ACTION

The Proposed Action would include design aspects and implementation of BMPs and measures that would address potential effects related to flooding, erosion and, siltation. These include, but are not limited, to preparation of a SWPPP, inclusion of drainage features, and planting vegetation for soil stabilization. The design of the Proposed Action also considers impacts related to earthquake shaking. There is a low probability of flooding and earthquake conditions, that cause embankment failure, to occur simultaneously. Therefore, impacts on earth resources are considered less than significant.

4.4 BIOLOGICAL RESOURCES

The affected environment for biological resources is presented in Section 3.4. As described in **Table 2-1**, the following are the primary differences between the Previously Approved Design and the Proposed Action, as relevant to biological resources: modified composition of the embankment to avoid the need for diverting or dewatering the primary stream flow of the Santa Ana River; and the expansion of the TCE and addition of a temporary access ramp at the southern end of the project.

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

permanent removal of habitat.

Impacts to biological resources were compared to impacts that were originally identified and mitigated for in the 2001 Final SEIS/EIR. Any additional impacts or changes, as a result of the project modifications under the Proposed Action, are addressed accordingly. The following analysis considers impacts (both direct and indirect) associated with the construction and future maintenance of the Proposed Action. Impacts are expected to primarily occur at and adjacent to the project site.

4.4.1 SIGNIFICANCE THRESHOLD

An evaluation of significant impacts on biological resources must consider the resource and how it fits into a regional or ecological context. Impacts are sometimes locally important, but not significant because, although they would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population-wide or region-wide basis.

Impacts would be significant if the Proposed Action would cause one or more of the following conditions to occur:

- A direct adverse effect on a population of a threatened, endangered, or candidate species or the unmitigated loss of designated critical habitat for a listed or candidate species, to the extent that the regional population is diminished.
- An unmitigated, net loss in the habitat value of a sensitive biological habitat or area of special biological significance.
- Substantial impedance to the movement or migration of fish or wildlife.
- Substantial loss to the population of any native fish, wildlife, or vegetation.
- Substantial loss in overall diversity of the ecosystem.

4.4.2 ENVIRONMENTAL CONSEQUENCES

Direct impacts could occur when sensitive biological resources are altered, disturbed, destroyed, or removed during construction of the project. Direct impacts would result from activities such as vegetation removal, grading, brushing, or the mechanical crushing of vegetation from equipment and vehicles. Other direct impacts could include loss or degradation of foraging, nesting, or burrowing habitat for wildlife species and habitat disturbance from noise related to activities.

Indirect impacts occur when activities affect biological resources in a manner other than direct impacts. Potential indirect impacts resulting from implementation of the Proposed Action include increased sedimentation, dust, changes to hydrology, or unfavorable substrate conditions that results in the introduction and establishment of exotic invasive species. These changes may in turn affect vegetation communities and sensitive species.

The riparian plant communities in the project area are considered sensitive habitat types for their role in the ecological function of the Santa Ana River corridor. These communities play important roles in the life histories for a broad diversity of both common and special-status wildlife species. In addition the project area overlaps with designated critical habitat for least Bell's vireo, southwestern willow flycatcher and Santa Ana Sucker. While there are impacts to non-sensitive habitats that are not protected, these

communities still provide important foraging and refugia habitat for a variety of sensitive plants and wildlife species.

4.4.2.1 *Proposed Action Alternative*

During Construction and Post-Construction

Vegetation Communities

The Proposed Action would result in potential effects to riparian and upland vegetation through vegetation clearing and ground-disturbing activities. Vegetation clearing and grading activities are expected to occur throughout the TCE and construction staging area to prepare the site for construction of the embankment structure, site access, and drainage systems. Areas would also be cleared to create room for stockpiles of material. Estimated vegetation impacts for the Previously Approved Design and Proposed Action are summarized in **Table 4-7** and **Table 4-8**, respectively.

To reduce potential effects related to ground disturbance, grading activities would be kept at a minimum, and root structures would be left intact to allow regrowth. To limit the effects of vegetation removal and ground-disturbing, construction activities would be limited to the TCE and delineated by visible boundaries. Additionally, dust control measures would be implemented to reduce excessive dust emissions. Excessive dust can decrease or limit plant survivorship by decreasing photosynthetic output, reducing transpiration, and adversely affecting reproductive success. Additionally, erosion control measures, such as berms and silt fences, would be implemented to prevent potential effects to existing topography and hydrological regimes that could impact the health of vegetation communities. Upon construction completion, the site would be restored to pre-project conditions and areas temporarily disturbed would be revegetated with native species.

Table 4-7 Vegetation Cover and Impacts under the Previously Approved Design

2001 Previously Approved Design ¹				
Cover Types	Total Acres	Project Component Permanent Impacts (acres)	Project Component Temporary Impacts (acres)	
		Embankment Structure	Embankment Structure	Borrow Area
Riparian Scrub	0.31	0.30	0.01	-
Willow Riparian	5.88	2.96	2.92	-
Cottonwood-willow Riparian	1.81	0.17	1.64	-
Arundo	27.07	11.45	15.62	-
Perennial Stream	1.41	0.72	0.69	-
Sandy Wash	5.73	2.25	3.48	-
Annual Grassland	24.87	2.37	0.05	22.45
Eucalyptus	0.24	0.22	0.02	-
TOTAL	67.32	20.44	24.43	22.45
¹ Acreages based on 2001 SEIS/EIR. Borrow Site and Haul Road estimated impact acreages were assumed at the time to be cumulative for several perimeter dikes and other Prado Embankment construction.				

Table 4-8 Vegetation Cover and Impacts under the Proposed Action

2020 Currently Approved Design¹				
Cover Type	Total Acres	Project Component Permanent Impacts (acres)	Project Component Temporary Impacts (acres)	
		Embankment Structure	Embankment Structure	Borrow Area
Southern Riparian Woodland	10.12	3.90	6.22	-
Disturbed southern Riparian Woodland	25.23	2.18	12.93	-
Disturbed Mulefat Scrub	1.50	0.12	1.38	-
Arundo Riparian	21.20	20.60	0.60	-
Ruderal	20.60	8.22	12.38	-
Nonnative Woodland	0.82	0.28	0.54	-
Sandy Wash	1.59	1.27	0.32	-
Disturbed Coastal Sage Scrub	1.27	0.0	1.27	-
Developed Disturbed	4.06	0.48	3.58	-
Disturbed Annual grassland	22.45	-	-	22.45
TOTAL	78.65	37.05	39.22	22.45

¹ Due to rounding of small number, totals may vary.

There are a number of mitigation and restoration sites located in close proximity to the project area. These sites include Corps mitigation sites and SAWA and Riverside-Corona Resource Conservation District (RCRCD) restoration sites. Temporary impacts would occur within the Corps mitigation site as a result of construction of a temporary ramp that would provide construction access to the floodplain and bluff toe. This location is the only feasible access to the project area that could accommodate large construction equipment and would be used as the primary access during construction. The ramp would angle down to the edge of the slope toe and would cross into the Corps mitigation area. To reduce impacts vegetation, the contractor will be required to remove the minimum amount of vegetation feasible to construct the ramp. Upon completion of construction, the ramp would be removed, and the area would be restored with native habitat. There will be no impacts to the SAWA and RCRCD restoration sites.

The Proposed Action could also facilitate the introduction or establishment of additional weed species, or further spread of existing weeds. As described above, the general area has been subject to habitat restoration efforts, and the project area is currently infested with non-native vegetation. Non-native and invasive species include, the highly invasive arundo/giant reed (*Arundo donax*), sweet clover (*Melilotus ablus*), mustard (*Hirschfeldia sp.*), sow thistle (*Sonchus sp.*) and brome grass (*Bromus sp.*). These invasive plant species can cause a permanent or long-lasting change to the environment by increasing vegetative cover, creating a dense layer that prevents native vegetation from germinating, altering the edaphic and hydrological conditions through nitrogen fixation or may reduce the water table as has been documented with species such as giant reed. To the extent feasible, the contractor would prevent exotic weeds from establishing within the work site. Construction equipment would be cleaned of mud or other debris prior to mobilizing and before leaving the site to reduce the potential spread of invasive plants and/or seeds.

Fill material for the construction of the embankment would be imported from a borrow site located approximately 3 miles west of the project area. The borrow site was recently used for two other SARM project features (Reach 9 Phase 4 and Women's Prison Dike) and is, therefore, already highly disturbed. Use of the borrow site would not result in any additional impacts to vegetation outside of the existing area of disturbance.

To reduce the potential effects on plant communities, including special-status plant species, the Corps

would implement conservation measures provided in the 2001 SEIS/EIR along with additional measures, as described above and in Section 6 of this document. These measures would ensure less than significant effects of the Proposed Action by minimizing the removal of and impacts to vegetation, to the extent practicable, and by restoring native plant communities at the conclusion of construction. Construction monitoring would be conducted to confirm compliance with commitments. Additionally, temporary and permanent impacts to riparian habitat and permanent impacts to upland habitat would be offset through mitigation, which includes restoration of riparian habitat at mitigation ratios. A total of 58.01 acres of impacts will be offset by a total of 187.30 acres of mitigation (**Table 4-9**). All temporary impacts will be restored onsite through planting and seeding by the contractor and undergo a maintenance period. Detailed information of habitat type mitigation ratios and maintenance commitments are provided in the Environmental Commitments Section 6.

Table 4-9. Required Offsite Mitigation for Project Impacts

Habitat	Impact Type*	Acres Impacted	Mitigation Ratio	Acres of Mitigation
Riparian/Wetland				
Southern Riparian Woodland	Permanent	3.90	5:1	19.50
	Temporary	6.22	1:1	6.22
Disturbed Southern Riparian Woodland	Permanent	2.18	5:1	10.90
	Temporary	12.93	1:1	12.93
Disturbed Mulefat Scrub	Permanent	0.12	5:1	0.60
	Temporary	1.38	1:1	1.38
Arundo Riparian	Permanent	20.60	5:1	103.00
	Temporary	0.60	1:1	0.60
Sandy Wash	Permanent	1.27	5:1	6.35
	Temporary	0.32	1:1	0.32
Non-Riparian (Upland)				
Ruderal	Permanent	8.22	3:1	24.66
	Temporary	NA**	NA**	0
Nonnative Woodland	Permanent	0.28	3:1	0.84
	Temporary	NA**	NA**	0
Total Acres				187.30
*all temporary impacts will also be restored onsite ** No offsite mitigation is required for temporary impacts to non-riparian habitat				

Sensitive Species

Federal- or State- listed plant species were not identified in the 2001 SEIS/EIR nor were they observed

during sensitive species surveys conducted in 2019. Therefore, they are presumed to be absent from the project area and are not discussed further in this document.

Wildlife

The 2001 SEIS/EIR and the 2012 BO Amendment included a series of avoidance/minimization or offsetting measures that would be implemented as part of the Proposed Action to compensate for impacts to wildlife, including sensitive species, should they occur. Measures to offset the permanent loss and temporary disturbance of wildlife habitat, include requirements for vegetation clearing to occur outside of the nesting season, restoration and maintenance of areas disturbed on-site (following project construction), and offsite mitigation. The minimization measures described above for vegetation communities would also benefit wildlife in the area. These measures include construction monitoring to ensure that impacts occur only within designated areas, fugitive dust control, and erosion control.

Additional measures to minimize potential effects to wildlife include environmental training for construction personnel, installation of sound barriers to minimize noise and visual impacts, and construction noise monitoring during the nesting season to ensure compliance with applicable noise thresholds (as outlined in the 2012 BO Amendment).

Sensitive Species

Habitat within or in the vicinity of the project area has the potential to support several federally- and state-listed wildlife species. Designated critical habitat for listed species also occurs within the project area. Federally-listed species include least Bell's vireo (nesting territories and designated critical habitat), California gnatcatcher (known foraging habitat), southwestern willow flycatcher (designated critical habitat), and yellow-billed cuckoo (low potential to occur based on historical sightings). A complete list of special-status species with potential to occur in the project area is listed in **(Table 3-6)**. Species covered under the Western Riverside MSHCP are also listed, but are not discussed further in this document.

The following sections discuss special-status wildlife that have the potential to occur within the project area. Environmental commitments include the requirement for surveys to be performed prior to construction, and construction monitoring would include monitoring of these species within the project area. A full list of environmental commitments can be found in Section 5 of this document. Implementation of these environmental commitments would result in less than significant impacts to wildlife. Federal- and state- listed species likely to occur in the project area are discussed below.

Santa Ana Sucker (FT) and Designated Critical Habitat

The Santa Ana sucker (hereinafter referred to as sucker) is known to occur within the Santa Ana River. Designated critical habitat for this species is present in the project footprint as stated previously and shown in **Figure 4.4-1**.

OCWD conducts regular monitoring around the River Road area, approximately 1.5 miles downstream of the project area. No sucker have been observed during surveys in this reach for the last 10 years. However, during heavy storm events, there is potential for sucker to be washed downstream and into the project area via the sandy wash (secondary channel). When the secondary channel was observed in January of 2019, it was mostly dry with some stagnant pools filled with debris. While it is unlikely that sucker would be washed into the area due to the apparent intermittent flow regime in the channel, sucker have been

observed in small, sandy channels in other areas. The contractor would be required to construct an earthen berm, bordering the river adjacent project limits, to prevent flows from easily entering the project area. If a major storm event occurs and flows entering the site are unavoidable, a protocol would be developed to avoid potential effects to sucker, including stranding. Protocol would include construction work to be suspended, and a qualified fish biologist would survey the project area to determine presence of sucker. If sucker are detected, they would be safely relocated to the nearest suitable habitat. There is a chance that sucker washing into the project area or being physically relocated could increase stress to the individual and cause mortality. Considering the low presence of sucker in project area, the low likelihood of a storm breaching site protection measures, and the measures in place to address potential sucker stranding, the Proposed Action may affect, but is not likely to adversely affect the sucker.

Critical habitat was re-designated for the Santa Ana sucker in 2010. This most recent modification to designated Critical Habitat includes a total of approximately 9,331 acres located within three units (Units 1-3). Unit 1 is located along portions of the Santa Ana River and is further divided into three separate units (Subunits A-C). Critical habitat was assessed by federal mapping and presence of Physical and Biological Features (PBFs) within the mapped areas. PBFs are features that are essential to the conservation of the species. These features include species needs for life processes and successful reproduction such as: space for growth or individuals and populations, cover and shelter for different life stages of a species, biological and physiological requirements, breeding and rearing sites, germination, seed dispersal and historical habitat or habitat protected from disturbance.

The project area overlaps with approximately 52.96 acres of critical habitat, which is 1% of the 4,771 acres of critical habitat in the subunit. Of that 52.96 acres, approximately 5 acres of open sandy wash and unvegetated floodplain contain some potential PBFs for sucker. The critical habitat potentially impacted by this project is in relatively poor condition, but is within the historical range for sucker. The majority of the area is comprised of dense, riparian vegetation. If flow were created in the secondary channel, the intermittent habitat available would still be considered to have low suitability due to disturbance from recreation and giant reed invasion. Most of the 5 acres of critical habitat that could be potentially affected would not be permanently degraded, and the hydrological regime would not be substantially affected by the Proposed Action. The sandy wash (secondary channel) would be altered due to the construction of the embankment feature, but a new channel would likely develop along the structure, similar to the existing channel paralleling the bluff. Although hardened features along banks are known to cause impacts to native fish by permanently removing vegetation and altering sediment movement, the embankment would be located on the toe of the existing bank for the floodplain. Therefore, it would not significantly alter the hydrologic regime during normal flow conditions. During high floods, the embankment would influence hydrology by preventing impinging flows from contacting the bluff toe. Flows reaching the embankment would likely have flow velocities strong enough to alter vegetation and sediment throughout the floodplain. Therefore, these effects would likely occur with or without the embankment feature present, and potential effects under this infrequent flood scenario would be considered less than significant.

As described in earlier section, the TCE would be cleared of vegetation and graded to prepare the site for construction, and areas outside of the permanent project footprint would be restored with native vegetation. Site preparation and measures would allow for the removal of giant reed and planting of native vegetation in its place. Therefore, this would create an overall improvement to sucker critical habitat within the project area. Additionally, mitigation measures to offset potential impacts to sucker and critical habitat would include implementation of a sucker predator removal program, which would occur for 5 years (see Section 6 Environmental Commitments). The Proposed Action may affect, but is

not likely to adversely affect sucker critical habitat.

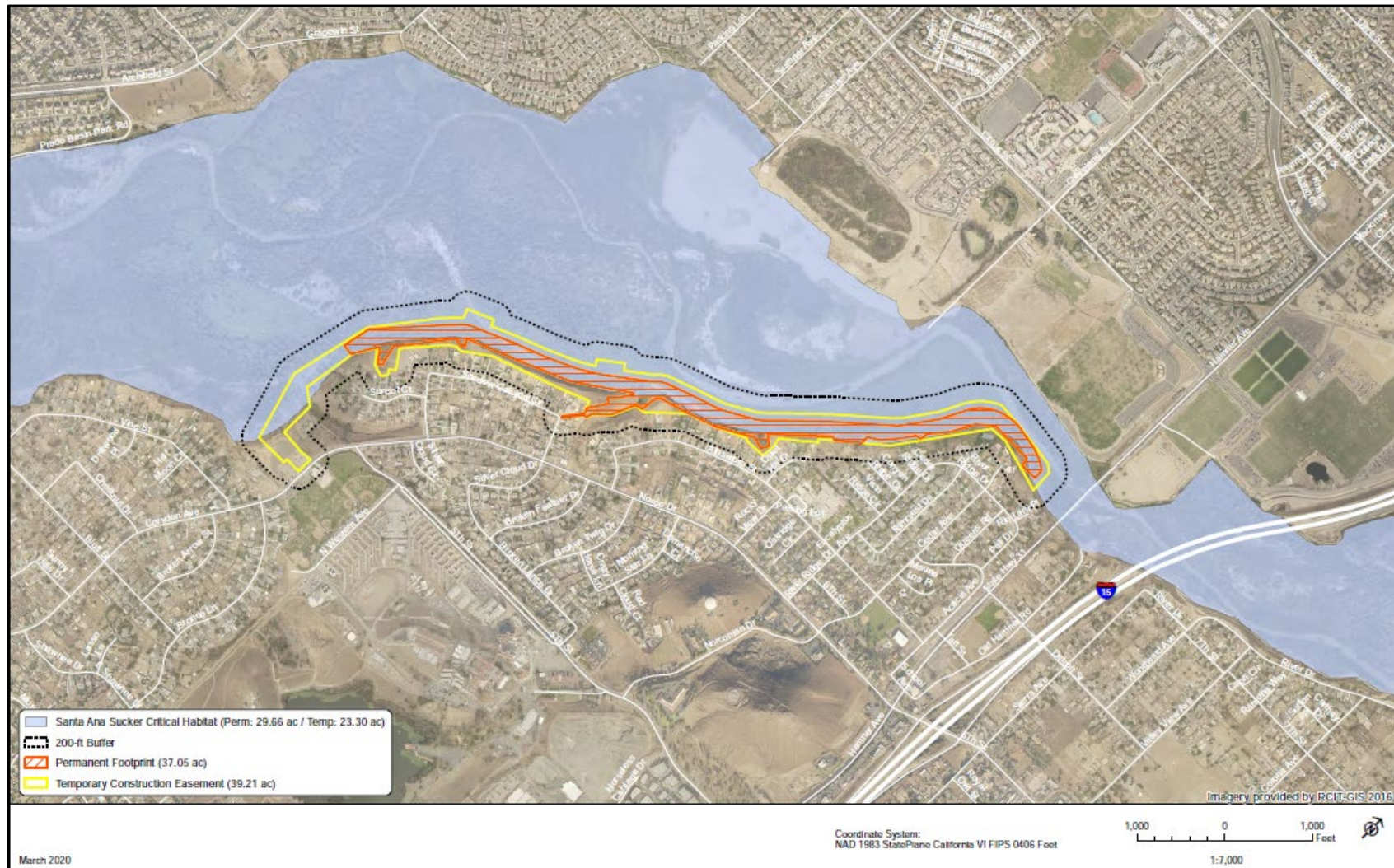


Figure 4.4-1 Santa Ana Sucker Critical Habitat

Other Special-Status Fish Species

Arroyo chub (Species of Special Concern and MSHCP-Covered Species) are likely to occur within the project vicinity, and potentially the project area. No direct effects are expected to occur to arroyo chub as this species would occur within the primary channel of the Santa Ana River, which currently lies outside of the project area. During infrequent, large storm events, native fish could get washed into the project site through avulsion flows. However, given the measures in place to protect the worksite, the low likelihood of such flood events, and protocol implemented response to such events, it is expected that potential effects to arroyo chub would be less than significant.

Least Bell's Vireo (FE, SE) and Designated Critical Habitat

Least Bell's vireo (vireo) are known to currently maintain ten territories within 200 ft of the project area, including the borrow site (**Figure 4.4-2**). These territories account for approximately 10% of the 101 territories in the area (SAWA 2019). Of the ten known territories occurring within 200 ft. of the project area, two lie within the permanent construction footprint, two lie within the TCE, and six lie within the 200 ft. buffer. This would result in potential permanent displacement of two territories and temporary displacement of eight territories. This is assuming that vireo nesting beyond 200 feet from the project would continue successfully. To avoid potential effects to vireo, vegetation clearing would occur outside of the nesting season, and sensitive species monitoring would occur through the duration of construction activities. Additionally, considering the large width of the floodplain, movement of vireo would not be constricted within the adjacent area. Although increased competition for nest sites and other resources could occur until construction is completed.

Vireo use their sense of hearing to locate their young and mates, to establish and defend territories, and to locate and evade predators (Scherzinger, 1970). The impact of construction noise on nesting vireo is not well understood. Excessive noise levels have the potential to cause behavioral changes, physiological effects, such as temporary or permanent loss of hearing, and can result in masking of important auditory cues, such as predator alert calls. Vireo may also abandon a nest and general territory if they cannot tolerate the loud noises, in which case eggs and/or hatchlings would be abandoned, inhibiting further recruitment to the population at least temporarily. Recent vireo surveys at the SARMP, Reach 9 BNSF Bridge Project revealed vireos did not appear to abandon territories in 2019 due to noise increases during piling driving activities, as evidenced by the number of territories remaining consistent between the 2018 and 2019. However, pile driving activities did not begin until later in the nesting season. Measures to minimize and avoid potential noise effects on vireo include construction of a sound wall around riparian habitat to attenuate construction noise. Noise monitoring would also be conducted to ensure compliance with noise established noise thresholds, as outlined in the 2012 BO.

Fugitive dust emissions from construction activities has the potential to impair the vision of vireo nesting within and adjacent to the project area. Additionally, increased human presence can cause disturbances to vireo, resulting in nest and/or territory abandonment. BMPs would be implemented to minimize fugitive dust emissions. Installation of sound walls would introduce a physical barrier between the project area and riparian habitat, construction activities would be blocked from sight.

A total of 72.42 acres of critical habitat fall within the project area. A total of 36.87 acres of designated critical habitat would be permanently impacted, and 35.55 acres would be temporarily impacted by the Proposed Action. Of the total 72.42 acres of critical habitat within the project area, approximately 48 acres provide PBFs (i.e., breeding and foraging habitat) required for least Bell's vireo occupation. These acres

contain relatively dense riparian and riparian scrub vegetation that are typically dominated by willows, but also contain a dense shrub layer that is mature. The remaining 24.42 acres do not provide PBFs as these areas occur in disturbed, upland communities or are developed areas (i.e. ruderal, grassland and disturbed coastal sage scrub). Critical habitat outside of the permanent construction area would be restored with native riparian vegetation after construction is completed.

As described earlier, nonnative species comprise a large percentage of the project area. Vegetation clearing at the beginning of construction and site restoration after construction would create an overall improvement in riparian habitat within the project area. Additionally, 72.42 acres of critical habitat is a small percentage compared to the 3,338 acres of designated habitat available in Riverside and San Bernardino Counties.

Mitigation to offset impacts to vireo and their critical habitat would also include off-site restoration of riparian habitat through the removal of nonnative species and implementation of a cowbird removal program control. Considering the BMPs, measures, and mitigation described above, the Proposed Action may affect vireo and vireo critical habitat.



Figure 4.4-2 Locations of Least Bell's Vireo Territories within the Project Vicinity

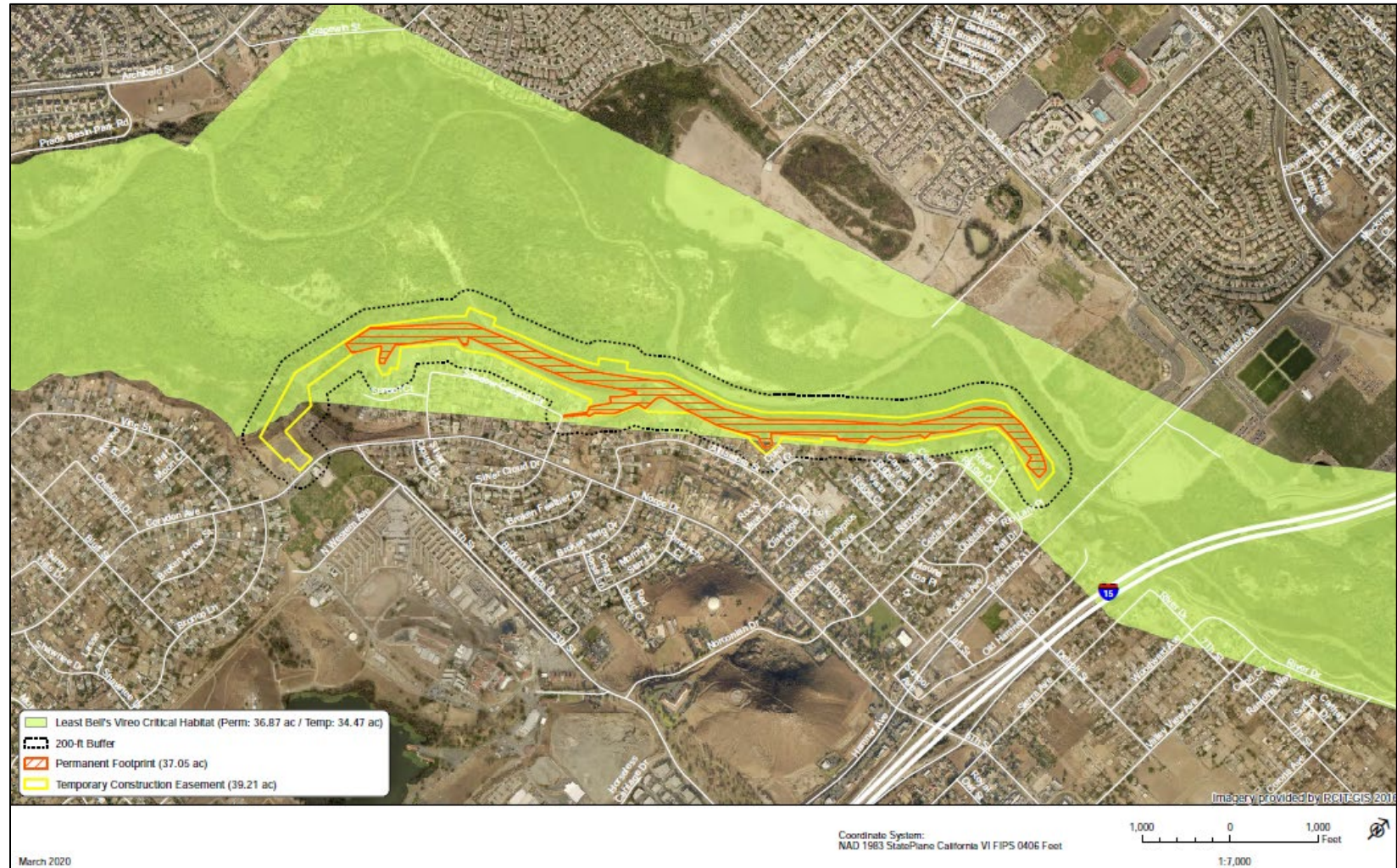


Figure 4.4-3 Least Bell's Vireo Critical Habitat within the Project Area



Figure 4.4-4 Least Bell's Vireo Critical Habitat within the Borrow Area

Southwestern willow flycatcher (FE, SE) and Designated Critical Habitat

The number of recorded flycatchers within Prado Basin peaked at nine territories in 2003. Overtime, there has been a steady decline in flycatcher presence, and no nesting pairs have been detected there since 2013 (Pike et al. 2013). Survey and monitoring activities were conducted by SAWA in 2019, and no flycatchers were not detected. Eight migratory individuals were documented within the larger watershed, and two non-paired individuals passed through the Norco Bluffs area. No breeding pairs were detected (SAWA 2019). This species is not expected to be affected by the Proposed Action.

Approximately 4.72 acres of critical habitat are present within the project area (**Figure 4.4-5**). As a result of the Proposed Action, approximately 0.40 acres would be permanently impacted, and 4.32 acres would be temporarily impacted. While designated critical habitat would be impacted, habitat suitability is relatively low within and around the project area. Much of the riparian habitat is heavily disturbed by giant reed invasion or disturbance from restoration activities that reduced the cover and vegetation layers preferred by this species for both nesting and foraging. There is potential that a transient individual could pass through the area during the construction of the project, however the width of the floodplain would allow the species to pass through the riparian corridor and easily avoid the project area. The measures listed above for minimizing and avoiding impacts to nesting birds, including vireo, would also reduce and mitigate impacts to flycatcher. Project activities are not expected to affect individuals or nests. Upon project completion, native revegetation and long-term maintenance of riparian vegetation would provide an overall improvement in flycatcher habitat for flycatcher. The Proposed Action may affect, but is not likely to adversely affect critical habitat for flycatcher.

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Figure 4.4-5 Southwestern Willow Flycatcher Critical Habitat

Other Special-Status Birds

The Proposed Action would temporarily and permanently impact riparian and upland habitat, as detailed in previous sections. Based on recent surveys, vegetation removal would have the potential to impact breeding and foraging habitat for special-status bird species, including burrowing owl, turkey vulture, downy woodpecker, Cooper's hawk, double crested cormorant, white-tailed kite, northern harrier and great egret.

Burrowing owl is known to occupy a burrow within 300 feet of the borrow site, however the individual has not been disturbed or displaced by previous and ongoing construction activities at the borrow site. Yellow warbler has not been detected during surveys, but habitat for nesting and foraging is present with the project area. Cooper's hawk foraging and nesting habitat is present within and adjacent to the project area and was observed during surveys.

Measures described previously for listed species would also benefit these special-status species. Measures include scheduling vegetation removal activities outside of the nesting bird season, implementing biological monitoring, and requiring construction workers to take an environmental training. Construction noise and increased human presence could potentially deter these species, but the wide floodplain available near the project area and open space surrounding the borrow area would allow these species to avoid these areas and utilize existing resources nearby. Therefore, potential effects to other special-status species are expected to be less than significant.

Special-Status Mammals

No bat surveys have been conducted for the project. However three special-status bat species have potential to occur within the project area, according to database searches and anecdotal evidence. These species include western yellow bat, western mastiff bat and pocketed-free tailed bat. California western mastiff bat have been observed in the project vicinity and may forage and roost in the proposed project vicinity since there is roosting habitat available. Suitable habitat for western yellow bat and pocketed-free tailed bat exists within the project vicinity. Pocketed free-tailed bats are less likely to occur in the project vicinity compared to the other two species because habitat suitability is relatively low.

Bats are known to roost within Hamner Street Bridge and forage over the Santa Ana River. The bridge is approximately 450 feet from the project TCE. Construction hours for the Proposed Action would avoid most night work. However, unique factors at the time of the project could change that proposal. Noise and vibration can negatively affect bats by impairing their ability to forage or roost comfortably. Additionally, increased human presence and fugitive dust emissions could potentially degrade habitat quality. BMPs would be implemented to reduce the presence of fugitive dust, and construction of sound walls would reduce direct sight of human presence from outside of the TCE.

Due to the distance of the project area from the Hamner Bridge and the breadth of the riparian habitat available outside of the project, bats would be able to forage in other areas of the floodplain. Loss of potential roosting habitat due to removal of trees within the project area as the potential to impact individuals. However, potential effects would likely be small and would not adversely affect the bat populations in the region. Other mammals covered in the Western Riverside MSHCP would be deterred from entering the site by fencing or sound wall installation. Only a small portion of the vast floodplain occurring within the project vicinity would be temporarily unavailable during project construction.

Measures to minimize and avoid impacts to special status mammals would include environmental training for crewmembers, pre-construction surveys for sensitive species, biological monitoring during construction, and development and implementation of a lighting plan to reduce potential effects to residents and wildlife. Considering the discussion above, potential effects to special-status mammal species are expected to be less than significant.

Wildlife Movement

As discussed in the 2001 SEIS/EIR, any construction activities within the Santa Ana River watershed that may impede wildlife movement have the potential to impose significant impacts. The Santa Ana River watershed has significant ecological importance for wildlife using the area and provides a transition between fragmented habitats in the region. Past SARM features, such as Prado Dam, State Routes 91 and 71, and Highway 15 have been implemented and consider regional wildlife movement in their design. Additional follow up studies are currently underway to evaluate wildlife movement with projects implemented. The 2001 SEIS/EIR indicated the proposed flood control improvements along Norco Bluffs would contribute little, if any, long-term effects to wildlife movement through the region. The Proposed Action would be a linear feature constructed roughly parallel to the south bank of the Santa Ana River and along the toe of the bluff. It is not anticipated to cause a physical impediment to or block any known movement pathways. As the permanent project footprint ranges between 20-40 feet wide in a floodplain averaging 990 feet wide, the project would not constrict wildlife movement. Furthermore, implementation of avoidance/minimization and offsetting measures developed as part of the Proposed Action would ensure that impacts to wildlife movement corridors and habitat linkages in the project area would not result in significant impacts to wildlife movement. Lighting plans would be developed to avoid impacts to residents and wildlife, if night work is required. Additionally, design of the sound walls would consider wildlife movement and include strategically-placed openings to avoid impeding movement. Therefore, potential effects to wildlife movement are considered less than significant.

Future Operations and Maintenance

Future maintenance of the Proposed Action Alternative would include routine inspections and minor repairs, of the Lower Norco Bluffs embankment and its associated features after construction is completed (see Section 2.4 for a detailed list of future maintenance activities). Most inspections and minor repairs would be confined to paved maintenance and access roads. Therefore, trampling of vegetation by vehicular or foot traffic would be minimized and are not significant. During major flood events, future maintenance activities may require access to the toe of the slope. This circumstance would occur if there is major flood-related damage to the launchable rock that maintains the structure of the embankment. Impacts would be analyzed at the time of the repairs since such repairs would be impossible to predict at this time, and the work needed would depend on the extent of repairs required. It is expected that there would be temporary impacts to riparian vegetation and wildlife if large construction equipment need to access the floodplain. These events are expected to occur infrequently, and measures would be implemented to minimize impacts to biological resources.

Future maintenance activities may also require removal of vegetation and debris from the embankment, and associated features, to ensure proper function of the feature. Vegetation removal and herbicide application would be conducted at the minimum amount to avoid over-application and minimize impacts to native vegetation. The amount of vegetation removed would be nominal since maintenance would occur at an interval that would prevent habitat for wildlife to establish. Additionally, vegetation would be

removed outside of nesting season to avoid impacts to wildlife, including sensitive species. Under routine maintenance activities, there would be no removal of riparian vegetation required in the floodplain.

Periodic movement of people, vehicles and potentially equipment onsite can introduce the risk of nonnative and invasive plant establishment and eventual degradation of native habitat. Exotic seeds can be transported by vehicles, equipment and on persons. While there is potential for limited exotic seed to be brought onsite and establish within the project area or move into the floodplain, BMPs would be implemented to limit the spread of nonnative seed. BMPs could include checking clothing, vehicles, and equipment before leaving the project area. Therefore, with the limited need for normal O&M activities no adverse effects are expected to occur.

O&M activities would not adversely affect nesting birds. Activities that could take place during nesting bird season are, inspections of the embankment structure, minor repairs and vegetation removal from the structure. None of these routine activities are expected to impact nesting bird habitat, and human presence will be minimal compared to existing recreational use within the area.

4.4.2.2 *No Action Alternative (Previously Approved Design)*

Under the Previously Approved Design, project modifications included under the Proposed Action would not be implemented, and the project would be constructed as described in the 2001 SEIS/EIR. Effects of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential effects to biological resources included short-term construction impacts and long-term operational impacts. Mitigation measures were proposed to compensate for potential significant effects to wildlife species and movement. Therefore, potential effects to biological resources were considered less than significant.

4.4.3 SUMMARY OF SIGNIFICANCE THRESHOLDS RELATED TO THE PROPOSED ACTION

The Proposed Action, including future maintenance, would include design aspects and implementation of BMPs and measures that would address potential effects related to temporary habitat loss, excessive noise, increased human presence, fugitive dust emissions, and habitat movement. Permanent and temporary impacts to habitat would be mitigated as described above in **Table 4-9**. Habitats disturbed within the TCE would be revegetated with native vegetation and maintained to ensure no net loss of habitat value, or sensitive biological habitat. The Proposed Action would not result in a substantial loss to the population of any native fish, wildlife, or vegetation, wildlife movement or in overall diversity of the ecosystem. Therefore, potential effects to biological resources is considered to be less than significant.

4.5 CULTURAL RESOURCES

The affected environment for cultural resources is presented in Section 3.5 and does not include any substantially different conditions than were present when the Lower Norco Bluffs Project was previously approved.

As described in **Table 2-1**, the following are the primary differences between the Previously Approved Design and the Proposed Action, as relevant to cultural resources: increased area of the TCE. For the purposes of the SEA an EIR Addendum, analysis of potential cultural resources impacts associated with project modification under the Proposed Action is provided below.

Under NEPA, significance is determined based on ‘context’ and ‘intensity’. For cultural resources, context is often viewed in terms of how important the resource may or may not be, while intensity is viewed in terms of the severity of the impacts to the resource. While cultural resources that are not eligible for the National Register are still considered as part of the NEPA review, once that resource fails to meet the criteria for eligibility for inclusion on the National Register its ‘context’ is found to be lacking. The phrase “adverse effect” (NHPA) and “significant impact” (used in NEPA) are not equivalent terms, but are similar in concept. Under the NHPA, impacts to cultural resources are typically examined in terms of how the project would affect the characteristics that make the property eligible for the National Register. Such impacts are referred to as adverse effects in the NHPA’s implementing regulations (36 CFR 800.5).

4.5.1 SIGNIFICANCE THRESHOLD

Impacts would be considered significant if the alternative (or “undertaking”) would result in:

- A substantial adverse effect to a historic property such that the implementation of the alternative would result in the destruction of a historic property or the loss of a property’s listing in or eligibility for listing in the National Register of Historic Places

4.5.2 ENVIRONMENTAL CONSEQUENCES

4.5.2.1 *Proposed Action*

During Construction

There are two recorded archeological sites, CA-RIV-1042 and -1043, within the Norco Bluffs project area. Both sites were originally recorded in 1975 and are described as sparse lithic scatters. Neither site was evaluated for eligibility for listing in the National Register. According to the 2001 EIS/EIR, an archeologist from the Corps resurveyed the Norco Bluffs’ portion of the APE in October 1998, but was unable to relocate the sites. A copy of a report documenting this 1998 survey or consultation letters with the State Historic Preservation Office have not been located. Additional surveys are scheduled to occur in Spring 2020. Results from findings and analysis of effects will be disclosed in the Final SEA/EIR Addendum; however, in-tact archaeological sites are considered unlikely within the project footprint. The proposed action is unlikely to affect historic properties and would be less than significant under NEPA.

Post-construction

Any potential effects to historic properties post-construction would be related to future operations and maintenance. See section below.

Future Operations and Maintenance

Future maintenance of the Proposed Action Alternative would include routine inspections and minor repairs, of the Lower Norco Bluffs embankment and its associated features after construction is completed (see Section 2.4 for a detailed list of future maintenance activities). Since intact archaeological sites are considered unlikely within the project footprint, future operations and maintenance are not expected to significantly impact cultural resources.

4.5.2.2 *No Action Alternative (Previously Approved Design)*

Under the No Action Alternative, project modifications included under the Proposed Action would not be implemented, and the project would be constructed as previously approved. Impacts due to this alternative would be the same as described in the 2001 Final SEIS/EIR. As with the proposed project, construction of this alternative is not expected to affect historic properties and would be less than significant under NEPA.

4.5.3 SUMMARY OF SIGNIFICANCE THRESHOLDS RELATED TO THE PROPOSED ACTION

The Proposed Action would not result in the destruction of a historic property or the loss of a property's listing in or eligibility for listing in the National Register of Historic Places. Additional cultural resources surveys are scheduled to occur during Spring 2020 and results from findings and analysis of effects will be disclosed in the Final SEA/EIR Addendum; however, in-tact archaeological sites are considered unlikely within the project footprint, and potential effects on cultural resources would be considered less than significant.

4.6 LAND USE

The affected environment for land use is presented in Section 3.6 and does not include any substantially different conditions than were present when the Lower Norco Bluffs Project was previously approved. According to the Land Use Element of the City of Norco General Plan, on-site and adjacent land uses designations include passive open space, parks for recreation, agricultural estates, and single family residences.

As described in **Table 2-1**, the following are the primary differences between the Previously Approved Design and the Proposed Action, as relevant to land use: expansion of the TCE in the southern portion of the project and relocation of the construction staging area. For the purposes of the SEA an EIR Addendum, analysis of potential land use impacts associated with project modification under the Proposed Action is provided below.

4.6.1 SIGNIFICANCE THRESHOLD

Impacts would be considered significant if the alternative is:

- Incompatible with existing land uses; or
- Conflict with applicable plans or policies

4.6.2 ENVIRONMENTAL CONSEQUENCES

4.6.2.1 *Proposed Action Alternative*

During Construction

Under the Proposed Action Alternative, construction activities would predominately occur in the Open Space land use zone, which is characterized as lands for the preservation of resources, which possess

significant natural value. Construction activities may temporarily affect natural resources, as described in earlier sections, however BMPs and minimization measures would be implemented to avoid or minimize impacts (See Section 4.4 Biological Resources).

Additionally, approximately half of the overflow parking lot for the Wayne-Makin Shearer Sports Complex will be temporarily closed for use as a construction staging area. Reduction of parking availability may impact the parks for recreation land use, however impacts will be temporary and will only occur for the duration of construction (currently estimated for two years). The Corps will also coordinate with the City of Norco to ensure appropriate signage is posted to designate construction-use areas, and other parking opportunities will be communicated to the public by the City of Norco.

Post-Construction

The Proposed Action would not result in permanent incompatibilities with the aforementioned land uses and would not prevent existing on-site land uses (riparian areas and open green space) from continuing in essentially the same manner. Additionally, the purpose of the Proposed Action is to provide bluff toe stabilization to the City of Norco, which would benefit the residents adjacent to the Norco Bluffs; therefore, the Proposed Action would be beneficial for the other surrounding land uses, including residential development. Implementation of the Proposed Action would be consistent with the goals and objectives of the Land Use Element because the land uses allowed within the General Plan designations would be able to continue after the implementation of this alternative.

To avoid or minimize impacts to species covered under the Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP), a series of measures from the 2001 SEIS/EIR and environmental commitments developed for this document would be implemented during and after construction. Refer to Section 4.4 (Biological Resources) for additional details.

Future Operations and Maintenance

Future maintenance of the Proposed Action Alternative would include routine inspections and minor repairs, of the Lower Norco Bluffs embankment and its associated features after construction is completed (see Section 2.4 for a detailed list of future maintenance activities). Future maintenance activities would not be incompatible with existing on-site or surrounding land uses.

4.6.2.2 *No Action Alternative (Previously Approved Design)*

Under the Previously Approved Design, project modifications included under the Proposed Action would not be implemented, and the project would be constructed as described in the 2001 SEIS/EIR. Construction of this alternative would not be inconsistent with local plans and policies. Therefore potential effects to land use were considered to be less than significant.

4.6.3 SUMMARY OF SIGNIFICANCE THRESHOLDS RELATED TO THE PROPOSED ACTION

The Proposed Action would result in short-term impacts to open space and associated biological resources, however BMPs and measures would be implemented to avoid or reduce potential effects (See Section 4.4 Biological Resources). The Proposed Action would not fundamentally alter existing on-site land uses, including riparian areas, open green space, and recreation. Stabilization of the bluff toe could benefit residents on Norco Bluffs by reducing erosion of the bluff and reducing the risk of property

loss through acquisition. The Proposed Action would allow for land uses to continue operating in essentially the same manner. Therefore, potential effects on land use are considered less than significant.

4.7 AESTHETICS

The affected environment for aesthetics is presented in Section 3.7 and does not include any substantially different conditions than were present when the Lower Norco Bluffs Project was previously approved. The project area contains a variety of views and perspectives, which reflect the diversity of land uses found from the recreation and open space of the Santa Ana River floodplain north of the project site and single family residential development located south, east, and west of the site. Approximate size and configuration of the Proposed Action would be consistent with the Previously Approved Design.

As described in **Table 2-1**, the following are the primary differences between the Previously Approved Design and the Proposed Action, as relevant to aesthetics: expansion of the TCE in the southern portion of the project and relocation of the construction staging area. For the purposes of the SEA an EIR Addendum, analysis of potential aesthetics impacts associated with project modification under the Proposed Action is provided below.

4.7.1 SIGNIFICANCE THRESHOLD

Impacts would be considered significant if the alternative results in:

- a substantial adverse effect on a scenic vista;
- substantial degradation of the existing visual character or quality of the site and its surroundings;
- a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

4.7.2 ENVIRONMENTAL CONSEQUENCES

4.7.2.1 *Proposed Action Alternative*

During Construction

Under the Proposed Action Alternative, development of the project would be visible during the construction. Construction activities and facilities would include construction of the embankment (approximately 1.5 miles in length), one temporary construction ramp and access road, and one permanent maintenance road; and a borrow area and approximate 6-mile haul route located west of the proposed project site. The staging area would be located adjacent to Corydon Avenue, west of the Wayne-Makin Shearer sports complex, south and east of the open space, and single residences north and south of the area. Therefore, construction activities would be visible to recreationalists, pedestrians, and homeowners. However, given that construction activities are temporary, these impacts would be considered less than significant.

Artificial light may be necessary, rarely, during the construction period since the proposed construction hours would be 7:00 a.m. to 6:00 p.m. Monday through Friday. In addition, the proposed project site is immediately surrounded by open space and at the toe of the bluff, within the Santa Ana River floodplain.

The closest residential area to the project area are the residences located along Shadow Canyon Circle. Residents would be located adjacent to the TCE and construction of the permanent maintenance road. If lighting is required in this area during construction, a Lighting Plan would be developed, and lights would be strategically placed to minimally impact surrounding residents. Therefore, any impacts associated with light and glare would be temporary, and impacts would be considered less than significant.

Post-Construction

The Proposed Action would not permanently impinge on a scenic vista or degrade the visual character of the site since the proposed project site consists of the borderland between open space and residential development and lies within the Santa Ana River floodplain. Most views of the project site are currently limited because of its location at the bluff toe, but viewers may observe undeveloped riparian habitat from the Corydon Equestrian Staging Area and residential developments. This view would not be blocked by the Proposed Action, since most vista points are from on top of the bluff and the structure runs along the toe of the bluff. In addition, the site of the Proposed Action has limited viewing opportunities for local residential communities. As such, although development of the Proposed Action would permanently change the conditions or views of the project site from the existing conditions, the Proposed Action would not substantially degrade the existing visual character or quality of the site and its surroundings. Impacts would be considered less than significant.

The closest officially designated State scenic highway is Route 91 from Route 55 to the east end of the City of Anaheim, which is approximately fourteen miles southwest of the project site. Therefore, the proposed project would not result in impacts on a State scenic highway or other scenic roadway.

Future Operations and Maintenance

Future maintenance of the Proposed Action Alternative would include routine inspections and minor repairs, of the Lower Norco Bluffs embankment and its associated features after construction is completed (see Section 2.4 for a detailed list of future maintenance activities). Future maintenance activities would not alter aesthetics.

4.7.2.2 No Action Alternative (Previously Approved Design)

Under the No Action Alternative, project modifications included under the Proposed Action would not be implemented, and the project would be constructed as previously approved. Impacts due to this alternative would be the same as described in the 2001 Final SEIS/EIR. Implementation of the alternative would result in physical alteration of the bluffs and could be viewed by a limited number of residents on the south side of the river channel and from distant views along the north side of the river channel. However, no long-term significant changes to the overall (foreground, middle ground, and background) view would occur on the south side of the river channel because the view at the bottom and along the bluff slope is a nominal portion of the panoramic view from these residences. Due to the distance, views from the north side of the river channel would be minimal. As a result, impacts were considered less than significant.

4.7.3 SUMMARY OF SIGNIFICANCE THRESHOLDS RELATED TO THE PROPOSED ACTION

The Proposed Action would alter visual character during construction and a permanent structure would be introduced along the bluffs. However, construction would be temporary, and the permanent structure

would not degrade the existing visual character or quality of the site given the location of the embankment below the bluff and the location and distance of vista points. During construction, a new source of light could be introduced since construction work hours occur from 7:00 a.m. to 6:00 p.m., however the occurrences would be temporary and infrequent. The contractor would also be required to submit a lighting plan, which would outline lighting locations strategically chosen to minimize impacts to surrounding residences. Therefore, potential effects to aesthetics are considered less than significant.

4.8 RECREATION

The affected environment for recreation is presented in Section 3.8 and does not include any substantially different conditions than were present when the Lower Norco Bluffs Project was previously approved. Approximate size and configuration of the Proposed Action would be consistent with the Previously Approved Design.

As described in **Table 2-1**, the following are the primary differences between the Previously Approved Design and the Proposed Action, as relevant to recreation: expansion of the TCE in the southern portion of the project and relocation of the construction staging area. For the purposes of the SEA an EIR Addendum, analysis of potential recreation impacts associated with project modification under the Proposed Action is provided below.

4.8.1 SIGNIFICANCE THRESHOLD

Impacts would be considered significant if the alternative results in:

- increased use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; and/or a substantial or permanent decrease in existing use, quality, or availability of recreational areas

4.8.2 ENVIRONMENTAL CONSEQUENCES

4.8.2.1 *Proposed Action Alternative*

During Construction

As described in Section 3.8, a variety of parks and recreational facilities are located in the vicinity (within 2 miles) of the Lower Norco Bluffs Project. Part of the Corydon Equestrian Staging Area would be located within the temporary work limits of the Proposed Action and approximately half of the area is proposed as a staging area for construction. This would temporarily limit the area for equestrian staging and overflow parking for the adjacent Wayne-Makin Shearer Sports Complex. The Proposed Action would not introduce new recreation impacts to the majority of parks and recreation facilities in the project vicinity.

Similar to the effects described for the Previously Approved Design, the Proposed Action would temporarily preclude access to equestrian and pedestrian trails located along Alhambra Street and Shadow Canyon Circle (on top of the Norco Bluffs) and the informal trails occurring within the Santa Ana River floodplain. The Corps would coordinate with the City of Norco to ensure the appropriate signage is displayed to notify the public of temporary trail closures. The temporary closure of trail access along Alhambra Street, Shadow Canyon Circle, and within the Santa Ana River floodplain would be unavoidable, under the Proposed Action, due to safety reasons. However, it would not be considered significant

considering the large number of alternative trail access options available. The Corps would coordinate with the City of Norco to post appropriate signage to indicate the temporary closure of trail access located along the top of Norco Bluffs.

The Proposed Action would also reduce parking availability to the westernmost sports field in the Wayne-Makin Shearer Sports Complex. Temporary, alternative parking areas will be coordinated with the City of Norco to accommodate users of the sports complex. The temporary reduction of parking availability in the Corydon Equestrian Staging area and overflow parking would be unavoidable under the Proposed Action, but would not be considered significant due to the remaining space available for parking and additional parking options coordinated through the City of Norco. In order to facilitate City of Norco's preparation for construction activities and resulting impacts to the park, including recreational facilities, Environmental Commitment EC-LU-1, described above in Section 4.6 (Land Use) has been updated from the 2001 Final SEIS/EIR and would be incorporated into coordination efforts. EC-LU-1 requires coordination with the City of Norco's Parks, Recreation, and Community Services Department prior to and during construction within the Lower Norco Bluffs Project area, including Corydon Equestrian Staging Area. Coordination would include, at a minimum, dates and duration of construction, future maintenance activities and procedures for notifying the city of such, etc.

Since the remaining portion of parking and the park itself would remain as is, with no loss of functionality, the Proposed Action would allow for recreation to continue in essentially the same manner. Therefore, there would be no increase in demand at other facilities such that there would be substantial physical or accelerated deterioration of the facility.

Post-Construction

Once constructed, the Proposed Action would require the permanent closure of some existing trail access points located along Alhambra Street. However, access along Shadow Canyon Circle will be available for continued use, and other access points along Corydon Avenue will remain intact (**Figure 4.8-1**). The Proposed Action would not affect any other recreational activities, including sports-related recreational activities.

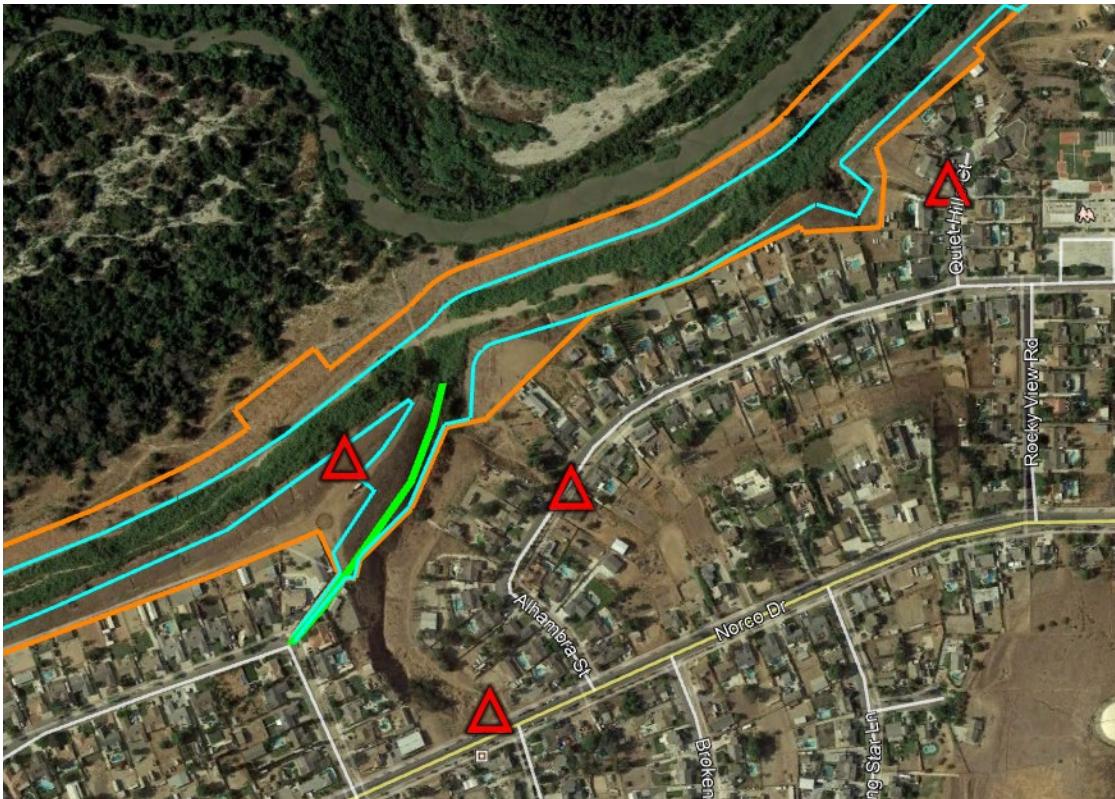


Figure 4.8-1. Locations of permanent trail access closures post-construction. Red triangles indicate permanent access closures. The orange line indicates the construction boundary, the blue line represents the permanent embankment feature, and the green line indicates the access maintained off of Shadow Canyon Circle.

Future Operations and Maintenance

Future maintenance of the Proposed Action Alternative would include routine inspections and minor repairs, of the Lower Norco Bluffs embankment and its associated features after construction is completed (see Section 2.4 for a detailed list of future maintenance activities). Maintenance activities would be limited to the project site and would not interfere with any adjacent recreational activities, with the exception of those requiring access at Shadow Canyon Circle. For safety reasons, equestrian or pedestrian access would be temporarily unavailable at this location during maintenance activities. Because closures would be temporary and alternative access points are available throughout the project area, future maintenance activities would not significantly impact recreation.

4.8.2.2 No Action Alternative (Previously Approved Design)

Under the No Action Alternative, project modifications included under the Proposed Action would not be implemented, and the project would be constructed as previously approved. Impacts due to this alternative would be the same as described in the 2001 Final SEIS/EIR. As with the proposed project, construction of this alternative would not significantly impact recreation.

4.8.3 SUMMARY OF SIGNIFICANCE THRESHOLDS RELATED TO THE PROPOSED ACTION

The Proposed Action would cause closures of some recreational access for equestrians and pedestrians during construction and maintenance activities. The Proposed Action would also cause permanent trail access closures along Alhambra Street. However, closures during construction and maintenance activities would be temporary and the permanent closures along Alhambra Street would be nominal compared to the large number of alternative access points available for recreational use. Alternative trail access points would still offer the same recreational experience with regard to quality and use. Because use of recreational facilities would remain unchanged, there would be no increase in demand at other facilities such that there would be substantial physical or accelerated deterioration of the facility. During construction some parking would be made unavailable in the Corydon Staging area and overflow parking lot. However, impacts would be temporary and some parking would still be available for use. Coordination would occur with the City of Norco to mitigate potential effects related to construction activities and impacts to parking availability. Therefore, potential effects to recreation are considered less than significant.

4.9 NOISE

The affected environment for noise is presented in Section 3.9 and does not include any substantially different conditions than were present when the Lower Norco Bluffs Project was previously approved.

As described in **Table 2-1**, the following are the primary differences between the Previously Approved Design and the Proposed Action, as relevant to noise: expansion of the TCE in the southern portion of the project and relocation of the construction staging area. For the purposes of the SEA an EIR Addendum, analysis of potential noise impacts associated with project modification under the Proposed Action is provided below.

The 2015 Riverside County General Plan includes the following applicable noise policies (Riverside County 2015):

- Noise Element Policy N.12.1. Minimize the impacts of construction noise on adjacent uses within acceptable practices.
- Noise Element Policy N.12.2. Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.
- Noise Element Policy N.12.4. Require that all construction equipment utilizes noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

Riverside County Municipal Code

The Riverside County Municipal Code Chapter 9.52 (Noise Ordinance 847 § 2, 2006) specifies sound level standards by land use type. Per Article 9.52.020 (Exemptions), noise from construction within one-quarter of a mile of an occupied residence is exempt from these standards if it occurs between the hours of 6:00 a.m. and 6:00 p.m. (June through September) or between the hours of 7:00 a.m. and 6:00 p.m. (October through May).

The 2003 City of Norco General Plan includes the following applicable noise policies (City of Norco 2003):

City of Norco Municipal Code

The City's noise ordinance (Chapter 9.07 Noise Regulations, of the City's Municipal Code) sets forth regulations concerning the generation and control of noise. The following sections of the Municipal Code are applicable to the proposed project.

15.30.020 Hours of Construction Activity. Construction activity, including equipment start-up and use, and the loading, unloading and handling of materials, shall not commence before 6:30 a.m., or continue beyond 7:00 p.m., on weekdays.

4.9.1 SIGNIFICANCE THRESHOLD

According to the ordinances outlined above, construction would need to occur between 7:00 a.m. and 6:00 p.m. on weekdays to remain in compliance with both county and city ordinances. Otherwise, a variance or exemption would need to be obtained. The project will assume the most restrictive ordinance, of applicable city and county ordinances, to remain within compliance of both county and city policies. Impacts would be considered significant if the alternative results in:

- conducting construction outside of allowable hours per County and City ordinances without obtaining a variance or exemption.

4.9.2 ENVIRONMENTAL CONSEQUENCES

4.9.2.1 *Proposed Action Alternative*

During Construction

As discussed in Section 2.0 (Proposed Action and Alternatives), construction of the Proposed Action is scheduled to commence in October 2020 and last approximately two years, ending in Fall 2022. It is possible that the Proposed Action would be built in stages, with multiple start dates and construction periods for various sections of the project depending on land acquisition schedule, environmental windows and weather delays. Construction phasing may result in an extension of the overall project duration beyond Fall 2022. Construction of the Proposed Action will require approximately 300 combined maximum daily haul trips for fill material which will be hauled from a borrow site located 3 miles west of the Lower Norco Bluffs Project area (refer to **Figure 2.3-7**) and for rip rap from a local quarry. Construction vehicles would access the site from Corydon Avenue or Shadow Canyon Circle. These trips would result in only short-term periodic increases in noise levels during normal construction hours.

The nearest sensitive receptor to the Proposed Action site are the residences located along Norco Bluffs, adjacent to the project area. The closest resident to the TCE would be located off of Shadow Canyon Circle, adjacent to the construction access road.

As long as construction activities occur during 7:00 a.m. to 6:00 p.m., Monday through Friday, which are the exempted time periods per County of Riverside Municipal Code and City of Norco Municipal Code, the proposed construction would be in compliance with local (city and county) noise ordinances; any changes to that schedule, including occasional overtime work, would require obtaining a variance from local authorities. The project will assume the most restrictive ordinance, of applicable city and county

ordinances, to remain within compliance of both county and city policies. Therefore, less than significant impacts would occur from construction equipment noise generated during construction of the Proposed Action.

While local ordinances do not limit the decibel level of construction that occurs during authorized time periods, information on anticipated noise levels that could be experienced by nearby residents, recreationists and wildlife in the vicinity is provided as follows. Noise levels for typical pieces of construction equipment that may be utilized for this project (at 50 feet) are listed in **Table 4-10**.

Table 4-10 Typical Noise Levels for Construction Equipment

Equipment	dBA at 50 Feet
Skid Steer	80
Shovel	82
Compactors	82
Concrete Pumps, Mixers, Batch Plants	82-85
Cranes (movable)	83
Dozers	85
Front End Loader	75-96
Graders, Scrapers	85-89
Trucks	88
Rock Drills	98

Source: FHWA Construction Noise Handbook, 2006

Noise from construction equipment attenuates over distance because of spreading losses, absorption of the intervening terrain, and reflection off any intervening walls or berms. Spreading losses account for an attenuation factor of 6 dBA per doubling of distance. For “line- of-sight” noise in the absence of any intervening terrain, an estimated average peak 92 dBA level is projected at 50 ft. and would be reduced to 86 dBA at 100 ft., 80 dBA at 200 ft., 74 dBA at 400 ft., etc. This assumption is utilized for evaluating stationary construction noise associated with construction of the Lower Norco Bluffs Project. Construction activities typically generate noise at a short-term rate throughout the workday and do not result in long-term, steady noise generation.

Post-Construction

This project is not creating or establishing a new, permanent source of noise. Any noise impacts occurring after construction would be related to future maintenance activities. See section below.

Future Operation and Maintenance

Future maintenance of the Proposed Action Alternative would include routine inspections and minor repairs, of the Lower Norco Bluffs embankment and its associated features after construction is completed (see Section 2.4 for a detailed list of future maintenance activities). Maintenance operations and repairs would require temporary access to the embankment and may involve on-site activities that

generate noise. Routine and special inspection and patrol with pickup trucks and sport utility vehicles may occur up to daily during the flood season and up to weekly during the non-flood season. Additionally, mobilizing dump trucks to haul stones and use of hydraulic excavators to place stones to protect and reinforce the constructed embankment, as necessary during flood fight activities, are part of future maintenance activities. Similar to construction of the Proposed Action, these activities could result in temporary, short-term periodic noise from construction equipment use. Duration of these activities would be 7:00 a.m. to 6:00 p.m., Monday through Friday, with the exception of emergency repairs or flood fighting activities that are required to protect life and property. Due to the short-term nature of maintenance and repair activities, and due to construction activities being exempt if conducted within the indicated time periods, potential effects of future maintenance activities on noise are considered less than significant.

4.9.2.2 *No Action Alternative (Previously Approved Design)*

Under the No Action Alternative, project modifications included under the Proposed Action would not be implemented, and the project would be constructed as previously approved. Impacts due to this alternative would be the same as described in the 2001 Final SEIS/EIR and similar to the Proposed Action. As with the Proposed Action, construction and maintenance of this alternative would not significantly impact noise.

4.9.3 SUMMARY OF SIGNIFICANCE THRESHOLDS RELATED TO THE PROPOSED ACTION

The Proposed Action would not conduct construction outside of allowable hours per county and city noise ordinances without obtaining a variance or exemption. Therefore, potential effects on noise are considered less than significant.

4.10 SOCIOECONOMICS

The affected environment for socioeconomics is presented in Section 3.10 and does not include any substantially different conditions than were present when the Lower Norco Bluffs Project was previously approved.

As described in **Table 2-1**, the following are the primary differences between the Previously Approved Design and the Proposed Action, as relevant to socioeconomics: expansion of the TCE in the southern portion of the project. For the purposes of the SEA an EIR Addendum, analysis of potential noise impacts associated with project modification under the Proposed Action is provided below.

The significance of population and expenditure impacts are assessed in terms of their direct effect on the local economy and related effect on other socioeconomic resources (e.g., housing).

4.10.1 SIGNIFICANCE THRESHOLD

Impacts would be considered significant if the alternative results in:

- substantial shifts in population trends or adversely affect regional spending and earning patterns

4.10.2 ENVIRONMENTAL CONSEQUENCES

4.10.2.1 ***Proposed Action Alternative***

During Construction

Construction of the Lower Norco Bluffs Project under the Proposed Action would be short-term and would not attract a long-term worker population to the project area. The majority of the construction-related jobs are expected to be filled by both currently employed and unemployed labor force participants from the surrounding area, and construction of the proposed project would not increase the region's population. Implementation of the Proposed Action would neither place a demand on employment opportunities or housing, nor would it create significant new employment opportunities or housing in the region. In addition, minority or low-income communities would not be disproportionately affected by implementation of the proposed project. Local populations would directly benefit from construction of the Lower Norco Bluffs Project through the provision of bluff toe protection. The Proposed Action would have no adverse impact to socioeconomics.

Post-Construction

Any socioeconomics impacts occurring after construction would be related to future maintenance activities. See section below.

Future Operations and Maintenance

Future maintenance of the Proposed Action Alternative would include routine inspections and minor repairs, of the Lower Norco Bluffs embankment and its associated features after construction is completed (see Section 2.4 for a detailed list of future maintenance activities). Future maintenance activities would not have the potential to result in substantial shifts in population trends; adversely affect regional spending and earning patterns; or introduce overwhelming demand for public services or utilities. Therefore, no socioeconomic impacts would occur as a result of future maintenance.

4.10.2.2 ***No Action Alternative (Previously Approved Design)***

Under the Previously Approved Design, project modifications included under the Proposed Action would not be implemented, and the project would be constructed as described in the 2001 SEIS/EIR. In the 2001 SEIS/EIR, socioeconomic effects were described in the context of an environmental justice analysis. Much of the information described in this section is similar to information provided in the analysis. Potential effects to socioeconomics would be similar to those described for the Proposed Action, and construction of this alternative would result in socioeconomic impacts that are considered less than significant.

4.10.3 SUMMARY OF SIGNIFICANCE THRESHOLDS RELATED TO THE PROPOSED ACTION

The Proposed Action would not cause substantial shifts in population trends or adversely affect regional spending and earning pattern. The majority of the construction-related jobs are expected to be filled by labor force participants from the surrounding area, which would not create demand on employment opportunities or housing. Additionally, minority or low-income communities would not be disproportionately affected by implementation of the proposed project. Local populations would directly benefit from construction of the Lower Norco Bluffs Project through the provision of bluff toe protection. Therefore, the Proposed Action would have no adverse impact to socioeconomics.

4.11 PUBLIC SERVICES AND UTILITIES

The affected environment for public services and utilities is presented in Section 3.11 and does not include any substantially different conditions than were present when the Lower Norco Bluffs Project was previously approved.

As described in **Table 2-1**, the following are the primary differences between the Previously Approved Design and the Proposed Action, as relevant to public services and utilities: expansion of the TCE in the southern portion of the project. For the purposes of the SEA an EIR Addendum, analysis of potential public services and utilities impacts associated with project modification under the Proposed Action is provided below.

4.11.1 SIGNIFICANCE THRESHOLD

Impacts would be considered significant if the alternative results in:

- an increase to the size of the population and geographic area served, the number and type of calls for service, physical development, or an increase in demand for service that could result in capacity constraints to existing public service and utilities providers.
- existing utility systems adversely affected by the proposed embankment construction activities, without equitable replacement, protection, or relocation.

4.11.2 ENVIRONMENTAL CONSEQUENCES

4.11.2.1 *Proposed Action Alternative*

During Construction

Construction activities could result in a temporary increase in the potential of safety and health hazards, which could increase the need for police and/or fire services due to accidents caused by construction personnel or equipment. To avoid and minimize potential risks associated with safety and health hazards, the contractor would be required to comply with safety and health standards as outlined in Engineering Manual 385-1-1, which describes stringent safety and occupational health standards required by all Corps activities and operations. As a standard Corps practice to alleviate fire hazards, a water truck is always present during construction activities. Implementation of BMPs to reduce the risk of hazards could include development of an accident prevention plan, identification of a site safety and health officer, and regular work-site safety inspections. Additionally, although the Proposed Action could have the potential to result in a temporary increase in police and fire service calls, this increase would be short-term and would not result in a significant permanent demand on fire or police facilities serving the proposed project area.

The Proposed Action would also not create added pressures on the public service system. As described in the Socioeconomics section (section 4.10), a majority of the construction-related jobs are expected to be filled by both currently employed and unemployed labor force participants from the surrounding area, and construction of the proposed project would not increase the region's population.

The Proposed Action would also not substantially impact water supply. Water would be required for dust abatement, cleaning of construction equipment, and irrigation for vegetation activities. The amount of

water required would depend on the length of access roads, weather conditions, road surface conditions, and other site-specific conditions. However, water use for the Proposed Action would not affect availability of water for the local population or other needs of the City of Norco.

The Proposed Action would not substantially change any wastewater impacts compared to the Previously Approved design. Wastewater generated during construction would be limited to that generated by project personnel and would be accommodated by portable toilets brought to staging areas for construction crews. These portable toilets would be emptied into septic tanks or municipal sewage systems. Because this increase would be short-term and temporary, wastewater generated during project construction is not expected to significantly impact the capacity of the City of Norco in providing wastewater services to the project area.

The Proposed Action would not substantially change any solid waste impacts compared to the Previously Approved Design. Organic materials, trees, shrubs, and abandoned timber structures, would be disposed of by hauling to a commercial site. Topsoil containing organic material would not be disposed of at a commercial site, but would be stockpiled and spread on embankment slopes or borrow areas as a part of site restoration. Disposal of these materials by burning or burying at the proposed project site would not be permitted. Inorganic materials would include, but are not limited to, broken concrete, rubble, asphaltic concrete, metal, and other types of construction materials. Where possible, soil from excavation would be screened and separated for use as backfill materials at the site of origin to the maximum extent possible. Spoils unsuitable for backfill use would be disposed of at appropriate disposal sites. As identified in **Table 3-10**, the project area is served by the El Sobrante Landfill. Because the exact amount of material recycling is unknown, the total amount of waste requiring landfill disposal is unknown. Recycling activities would greatly reduce the quantity of construction-related materials transported to local landfills. It is assumed that the amount of construction waste would be a small percentage of the maximum daily throughput for El Sobrante. Therefore, construction waste generated by the proposed project would not substantially affect the remaining capacities of local landfills to serve local demands.

A number of utilities currently exist within the Proposed Action TCE, and some will require protection or relocation (new locations are currently unknown) due to the proposed project. **Figure 2.3-8** shows known utilities located in the project TCE. These include:

- Southern California Edison conductors within the Corydon Staging Area and abandoned wastewater treatment plant
- Transmission gas lines and gas points along Corydon Avenue
- ATT Conduit within the wastewater treatment plant

The Corps will coordinate with the appropriate jurisdictions prior to and during construction to ensure that only temporary disruptions occur to the services provided by the utilities mentioned above. Currently, no known utility relocations are required at this time. If utility modifications are determined to be required, equitable, replacement, protection, or relocation would occur.

Post-Construction

Any public services and utilities impacts occurring after construction would be related to future maintenance activities. See section below.

Future Operation and Maintenance

Future maintenance of the Proposed Action Alternative would include routine inspections and minor repairs, of the Lower Norco Bluffs embankment and its associated features after construction is completed (see Section 2.4 for a detailed list of future maintenance activities). No new workers would be required for future maintenance. Therefore, operation and maintenance of the embankment would not generate any additional population that could exceed the capacity of local public service providers. Periodic maintenance, as well as required maintenance following flood and scour events, would require relatively small amounts of material and would typically occur for only short periods of time. Consequently, any increases in fire or police calls would be temporary and not substantially alter the level of service of these providers. Demands on utilities during maintenance would also be temporary and relatively minor. As such, future maintenance is not expected to result in any significant impacts to public services and utilities.

4.11.2.2 *No Action Alternative (Previously Approved Design)*

Under the Previously Approved Design Alternative, construction related impacts or temporary increases in public services or utilities demand would occur, similar to the Proposed Action. Potential impacts to public services, water, wastewater, and solid waste would be similar to the representative scenario provided above for the proposed project. Therefore, temporary construction public services and utilities impacts associated with the Previously Approved Design Alternative would not result in any significant impacts.

4.11.3 SUMMARY OF SIGNIFICANCE THRESHOLDS RELATED TO THE PROPOSED ACTION

The Proposed Action would not result in any significant increase in demand for public services since the implementation of BMPs would reduce the risk of fire and safety hazards. Additionally, a majority of the construction-related jobs are expected to be filled by labor force participants from the surrounding area, which would not result in a substantial increase in the local population and increase public service needs. Wastewater and solid waste services would also not be significantly affected as wastewater generated during construction would be limited and as it is assumed that the amount of construction waste would be a small percentage of the maximum daily throughput for El Sobrante landfill. The Proposed Action does not currently anticipate the need to modify any existing utility structures in the project area. However, utility modifications are determined to be required, equitable, replacement, protection, or relocation would occur. Therefore, potential effects on public services and utilities are expected to be less than significant.

4.12 TRANSPORTATION

The affected environment for transportation is presented in Section 3.12 and does not include any substantially different conditions than were present when the Lower Norco Bluffs Project was previously approved.

As described in **Table 2-1**, the following are the primary differences between the Previously Approved Design and the Proposed Action, as relevant to transportation: modified composition of the embankment to include launchable rock instead of soil cement; filling of one side canyon and a system of v-ditches, catch basins, side drains, and culverts to assist drainage; relocation of the construction staging area; and the addition of a temporary access ramp at the southern end of the project. For the purposes of the SEA an EIR Addendum, analysis of potential earth resources impacts associated with project modification

under the Proposed Action is provided below.

Applicable Regulations

California Department of Transportation

Caltrans has jurisdiction over State highways and sets maximum load limits for trucks and safety requirements for oversized vehicles that operate on highways. The following Caltrans regulations apply to potential transportation and traffic impacts of the proposed project:

- Vehicle Code (CVC), division 15, chapters 1 through 5 (Size, Weight, and Load). Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways.
- Street and Highway Code §§660-711, 670-695. Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery, includes regulations for the care and protection of State and county highways and provisions for the issuance of written permits, and requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.

4.12.1 SIGNIFICANCE THRESHOLD

Impacts would be considered significant if the alternative results in:

- 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).

4.12.2 ENVIRONMENTAL CONSEQUENCES

4.12.2.1 *Proposed Action Alternative*

During Construction

The Proposed Action would result in temporary, short-term increases in local traffic as a result of construction-related vehicle trips. Specifically, construction of the Proposed Action will require approximately 300 combined maximum daily haul trips for fill material which will be hauled from a borrow site located 3 miles west of the Lower Norco Bluffs site (refer to **Figure 2.3-7**) and for rip rap material from a local quarry. Construction vehicles would access the site from Cucamonga Avenue, Chino Corona Road, River Road, Bluff Street, Shadow Canyon Circle and Corydon Avenue.

Based on the above, it is assumed construction-related traffic would be dispersed amongst SR-91 and I-15 for regional access to the Proposed Action area, and Cucamonga Avenue, Chino Corona Road, River Road, Bluff Street, Shadow Canyon Circle, Corydon Avenue, Norco Drive, and Sixth Street for site access. Therefore, these roadways would likely experience the majority of Proposed Action related traffic. **Table 3-11** shows the most recently published annual average daily traffic (AADT) volumes on the segments of these roadways nearest the Proposed Action site. Given the high volume of existing traffic on these roadways (as shown in **Table 3-11**), the anticipated maximum construction related traffic of approximately 300 daily trips would account for a minimal increase of existing average daily traffic volumes along utilized roadways. This short-term increase in daily traffic volumes is considered unlikely to exceed the capacity of these roadways or

exceed any applicable Riverside County General Plan performance standard (refer to Section 3.12). Therefore, temporary construction related traffic impacts to the existing traffic load and capacity of the utilized roadway system would be less than significant.

During construction, the primary construction staging area for the Proposed Action would be located off of Corydon Avenue in the Corydon Equestrian Staging Area and overflow parking lot for the Wayne-Makin Shearer Sports Complex. The construction staging area is approximately 500 feet north of the nearest residential receptor (refer to **Figure 2.3-3**). In the event any oversize loads would occur during construction on public roadways, they must comply with Caltrans regulations regarding oversize load limits and permits. Additionally, all site access points will be clearly designated and would likely have controlled entrance, thus eliminating roadway hazards. Therefore, less than significant safety impacts would occur to local roadways during construction.

Post-Construction

The Proposed Action will be constructed along the Santa Ana River and would not introduce any new road hazards such as sharp curves or dangerous intersections. It is assumed that once the Proposed Action is operational, site access would be gate-controlled. See Future Operations and Maintenance section below for potential impacts to roadway capacity and traffic.

Future Operations and Maintenance

Future maintenance of the Proposed Action would include routine inspections and minor repairs, of the Lower Norco Bluffs embankment and its associated features after construction is completed (see Section 2.4 for a detailed list of future maintenance activities). Mobilizing dump trucks to haul stones and use of hydraulic excavators to place stones to protect and reinforce the constructed embankment, as necessary during flood fight activities, are part of routine operation and maintenance. Number of vehicle trips required for stone replacement maintenance would be dependent on the amount of stone removed during a flood event. The replacement of stone is expected to occur infrequently, and more trips would likely be necessary during the winter months compared to the summer months. Similar to construction traffic, these trips would be dispersed amongst I-15 and SR-91 for regional access, and utilize Norco Drive, Corydon Avenue, and Shadow Canyon Circle to access the Lower Norco Bluffs project site. Any permanent increase in traffic would be infrequent and would account for a negligible increase to average daily trips along utilized roadways (per traffic volumes shown in **Table 3-11**). As discussed above, maintenance related traffic would account for a negligible increase of daily trips along utilized roadways (per traffic volumes shown in **Table 3-11**). Therefore, future maintenance activities would not have a significant effect on roadway capacity, traffic, or roadway hazards.

4.12.2.2 No Action Alternative (Previously Approved Design)

Under the Previously Approved Design Alternative, project modifications included under the Proposed Action would not be implemented, and the Lower Norco Bluffs Project would be constructed as previously approved. Construction and maintenance of the Previously Approved Design Alternative is assumed to require the same or similar daily vehicle trips to that of the Proposed Action. Therefore, the analysis of construction related traffic generation would be similar or identical to that provided above for the Proposed Action. Less than significant impacts would occur from construction and maintenance vehicle trips of the Previously Approved Design Alternative. Similar to the Proposed Action, It is assumed that once the Previously Approved Design Alternative is operational, site access would be gate-controlled. Therefore, no traffic safety hazards impacts would occur from construction and operation of the Previously Approved

Design Alternative.

4.12.3 SUMMARY OF SIGNIFICANCE THRESHOLDS RELATED TO THE PROPOSED ACTION

The Proposed Action would account for a minimal increase of existing average daily traffic volumes along utilized roadways during construction. This short-term, minimal increase in daily traffic volumes is considered unlikely to exceed the capacity of these roadways or exceed any applicable county performance standards. Any increase in traffic volumes related to future maintenance would be dependent on the type of maintenance activity occurring, but would likely be negligible and temporary. Therefore, potential effects to traffic are considered less than significant.

4.13 HAZARDOUS MATERIALS

The affected environment for hazardous materials is presented in Section 3.13. The previously identified construction staging area in the abandoned wastewater treatment plant is currently undergoing a Phase III Environmental Site Assessment. Results of the assessment are anticipated in Summer 2020.

As described in **Table 2-1**, the following are the primary differences between the Previously Approved Design and the Proposed Action, as relevant to hazardous materials: expansion of the TCE in the southern portion of the project and relocation of the construction staging area. For the purposes of the SEA an EIR Addendum, analysis of potential public services and utilities impacts associated with project modification under the Proposed Action is provided below.

4.13.1 SIGNIFICANCE THRESHOLD

Impacts would be considered significant if the alternative results in:

- a potential public health hazard involving the use, production, or disposal of materials, which pose a hazard to people or animal or plant population in the area affect; or
- a significant hazard to the public or the environment through reasonably foreseeable upset and accident condition involving the release of hazardous materials into the environment

4.13.2 ENVIRONMENTAL CONSEQUENCES

4.13.2.1 *Proposed Action*

During Construction

Small quantities of hazardous materials would be stored, used, and handled during construction of the Proposed Action, including petroleum hydrocarbons and their derivatives (e.g., diesel, gasoline, oils, lubricants, and solvents) to operate the construction equipment. These materials would be contained within vessels engineered for safe storage. Storage of substantial quantities of these materials along the embankment is not anticipated. Furthermore, construction vehicles may require on-site fueling, or routine or emergency maintenance that could result in the release of oil, diesel fuel, transmission fluid or other materials; however, the materials would not be used in quantities or stored in a manner that would pose a significant hazard to the public or the workers themselves. Therefore, impacts from general construction activities would be less than significant. The potential for an accidental release of toxic

materials from construction vehicles (e.g., oil and diesel fuel) would be mitigated by the fueling and servicing of construction vehicles in protected areas so that fluids would be contained within an isolated or impervious area a safe distance from the active flow path. Spills or leaks would be cleaned up immediately, and any contaminated soil would be disposed of properly.

As standard Corps practice to alleviate fire hazards, a water truck is always present during construction activities. In addition, Corps construction projects must comply with the fire prevention and protection practices set forth in the Corps' Safety and Health Requirements Manual (EM 385-1-1). The provisions of EM 385-1-1 are incorporated into all Corps construction specifications, and the contractor is required to prepare a fire prevention and protection plan for the construction project.

Post-Construction

The Proposed Action would not require long-term storage, treatment, disposal, or transport of substantial quantities of hazardous materials.

Future Operations and Maintenance

Future operations and maintenance of the Proposed Action would include routine inspections and minor repairs, of the Lower Norco Bluffs embankment and its associated features after construction is completed (see Section 2.4 for a detailed list of future maintenance activities). These activities would not create impacts to public safety.

4.13.2.2 *No Action Alternative (Previously Approved Design)*

Effects of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Under the Previously Approved Design, the design modifications of the Proposed Action would not be implemented, and the Lower Norco Bluffs Project would be constructed as previously approved. Impacts on hazardous materials through the implementation of this alternative would be similar to that of the Proposed Action, and no impacts to public safety would occur.

4.13.3 SUMMARY OF SIGNIFICANCE THRESHOLDS RELATED TO THE PROPOSED ACTION

The Proposed Action would require use, storage and handling, of small quantities of hazardous materials during construction, however BMPs would be implemented to reduce the risk of safety and health hazards. Hazardous materials would be properly stored, and the potential for an accidental release of toxic materials from construction vehicles would be mitigated by fueling and servicing construction vehicles in protected areas. Spills or leaks would be cleaned up immediately, and any contaminated soil would be disposed of properly. As standard Corps practice to alleviate fire hazards, a water truck is always present during construction activities. In addition, Corps construction projects must comply with the fire prevention and protection practices set forth in the Corps' Safety and Health Requirements Manual (EM 385-1-1). The provisions of EM 385-1-1 are incorporated into all Corps construction specifications, and the contractor is required to prepare a fire prevention and protection plan for the construction project. Therefore, potential effects related to hazardous materials would be considered less than significant.

5 CUMULATIVE IMPACTS

A cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time in the proposed activity area. Those actions could be undertaken by various agencies (federal, state, or local) or private entities. A discussion of cumulative impacts resulting from actions and projects that are proposed, under implementation, or reasonably anticipated to be implemented in the near future is required.

Cumulative environmental impacts are most likely to arise when a relationship exists between a proposed activity and other projects expected to occur in a similar location, time period, and/or involving similar actions. Projects in proximity to the proposed project activities would be expected to have more potential for a relationship that could result in potential cumulative impacts than those more geographically separated.

This cumulative impact discussion analyzes cumulative projects located within approximately two miles of the Lower Norco Bluffs Project area that could have the ability to combine with impacts from the Proposed Action. These projects are summarized in **Table 5-1**. Projects that occur further away are assumed to be outside of the influence of the Proposed Action. For instance, construction noise would not be heard at that distance, minor hydrologic or water quality effects would dissipate, and biological effects would most likely be limited to plant and animal species within the geographically local area.

The assessment focuses on addressing the following: (1) the area(s) in which the effects of the proposed project would be felt; (2) the effects that are expected in the area(s) from the proposed project; (3) past, present, and reasonably foreseeable future actions that have or that are expected to have impacts in the same area; (4) the impacts or expected impacts from these other actions; and (5) the overall impact(s) that can be expected if the individual impacts are allowed to accumulate.

Table 5-1. Cumulative Projects in the Proposed Action Vicinity

Project Name	General Location	Description
River Road Dike (Santa Ana River Mainstem Project)	The project site is within the City of Norco along River road on the easterly side of the Prado Basin reservoir.	The purpose of this project is to provide flood-risk reduction to nearby residential developments, businesses, and infrastructure from reservoir expansion that results from raising Prado Dam. <i>Construction is scheduled to begin October 2020 and complete in May 2022</i>
Santa Ana River Mainstem Mitigation Areas (Norco site and Target Areas 1-4)	The Norco site is located east of Archibald Ave., northwest of Norco Dr., and south of Riverwalk Park in Norco, CA. Target Areas 1-4 are located within the Santa Ana River Floodplain downstream of the Norco site and along Temescal Creek.	This project includes several mitigation parcels that have been restored, through arundo removal, to offset construction impacts related to SARMP. <i>Monitoring, management, and maintenance of the restoration sites will continue in perpetuity.</i>
Hamner Ave Bridge	The bridge site is near the border between Norco and Eastvale, approximately 1,300 feet to the west of the I-15 Bridges over the Santa Ana River in the City of Norco, California.	The purpose of the project is to replace the existing 2-lane bridge with a 6-lane bridge to provide enhance public safety and traffic circulation in the area. <i>Construction is scheduled to start January 2021 and complete January 2023</i>
I-15 Bridge	Along the I-15 between State Route 60 and Cajalco Road	The Riverside county Transportation Commission in partnership with Caltrans and the Federal Highway Administration, is adding two express lanes to I-15 in both directions, widening 11 bridges, and adding six soundwalls. The project will be built within the existing median and offer multiple entrance and exit points to the express lane. <i>Construction is on-going and scheduled to complete in the second half of 2020</i>
Santa Ana River Trail	The proposed Santa Ana River Trail would be located approximately 2500 ft. northwest of the project area. This system is currently continuous in the immediate project vicinity, but not continuous through the City of Norco.	The 22-mile Santa Ana River trail is divided into three sections: Lower, Middle, and Upper, and includes bicycle trails and hiking/equestrian trails. The Upper trail consists of proposed trail alignments that would cross adjacent the Lower Norco Bluffs Project area. <i>Construction of some segments is on-going and anticipated to be completed in 2025 or later, pending further reviews and approvals by the Corps and other regulatory agencies.</i>

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		<i>Construction within Prado Basin, if approved, would also depend on timing for completion of SARMP features.</i>
RCRCD Conservation Easement	The conservation lands are located adjacent to the north side of the proposed project.	RCRCD purchased 111 acres on the main stem of the Santa Ana River near Norco and Eastvale. <i>Arundo donax</i> has invaded the riparian habitat and the invasive weeds are being removed to help restore the area to a plant community with native species. <i>Active restoration is on-going</i>
Abandoned Wastewater Treatment Plant Phase III Environmental Site Assessment	The abandoned wastewater treatment plant is located adjacent to the proposed project and staging area.	There is currently an HTRW Phase III Environmental Site Assessment being conducted by the GSA at the abandoned wastewater treatment plant off of Corydon Avenue, adjacent to the project footprint. <i>Results from the assessment are anticipated during Summer 2020.</i>

5.1 WATER RESOURCES AND HYDROLOGY

Construction activities for the Proposed Action would not have water resources, and hydrology impacts above and beyond those determined in the 2001 Final SEIS/EIR, which were largely characterized by other flood control projects within and downstream of the Prado Basin. As discussed in previous sections, the Proposed Action would be in full compliance with applicable laws and regulations, as well as environmental commitments identified in the 2001 Final SEIS/EIR and in Section 6 of this document. As such, potential impacts to water resources and hydrology would be site-specific and not significant. Water resources and hydrology impacts of the Proposed Project would not singly, or cumulatively, combine with similar impacts of other projects as significant impacts. Also, the Proposed Project would provide bluff toe protection to adjacent developed areas. Furthermore, as described in Section 2 of this draft SEA, the Proposed Action would contribute to the national economic development (NED) objective of providing flood protection for the surrounding area. Other flood control projects in the cumulative scenario would also contribute to this NED objective, resulting in an overall benefit. Therefore, cumulative impacts on water resources and hydrology from the Proposed Action would be less than significant.

5.2 AIR QUALITY

The SCAQMD regional analysis focuses on whether a specific project would result in a cumulatively considerable increase in emissions. By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development within the Basin, and this regional impact is cumulative rather than being attributable to any one source. A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects.

The primary air quality impacts of the Proposed Action would occur during construction, since the operational impacts would result from limited vehicle trips for future operations and maintenance activities. The SCAQMD thresholds of significance were developed in order to ensure compliance with the SIP. Pursuant to Clean Air Act regulations at 40 CFR 932.158(a)(5)(v), emissions of ozone (i.e., VOC and NOx - the precursors to ozone) or NO₂ are deemed to be in compliance with applicable SIP for projects where the action involves regional water and/or wastewater projects. Furthermore, as indicated in Section 4.4.4 of the 2001 SEIS/EIR, the project is sized to meet the population projection in the SIP. As a result, emissions of VOC, NOx, and NO₂ are deemed to be in compliance with the SIP and a conformity analysis is not required for these pollutants. Based on the above, NOx emissions would be in compliance with the SIP. Impacts would be less than significant cumulatively.

5.3 EARTH RESOURCES

Construction activities for the Proposed Action would not have earth resources impacts above and beyond those determined in the 2001 Final SEIS/EIR. As discussed in previous sections, the Proposed Action would be in full compliance with applicable laws and regulations, as well as environmental commitments identified in the 2001 Final SEIS/EIR and in Section 6 of this document. As such, potential impacts to earth resources would be site-specific and not significant. Earth resources impacts of the Proposed Project would not singly, or cumulatively, combine with similar impacts of other projects as significant impacts. Therefore, cumulative impacts on earth resources from the Proposed Action would be less than significant.

5.4 BIOLOGICAL RESOURCES

Continued development in the region has resulted in substantial losses of habitat and produced extensive habitat fragmentation. Impacts from increased development have caused wildlife population and habitat isolation, constrained or obstructed movement and connectivity, reduced genetic exchange among and between wildlife populations, declining populations due to fragmentation, increasing wildlife mortality caused by vehicle collisions, and behavioral changes such as habitat avoidance. It is assumed that all actions that result in habitat disturbance (other than mitigation or restoration efforts, which typically have a restoration plan with methods for reducing potential impacts) would include offsetting measures to address individual impacts. Therefore, cumulative impacts on biological resources from the Proposed Action would be less than significant.

5.5 CULTURAL RESOURCES

There are two recorded archeological sites, CA-RIV-1042 and -1043, within the Norco Bluffs project area, however neither site was evaluated for eligibility for listing in the National Register, and the sites have not been able to be relocated. Additional surveys are scheduled to occur in Spring 2020. Results from findings and analysis of effects will be disclosed in the Final Draft of the SEA; however, in-tact archaeological sites are considered unlikely within the project footprint. If in-tact archaeological sites are not located, the Proposed Action would not result in significantly diminished cumulative scientific and cultural value of such resources in the region. It is expected that the Proposed Action, in conjunction with ongoing and future actions, would not contribute significantly to the loss of cultural values or data within the basin, especially if the resources are not located. Therefore, cumulative impacts on cultural resources from the Proposed Action would be less than significant.

5.6 LAND USE

Land use impacts tend to be localized, affecting properties in the immediate vicinity of the project. As discussed in Section 4.6 (Land Use), the Proposed Action would not be incompatible with existing land uses and would not be inconsistent with applicable plans and policies. Potential land use impacts from the Proposed Action would affect existing recreational land uses surrounding the site. Therefore, the Proposed Action would not contribute to cumulative impacts from other projects scheduled to occur in the area. Therefore, cumulative impacts on land use from the Proposed Action would be less than significant.

5.7 AESTHETICS

The activities associated with the Proposed Action would be short-term, localized, and would not significantly impact or conflict with visual resources (see Section 4.7). Therefore, the proposed project would not contribute to a degradation or alteration of the scenic viewscape. As such, no cumulative aesthetics impacts would occur.

5.8 RECREATION

As described in Section 4.8 (Recreation), implementation of the Proposed Action would temporarily interfere with recreational activities in the immediate vicinity, including access to trails along Shadow

Canyon Circle, and permanently interfere with trail access along Alhambra Street. It would also temporarily reduce parking availability for the adjacent Wayne-Makin Shearer Sports Complex. Because of the number of equestrian trails available in the vicinity and the temporary nature of other impacts to recreational activities, the potential effects would be less than significant. The cumulative projects listed in **Table 5-1** would not result in the elimination or replacement of recreation uses or facilities. The City of Corona Santa Ana River Trail, listed in **Table 5-1**, would improve and increase recreational opportunities in the Lower Norco Bluffs Project vicinity. With the implementation of environmental commitments for recreation described in Section 6 (Environmental Commitments) and Section 4.8 (Recreation), no contribution to cumulative impacts in the region would occur.

5.9 NOISE

With regard to a cumulative increase in temporary noise levels of the Proposed Action construction in conjunction with construction of cumulative projects identified in **Table 5-1**, The Proposed Action construction would temporarily increase ambient noise levels in the vicinity of the Proposed Action area. As discussed in Section 3.0 (Affected Environment), the nearest sensitive receptors are located adjacent to the TCE off of Shadow Canyon Circle. Construction activities associated with other projects in close proximity to the Proposed Action (as identified in **Table 5-1**) could potentially occur at the same time as the Proposed Action and further increase noise levels at these sensitive receptor locations. However, due to the distances and construction timing of projects identified in **Table 5-1**, it is unlikely that construction noise from the Proposed Action would combine with construction noise from those projects to increase potential cumulative construction noise impacts to sensitive receptors. In the event this occurred, these impacts would be temporary and of short duration. While mobile construction vehicles bringing construction supplies to cumulative project sites could share travel routes with the Proposed Action, it is assumed these shared routes would be limited to regional access roadways (I-15 and SR-91). Due to the traffic volumes on these roadways, no significant cumulative noise from mobile construction sources would occur to sensitive receptors along shared travel routes.

Each cumulative project identified in **Table 5-1** would be required to comply with local noise ordinances. However, per discussion in Section 4.0 (Environmental Consequences), as long as construction activities occur during 7:00 a.m. to 6:00 p.m., Monday through Friday, which are the exempted time periods per county and city ordinances; any changes to that schedule, including occasional overtime work, would require obtaining a variance from local authorities. As a result, the Proposed Action would not result in significant construction or operational noise impact. Therefore, while overall development of the Lower Norco Bluffs Project area could result in cumulative temporary and permanent increases to existing ambient noise levels, the Proposed Action would have a minimal cumulative contribution to these potential noise impacts. Therefore, noise impacts of the Proposed Action would not combine with impacts of present and reasonably foreseeable projects to result in a significant cumulative impact.

5.10 SOCIOECONOMICS

The Proposed Action would not create socioeconomic impacts to any adjacent communities in the region (see Section 4.10). As such, implementation of the Proposed Action would not contribute to an incremental socioeconomic effect that would be cumulatively considerable.

5.11 PUBLIC SERVICES AND UTILITIES

The Proposed Action would have no significant impacts on public services and utilities (See Section 4.12). As such, the proposed project would not contribute to an incremental impact on public services and utilities that would be cumulatively considerable.

5.12 TRANSPORTATION

Cumulative projects within the area (as identified in **Table 5-1**) will generate trips to and from the respective project sites using local roadways. The combined contribution of these vehicle trips could result in an increase to existing roadway network levels of service. However, each project identified in **Table 5-1** would be required to comply with the performance standards identified in the Riverside County General Plan (Refer to Section 4.13). While development of cumulative projects identified in **Table 5-1** will result in a cumulative addition to traffic volumes on study area roadways, the Proposed Action's contribution to this impact would be minimal during both construction and operation (refer to Section 4.13). Additionally, proposed haul routes were developed to avoid roadways on the eastside of the project area to avoid and prevent traffic congestion associated with nearby Hamner Bridge and I-15 Bridge construction projects. Therefore, the contribution of the Proposed Action to cumulative impacts would be less than significant.

5.13 HAZARDOUS MATERIALS

As discussed in Section 4.11, the Proposed Action would not substantially increase the risks associated with hazardous materials. The construction of the proposed project would be a beneficial impact. Therefore, safety risks associated with the proposed project would not result in a significant cumulative impact.

6 ENVIRONMENTAL COMMITMENTS

The following environmental commitments have been incorporated into the proposed project for the purpose of minimizing environmental effects. Many of these commitments were included in the 2001 SEIS/EIR and other related documents. Updates and additional information are provided in brackets, and new commitments or measures that were developed subsequent to the 2001 SEIS/EIR are prefaced with "EC-".

Air Quality

- AQ-1 The project construction contractor shall retard diesel engine injection timing by two degrees before top center on all construction equipment that was manufactured before 1996, and which does not have an existing IC engine warranty with the manufacturer. The contractor shall provide a certification from a third-party certified mechanic prior to start of construction, stating the timing of all diesel-powered construction equipment engines have been retarded two degrees before top center.
- AQ-2 The project construction contractor shall use high-pressure injectors on all diesel engines that were manufactured before 1996, and which do not have existing IC engine warranties with

the manufacturer. The contractor shall provide documentation of warranty and manufacture date or a certification from a third-party certified mechanic stating that all diesel construction equipment engines are utilizing high-pressure fuel injectors.

- AQ-3 The project construction contractor shall use Caterpillar pre-chamber diesel engines or equivalent, and perform proper maintenance and operation.
- AQ-4 The project construction contractor shall electrify equipment, where feasible.
- AQ-5 The project construction contractor shall restrict the idling of construction equipment to 10 minutes.
- AQ-6 The project construction contractor shall ensure that equipment will be maintained in proper tune to prevent visible soot from reducing light transmission through the exhaust stack exit by more than 20 percent for more than 3 minutes per hour and use low-sulfur fuel as required by SCAQMD regulation.
- AQ-7 The project construction contractor shall use catalytic converters on all gasoline equipment (except for small [2-cylinder] generator engines). If this measure is not implemented, emissions from gasoline equipment shall be offset by other means (e.g., Emission Reduction Credits).
- AQ-8 The project construction contractor shall cease construction during periods of high ambient ozone concentrations (i.e., Stage 2 smog alerts) near the construction area (SCAQMD, 1993).
- AQ-9 The project construction contractor shall schedule all material deliveries to the construction spread outside of peak traffic hours, and minimize other truck trips during peak traffic hours, or as approved by local jurisdictions.
- AQ-10 The project construction contractor shall use only solar powered traffic signs (no gasoline-powered generators shall be used).

The following measures will be implemented to reduce construction emissions of PM10:

- AQ-11 The project construction contractor shall apply non-toxic soil stabilizers according to manufacturers' specification to all inactive construction areas (previously graded areas inactive for 10 days or more; soil stock piled for 2 days or more).
- AQ-12 The project construction contractor shall enclose, cover, water twice daily, or apply non-toxic soil binders according to manufacturers' specifications to exposed stock piles (i.e., gravel, sand, dirt) with 5 percent or greater silt content.
- AQ-13 In areas where dewatering is not required, the project construction contractor shall water active grading/excavation sites at least twice daily.
- AQ-14 The project construction contractor shall increase dust control watering when wind speeds exceed 15 miles per hour for a sustained period of greater than 10 minutes, as measured by an anemometer. The amount of additional watering would depend upon soil moisture content at the time; but no airborne dust should be visible.

- AQ-15 The project construction contractor shall suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph (40 kph).
- AQ-16 The project construction contractor shall ensure that trucks hauling dirt on public roads to and from the site are covered and maintain a 50 mm (2 in) differential between the maximum heights of any hauled material and the top of the haul trailer. Haul truck drivers shall water the load prior to leaving the site to prevent soil loss during transport.
- AQ-17 The project construction contractor shall ensure that graded surfaces used for off-road parking, materials lay-down, or awaiting future construction are stabilized for dust control, as needed.
- AQ-18 The project construction contractor shall sweep streets in the project vicinity once a day if visible soil material is carried to adjacent streets.
- AQ-19 The project construction contractor shall install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip.
- AQ-20 The project construction contractor shall apply water three times daily, or apply non-toxic soil stabilizers according to manufacturers' specifications to all unpaved parking, staging areas, or unpaved road surfaces.
- AQ-21 The project construction contractor shall ensure that traffic speeds on all unpaved roads to be reduced to 15 mph (25 kph) or less.
- AQ-22 Prior to the approval of plans and specifications, the USACE shall ensure that plans and specifications specify that all heavy equipment shall be maintained in a proper state of tune as per the manufacturer's specifications.

Biological Resources

- BR-1 The USACE shall develop and implement a monitoring program that entails surveys for least Bell's vireo and southwestern willow flycatcher in spring and early summer during construction. In addition a monitoring protocol will be developed and implemented for raptor monitoring including bald and golden eagles in both the project area and borrow site area during construction. If eagles are foraging, the Corps will coordinate with the Contracting officer Representative and USFWS to develop appropriate avoidance measures.
- BR-2 The construction contractor shall keep grading activities associated with the project construction to a minimum and existing root systems will be left intact to the extent feasible.
- BR-3 The construction contractor shall clear vegetation associated with project construction within potential vireo or flycatcher habitat only during period when least Bell's vireo and southwestern willow flycatcher are not nesting (nesting period is from February 28 – August 15).

- BR-4 The Corps biologist (or the environmental monitor) will monitor construction activities to assure that vegetation is removed only in designated areas and compliance with commitments. Riparian areas not to be disturbed will be flagged.
- EC-BR-5 In compliance with the 2012 BO Amendment, the Corps will mitigate for habitat impacts by restoring (through arundo removal and other non-native removal at an offsite location) one acre of riparian habitat for each acre of wetland/riparian habitat temporarily disturbed and restoring five acres for each acre of permanent impact to riparian/wetland habitat to be maintained in perpetuity (**Table 4-9**). This will equate to 161.8 acres of off-site mitigation to compensate for 27.96 acres of permanent impacts to riparian habitat and 21.45 acres of temporary impacts to riparian/wetland habitat. The 1:1 off-site mitigation requirement for temporary to riparian/wetland habitat impacts assumes that the restored area will be actively maintained in perpetuity. (The Corps also has the option of compensating for temporary impacts to riparian/wetland habitat by restoring three acres in an off-site location for each acre affected (3:1), and maintaining the restored area for a period of five years only.) In addition, all temporarily affected areas will be restored on-site by hydroseeding of native vegetation communities, as approved by USACE. Acreage of actual disturbance will be documented and compared to acreage restored; any shortfalls will be addressed through additional mitigation.
- EC-BR-6 The USACE shall restore each acre of riparian vegetation that is temporarily disturbed during construction-related activities (21.45 acres) and shall keep all temporarily disturbed areas free of exotic plants until riparian vegetation is re-established. If the site has not begun to recover within 5 years (i.e., 50 percent of the disturbed areas are not vegetated with young riparian vegetation), then the site will be replanted with cuttings from native riparian species.
- EC-BR-7 In compliance with the 2012 BO Amendment, the USACE will restore (through arundo and other non-native removal) three acres of riparian habitat for each acre of non-riparian floodplain habitat permanently impacted by the project (**Table 4-9**). This will equate to 25.50 acres of off-site restoration to compensate for 8.98 acres of permanent impacts to non-riparian habitat. All temporarily impacted areas will be restored onsite, with appropriate vegetation communities approved by the USACE. The USACE shall maintain temporarily impacted, non-riparian areas for 8 years post-construction. Acreage of actual disturbance will be documented and compared to acreage restored; any shortfalls will be addressed through additional mitigation.
- EC-BR-8 The USACE or Sponsor shall implement or contribute funding to a cowbird trapping program within Prado Basin during the construction of the project and for 5 years after completion. Sufficient funding shall be provided to maintain at least 5 traps during vireo nesting season within the vicinity of the Norco Bluffs project area.
- EC-BR-9 Construction personnel will strictly limit their activities, vehicles, equipment, and construction materials to the TCE including designated borrow areas, staging areas or routes of travel. The construction area(s) will be the minimal area necessary to complete the Proposed Project and will be specified in the construction plans. Highly visible barriers (such as orange construction fencing or sound walls) will be installed around all riparian

and sensitive habitats adjacent to the TCE to designate limits of construction activities. These barriers will be maintained until the completion of all construction activities.

- EC-BR-10 Noise barriers will be constructed where the project borders riparian habitat or at the recommendation of a qualified biologist (or repaired) prior to February 14 of each year to minimize impacts to listed species and nesting birds. The construction contractor will be required to monitor noise regularly during the nesting season (February 15 – August 15), as all work will be within 500 feet of riparian habitat. Ambient noise levels will be recorded prior to the nesting season, or prior to construction during that period. If construction noise levels exceed authorized limits (per the 2001 and 2012 BO or as otherwise agreed to by the Service), the Contractor will construct or modify sound barriers, equipment, or procedures (including construction schedules) as necessary to meet these conditions to ensure that: 1) noise does not exceed 60 dBA, or otherwise agreed upon limit with the Service, within occupied vireo habitat; or, (2) noise does not exceed 5 dBA above ambient conditions if said levels are above 60 dBA, or another agreed upon limit. If construction noise levels within riparian habitat areas outside of the project footprint cannot be reduced below 60 dBA or another agreed upon and documented limit, during the period of February 15 through August 15 of any year, the Corps will offset impacts at a 1:1 ratio per breeding season affected by such noise levels. This 1:1 ratio will be based on the acreage of riparian habitat outside the project footprint subject to noise levels over 60 dBA, or 5 dBA above ambient, or other agreed upon limit, during the noted period, per the number of breeding seasons affected (e.g., 1 acre of riparian, habitat affected by noise in two breeding seasons will result in 2 acres of restoration). The area affected will be determined by the periodic project noise monitoring.
- EC-BR-11 Prior to construction activities, a Corps qualified biologist (or the environmental monitor) shall conduct pre-construction environmental training for all construction crew members. The training shall focus on required avoidance/minimization measures and conditions of regulatory agency permits and approvals (if required). The training shall also include a summary of sensitive species and habitats potentially present within and adjacent to the project site.
- EC-BR-12 Dust control measures will be implemented during the construction phase to reduce excessive dust emissions. Methods for reducing dust emissions may include wetting work areas by water truck on a regular basis such as dirt access roads and sediment stockpiles, as well as covering truck beds carrying material and stockpiles.
- EC-BR-13 Prior to any ground-disturbing activities (e.g. mechanized clearing or rough grading) for all project related construction activities, a Corps qualified biologist (or environmental monitor) shall conduct a pre-construction surveys of the project site for terrestrial special-status, including Multiple Species Habitat Conservation Plan (MSHCP) covered, wildlife species. During these surveys the biologist will:
- a. Inspect the project area for any sensitive wildlife species;
 - b. In the event of the discovery of a non-listed, special-status ground-dwelling animal such as a burrowing owl or special-status reptile, attempts will be made to recover and relocate the animal to adjacent suitable habitat within the project site at least 200 feet from the limits of construction activities. Burrowing owl surveys and relocations would

follow established protocols.

- EC-BR-14 The USACE or contracted biologists will continue to monitor and survey the project area, borrow area, and adjacent habitats throughout construction and restoration activities for the presence of special status species, and shall confirm that conservation measures are sufficient to avoid or minimize impacts to these species, or shall recommend additional measures as warranted.
- EC-BR-15 Upon construction completion the contractor will immediately re-vegetate bare and disturbed areas with a native hydroseed mix approved by USACE, and depending on the time of year the hydroseed is placed, temporary supplemental watering may be needed. Watering need and frequency for hydroseeded areas will be approved by USACE to ensure success germination and establishment of native vegetation.
- EC-BR-16 Best management practices shall be implemented to reduce impacts to native habitats, including the following:
- a. All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other toxic substances will occur in developed or designated non-sensitive upland areas. These areas will implement BMPs to prevent runoff carrying toxic substances from entering the Santa Ana River and associated drainages. If a spill occurs outside of a designated area, the cleanup will be immediate and documented.
 - b. Fire suppression equipment including shovels, water, and extinguishers will be available onsite during the fire season (as determined by Riverside County Fire Department) and when activities may produce sparks. Emergency contacts for the Norco Fire Station No. 57 on Corydon Avenue will be established.
 - c. To the extent feasible, the contractor will prevent exotic weeds from establishing within the work site during construction. Construction equipment will be cleaned of mud or other debris prior to mobilizing and before leaving the site to reduce the potential spread of invasive plants and/or seeds.
- EC- BR-17 To avoid and reduce impacts to Santa Ana sucker, no work will take place within the main channel of Santa Ana River. In addition, during the construction phase the contractor will construct an earthen berm on the inside edge of the TCE bordering the main channel of the Santa Ana River. The purpose of the berm is to reduce the likelihood of channel flows entering the project site during a storm event, thus avoiding impacts to Santa Ana sucker by exclusion from the project area. If the berm fails and channel flows enter the project site, all work in the flooded area will cease until the biological monitor confirms that work can recommence. The decision to restart will be based on the following:
- a. Assessment of Santa Ana sucker presence within the project area, via surveys employing techniques such as block nets and electro-fishing,
 - b. Removal of fish present and,
 - c. Lack of channel flows entering the project site within the foreseeable immediate future.
- EC-BR-18 To additionally reduce potential impacts to Santa Ana Sucker, the USACE will contract

localized sucker predator removal for 5 years. The location within Santa Ana River and methodologies will be developed in coordination with the USFWS, within one year of the project start.

Water Resources and Hydrology

- EC-WR-1 Construction Stormwater Pollution Prevention Plan. A Construction Stormwater Pollution Prevention Plan (SWPPP) shall be developed for the project by the construction contractor, and filed with the Santa Ana Regional Water Quality Control Board (RWQCB) prior to construction. The SWPPP shall be stored at the construction site for reference or inspection review. Implementation of the SWPPP would help stabilize graded areas and waterways, and reduce erosion and sedimentation. The plan would designate BMPs that would be adhered to during construction activities. Erosion minimizing efforts such as straw wattles, water bars, covers, silt fences, and sensitive area access restrictions (for example, flagging) would be installed before clearing and grading begins. Mulching, seeding, or other suitable stabilization measures would be used to protect exposed areas during construction activities. During construction activities, measures would be in place to ensure that contaminants are not discharged from the construction sites. The SWPPP would define areas where hazardous materials would be stored, where trash would be placed, where rolling equipment would be parked, fueled and serviced, and where construction materials such as reinforcing bars and structural steel members would be stored. Erosion control during grading of the construction sites and during subsequent construction would be in place and monitored as specified by the SWPPP. A silting basin(s) would be established, as necessary, to capture silt and other materials, which might otherwise be carried from the site by rainwater surface runoff.
- EC-WR-2 Hazardous Materials Management Plan and Emergency Response Plan. A project- specific hazardous materials management and hazardous waste management plan would be developed prior to initiation of construction. The plan would identify types of hazardous materials to be used during construction and the types of wastes that would be generated. All project personnel would be provided with project-specific training to ensure that all hazardous materials and wastes are handled in a safe and environmentally sound manner. This plan shall include an emergency response program to ensure quick and safe cleanup of accidental spills.
- EC-WR-3 Water quality permits. Prior to engaging in any soil-disturbing activities, the construction contractor shall document compliance with the Clean Water Act (CWA) Section 402 NPDES General Permit for Storm Water Discharges Associated with Construction Activities, and shall also receive any necessary permits for dewatering activities, as applicable.

Land Use

- EC-LU-1 Before and during construction within the Lower Norco Bluffs area, including the Corydon Equestrian Staging area, the construction plans shall be coordinated with the City of Norco's Parks, Recreation, and Community Services. At a minimum, coordination shall include the following: the expected start date and duration of construction; a detailed description of the activities associated with construction; a detailed description of

expected maintenance activities that will occur in the future, which shall include the frequency and duration of such activities, and the procedures for notifying the City prior to maintenance activities in order to avoid disruptions to the remaining recreation resources; and any additional information that would help minimize disruptions to the remaining recreation resources.

Aesthetics

- EC-A-1 If artificial lighting is required during construction, a Lighting Plan will be developed by the contractor to outline and determine locations of light sources. All night work will be coordinated with the City of Norco. At a minimum, coordination shall include the following: the expected start date and duration of night time work; a detailed description of the activities associated with night time work; a detailed description of expected maintenance activities that will occur in the future, which shall include the frequency and duration of such activities, and the procedures for notifying the City prior to maintenance activities in order to avoid disturbance to residents and wildlife.

Noise

Construction would need to occur between 7:00 a.m. and 6:00 p.m. on weekdays to remain in compliance with both county and city ordinances. The project will assume the most restrictive ordinance, of applicable city and county ordinances, to remain within compliance of both county and city policies. Any changes to that schedule, including occasional overtime work, would require obtaining a variance from local authorities per the following additional environmental commitments, which would be incorporated into contract specifications for the proposed project to reduce potential impacts to noise.

- EC-N-1 Prior to construction, the construction contractor shall obtain Riverside County approval (exemption or variance) per Riverside County Municipal Code Section 847, Section 7.(a).1 – , Section Construction Related Exceptions, for all noise sources not exempt by Riverside County Municipal Code Section 847, Section 2.i. and exceeding Riverside County Municipal Code Section 847, Section 4 – General Sound Level Standards. Additionally, prior to any such activities occurring, the construction contractor shall obtain Riverside County approval (exemption or variance) for all operational and maintenance activities not compliant with Riverside County Municipal Code Section 847.
- EC-N-2 Prior to construction, the construction contractor shall obtain a variance from the City of Norco for all construction activities not compliant with the performance standards identified within the City of Norco Municipal Code Section 17.84.040 (c) – Noise Standards. Additionally, prior to any such activities occurring, the project proponent shall obtain a variance from the City of Norco for all operational and maintenance activities not compliant with City of Norco Municipal Code Section 17.84.040 (c) – Noise Standards.

Cultural Resources

- CR-1 The Corps shall ensure that ground disturbing activities that have the potential to impact historic properties is monitored by archaeologists meeting the Secretary of the Interior's Standards. Any finds shall be documented in accordance with the Programmatic Agreement.

- CR-2 If previously unknown cultural resources are found during construction of any feature of the Santa Ana River Project, construction in the area of the find shall cease until the requirements in 36 CFR 800.13, are met. This would include coordination with the California State Historic Preservation Officer, the Advisory Council on Historic Preservation, and appropriate Native American groups and/or other interested parties. It may require additional measures such as test and data recovery excavations, archival research, avoidance measures, etc.

7 COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

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. Included in this summary is a discussion of the consistency of the proposed project with each of the plans, policies, and regulations listed below.

7.1 FEDERAL LAWS AND REGULATIONS

The National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA)

This SEA/EIR Addendum was prepared in accordance with both NEPA and CEQA. Pursuant to Section 15164 of the State CEQA Guidelines, an addendum to an approved EIR shall be prepared if “none of the conditions described in Section 15162 of the guidelines calling for preparation of a subsequent EIR have occurred, only if minor technical changes or additions are necessary to make the EIR under consideration adequate under CEQA, and the changes to the EIR made by the addendum do not raise important new issues about significant effects on the environment.”

The subject Supplemental EA documents that the above conditions have been met. The proposed modifications will not significantly impact any resources other than those described in the previously prepared environmental documents. Preparation of an SEIS/EIR is, therefore, not required.

National Historic Preservation Act (NHPA) of 1966, as amended

The Project is in compliance with the Act. A programmatic agreement (PA) was executed for the Santa Ana River Mainstem Project in 1992 by the, Corps, California State Historic Preservation Office, and the Advisory Council on Historic Preservation. The PA details the procedures to be followed for each feature of the project. In accordance with the PA, cultural resource surveys are scheduled for the Spring of 2020 and the Corps shall consult with the State Historic Preservation Office regarding the presence or absence of historic properties.

Fish and Wildlife Coordination Act, as amended

The proposed project is in compliance. The SARMP has been fully coordinated with USFWS, CDFW, and other agencies. Two Coordination Act Reports have been prepared for the SARMP (1988 and 1999). These documents are included in the 1988 GDM/SEIS and the 2001 SEIS/EIR, and the recommendations continue to be carried forward during implementation of each SARMP feature. Over the years, numerous meetings have occurred between USFWS, CDFW, other resource agencies; non-federal sponsors; and the Corps to discuss previous and current SARMP features and other proposed and ongoing embankment protection

projects. Discussions included potential impacts to, mitigation for, and minimization and avoidance measures for nesting birds covered under the Migratory Bird Treaty Act (MBTA); species covered under the Federal and California Endangered Species Act (such as the least Bell's vireo, California gnatcatcher, and Santa Ana sucker); and wildlife movement issues. Specific issues related to the proposed project are being coordinated with the resource agencies. Furthermore, this draft SEA/EIR Addendum has been sent to USFWS, CDFW, and other resource agencies for review.

Bald and Golden Eagle Protection Act, as amended

The proposed project is in compliance. The Bald and Golden Eagle Protection Act of 1940 protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: "disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior" (72 FR 31132; 50 CFR 22.3).

On 10 November 2009, the USFWS implemented new rules (74 FR 46835) governing the "take" of golden and bald eagles. The new rules were released under the existing Bald and Golden Eagle Act which has been the primary regulation protection unlisted eagle populations since 1940. All activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity must be permitted by the USFWS under this act. The definition of disturb (72 FR 31132) includes interfering with normal breeding, feeding, or sheltering behavior to the degree that it causes or is likely to cause decreased productivity or nest abandonment.

The proposed project modification will not affect birds protected under this act, beyond those affects that were addressed in the 2001 Final SEIS/EIR and CESA (2081-2001-023-06). Golden eagles may occasionally forage within the borrow site and other upland habitats within Prado Basin, as do other raptors. However, no nesting habitat will be affected and no nests are known to occur in the vicinity. Mitigation and compensation measures that were outlined in those documents will be implemented, as required, for impacts related to proposed project. For instance, temporarily impacted areas will be re-vegetated following construction.

The Endangered Species Act, as amended

The Endangered Species Act (ESA), and subsequent amendments, provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. Section 7 requires federal agencies, in consultation with, and with the assistance of the Secretary of the Interior or the Secretary of Commerce, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. Potential effects of the Proposed Action on federally-listed species and on designated and proposed critical habitat are being addressed in a formal consultation with USFWS. A Biological Assessment was prepared and is included in Appendix D. The Corps has determined that least Bell's vireo (*Vireo bellii pusillus*) and its designated critical habitat may be adversely affect, southwestern willow flycatcher (*Epidonax trailii extimus*) would not be affected and its critical habitat may be affected, but is not likely be adversely affected, and Santa Ana sucker (*Catostomus santaanae*) and its critical habitat may be affected but will likely not be adversely affected.

A request for formal consultation for these species and their designated critical habitats will be sent to USFWS near the start of the public review period for this draft SEA/EIR Addendum. A new or amended Biological Opinion will be included in the Final SEA/EIR Addendum.

Migratory Bird Treaty Act

The proposed project is in compliance. The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711) makes it unlawful to possess, buy, sell, purchase, barter or “take” any migratory bird listed in Title 50 of the Code of Federal Regulations Part 10. “Take” is defined as possession or destruction of migratory birds, their nests or eggs. Birds protected under the MBTA include essentially all native birds in a given region. Initial vegetation clearing must be conducted outside of the nesting bird season. Therefore, vegetation removal must take place between August 15 and February 28. Mitigation measures developed in the 2001 Final SEIS/EIR have been formulated to reduce impacts on migratory birds.

Clean Air Act, as amended

'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 project “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 National Ambient Air Quality Standards (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. Emissions generated by this proposed project are expected to be temporary, and would be below Federal and local air standards.

For the proposed project, the Corps would implement environmental commitments (AQ-1 to AQ-22) to further ensure that impacts to air quality would not be considered regionally significant, and that construction emissions would not violate NAAQS. The proposed project would have no long-term impacts on local or regional air quality. Thus, emissions from the Proposed Action would conform to the SIP. The Corps has determined that the proposed project is in compliance with the CAAA.

Clean Water Act, as amended

The proposed project is in compliance with the guidelines in 40 CFR 230.10(c), promulgated by the Environmental Protection Agency (EPA) under Section 404(b)(1) of the Clean Water Act (CWA) Guidelines. The 2001 SEIS/EIR identified that the proposed project and other Prado Basin and Vicinity features would affect jurisdictional waters (Waters of the U.S.). The current Proposed Project does not encroach any further into Waters of the U.S. than originally designed, and therefore does not result in additional impacts. See Section 4.1, Water Resources and Hydrology, for an updated analysis, accounting, and description of impacts to Waters of the U.S. related to the proposed project. An updated 404(b)(1) evaluation can be found in Appendix C. Pursuant to the Corps Clean Water Act implementing regulations (33CFR 336.1(a)(1)), coordination to obtain 401 certification from the RWQCB is ongoing, and certification or a waiver will be included in the Final SEA/EIR Addendum. The Corps’ contractor will obtain a National Pollution Discharge Elimination System (NPDES) construction stormwater permit (Section 402) prior to construction. A SWPPP including BMPs and Erosion and Sedimentation Control Plan would be developed and implemented by the construction contractor prior to and during construction to minimize site erosion.

Executive Order 11988, Floodplain Management

Under this Executive Order, the Corps must take action to avoid development in the base floodplain (100-year) unless it is the only practicable alternative to reduce hazards and risks associated with floods; to minimize the impact of floods on human safety, health and welfare; and to restore and preserve the natural and beneficial value of the base floodplain. The Proposed Project would avoid development in the flood basin to the extent practicable to reduce hazards and risks. The Proposed Project is in compliance. Executive Order 11900.

Protection of Wetlands

In developing alternatives, the Corps considered the effects of the proposed project on the survival and quality of wetlands. Projects are to "...avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative..." See Section 4.4, Biological Resources, for an accounting and description of impacts to wetlands related to the construction of the Proposed Project. Mitigation measures developed in the 2001 Final SEIS/EIR and, subsequently for this Proposed Project, have been formulated to reduce impacts on wetlands.

Executive Order 12898, Environmental Justice

Executive Order 12898 requires the U.S. EPA and all other Federal agencies (as well as state agencies receiving Federal funds) to develop strategies to address this issue as part of the NEPA process. The agencies are required to identify and address, as appropriate, any disproportionately high and adverse human health or environmental impacts of their programs, policies, and activities on minority and low-income populations. The order makes clear that its provisions apply fully to programs involving Native Americans. The CEQ has oversight responsibility for the Federal government's compliance with E.O. 12898 and NEPA. The CEQ, in consultation with the USEPA and other agencies, has developed guidance to assist Federal agencies with their NEPA procedures so that environmental justice concerns are effectively identified and addressed. According to the CEQ's Environmental Justice Guidance Under the National Environmental Policy Act (published December 10, 1997), agencies should consider the composition of the affected area to determine whether minority populations or low-income populations are present in the area affected by the Proposed Action, and if so whether there may be disproportionately high and adverse human health or environmental impacts (Council on Environmental Quality 1997). An updated Environmental Justice Analysis is provided in Appendix E. The SEA/EIR Addendum is in compliance with the directives and objectives of this Executive Order.

Executive Order 13112, Invasive Species

The proposed project is in compliance with Executive Order 13112, which requires federal agencies to prevent the introduction of invasive species; provide for their control; and minimize the economic, ecological, and human health effects that invasive species cause. The environmental protection standard specifications direct the contractor to implement measures to prevent the spread of invasive species. Mitigation measures developed in the 2001 Final SEIS/EIR and this SEA/EIR Addendum have been formulated to reduce impacts from invasive species.

7.2 STATE REGULATIONS

California Regional Water Quality Control Board (RWQCB)

The construction contractors will be required to comply with requirements to request discharge permits, where applicable, prepare SWPPPs, and provide notifications to the State Water Resources Control Board.

California Air Resources Board

CARB has issued a number of CAAQS. These standards include pollutants not covered under the NAAQS and also require more stringent standards than those under the NAAQS. There is no change in compliance from the 2001 Final SEIS/EIR.

In 2006, in response to concerns related to global warming and climate change, the California State Legislature adopted Assembly Bill 32 (AB 32), the “California Global Warming Solutions Act of 2006.” AB 32 focuses on reducing GHGs in California and requires the California Air Resources Board (CARB), the State agency charged with regulating statewide air quality, to adopt rules and regulations that would achieve GHG emissions equivalent to State-wide levels in 1990 by 2020 (Hendrix, Wilson, et. al., 2007). The Proposed Project would not conflict with any applicable plan, policy, or regulation for the purpose of reducing GHG emissions.

California Endangered Species Act

The Proposed Project is, or would be, in compliance. Effects of the Proposed Project on state-listed species would be addressed in consultations by OCPW with CDFW, if necessary. The CESA permit (2081-2001-023-06) previously issued for the SARMP may be amended after receipt of a Biological Opinion by USFWS to address proposed changes to the Lower Norco Bluffs Project, if necessary. However, previous coordination with CDFW on other SARMP features indicated that neither CESA nor a Streambed Alteration Agreement would be required, considering that construction will be overseen by the federal government, and routine OMMR&R conducted by the non-federal sponsors would not result in additional effects to state-listed species. The same would apply for the Proposed Project.

California Department of Fish and Wildlife Code, Section 1600

The Proposed Project is, or would be, in compliance. A 1601 Streambed Alteration Agreement (SAA No. 6-2001-263) was issued for the SARMP in 2002. This SAA had expired, and a new SAA (1600-2009-0031-R6) was signed by OCPW in October 2009. OCPW is responsible for coordinating with CDFW, if necessary, for any additional updates. However, previous coordination with CDFW on other SARMP features indicated that neither CESA nor a SAA would be required, considering that construction will be overseen by the federal government, and routine OMMR&R conducted by the non-federal sponsors would not result in additional effects to listed species. The same would apply for the Proposed Project. Applicable minimization and avoidance measures included in the 2009 amended SAA would be followed during construction of the Proposed Project.

7.3 LOCAL REGULATIONS

South Coast Air Quality Management District (SCAQMD)

The proposed project is within SCAQMD jurisdiction. The SCAQMD is responsible for planning, implementing, and enforcing federal and State ambient standards within this portion of the South Coast Air Basin. The regulations of this agency are primarily focused on stationary sources; therefore, most of the local agency regulations are not relevant to the Proposed Project.

The SCAQMD has visible emissions, nuisance, and fugitive dust emissions regulations with which the Project's construction will need to comply. The specific regulations are as follows:

- SCAQMD Rule 401 – Visible Emissions
- SCAQMD Rule 402 – Nuisance
- SCAQMD Rule 403 – Fugitive Dust

These rules limit the visible dust emissions from the project construction sites, prohibit emissions that can cause a public nuisance and require the prevention and reduction of fugitive dust emissions to the extent possible. There is no change in compliance from the 2001 Final SEIS/EIR.

Riverside County Municipal Code

The Riverside County Municipal Code Chapter 9.52 (Noise Ordinance 847 § 2, 2006) specifies sound level standards by land use type. Per Article 9.52.020 (Exemptions), noise from construction within one-quarter of a mile of an occupied residence is exempt from these standards if it occurs between the hours of 6:00 a.m. and 6:00 p.m. (June through September) or between the hours of 7:00 a.m. and 6:00 p.m. (October through May). If any changes occur to the project work hours, a variance would be obtained. The Proposed Project is considered within this provision.

City of Norco Municipal Code

Title 9, Chapter 9.07 of the City of Norco Municipal Code provides exterior and interior noise standards, special provisions, exemptions, and variances for noise sources. Certain exempt activities include facilities owned or operated by or for a governmental agency, emergency-related noise, agricultural operations, and construction. Capital improvement projects of a governmental agency are specifically exempt from the noise ordinance pursuant to Section 9.07.020 of the City of Norco Municipal Code. The Proposed Project is considered within this provision.

8 AGENCY COORDINATION

The Lower Norco Bluffs Project was coordinated formally and informally with numerous agencies, organizations, and individuals, including USFWS, CDFW, State Parks (also known as California Department of Parks and Recreation), SHPO, Santa Ana RWQCB, Caltrans, Orange County agencies, Riverside County agencies, and local cities. This Draft SEA/EIR Addendum will be distributed to several public agencies and interested parties for review as identified in the Distribution List, Appendix A.

9 LIST OF PREPARERS AND REVIEWERS

Name	Role
Hayley Lovan	Reviewer, Chief, Ecosystem Planning Section
Jenna May	Environmental Coordinator
Marissa Maggio	Biologist
Danielle Storey	Archaeologist
Florin Nistor	Engineering Design Technical Lead
Michael Lau	Geotechnical Design
Jeffrey Devine	HTRW Analysis

10 CONCLUSION

Based on the analysis and conclusions set forth in this Draft SEA, environmental impacts from the proposed modifications to the Lower Norco Bluffs Project are expected to be less than significant. Therefore, preparation of an Environmental Impact Statement is not required.

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