

**Appendix B – Jurisdictional Delineation Report and Clean Water Act
404(b)(1) Evaluation**

PRELIMINARY JURISDICTIONAL WATERS AND WETLANDS DELINEATION REPORT FOR THE NORCO BLUFFS PROJECT

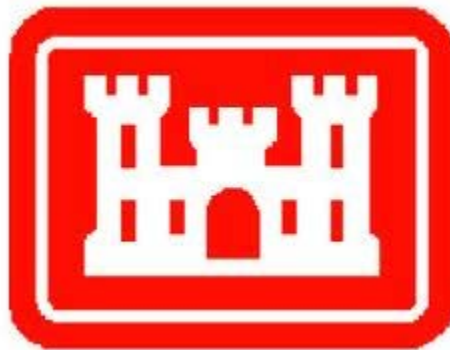
Prepared for:

U.S. Army Corps of Engineers, Los Angeles District

CESPL-PD-RQ

P.O. Box 532711

Los Angeles, California 90053



Prepared by:

Aspen Environmental Group

5020 Chesebro Road, Suite 200

Agoura Hills, CA 91301

December 2018

Preliminary Jurisdictional Waters and Wetlands Delineation Report

Norco Bluffs Project Riverside County, California

The undersigned certify that this report is a complete and accurate account of the findings and conclusions of a jurisdictional determination and delineation for the above-referenced project.

Margaret Schaap
Biologist and Regulatory Permitting Specialist
Aspen Environmental Group

December 2018

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1.0 Introduction

This report presents the findings of an investigation of jurisdictional features conducted by Aspen Environmental Group (Aspen) for the Norco Bluffs Project (Project) on November 27, 2018. The Project area is located adjacent to the Santa Ana River in Norco, Riverside County, California (Figure 1; note that all figures are included within Attachment 1). The Project Area is located west of Interstate 15 (I-15) and north of Norco Drive. The limits of the Project area were provided to Aspen by the U.S. Army Corps of Engineers (USACE). The proposed Project activities include geotechnical investigations in the Project area to finalize Project design.

1.1 Lead Agency Name and Address

U.S. Army Corps of Engineers, Los Angeles District
915 Wilshire Blvd.
Los Angeles, CA 90017

1.2 Contact Person and Phone Number

Naeem A. Siddiqui
Biologist, Ecosystem Planning Section
Los Angeles District, U.S. Army Corps of Engineers
Phone: (213) 452-3852
E-mail: Naeem.a.siddiqui@usace.army.mil

2.0 Project Location and Description

The Project is being designed to protect an existing development along the south side of the Santa Ana River. The development is situated along the bluffs within the city of Norco, approximately 5 miles upstream of Prado Dam.

The Project is a component of the Santa Ana River Mainstem Project (SARMP). The SARMP is a multi-agency flood control project that include Seven Oaks Dam, Prado Dam, and various other components along the Santa Ana River. In addition to the USACE, the local sponsors for the SARMP include Orange County Public Works, Riverside County Flood Control and Water Conservation District, and the San Bernardino County Department of Public Works.

This report was prepared to support permitting of geotechnical studies within the Project area. The geotechnical studies will start near the Hamner Avenue bridge and extends approximately 10,400 feet (2 miles) downstream. The Project Area extended 500 feet from the centerline of the anticipated geotechnical studies into Santa Ana River floodplain (northwest), and 200 feet on the upland (southeast) side. Portions of the Project Area have been subject to giant reed (*Arundo donax*) removal and is regularly used as equestrian trails.

2.1 Topography and Surrounding Land Uses

The Project area is located in the middle of USGS Corona North 7.5-minute quadrangle (USGS, 1967). Elevations within the Project area range from approximately 540 to 640 feet above mean sea level (MSL). The topography of the Project Area is distinguished by a well-defined bluff that supports a number of houses and development approximately 60 feet above the Santa Ana River floodplain. Within the

floodplain and on the bluffs are relatively flat. The bluffs are notched with a series channels conveying runoff into the Santa Ana River.

Both sides of the Santa Ana River floodplain in the vicinity of the Project are flanked with housing developments, and parks. Portions of the Project Area have been subject to vegetation management activities with the removal and treatment of giant reed. The floodplain and the edge of the bluff on the south side of the river are regularly used as equestrian trails. The Project Area is located just upstream of the Prado Basin to the east. Three bridges cross the Santa Ana River in close proximity to the Project Area; Hamner Avenue and Interstate 15 on the upstream end, and River Road on the downstream end.

2.2 Vegetation

Habitat within the Project area includes eight cover types. These include Arundo management area, developed or disturbed, native riparian, non-native riparian, non-native upland, non-native woodland, wash, and open water (Attachment 1, Figure 3). These vegetation and cover types generally match names used in previous environmental documents or the SARMP.

Arundo management area. This cover type is found in patches within the Project area. These areas have been subject to significant disturbance to remove and treat this invasive species. Few plants remain following treatment and include native tree and shrub species.

Developed or Disturbed. There are numerous developed areas in the Project area including roads, parking lots, residential areas, and adjacent cleared lands. These areas are typically devoid of vegetation or support scattered ornamental species or low densities of weeds.

Native Riparian. This cover type is used to describe a number of vegetation communities within the Santa Ana River floodplain that are dominated by native riparian species. These species include mulefat (*Baccharis salicifolia*), willow species (*Salix sp.*), coyote bush (*Baccharis pilularis*), bur marigold (*Bidens laevis*), watercress (*Nasturtium officinale*), and cattails (*Typha sp.*). This cover type also included a number of non-native species including Arundo, date palms (*Phoenix sp.*) and mustards (*Hirschfeldia sp.*)

Non-native Riparian. This cover type is used to describe vegetation communities that are dominated by non-native riparian species within the Santa Ana River floodplain. These species include Arundo, sweet clover (*Melilotus albus*), and tree tobacco (*Nicotiana glauca*).

Non-native Upland. This cover type is used to describe vegetation communities that are dominated by non-native upland species. Mapped predominantly on the steep slopes between the flood plain and housing developments, species commonly observed include mustards, tree tobacco, horseweed (*Erigeron bonariensis*), sow thistle (*Sonchus sp.*), brome (*Bromus sp.*), Russian thistle (*Salsola sp.*), and various ornamental species.

Water. The main channel/perennial portion of the Santa Ana River has been mapped as water. Emergent vegetation was observed in shallow or slow moving open water and along the edges of the main flow channel.

Wash. This cover type is found in dry stream channels that have recently been scoured by floods or high flows. 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.

2.3 Climate

The climate in the Project vicinity consists of warm, dry summers and mild, wet winters. The average annual high temperature is about 80°F and the average annual low is about 50°F (U.S. climate data 2018). Roughly 80 percent of the rain falls from November through March. The mean seasonal precipitation for the Project vicinity is approximately 12 inches (U.S. climate data 2018). Storms that have the potential to produce significant amounts of precipitation and flooding are extra-tropical cyclones of North Pacific origin, which normally occur from December through March. These storms often last for several days and can produce widespread precipitation. In addition to the extra-tropical cyclones, the area of the Project may receive thunderstorms, which can occur at any time of the year. Thunderstorms cover comparatively small areas, but result in high-intensity precipitation, usually lasting for less than three hours. On a smaller watershed, thunderstorms can produce flash flooding.

2.4 Hydrology and Geomorphology

The Project area occurs within the floodplain of the Santa Ana River. Surface water was present in the mainstream channel at the time of the survey. The Project Area is located within the Santa Ana River Watershed. It is also located in the Santa Ana River hydrologic unit, a hydrological boundary of the South Coast Hydrologic Region as designated by the California Regional Water Quality Control Board (MWD 2007). The Santa Ana River watershed covers over 2,650 square miles of wildly varying terrain, and includes parts of San Bernardino, Riverside, and Orange Counties. The mainstem of the river extends for over 100 miles, and has over 50 contributing tributaries, making the Santa Ana River the largest stream system in southern California. The headwaters for the river and its tributaries originate in the San Gabriel and San Bernardino Mountains in the north, and the San Gorgonio and San Jacinto Mountains in the east.

2.5 Geology

The upper portion of the Santa Ana River, in which the Project Area is located, is comprised of alluvial deposits that have eroded from the surrounding mountain ranges. These deposits vary in depth from less than 200 feet to over 1,000 feet. The Santa Ana River watershed is located within a geologically active area. The watershed sits on a number of faults including the San Andreas and San Jacinto Faults in the upper watershed. The Elsinore-Whittier Fault passes under the Prado Dam, and the Newport-Inglewood Fault occurs within the Los Angeles Area. Groundwater in the watershed is highly controlled by the configuration of bedrock and by the extensive faulting. The variable depth to bedrock and the presence of faults can cause pressure zones where water flows to the ground surface.

The Project Area is located at the southern end of an extensive alluvial fan that has resulted from thousands of years of fluvial sediment deposition from the Cajon Creek, Lytle Creek, and the Santa Ana River Washes. Soils in the Project Area are loams, sand, and gravel derived from alluvial fans originating in the San Gabriel and San Bernardino Mountains to the north. Historic soil data from the National Resource Conservation Society (NRCS) were reviewed to determine that hydric soils were not historically present in the Project Area (2018a); however, small patches of hydric soils may be found within non-hydric polygons based on NRCS minimum mapping units. The Project Area is mapped as Tujunga gravelly loamy sand, 0 to 9 percent slopes as shown in Attachment 3.

Tujunga gravelly loamy sand, 0 to 9 percent slope is a somewhat excessively drained soil that is found on alluvial fans and is derived from granite. It is found in areas with 0 to 9% slope and from elevations of about 10 to 1,500 feet. Water table depth is typically more than 80 inches and these areas are rarely flooded. The substrate is composed of gravelly loamy sand (0-36"), gravelly sand, gravelly loamy sand (36-60").

2.6 Soils

Table 2-1 Soil Units Occurring in the Project Area

Map Unit Symbol/No.	Map Unit Name	Description	Area (Acres)	Percent Total
DmA	Dello loamy fine sand, gravelly substratum, 0 to 2 percent slopes	A poorly-drained soil that occurs on flood plains between 10-20 feet in elevation; parent material consists of alluvium derived from granite; loamy sand (0-8"), sand (8-36"), gravelly coarse sand (36-60").	31.88	23.9
DrA	Dello loamy sand, poorly drained, 0 to 2 percent slopes	A moderately well-drained soil that occurs on flood plains between 10-20 feet in elevation; parent material consists of alluvium derived from granite; loamy fine sand (0-8"), sand (8-36"), gravelly coarse sand (36-60").	43.74	11.6
GoB	Grangeville loamy fine sand, drained, 0 to 5 percent slopes	A poorly-drained soil that occurs on alluvial fans between +00 and 1800 feet in elevation; parent material consists of alluvium derived from granite; loamy fine sand (0-17"), sandy loam (17-60").	26.75	9.4
GyC2	Greenfield sandy loam, 2 to 8 percent slopes, eroded	A well-drained soil that occurs on alluvial fans and terraces between 100 to 3500 feet in elevation; rarely flooded; parent material consists of alluvium derived from granite; sandy loam (0-26"), fine sandy loam (26-43"), loam (43-60"), stratified loamy sand to sandy loam (60-72").	15.15	10.9
GyD2	Greenfield sandy loam, 8 to 15 percent slopes, eroded	A well-drained soil that occurs on alluvial fans and terraces between 100 to 3500 feet in elevation; rarely flooded; parent material consists of alluvium derived from granite; sandy loam (0-26"), fine sandy loam (26-43"), loam (43-60").	0.57	2.2
PIB	Placentia fine sandy loam, 0 to 5 percent slopes	A moderately well-drained soil that occurs on alluvial fans and terraces between 50 to 2500 feet in elevation; parent material consists of alluvium derived from granite; fine sandy loam (0-18"), clay (18-39"), clay loam (39-57"), and gravelly sandy loam (57-60").	6.06	8.3
PID	Placentia fine sandy loam, 5 to 15 percent slopes	A moderately well-drained soil that occurs on alluvial fans and terraces between 50 to 2500 feet in elevation; parent material consists of alluvium derived from granite; fine sandy loam (0-18"), clay (18-39"), clay loam (39-57"), and gravelly sandy loam (57-60").	2.34	0.8
TeG	Terrace escarpments	Occurs on terraces; parent material consists of alluvium derived from mixed sources.	35.96	15.0
TvC	Tujunga loamy sand, channeled, 0 to 8 percent slopes	A excessively-drained soil that occurs on alluvial fans and flood plains between 10 to 2900 feet in elevation; parent material consists of sandy alluvium derived from granite; loamy sand (0-10"), loamy sand (10-60").	18.73	9.6
W	Water		19.14	8.4
Total			200.32	100

3.0 Regulatory Background

Jurisdictional waters, including some wetlands and riparian habitats, may be regulated by the U.S. Army Corps of Engineers (USACE), the Santa Ana Regional Water Quality Control Board (SARWQCB), and the California Department of Fish and Wildlife (CDFW; formerly California Department of Fish and Game). The USACE Regulatory Program regulates activities pursuant to Section 404 of the federal Clean Water Act (CWA); the CDFW regulates activities under the Fish and Game Code Section 1600-1607; and the SARWQCB regulates activities under Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act. Refer to Attachment 6 for additional details on regulatory authorities and background.

4.0 Waters and Wetlands Delineation Methodology

The assessment of jurisdictional wetlands, other waters of the United States (waters of the U.S.), waters of the State, and riparian habitat was conducted by Aspen biologists Margaret Schaap and Erik Waardenburg on November 27, 2018. Prior to conducting the field assessment Ms. Schaap reviewed current and historic aerial photographs, the San Bernardino County Soil Survey (Natural Resource Conservation Service [NRCS], 2018a), and the local and state hydric soil list (NRCS 2018b) to evaluate the potential active channels and wetland features in the Project Area.

A series of transect locations were determined prior to conducting fieldwork, based on methods in the USACE Wetland Delineation Manual (1987). Transects were numbered 1 -6 starting from the downstream end of the Project Area. Each transect was walked perpendicular to the channel and locations were each transect intersected with a state or federally Jurisdictional water a GPS point was collected.

During the field assessment, vegetation, hydrology, and locations of sample locations were mapped using a BadElf GPS unit and identified on aerial photographs (Figures 4a through 4c). Field maps were digitized using Global Information System (GIS) and total state and federal jurisdictional areas were calculated.

4.1 Federal Wetlands

Jurisdictional wetlands were delineated using a routine determination according to the methods outlined in the USACE Wetland Delineation Manual (1987) and the Arid West Supplement (2008) based on three wetland parameters: dominant hydrophytic vegetation, wetland hydrology, and hydric soils. The three parameters were evaluated at a series of sample points throughout the Project Area. The locations of these sample points were selected at locations judged most likely and least likely to meet wetlands criteria. Soil pits were excavated at these locations to evaluate the presence of hydric soils (Figures 4a through 4c).

Hydrophytic Vegetation

At each sample location, the aerial cover of all plant species in each vegetation type was visually estimated. Plant species in each stratum (tree, sapling and shrub, herb, and woody vine) were ranked according to their canopy dominance (USACE 2008). Species that contributed to a cumulative coverage total of at least 50 percent and any species that comprised at least 20 percent of the total coverage for each stratum were recorded on the Field Data Sheets (50/20 Rule). Wetland indicator status was assigned to each dominant species using the Region 0 List of Plant Species that Occur in Wetlands and Summary of Wetland Indicator Status (Reed 1988), the California subregion of the National List of Vascular Plant Species that Occur in Wetlands: 1996 National Summary (USFWS 1997), and the Arid West Region of The National Wetland Plant List (USACE 2012). If greater than 50 percent of the dominant species from all strata were Obligate, Facultative-wetland, or Facultative species, the criteria for wetland vegetation was met (refer to Table 3 of Attachment 5).

Wetland Hydrology

At each sample location, the presence or absence of wetland hydrology was evaluated by observing indicators of hydrology (USACE 2008). These indicators are divided into two categories (primary and secondary indicators). Presence of one primary indicator is evidence of wetland hydrology. Presence of two or more secondary indicators can also be evidence of wetland hydrology. The Arid West Supplement includes two additional indicator groups that can be utilized during dry conditions or in areas where surface water and saturated soils are not present including Group B (evidence of recent inundation) and

Group C (evidence of recent soil saturation) (USACE 2008). For additional information regarding wetland hydrology indicators refer to Tables 4 and 5 in Attachment 5.

Hydric Soils

Soil pits were excavated at each sample location using a shovel. Whenever possible they were excavated to a depth of 20 inches (USACE 2008). At each soil pit, the soil texture and color were recorded by comparison with a Munsell soil color chart (2000). Any other indicators of hydric soils, such as redoximorphic features, hydrogen sulfide odor, buried organic matter, organic streaking, reduced soil conditions, gleyed or low-chroma soils were also recorded (refer to Tables 6 and 7 of Attachment 5).

4.2 Federal Non-Wetland Waters

Jurisdictional non-wetland waters of the U.S. were delineated based on the limits of the ordinary high-water mark (OHWM) as determined by physical and biological features such as bank erosion, deposited vegetation or debris, and vegetation characteristics. See Tables 1 and 2 in Attachment 5 (Potential Geomorphic and Vegetative Indicators of Ordinary High-Water Marks for the Arid West) for a list of key physical features for determining the OHWM identified by the arid west manual.

4.3 CDFW Jurisdictional Waters

CDFW jurisdiction was delineated to the top of the banks of the channel/Reservoir and/or to the edge of the riparian canopy/riparian habitat. For most of the Project Area, the riparian canopy/riparian habitat extends beyond the OHWM. Therefore, the total acreage of CDFW jurisdictional waters is greater than the combined acreage of federal jurisdictional waters/wetlands.

5.0 Results

Three types of jurisdictional features were documented within the Project Area: USACE jurisdictional non-wetland waters of the U.S, USACE jurisdictional wetlands, and CDFW jurisdictional waters of the State (refer to Figures 4a through 4c). Table 4-1 and Figures 4a through 4c show locations and acreages of jurisdictional features in the Project Area. Attachment 4 contains the Wetland Determination Data Forms completed during the assessment.

Table 5-1: Acreage of Jurisdictional Waters, Wetlands, and CDFW Habitat

	USACE Jurisdictional Waters of The U.S. (Acres)		CDFW State Jurisdictional Waters (Acres)
	Non-wetland waters of U.S.	Wetlands	
Project Area	37.38	4.11	154.27

- (a) Non-wetland waters of the United States and non-wetland waters of the State overlap; as such, jurisdictional acreages are not additive.
(b) Wetlands fall under the jurisdiction of the USACE, SARWQCB, and CDFW; as such, wetland acreages are not additive.

Table 5-2: Temporary Impacts from Geotechnical Investigations to Jurisdictional Waters, Wetlands, and CDFW Habitat

	USACE Jurisdictional Waters of The U.S. (Acres)		State Jurisdictional Waters (Acres)
	Non-wetland waters of U.S.	Wetlands	
Geotechnical Investigation Temporary Impact Area	0.20	0.09	0.88
Total	0.29		0.88

5.1 Federal Wetlands

Based on this assessment of hydrology, vegetation, and soils, and Aspen’s professional opinion, approximately 4.11 acres of the Project Area satisfies the federal criteria as wetlands (USACE 1987 and USACE 2008). These areas are shown on Figures 4. Additional information for each location can be found on the field data sheets (Attachment 4). It is anticipated that 0.09 acres of Federal wetlands will be temporarily impacted by the geotechnical investigations.

Vegetation

Pockets of habitat with a dominance of hydrophytic vegetation are generally present within the areas immediately adjacent to the main channel of the Santa Ana River, or within areas that showed evidence of seasonal flow, such as secondary channels. When a dominance of hydrophytic vegetation is observed it is generally short lived and wholly dependent on the rate of fluctuation of the water level in the floodplain. Most species observed were FACW or FAC. Additional information on the vegetation observed for each location can be found on the field data sheets (Attachment 4).

Wetland Hydrology

Surface water was present within the Project Area during the survey. Drift deposits, water stained leaves, saturation, and inundation were present at several of the location. Additional information on the hydrology observed for each location can be found on the field data sheets (Attachment 4).

Hydric Soils

Soil pits in the Project Area exposed a reduced matrix and strong smell of hydrogen sulfide, which are both indicators of hydric soils. At least one of these indicators were detected at sample locations T6P1, T4P1, T1P1, and T1P2 (Figures 4). The soil pits on transects 4 and 6 were in close proximity to ponded water that appears to be present year-around. Redox features were present at the two pits on transect 1. Additional information on the soils observed for each location can be found on the field data sheets (Attachment 4)

5.2 Federal Non-Wetland Waters

Based on this assessment of OHWMs and Aspen’s professional opinion, 37.38 acres of the Project Area meet the definition of waters of the U.S. as outlined in 33 CFR Part 328 (Figure 5). The limits of the OHWM were determined using biological features such as bank erosion, deposited vegetation or debris, and vegetation and soils characteristics noted during the field surveys. Some of the key hydrology indicators

noted during the delineation included the following. See Tables 1 and 2 in Attachment 5 for additional information.

- A1 – Surface Water
- A2 – High Water Table
- A3 – Saturation
- B2 – Active floodplain
- B3 – Drift Deposits
- B13 – Drift (organic debris, larger than twigs)
- C1 – Hydrogen Sulfide Odor

Federal non-wetland waters of the U.S. included part of the channel bottom within the Project Area and extended up the side slopes to approximately 5 feet or less depending on the location of drift deposits on and the vegetation and side slopes (i.e., the OHWM). A review of historic aerial photography (1995 – 2014) confirms the location and extent of Federal non-wetland waters of the U.S. identified during our site visit. It is anticipated that 0.20 acres of Federal non-wetland waters of the U.S. will be impacted by the geotechnical investigation.

5.3 CDFW Waters

Based on this assessment and Aspen’s professional opinion, approximately 154.27 acres of the Project Area meet the definition of CDFW jurisdictional waters of the State as outlined in Sections 1600-1616 of the California Fish and Game Code (Figure 5). This conclusion is primarily based on the presence of bed and bank and extent of riparian vegetation which included riparian, woodland, wash and water cover types. Native and non-native riparian cover types are dominated by willow species, Arundo, and mulefat. It is anticipated that 0.88 acres of CDFW jurisdictional waters will be temporarily impacted as a result of geotechnical investigations.

6.0 Summary and Conclusions

The Project area includes jurisdictional waters of the State and waters of the U.S. including federally jurisdictional wetlands and USACE non-wetland waters as follows:

- 4.11 acres of federally jurisdictional wetland were mapped in areas that support hydrophytic vegetation, show evidence of wetland hydrology, and contain hydric soils. Temporarily impacted by geotechnical investigations may impact up to 0.09 acres of federally jurisdictional wetlands.
- 37.38 acres of jurisdictional non-wetland waters of the United States where mapped in areas that did not meet the hydrophytic vegetation or hydric soils criteria for wetlands but where evidence of hydrology or a discernible OHWM was visible. Temporarily impacted by geotechnical investigations may impact up to 0.20 acres of jurisdictional non-wetland waters of the United States.
- 154.72 acres of CDFW jurisdictional waters were mapped based on riparian vegetation, bed and bank delineation, and field observations. Temporarily impacted by geotechnical investigations may impact up to 0.88 acres of CDFW jurisdictional waters and habitats.

The conclusions presented above represent Aspen's professional opinion based on their knowledge and experience with the USACE and CDFW, including their regulatory guidance documents and manuals. However, the USACE and CDFW have final authority in determining the status and presence of jurisdictional wetlands and waters and the extent of their boundaries.

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US ARMY CORPS OF ENGINEERS

LOS ANGELES DISTRICT

SANTA ANA RIVER MAINSTEM PROJECT: LOWER NORCO BLUFFS PROJECT
COUNTY OF RIVERSIDE, CALIFORNIA

CLEAN WATER ACT SECTION 404(B)(1) EVALUATION

April 2020

1 INTRODUCTION

The following evaluation is provided in accordance with Section 404(b)(1) of the Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500) as amended by the Clean Water Act of 1977 (Public Law 95-217). Its intent is to succinctly state and evaluate information regarding the effects of discharge of dredged or fill material into the waters of the U.S.

Although the Corps does not process and issue permits for its own activities, the Corps authorizes its own discharges of dredged or fill material by applying all applicable substantive legal requirements, including application of the Section 404(b)(1) Guidelines, 33 C.F.R. 336.1(a). As such, this analysis is not meant to stand alone, and depends on information provided in the draft Supplemental Environmental Assessment/Environmental Impact Report Addendum (SEA/EIR Addendum) to which this evaluation is appended. Citation in brackets [] refer to expanded discussion found in the SEA/EIR Addendum, to which the reader should refer for details.

2 PROJECT DESCRIPTION

The draft SEA/EIR Addendum for the Lower Norco Bluffs Toe Protection (Lower Norco Bluffs) portion of the Santa Ana River Mainstem Flood Control Project (SARMP) was prepared 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 the 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 previously described and analyzed in the 2001 SEIS/EIR, and a 404(b)(1) analysis was conducted for the Previously Approved Design (see Appendix C of the 2001 SEIS/EIR). The April 2020 draft SEA/EIR Addendum includes the Previously Approved Design described in the 2001 SEIS/EIR, which is now considered the “No Action” Alternative, and proposed modifications to the Previously Approved Design (the Proposed Action Alternative).

2.1 Study Area Description [1.1]

The Lower Norco Bluffs Project is located in the city of Norco, Riverside County, California. It is situated adjacent to the Santa Ana River and within the floodplain. 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 project area begins just south of the Hamner Avenue Bridge and extends down to the Corydon Equestrian Staging Area off of Corydon Avenue.

Figure 2-1 shows the project location and vicinity, and **Figure 2-2** shows the project area

2.2 Basic Project Purpose [1.5]

The basic project purpose comprises the fundamental, essential, or irreducible purpose of the proposed project, and is used by the Corps to determine whether the project is water dependent. The basic project purpose for the proposed project is protecting the toe of the bluff from impinging flows from the Santa Ana River. This protection can only be accomplished through modification of the river-side of the

embankment, within the floodplain of the Santa Ana River, or through channelization of the river. As a result, the project is water dependent.

2.3 Overall Project Purpose [1.5]

The overall project purpose serves as the basis for the Corps 404(b)(1) alternatives analysis and is determined by further defining the basic project purpose in a manner that more specifically describes the goals for the project, and which allows a reasonable range of alternatives to be analyzed.

In conjunction with raising Prado Dam, real estate acquisition is required for properties 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. Within the area of Norco Bluffs, the 566-ft elevation line has been continually migrating due to stormwater erosion of the bluffs. The main objective of the Lower Norco Bluffs Project 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.

Alternatives that accomplish the objective of preventing movement of the 566-ft elevation are limited to structural measures that protect the bluff toe from undercutting, or measures that prevent the river from encroaching upon the south embankment (channelization). Channelization alternatives are not being considered due to significant environmental impacts that would occur, including significantly greater impacts to jurisdictional waters and wetlands. Two embankment protection alternatives, in addition to the No Action (no construction) alternative, were analyzed in the 2001 SEIS/EIR and 404(b)(1) Evaluation. This 2020 404(b)(1) Evaluation analyzes proposed modifications to the Previously Approved Design. The current Proposed Action along with previously analyzed alternatives represent the reasonable range of alternatives that would meet the project purpose. Of the alternatives evaluated in the 2001 documents, the Previously Approved Design had been identified as the Least Environmentally Damaging Alternative at that time. Therefore, the current evaluation is limited to a comparison between the Previously Approved Design and the Proposed Action.

Santa Ana River: Lower Norco Bluffs Toe Protection

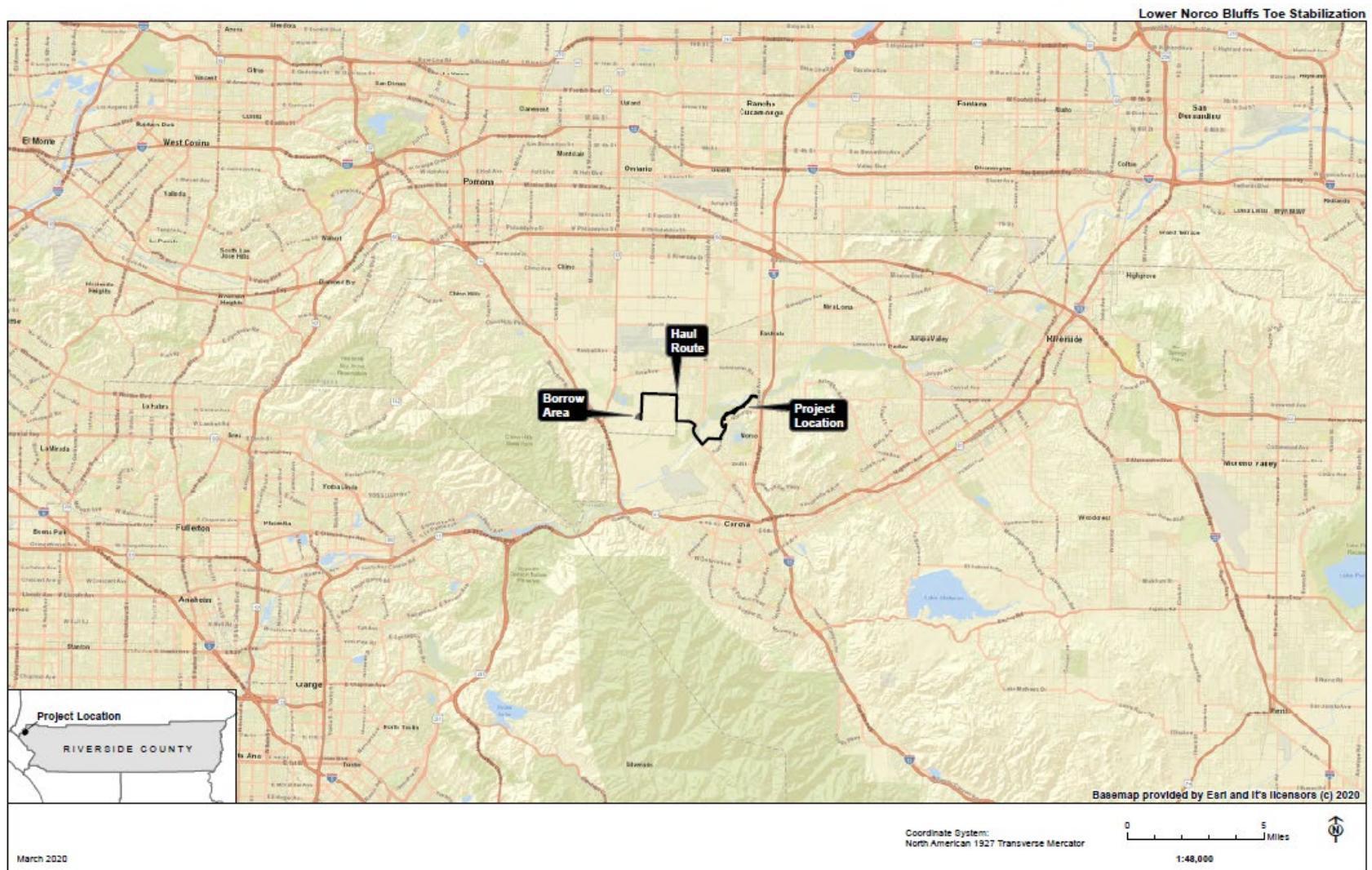


Figure 2-1 Lower Norco Bluffs Regional Map

Santa Ana River: Lower Norco Bluffs Toe Protection



Figure 2-2 Lower Norco Bluffs Project Area

2.4 Jurisdictional Determination of the Waters of the U.S. [3.1.4; Appendix B]

A jurisdictional delineation was performed in the project area by Aspen Environmental Group on November 27, 2018. Results of the delineation determined both wetland and non-wetland waters of the U.S. (WOTUS). See the Jurisdictional Delineation Report in Appendix B of the draft SEA/EIR Addendum.

Figure 2-3 through **Figure 2-7** show the types of WOTUS delineated and the footprints of the impacts as a result of the project. Two types of WOTUS were delineated:

- **Non-wetland Waters of the U.S. [(a)(5) Waters]**¹ Non-wetland WOTUS included several drainages that exhibited ordinary high watermark (OHWM). It also included part of the channel bottom that extended up the side slopes to approximately 5 ft., or less, depending on the location of drift deposits and the vegetation and slide slopes (i.e., the OHWM). A review of historic aerial photography (1995-2014) confirms the location and extent of Federal non-wetland WOTUS identified during the site visit.
- **Wetland Waters of the U.S. [(a)(6) Waters]** Wetland WOTUS included several locations where surface water, water-stained leaves, saturation, and inundation were present. Pockets of habitat with a dominance of hydrophytic vegetation were generally present within areas immediately adjacent to the main channel of the Santa Ana River, or within areas that showed evidence of seasonal flow, such as secondary channels.



Figure 2-3 Jurisdictional Delineation

¹(a)(5) Waters” and other similar bracketed statements refer to which category of waters of the US, as defined in 33 CFR § 328.3(a), each type of water identified here fits within.

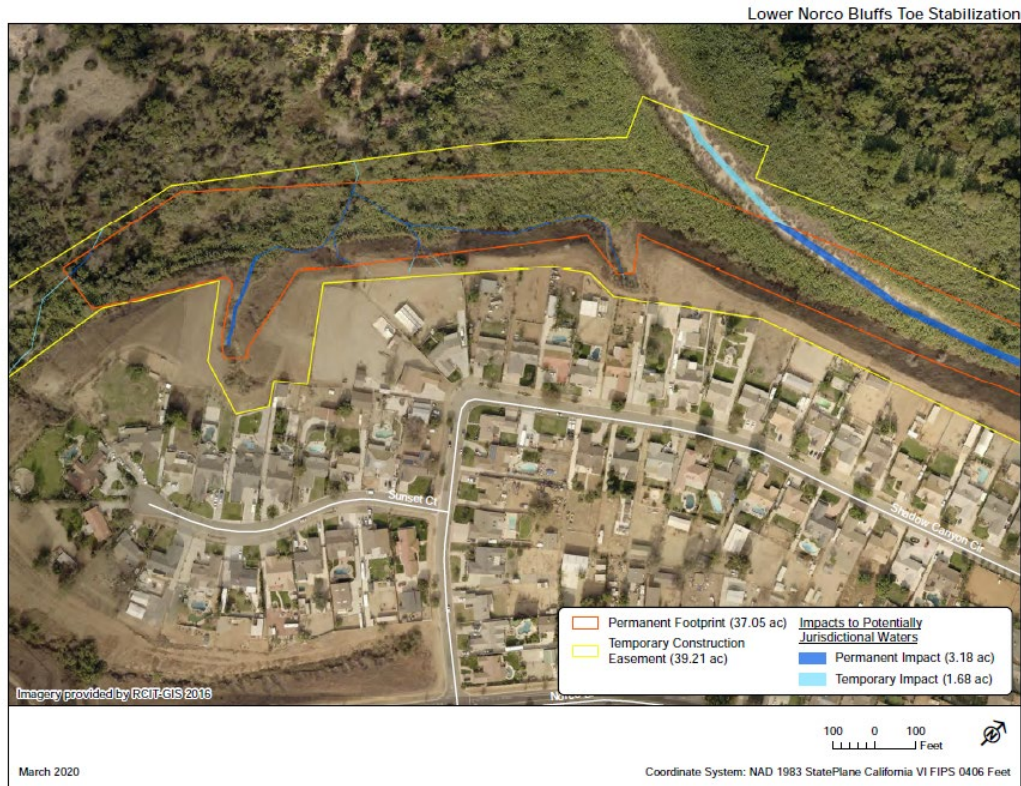


Figure 2-4 Jurisdictional Delineation

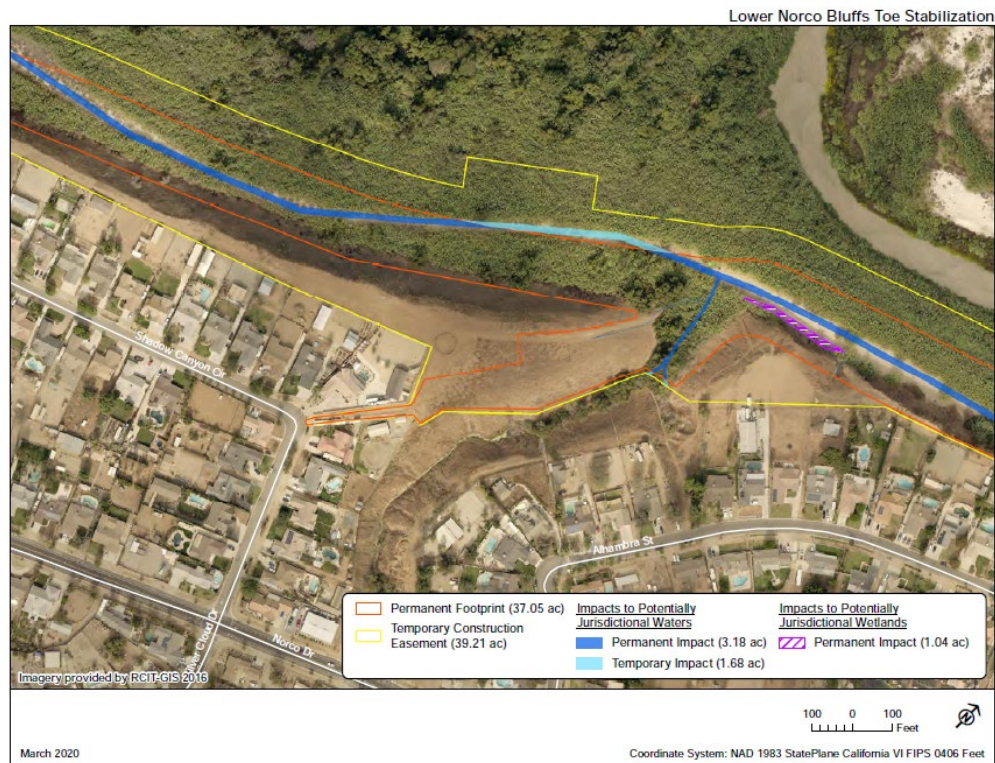


Figure 2-5 Jurisdictional Delineation



Figure 2-6 Jurisdictional Delineation

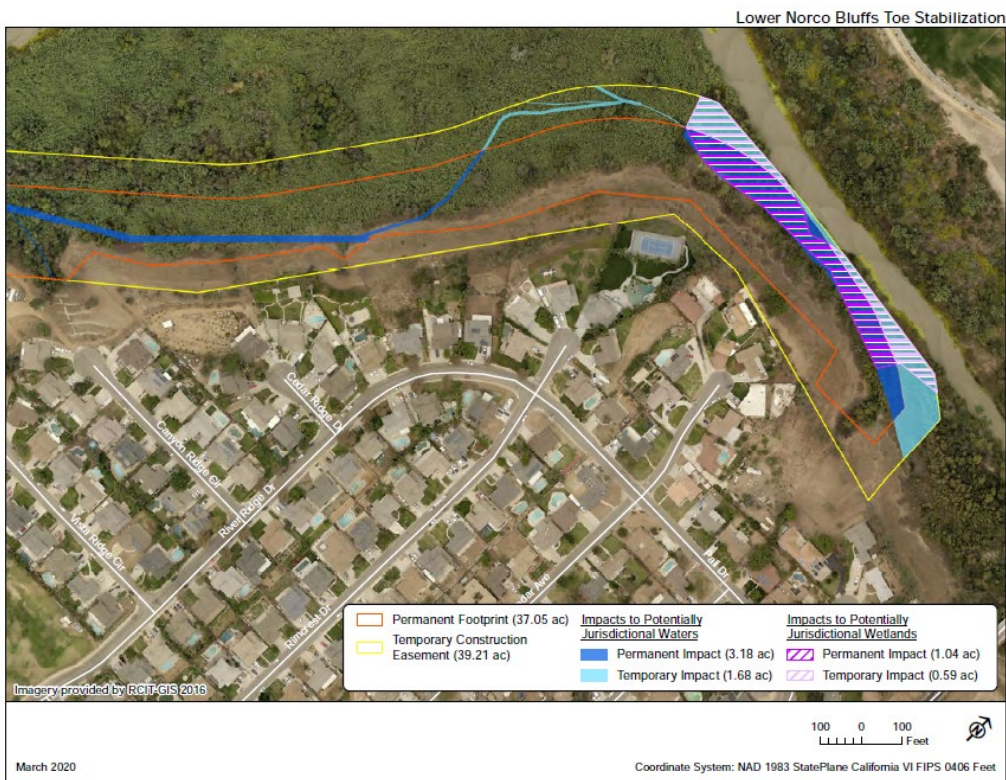


Figure 2-7 Jurisdictional Delineation

2.5 General Description [2.3]

Project alternatives analyzed in the Draft SEA/EIR Addendum include the No Action Alternative (Previously Approved Design) and the Proposed Action Alternative. A full description of each alternative is included in Section 2.3 of the Draft SEA/EIR Addendum. The Preferred Alternative (the Proposed Action Alternative) is also described and evaluated below in comparison with the Previously Approved Design to identify the Least Environmentally Damaging Practicable Alternative (LEDPA).

2.6 Least Environmentally Damaging Practicable Alternative

The guidelines promulgated under Section 404 of the Clean Water Act specify that a permit can be issued for a discharge of dredged or fill material to Waters of the United States only if the discharge is determined to be the least environmentally damaging practicable alternative (LEDPA) (40 CFR § 230.10(a)). When a proposed project requires an individual permit for filling Waters of the United States, an analysis of alternatives must be carried out. For this analysis, the LEDPA generally is the practicable alternative that either avoids Waters of the United States or impacts the smallest area of the waters.

The LEDPA would inflict the least amount of adverse impacts on the aquatic ecosystems posed by specific dredged or fill material discharge activities while maintaining the existing flood control goals of the project. Based on the analyses provided below, the USACE has identified the Preferred Alternative as the LEDPA. Compared with the Previously Approved Design, the Preferred Alternative would have the least environmental impact on existing WOTUS.

2.6.1 Proposed Action Alternative [2.3.2]

Proposed design modifications including the incorporation of launchable rock and riprap rather than soil cement would eliminate the need for diversion of the river or deep dewatering that would have been necessary with the Previously Approved Design. Some dewatering of nuisance surface water may be required, however such operations are expected to be minimal. The embankment would measure approximately 1.5 miles in length. 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 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 3-1**). 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

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. 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.

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.

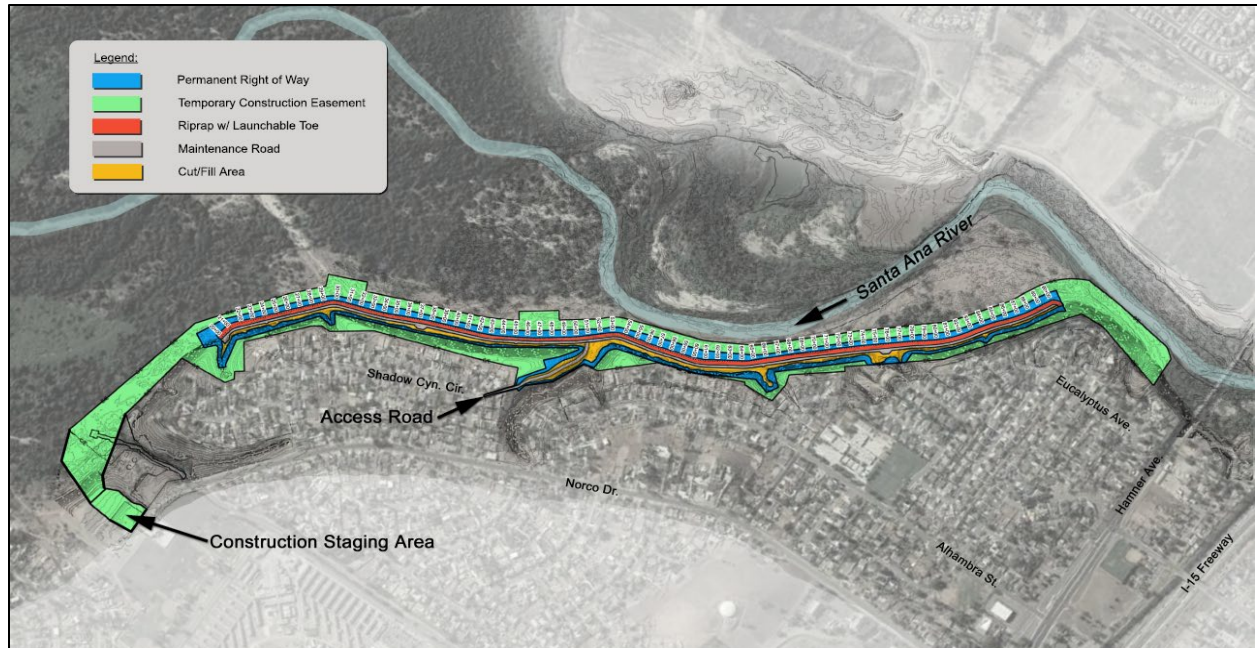


Figure 3-8 Lower Norco Bluffs Project Map and Construction Boundary

Table 3-1. Proposed Action Alternative Impacts to WOTUS

	Temporary Fill Impacts		Permanent Fill Impacts	
	Non-wetland	Wetlands	Non-wetland	Wetlands
Project Area	1.68	0.59	3.18	1.04

2.6.2 Previously Approved Design Alternative [2.3.1; Appendix F]

The Previously Approved Design Alternative is defined as constructing the Lower Norco Bluffs Project according to the plan presented in the 2001 SEIS/EIR. 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. 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.

In the 2001 SEIS/EIR, the details for the location of the composition of the permanent maintenance road were not described. It would be assumed under this alternative, the permanent maintenance road would be similar to that described for the Proposed Action Alternative.

Additionally, the 2001 SEIS/EIR considered a staging area for construction equipment to be located within an abandoned wastewater treatment plant site that is located approximately 1440 ft. downstream of the toe stabilization improvements. A site assessment was recently conducted to determine the character and extent of an Hazardous, Toxic, Radioactive Waste (HTRW) release. A follow up remediation plan and

action for the release is currently being undertaken for this property (See Appendix F in the Draft SEA/EIR Addendum for additional details). As a result, this site is not feasible for use as a staging area, and it is assumed the staging area described as part of the Proposed Action Alternative would be utilized instead.

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 activities would be similar to those described for the Proposed Action Alternative.

3 ALTERNATIVES ANALYSIS

3.1 Restrictions on Discharge

The 404(b)(1) Guidelines prohibit the discharge of dredged or fill material into waters of the U.S. if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. 40 C.F.R. 230.10(a). To be “practicable,” an alternative must be “available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.” 40 C.F.R. 230.10(a)(2).

3.2 Overall Project Purpose

Both the Previously Approved Design and the Proposed Action alternatives would meet the overall project purpose. As discussed in Chapter 2 of the draft SEA/EIR Addendum, 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.

3.3 Practicability (Technology)

Both alternatives can be constructed with existing technology and would utilize conventional construction techniques and conventional construction equipment. However, the Previously Approved Design would require certain modifications in order to be fully implementable, including identification of a different staging area to avoid contaminated soils.

3.4 Practicability (Logistics)

Both alternatives would be located within Corps operation areas or Corps/sponsor-owned areas, or areas where rights of entry or temporary easements have been acquired by the non-Federal sponsor. All areas where discharges of fill material into WOTUS would occur are located within lands that have been acquired for the project. Thus, all discharges of fill material are practicable with respect to logistics.

3.5 Practicability (Cost)

Costs associated with the alternative are practicable.

Alternatives ¹	Practicability Test			Significant Environmental Impact to Non-Aquatic Resources	Meets Overall Project Purpose
	Cost	Logistics	Technology		
Proposed Action Alternative	Yes	Yes	Yes	No	Yes
No Action Alternative (Previously Approved Design)	Yes	Yes	Yes	No	Yes

¹Reference draft SEA/EIR Addendum for analysis of impacts to non-aquatic resources

4 FACTUAL DETERMINATIONS

The purpose of the Section 404(b)(1) Guidelines is to restore and maintain the chemical, physical, and biological integrity of the waters of the US through the control of discharges of dredged or fill material. Except as provided under CWA Section 404(b)(2), no discharge of dredged or fill material will be authorized if there is a practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem, as long as the alternative does not have other significant adverse environmental consequences. In accordance with the Section 404(b)(1) Guidelines, the potential short-term or long-term effects of a proposed discharge of dredged or fill material on the physical, chemical, and biological components of the aquatic environment must be determined.

The following discussion evaluates impacts of both alternatives on environmental resources identified in Subpart C through Subpart F of the Section 404(b)(1) Guidelines.

4.1 Physical and Chemical Characteristics Determinations (Subpart C)

4.1.1 Substrate [2.3.2.5; 3.3]

Geotechnical studies indicate that the sediment within the Norco Bluffs consists primarily of alluvial materials, including clay, silt, sand, and gravel. Fill for both alternatives would include native alluvial material acquired from on-site or material imported from the borrow site, which is also located in Prado Basin.

4.1.2 Suspended Particulates and Turbidity [4.1.2.1]

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. Although no activities associated with the Proposed Action 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. 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 river diversion and dewatering efforts, have a greater potential to impact water quality, compared to the Proposed Action.

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

- 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.

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.

The Proposed Action includes a drainage system and 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. Temporarily impacted areas throughout the construction 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.

Although future maintenance for both alternatives 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. Maintenance activities associated with the Previously Approved Design may also require excavation into the riverbed, which would create the potential for groundwater contamination.

4.1.3 Contaminants [4.1.2.1]

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. This potential would be similar for both the Proposed Alternative and the Previously Approved Design.

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.
- 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.

Although future maintenance may introduce potential water quality impacts associated with the use of motorized vehicles and equipment, potential impacts would be avoided or minimized through the implementation of the BMPs and design criteria described above.

4.1.4 Current Patterns and Water Circulation [4.1.1.1]

Unlike the Previously Approved Design Alternative, the Proposed Action Alternative 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.

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. As with the Previously Approved Design, 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.

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.

4.1.5 Cumulative Impacts [5.1]

Potential cumulative impacts on water resources and hydrology from the Proposed Action and Previously Approved Design were determined to be less than significant in the draft SEA/EIR Addendum and the 2001

SEIS/EIR, respectively.

4.2 Potential Effects on Biological Characteristics of the Aquatic Ecosystem (Subpart D) [3.4]

4.2.1 Threatened and Endangered Wildlife [4.4.2.1; Appendix D]

Santa Ana Sucker (Federally Threatened) 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.

Orange County Water District 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. Under the Previously Approved Design, any sucker potentially occupying the area would be directly affected by the diversion and dewatering of the primary channel of the Santa Ana River. Although similar measures would be implemented to prevent sucker from being stranded, this alternative would adversely affect the sucker.

Critical habitat was revised 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 sections, 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. The Proposed Action may affect, but is not likely to adversely affect sucker critical habitat. Under the Previously Approved Design, sucker critical habitat would be directly affected by the diversion and dewatering of the primary channel of the Santa Ana River. Although similar measures would be implemented to prevent sucker from being stranded, this alternative would adversely affect sucker critical habitat.

Least Bell's Vireo (Federally and State Endangered) 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. 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, both alternatives may affect vireo and vireo critical habitat.

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 either alternative.

Approximately 4.72 acres of critical habitat are present within the project area. 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. Both alternatives may affect, but are not likely to adversely affect critical habitat for flycatcher.

4.2.2 Fish, Crustaceans, Mollusks, and other Aquatic Organisms

For both alternatives, potential effects to other aquatic organisms would be similar to those described above for sucker. Fish could potentially become stranded, however the probability of this occurring could be reduced by implementation of measures to protect the construction site and protocol for retrieval. Potential effects related to water quality would be more severe under the Previously Approved Design due to the diversion and dewatering of the primary channel. Turbidity could directly impact aquatic organisms with limited mobility through burial. However, turbidity impacts would be temporary and be limited to construction and during emergency maintenance activities.

4.2.3 Other Wildlife

Potential effects and minimization measures described previously for listed species would also apply to other species occupying the area. 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. For aquatic species, 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 aquatic species would be less than significant for both alternatives.

4.2.4 Cumulative Impacts [5.4]

Potential cumulative impacts on water resources and hydrology from the Proposed Action and Previously Approved Design were determined to be less than significant in the draft SEA/EIR Addendum and the 2001 SEIS/EIR, respectively.

4.3 Potential Effects on Special Aquatic Sites (Subpart E)

4.3.1 Wetlands and Vegetated Shallows [4.4.2.1]

Both the Proposed Action and the Previously Approved Design would result in potential effects to riparian 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.

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-disturbance, 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.

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 the draft SEA/EIR Addendum. 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 would be offset through mitigation, which includes restoration of riparian habitat. 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 of the draft SEA/EIR Addendum.

4.3.2 Mud Flats

No mud flats exist within the project area. Therefore, none would be impacted by either the Proposed Action or the Previously Approved Design.

4.3.3 Coral Reefs

No coral reefs exist within the project area. Therefore, none would be impacted by either the Proposed Action or the Previously Approved Design.

4.3.4 Riffle and Pool Complexes

No riffle and pool complexes exist within the project area. Therefore, none would be impacted by either the Proposed Action or the Previously Approved Design.

4.3.5 Cumulative Impacts [5.4]

Potential cumulative impacts on water resources and hydrology from the Proposed Action and Previously Approved Design were determined to be less than significant in the draft SEA/EIR Addendum and the 2001 SEIS/EIR, respectively.

4.4 Potential Effects on Human Use (Subpart F)

4.4.1 Municipal and Private Water Suppliers [4.11.2.1]

Neither the Proposed Action nor the Previously Approved Design would 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

construction would not affect availability of water for the local population or other needs of the City of Norco.

4.4.2 Recreational and Commercial Fisheries [5.8]

There are no commercial or recreational fisheries within the project area.

4.4.3 Water-Related Recreation [5.8]

There are no water-related recreation within areas where construction would occur.

4.4.4 Aesthetics [4.7.2.1]

Under both alternatives, 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.

4.4.5 Parks, national and historical monuments, national seashores, wilderness areas, and research sites

There are no parks, national and historical monuments, national seashores, wilderness areas, or research sites within the project area.

4.4.6 Cumulative Impacts [5.7; 5.8; 5.11]

Potential cumulative impacts on water resources and hydrology from the Proposed Action and Previously Approved Design were determined to be less than significant in the draft SEA/EIR Addendum and the 2001 SEIS/EIR, respectively.

4.5 Evaluation and Testing (Subpart G)

Both alternatives would result mostly in discharges of native fill within waters of the US associated with earthmoving activities. Permanent discharges of fill material would entail discharges of rock and concrete.

Both temporary and permanent fills would be chemically inert and would not leach contaminants into the water column. Per 40 C.F.R 230.60(a), testing is not required.

5 MITIGATION MEASURES (Subpart H) [6.0]

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 restore (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 by the Lower Norco Bluffs Toe Protection Project, and restore five acres for each acre of permanent impact to riparian/wetland habitat to be preserved in perpetuity. This will equate to 161.8 acres of off-site restoration 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 offsite 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 onsite to native vegetation communities 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 successfully restore each acre of riparian vegetation that is temporarily disturbed during construction-related activities (21.45 acres) and will 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. 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 non-riparian areas that are temporarily disturbed or destroyed free of exotic plants for 8 years. 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.

6 CONCLUSION

- a) Adaptation of the Section 404(b)(1) Guidelines to this Evaluation. No significant adaptations of the guidelines were made relative to this evaluation.
- b) Evaluation of Availability of Practicable Alternatives to the Proposed Discharge Site Which Would Have Less Adverse Impact on the Aquatic Ecosystem. All practicable alternatives for fill material and backfill were evaluated. The Preferred Alternative is both the most cost-effective and least environmentally damaging. The Preferred Alternative is the Proposed Action Alternative.
- c) Compliance with Applicable State Water Quality Standards: The proposed Preferred Alternative would comply with State of California water quality standards. The Corps will submit a request for 401 Certification to the Santa Ana Regional Water Quality Control Board (RWQCB). Certification or a waiver will be documented in the Final SEA/EIR Addendum. The construction contractors will comply with separate requirements to request discharge permits (where applicable), prepare SWPPPs, and provide notifications to the State Water Resources Control Board.
- d) Compliance with Applicable Toxic Effluent Standard or Prohibition Under Section 307 of the Clean Water Act: No toxic materials/wastes are expected to be produced or introduced into the environment by the Lower Norco Bluffs project. Discharge will consist of native substrate, rip rap, and launchable rock. Launchable rock and rip rap will be inert and stable.
- e) Compliance with the Endangered Species Act of 1973: As discussed in the attached draft SEA/EIR Addendum, the Corps has determined the Lower Norco Bluffs project may adversely affect, but would not jeopardize the continued existence of Federally-listed threatened or endangered species including southwestern willow flycatcher, least Bell's vireo, and the Santa Ana sucker. Formal consultation pursuant to Section 7(c) will be initiated with the USFWS. The Biological Assessment and Biological Opinion will be made available in the Final SEA/EIR Addendum.
- f) Compliance with Specified Protection Measures for Marine Sanctuaries Designated by the Marine Protection, Research, and Sanctuaries Act of 1972: No sanctuaries as designated by the Marine Protection, Research and Sanctuaries Act of 1972 will be affected by the Lower Norco Bluffs. No sediments would be disposed of within the ocean.

- g) Evaluation of Extent of Degradation of the Waters of the United States: No significant degradation of municipal or private water supplies, special aquatic sites, or plankton resources will occur.
- h) Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Ecosystem: Specific environmental commitments are outlined in Section 6 of the attached SEA/EIR Addendum, and in Section 5 above. These measures have been incorporated within the project description for the Proposed Action.
- i) On the Basis of the Guidelines, the Proposed Disposal Site(s) for the Discharge of Dredged or Fill Material is:

☒ (1) Specified as complying with the requirements of these guidelines; or,
☐ (2) Specified as complying with the requirements of these guidelines, with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects on the aquatic ecosystem; or,
☐ (3) Specified as failing to comply with the requirements of these guidelines.

Prepared by: Jenna May
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