SANTA ANA RIVER MAINSTEM PROJECT:
PRADO DAM SPILLWAY MODIFICATION

RIVERSIDE COUNTY, CALIFORNIA

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT/ENVIRONMENTAL IMPACT REPORT ADDENDUM

SCH # 97071087

US Army Corps of Engineers

PREPARED BY:
U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

MARCH 2022

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FINDING OF NO SIGNIFICANT IMPACT (FONSI)

SANTA ANA RIVER PRADO DAM SPILLWAY MODIFICATION PROJECT
RIVERSIDE COUNTY, CALIFORNIA

The U.S. Army Corps of Engineers, Los Angeles District (USACE) has conducted an environmental analysis in accordance with the National Environmental Policy Act of 1969, as amended, for proposed design modifications to the Santa Ana River Mainstem Project (SARMP): Prado Embankment – Spillway as previously authorized in § 401 of the Water Resources Development Act of 1986 and for modifications to the spillway as determined by the Dam Safety Modification Study. The Supplemental Environmental Assessment and Environmental Impact Report Addendum (SEA/EIR Addendum), dated March 2022, addresses proposed modifications and design refinements to the spillway configuration and construction methods. This SEA/EIR Addendum has been prepared by the USACE as a supplement to the Final Supplemental Environmental Impact Statement/EIR (SEIS/EIR) for Prado Basin and Vicinity, dated November 2001, and previous EIS and SEISs/General Design Memorandums (GDMs).

Proposed modifications to the previous design include changes to the dimensions, borrow areas, access roads, weir type, and onsite protection within the Temporary Construction Easement (TCE).

- The whole spillway structure would be reconfigured but stay within the existing spillway footprint.
- A new labyrinth weir would be constructed to replace the ogee weir, at the authorized height.
- The spillway chute and walls would be rebuilt.
- The flip-bucket will be modified to include a concrete erosion pad and connector wall.
- An additional borrow area has been established off Auto Center Drive across from the Prado field offices.
- The TCE was expanded to include an existing access road that runs along the auxiliary embankment.
- A temporary cofferdam would be constructed to protect the work site during the wet season.

The modified design would result in approximately 48.0 acres of permanent impacts and 126.9 acres of temporary impacts to existing vegetation in undeveloped areas. Temporary and permanent impacts to habitats will be offset by habitat restoration in other locations both nearby the Prado Dam Spillway and elsewhere within Prado Basin.

Construction associated with the Proposed Action is tentatively scheduled to start in Summer or Fall 2024 and would continue for approximately fifty (50) months.

The Final Prado Dam Spillway Modification SEA/EIR Addendum, incorporated herein by reference, evaluates 4 alternatives: The No Action Alternative, under which spillway raise

construction would occur as described in the 2001 Final SEIS/EIR with no modifications or additions; and three other alternatives that are all similar in function and impacts but would incorporate different modifications or additions. The Recommended Plan, in which the proposed design and construction modifications would be implemented, was selected during the dam safety modification study and is fully documented in the Dam Safety Action Decision Summary.

An electronic public Draft Prado Dam Spillway Modification SEA/EIR Addendum was made available on the Los Angeles District homepage and was distributed to known interested parties in August 2021, with a request for comments from August 18, 2021 to September 24, 2021. Comments received on that public Draft are included in Appendix H of the SEA/EIR Addendum, along with the USACE's response.

For all alternatives, the potential effects were evaluated, as appropriate. A summary assessment of the potential effects of the recommended plan are listed in Table-1 below:

Table-1: Summary of Potential Effects of the Recommended Plan (including proposed minimization and avoidance measures)

	Insignificant effects	Insignificant effects as a result of mitigation	Resource unaffected by action
Water Resources and Hydrology	☒	☐	☐
Air quality	☒	☐	☐
Earth Resources	☒	☐	☐
Biological Resources	☐	☒	☐
Cultural Resources	☒	☐	☐
Land Use	☒	☐	☐
Aesthetics	☒	☐	☐
Recreation	☒	☐	☐
Noise	☒	☐	☐
Socioeconomics	☒	☐	☐
Public Services and Utilities	☒	☐	☐
Transportation	☒	☐	☐
Hazardous Materials	☒	☐	☐

Avoidance and minimization measures to be implemented as part of the action are included in the SEA/EIR Addendum in Section 6.0. With the implementation of these measures, all potential impacts to environmental and human resources in and adjacent to the project area, outside of those already identified impacts to existing habitat, would be less than significant.

Biological, cultural, and environmental resources surveys were conducted at the Prado Dam Spillway Modification Project Area, and potential impacts or effects of the project were analyzed in the Final SEA/EIR Addendum. Endangered Species Act compliance was initially addressed through a biological opinion from the U.S. Fish and Wildlife Service (USFWS) dated December 5, 2001 (FWS-SB-909.6), and more recently addressed through a biological opinion from the USFWS dated November 26th, 2021 (FWS-WRIV-08B0408-21F1233). The USFWS determined that Coastal California gnatcatcher (*Polioptila californica californica*) and least Bell's vireo (*Vireo bellii pusillus*) would be adversely affected by the Proposed Action. The USFWS determined that the Proposed Action is not likely to jeopardize the continued existence of the Coastal California gnatcatcher or least Bell's vireo, nor result in the destruction or adverse modification of designated critical habitat for the vireo which is present nearby.

The Proposed Action is in compliance with the Clean Water Act (CWA). Coordination with the Santa Ana Regional Water Quality Control Board (RWQCB) staff on November 22, 2021 and April 21, 2022 confirmed that the Section 401 Water Quality Certification (WQC) previously received for the Alcoa Dike feature of SARMP will be amended to reflect that the Spillway Modification project rather than the Alcoa Dike feature will utilize a borrow site containing riparian habitat and Waters of the United States. While the Alcoa Dike feature is no longer planning to use this borrow site, the site would instead be used by the Spillway Modification project (Proposed Action), potentially resulting in temporary impacts to habitat within this area. These impacts have been mitigated in accordance with 401 WQC requirements for Alcoa Dike, and no additional impacts are proposed or anticipated to occur as a result of using the borrow site for Prado Spillway Modifications rather than for Alcoa Dike. The RWQCB will process the amendment prior to or during construction of the Prado Dam Spillway Modification Project, once it is confirmed that impacts to the unnamed drainage within the borrow site are not avoidable.

Pursuant to Section 106 of the National Historic Preservation Act of 1966, a programmatic agreement (PA) was executed for the SARMP in 1993 by the USACE, State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation. The PA also details the procedures to be followed for each feature of the project. Pursuant to the PA, the USACE has undertaken a series of historic property identification efforts within the project area. In consultation with the SHPO, three resources within the project area have been determined to be eligible for the National Register of Historic Places. In consultation with the SHPO and the ACHP, all three have been mitigated. The Prado Dam was mitigated through the completion of a Historic American Engineering Record that was filed with the National Park Service in 1996. Additionally, two archaeological sites that were located within the proposed borrow area, CA-RIV-1039 and CA-RIV-1044, were excavated in the early 2000s.

Due to the passage of time since the last cultural resource survey, the USACE completed a cultural resource survey of B2, B5, and S1 in July of 2021. No new cultural resources were identified during the survey. In accordance with Stipulation 1 of the PA, the USACE submitted the cultural resources survey report to the SHPO for their review and acceptance. The SHPO

accepted the survey report on October 27, 2021. Under the terms of the PA, no further consultation is required.

The USACE also notified the following non-Federally recognized Tribes about the project and sought their assistance in identifying any properties which are of religious or cultural significance that may be affected by the project: Gabrieleno Band of Mission Indians - Kizh Nation, Gabrieleno/Tongva San Gabriel Band of Mission Indians, Gabrielino /Tongva Nation, Gabrielino Tongva Indians of California Tribal Council, Gabrielino-Tongva Tribe, Juaneno Band of Mission Indians Acjachemen Nation –Belardes, and San Fernando Band of Mission Indians. The USACE also provided the 2021 cultural resources survey report to the Tribes for their review and comment on October 4, 2021. No comments were received.

The Proposed Action is in compliance with all federal regulations and CEQA requirements and rules, and in compliance with all state of California statutes.

Based on the analyses in the SEA/EIR Addendum, implementation of the Proposed Action would result in short term and long-term impacts to environmental resources including, but not limited to, biological resources, air quality, and water quality. All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on the Final SEA/EIR Addendum, the reviews by other Federal, State and local agencies, and the review by my staff, it is my determination that the Proposed Action would not have a significant effect on the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

22 April 2022

Date

Julie A. Balten
Colonel, U.S. Army
Commanding

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List of Acronyms	
APE	Area of Potential Effect
BMP	Best Management Practice
BNSF	Burlington Northern Santa Fe
BO	Biological Opinion
CARB	California Air Resources Board
CAAQ	California Ambient Air Quality
CAGN	Coastal California Gnat Catcher
CDFW	California Department of Fish and Wildlife
CEQ	Center for Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response Cleanup and Liability Act
CESA	California Endangered Species Act
CNPS	California Native Plant Society
DSAC	Dam Safety Action Classification
DSMS	Dam Safety Modification Study
DSM	Dam Spillway Modification
EA	Environmental Assessment
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	United States Environmental Protection Agency
ER	Engineering Regulation
FWAC	Future Without Action Condition
GDM	General Design Memorandum
GHG	Green House Gas
HTRW	Hazardous, Toxic, Radioactive Waste
I-15	Interstate 15
IRRM	Interim Risk Reduction Measure
LRR	Limited Reevaluation Report
MSHCP	Multi-Species Habitat Conservation Plan
NED	National Economic Development
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
OCFCD	Orange County Flood Control District
OCPW	Orange County Public Works
OCWD	Orange County Water District
OHWM	Ordinary High Water Mark
PCA	Project Cooperation Agreement
PFM	Potential Failure Mode
RCFC&WCD	Riverside County Flood Control and Water Conservation District
RCRA	Resource Conservation and Recovery Act
RCRCD	Riverside-Corona Resource Conservation District
RMP	Risk Management Plan
ROG	Reactive Organic Gases
RWQCB	Regional Water Quality Control Board
SEIS	Supplemental Environmental Impact Statement

List of Acronyms	
SARMP	Santa Ana River Mainstem Project
SAWA	Santa Ana Watershed Association
SAWPA	Santa Ana Watershed Project Authority
SBCFCD	San Bernardino County Flood Control District
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SR-71	State Route 71
SR-91	State Route 91
SWPPP	Stormwater Pollution Prevention Plan
TCE	Temporary Construction Easement
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
WRDA	Water Resources Development Act

1 INTRODUCTION

This Supplemental Environmental Assessment/Environmental Impact Report Addendum (SEA/EIR Addendum) for the Prado Dam Spillway Modification (DSM) Project has been prepared by the U.S. Army Corps of Engineers (USACE), Los Angeles District. The Project (Proposed Action) includes two elements: The Dam Safety Modification Study (DSMS) and the updated design for Prado Dam Spillway Raise Project which is a feature of the Santa Ana River Mainstem Flood Risk Management Project (SARMP). The 2021 Proposed Action includes modifying the Prado Dam Spillway to reduce existing dam safety performance concerns and design changes to the authorized raising of the spillway, including reconfiguring the chute and chute walls and changing from an ogee weir to a labyrinth weir. The scope of this document is to address any changed condition to be affected by the design change that was not previously addressed in earlier NEPA documents analyzing the raising of the spillway. The two elements are evaluated as one Proposed Action because the Dam Safety Modification Study relies on the raise being constructed and both elements share the same impacts. Section 2.2.2 described the Proposed Action with both elements detailed.

The Prado Dam Spillway Raise is the final phase of the All River Plan, a 45-year effort that includes the raise of Prado Dam by twenty feet, as initially recommended in the 1975 "Review Report on the Santa Ana River Main Stem – including Santiago Creek and Oak Street Drain for flood control and allied purposes", summarized in the 1982 Chief's Report, and ultimately authorized in § 401 of the Water Resources Development Act (WRDA) of 1986, PL 99-662, 100 Stat. 4113, as amended. The authorized spillway raise was evaluated in the 2001 Supplemental Final Environmental Impact Statement/Environmental Impact Report (SEIS/EIR). Since that time, the only baseline changes are updated critical habitat boundaries identified within the project area and updated hydrology which has demonstrated a need to modify the Corps' spillway design. Rather than construct a raised ogee weir as initially anticipated, the Corps now plans to construct a raised labyrinth weir. This change addresses dam safety concerns and falls within the parameters of the impacts previously covered in the 2001 SEIS/EIR. This change does not expand the impacts previously evaluated in the environmental documents. As described below, the impacts and changed conditions considered within this document are therefore narrowly focused on the project area immediately surrounding the spillway.

The original Prado Dam project features, consisting of an earth-filled embankment, outlet works, and spillway, were authorized in the Flood Control Act of 1936, and designed and constructed by the U.S. Department of the Army in 1941 following the disastrous 1938 floods in southern California. The dam is owned, operated, and maintained by the USACE Los Angeles District for the primary authorized purpose of flood risk management. In addition to flood risk management, the Prado Dam and Basin is authorized for water conservation and recreation.

Following decades of analysis and recommendations, the planned modification of Prado Dam began in the early 2000's. Modifications that have been completed include raising the height of the main embankment and constructing a new outlet works. Other features of SARMP were completed to accommodate a future expanded footprint of the reservoir pool impoundment, including upstream tributary improvements, a series of interior dikes upstream of the dam, the auxiliary embankment and floodwall, and the SR-71 highway dike.

As authorized by WRDA 1986 and evaluated in the 2001 SEIS/EIR, raising the spillway crest has been planned as the final phase of the dam raise following the construction and completion of all other SARMP

Prado Basin structures. Currently, all other SARMP Prado Basin structures are either in construction or have been completed.
Features of the SARMP Prado Dam Spillway Raise Project, as previously designed and addressed in the 2001 SEIS/EIR, included modifying the hydraulic control structure, constructing new approach walls, and constructing embankment connections. However, the Spillway Raise Project design as described in 2001 SEIS/EIR relied on a raise of the ogee weir.

In 2019, a Dam Safety Evaluation assessed the risk of failure of the existing spillway structure. Based on the results of this evaluation and the high population at risk downstream of the dam, the Dam Safety Action Classification (DSAC) for Prado Dam was changed from moderate risk to very high risk. A Semi-Quantitative Risk Assessment (SQRA) was performed and confirmed the DSAC rating. In 2020, a Dam Safety Modification Study (DSMS) was initiated to further evaluate project dam safety risks and provide conceptual level designs to reduce the risks (also known as risk management plans, or RMPs). As part of the risk evaluation, potential failure modes (PFMs) identified include:

- Floodwater flowing over an area between the existing spillway and raised main dam embankment,
- Extensive erosion of the spillway foundation following structural failure of a chute slab during spillway operation, and
- Instability of the ogee weir (also referred to as a hydraulic control structure) during large spillway discharges.

Other risks include fault rupture (earthquake) that damage the outlet works structure resulting in the inability to use the conduits to pass flows, thus leading to earlier spillway discharge, and erosion downstream of the spillway during spillway discharge.

The purpose of the Prado DSMS is to identify and recommend an RMP to reduce the dam safety risk. Several RMPs were formulated, evaluated, and compared to identify a final array of RMPs. A Recommended Plan was selected from the final RMP array. At this point, because of dam safety concerns, a labyrinth weir design has replaced the ogee weir design. The chute (i.e., the spillway channel consisting of large segments of concrete slabs and walls) and chute walls will also be replaced in connection with the dam safety construction.

The spillway raise itself was already evaluated in the 2001 SEIS/EIR, so only impacts attributable to the dam safety modifications and construction are evaluated within this document. The array of alternatives evaluated in the raised condition are limited to the final array of RMPs identified in the DSMS. The 2021 Proposed Action is the Recommended Plan, the selected action from the final array of RMPs identified in the DSMS, in combination with the authorized SARMP Prado Dam Spillway Raise Project.

California Environmental Quality Act Compliance

USACE is the lead agency for compliance with NEPA on all SARMP features and the Orange County Flood Control District (OCFCD), one of the SARMP local sponsors and the local sponsor for the Prado Dam separable element, is the lead agency for compliance with California Environmental Quality Act (CEQA). Other local sponsors for the SARMP include the Riverside County Flood Control and Water Conservation District (RCFC&WCD) and San Bernardino County Flood Control District (SBCFCD), but neither are signatories to the Project Cooperation Agreement for the Construction of the Prado Dam separable

element of the SAR.

CEQA Guidelines (California Code of Regulations, title 14, section 15000 *et seq*.) authorizes a Lead or Responsible Agency to prepare an Addendum to a previously certified program or project EIR if some changes or additions are necessary to a previously analyzed project and none of the conditions described in CEQA Guidelines Section 15162 requiring the preparation of a Subsequent EIR or CEQA Guidelines Section 15163 requiring the preparation of a Supplement to an EIR are met. OCFCD has determined that preparation of an Addendum to the 2001 SEIS/EIR is an appropriate method for achieving CEQA compliance for the proposed Prado Dam Spillway Raise project element pursuant to CEQA Guidelines Section 15164 (Addendum to an EIR or Negative Declaration), because the updates to the Proposed Action (as evaluated in 2001) are considered minor. The 2021 Proposed Action reconfigures the previously authorized and evaluated raised spillway design, does not change the construction footprint, does not change the hydrologic function of the spillway, and causes only minor visual changes to the project as designed. furthermore, minor changes and additions to previously proposed environmental commitment measures are listed in Chapter 6. These supplementary measures account for additional listed species occupying the habitat adjacent to the project to ensure a less than significant impact. Thus, there are no significant impacts to the environment outside the scope of the previous environmental documents.

Table 1-1 summarizes the primary differences between the 2001 Proposed Action and the 2021 Proposed Action described in this SEA/EIR Addendum, as well as changes to site conditions that have occurred since 2001. Section 2.2 details the design differences between the 2001 Proposed Action as evaluated in the 2001 SEIS (which is now considered the "No Action" alternative), against the final array of RMPs evaluated in the DSMS including Alternative 1 (Proposed Action), Alternative 2, and Alternative 3. Finally, **Table 2-1** summarizes the design differences between the 2001 design and the 2021 Proposed Action and alternatives.

USACE is responsible for the operation, maintenance, repair, replacement, and rehabilitation of the Prado Dam. Other agencies (i.e., cooperating, responsible, and trustee agencies) that may use this SEA/EIR Addendum in the decision-making or permit process will consider the information in this combined document along with other information that may be presented during the NEPA/CEQA process. Other responsible and trustee agencies were identified in the 2001 SEIS/EIR and are listed as follows:

- California Department of Fish and Wildlife (CDFW)
- California Department of Parks and Recreation
- City of Corona
- Orange County Water District (OCWD)
- Santa Ana Regional Water Quality Control Board (SARWQCB)
- United States Fish and Wildlife Service (USFWS)

Prado Dam Spillway Modification Supplemental Environmental Assessment/Environmental Impact Report Addendum

This SEA/EIR Addendum documents and evaluates the potential impacts of the Prado Dam Spillway Modification on environmental resources. Throughout this SEA/EIR addendum, the Prado Spillway Modification Project refers to the final array of RMPs associated with the Dam Safety Modification Project in conjunction with a raised spillway control structure previously authorized in the Spillway Raise Project. This document also evaluates the changes in sensitive habitat presence within the construction footprint

and adjacent area, including staging, haul routes and borrow areas, as summarized in **Table 3-6**.

1.1 PROJECT LOCATION

The project area is located within Riverside County, California, along the northwestern border of the City of Corona limits within United States Geological Survey (USGS) 7.5-minute quadrangle map (quadrangle) Prado Dam and in Corona North. The project area is approximately 40 miles southeast of Los Angeles, near the border of Orange County (**Figure 1-1**). The spillway is directly adjacent to (east of) the Prado Dam main embankment and the outlet works structure (Figure 1-2**)**.

Figure 1-2 shows the existing flood control features and nomenclature in the vicinity of Prado Spillway. The project footprint runs north of Auto Center Drive and along Pomona Rincon Road to just below the spillway structure. The areas to be used for fill material and staging are mostly located north west of the spillway, with a small staging area directly to the southwest of the Spillway. The project footprint or Temporary Construction Easement includes access routes to the site. The construction footprint is described with more detail in Section 2.2.2 and **Figure 2-5**.

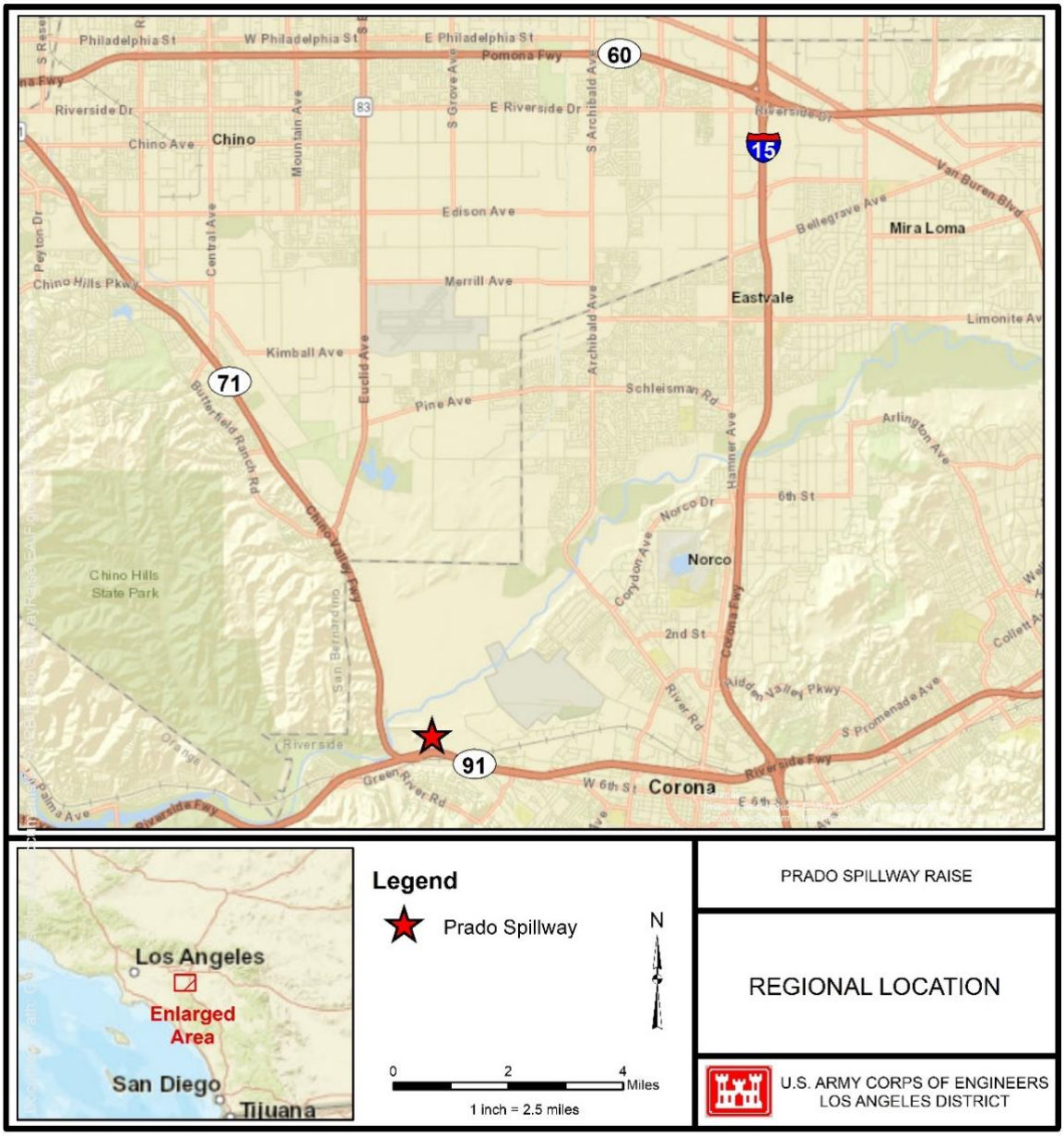

Figure 1-1. Regional Map

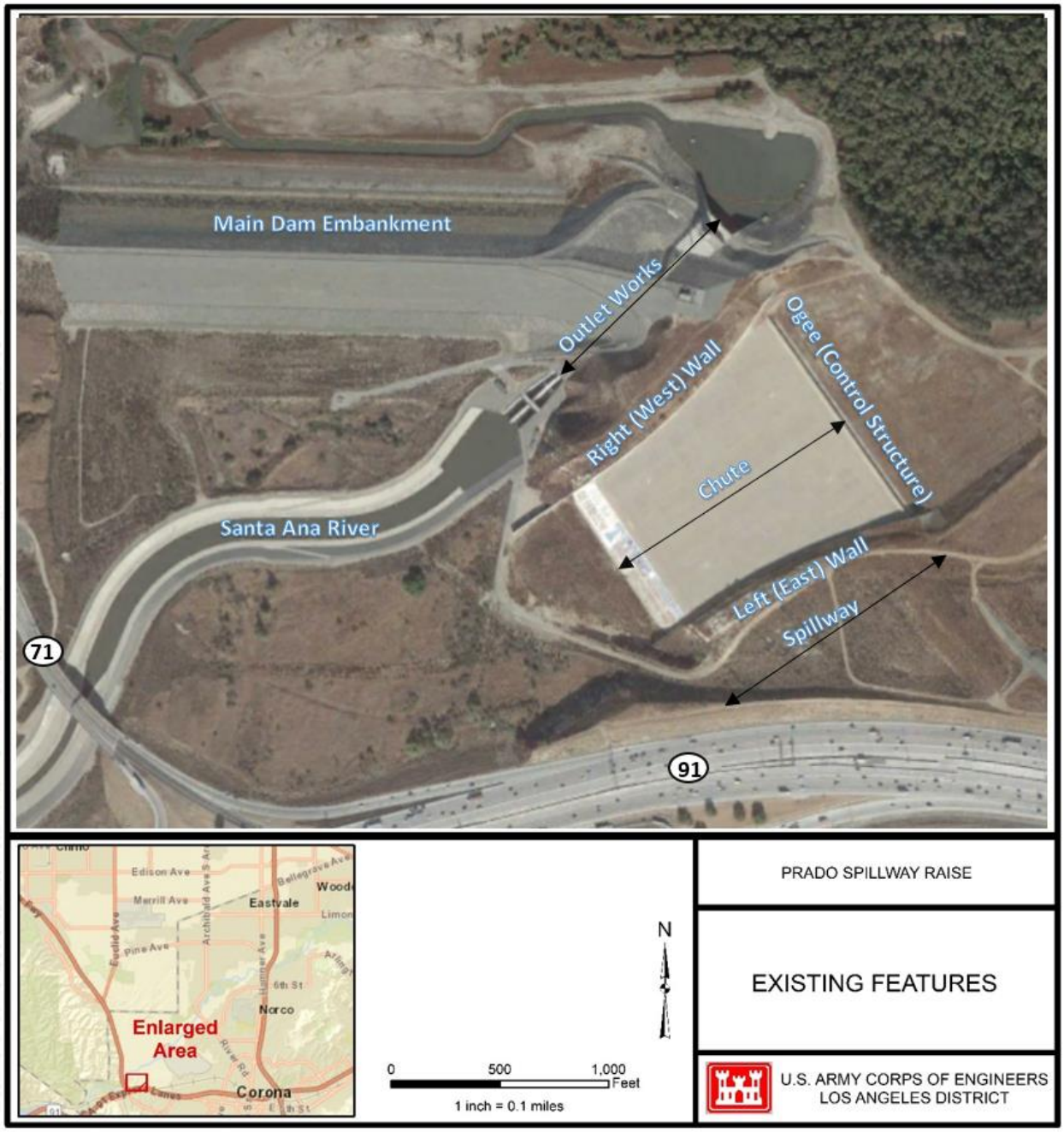

Figure 1-2. Surrounding Flood Control Features and Nomenclature

1.1.1 Project Datum

The original construction of Prado Dam in 1941 was based on the National Geodetic Vertical Datum of 1929 (NGVD 29) vertically and the North American Datum of 1927 (NAD 27) horizontally. All SARMP features have been constructed based on the NAD 27/NGVD 29 datum to ensure consistency with historic reference to design water surface elevations in the context of operations and maintenance of the project features. The 2018 survey topography for the Prado spillway is also based on NAD 27/NGVD 29 datum. As a result, the contract drawings for the Prado spillway modifications will be completed in NAD 27/NGVD 29 datum for consistency.

However, current USACE guidance requires that project drawings reference the North American Vertical Datum of 1988 (NAVD 88) vertically and the North American Datum of 1983 (NAD 83) horizontally. For Prado Dam, NAVD 88 elevations are 2.285 feet higher than NGVD 29 elevations.

1.2 PROJECT AUTHORITY

Prado Dam was originally authorized by the Flood Control Act of 1936, Pub. L. No. 738, § 5, 49 Stat. 1570, 1589 (1936), as amended by the Flood Control Act of 1936, Amendments, Publ. L. No. 75-406, § 5, 50 Stat. 876, 879 (1937). Construction of the original Prado Dam features was completed in May 1941. The primary authorized purpose of Prado Dam is flood risk management, followed by water conservation and recreation. The SARMP improvements were authorized for construction by Section 401(a) of the Water Resources Development Act (WRDA) of 1986, Pub. L. No. 99-662, 100 Stat. 4082, 4111 (1986).

The recommended All River Plan for the SARMP is contained in the Phase I General Design Memorandum (GDM) for the SARMP (USACE 1980) and included eight elements, which were presented to Congress in the 1982 Chief's Report, authorized in WRDA 1986, and subsequently reevaluated in the Phase II GDM (USACE 1988). The Recommended Plan was to provide a level of protection against the Standard Project Flood (SPF). SPF is a flood resulting from the most severe combination of rainfall and hydrologic conditions that are considered reasonable in the region. For this region the SPF is a 2-day volume providing 410,000 ac-ft of water. These events are rare but may occur.

The Corps was directed to determine whether Prado Dam was a separable element of the SARMP in § 309 of WRDA 1996, Pub. L. No. 104-303, 110 Stat. 3713. In addition to the 2001 SEIS/EIR, USACE therefore also prepared a Limited Reevaluation Report (LRR) entitled "Prado Dam Separable Element, Prado Basin & Vicinity and a hydrological analysis for the Prado Dam Spillway Modification (December 2001)", where the Probable Maximum Flood (PMF) was evaluated. The LRR recognized, consistent with the Phase I GDM and Phase II GDM, that the purpose of the proposed Prado Dam improvements was to increase the level of flood protection by raising the dam's embankment and spillway crest elevations by twenty feet. The reservoir storage capacity, as a result, would also be increased from 217,000 acre-feet to 362,000 acre-feet. The new outlet works structure, installed 2005 as part of the SARMP, allows Prado Dam the capability of releasing flows up to 30,000 cubic feet per second (cfs) into the downstream channel prior to spillway operation.

In accordance with the determination in the LRR to construct the Prado Dam Spillway Raise Project as a separable element, a Project Cooperation Agreement (PCA) with the Orange County Flood Control District for the construction of the Prado Dam Separable Element was signed February 11, 2003 and the Prado Dam Spillway Raise Project component was removed from the definition of the project in the SARM Local Cooperation Agreement (LCA) by a second modification to the LCA dated February 24, 2003. The SARM LCA continues to govern the construction of the remaining SARMP features. Cost sharing is required under the agreements for certain features of the SARM including features of the Prado Dam Separable Element,

except as specified in recent amendments to those agreements providing for the use of funding from Bipartisan Budget Act BBA of 2018 funds.

1.3 PREVIOUSLY PREPARED DOCUMENTS AND GUIDANCE

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

- Review Report and Environmental Impact Statement, United States Army Corps of Engineers, Los Angeles District, 1975.
- Phase I General Design Memorandum and Supplemental Environmental Impact Statement, United States Army Corps of Engineers, Los Angeles District, 1980.
- Upstream Dam Alternatives Supplemental Environmental Impact Statement, United States Army Corps of Engineers, Los Angeles District, 1985.
- Santa Ana River Mainstem including Santiago Creek. Phase II General Design Memorandum and Supplemental Environmental Impact Statement (GDM/SEIS), Volumes I and II, United States Army Corps of Engineers, Los Angeles District, 1988.
- Limited Reevaluation Report for Prado Dam Separable Element, Prado Basin and Vicinity, Including Reach 9 and Stabilization of the Bluff Toe at Norco Bluffs SEIS/EIR, United States Army Corps of Engineers, Los Angeles District, 2001.
- Re-initiation of Formal Section 7 Consultation on the Prado Mainstem and Santa Ana River Reach 9 Flood Control Projects and Norco Bluffs Stabilization Project, Orange, Riverside, and San Bernardino Counties, 2012 Biological Opinion (BO) Amendment (FWS-SB/WRIV/OR-08B0408-11F0551). The Service has issued a series of BOs (including, but not limited to, Service 1980, 1989, 2001, 2004, 2005, 2012, 2013, 2015, 2017) addressing the effects of constructing, operating, and maintaining the SARMP on federally listed species and their designated critical habitat.
- ER 1110-1-12, Quality Management, 31 Mar 2011.
- ER 1110-2-1156, Safety of Dams – Policy and Procedure, 31 Mar 2014.
- Dam Safety Action Decision Summary (DSADS), Aug 2021.
- South Pacific Division Dam Safety Production Center Quality Control Plan.
- CESPD Regulation 1110-1-8, Quality Management Plan.
- Los Angeles District Quality Control Policy, In-House Design of Plans and Specifications.
- EC 1165-2-217, Review Policy for Civil Works, May 2021.
- ECB 2019-15, Interim Approach for Risk-Informed Designs for Dam and Levee Projects, 08 October 2019.
- ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 07.
- Prado Dam Interim Water Control Manual, April 2021.
- SEA/EIR Addendum, Santa Ana River Mainstem, Alcoa Dike, Santa Ana River Flood Control

Project, Riverside County, California. U.S. Army Corps of Engineers, Los Angeles District, Los Angeles, California, 2018.

- Santa Ana Regional Water Quality Control Board. 2019. Clean Water Act Section 401 Water Quality Certification and Order for The Santa Ana River Mainstem Project, Alcoa Dike for phase I and Phase II (SARWQCB WDID # 332019-08), 2019.
- SEA/EIR Addendum, Santa Ana River Mainstem, Alcoa Dike Phase II, Santa Ana River Flood Control Project, Riverside County, California. U.S. Army Corps of Engineers, Los Angeles District, Los Angeles, California, 2021.

1.4 DIFFERENCES BETWEEN 2001 PROPOSED ACTION AND 2021 PROPOSED ACTION

To provide context when explaining the primary differences between the 2001 Proposed Action and the 2021 Proposed Action, **Figure 1-3** shows the existing features of the Prado Spillway.

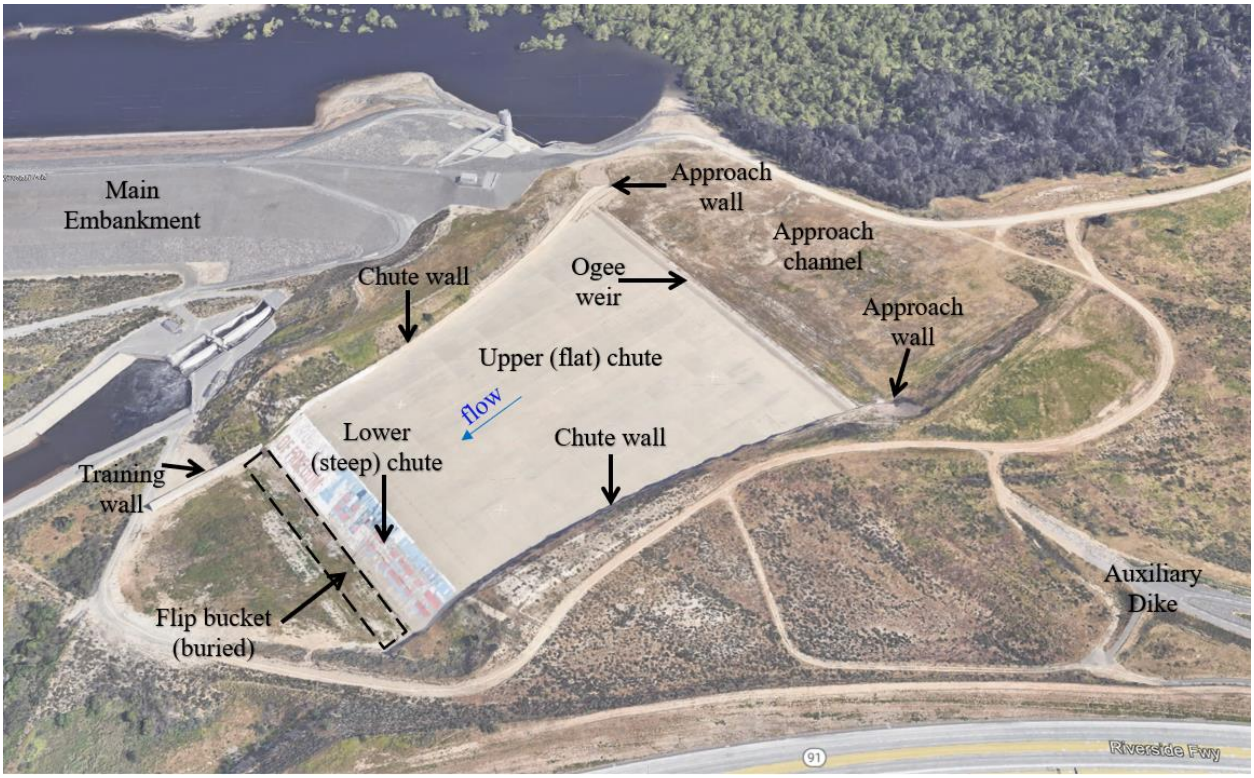

Figure 1-3 Detailed Features of the Existing Prado Spillway.

Table 1-1 summarizes the primary differences between the 2001 Proposed Action and the 2021 Proposed Action described in this SEA/EIR Addendum, as well as changes to existing site conditions that have occurred since 2001. Compared to the 2001 Proposed Action, the duration of temporary impacts increases in the 2021 Proposed Action (i.e., the construction period would span 3 more years and a temporary coffer dam will need to be constructed), and there has been an increase in habitat quality for listed species within the Basin. Potential environmental effects of each modification have been updated and analyzed:

Table 1-1. Summary of the primary differences between the 2001 authorized project and the 2021 Proposed Action.

2001 Proposed Action Elements	2021 Proposed Action Elements
Raise the existing spillway control structure crest (ogee weir) 20 feet with use of concrete cap or overlay.	Replace the existing ogee weir control structure with a new labyrinth weir control structure at a crest elevation that is approximately 20 feet higher than the existing ogee weir crest elevation.
Construct embankment connections for the main dam embankment to the spillway and the auxiliary dike embankment to the spillway.	No change.
Construct approach channel walls/ dikes (referred to as training walls/dikes).	Construct approach channel walls.
Retain the existing concrete spillway chute.	Replace the spillway chute.
Chute walls: Retain existing chute walls but construct concrete slope protection above the existing walls.	Replace the chute walls.
Retain the existing flip bucket. Modify the downstream training wall.	Modify the existing flip-bucket and include a concrete erosion pad and connector wall.
Identification of general borrow and staging areas.	Identification of specific borrow and staging areas.
No identification of cofferdam to protect project site.	Identification and design development of a temporary coffer dam during construction.
Coastal California Gnatcatcher (CAGN) not present in project area. Coastal sage scrub habitat in the area is poor quality.	CAGN have colonized Project area. Quality of coastal sage scrub in area has increased due to previous restoration efforts.
Least Bell's vireo (LBV) not as abundant in the project area due to low habitat quality.	Several territories of LBV exist within the proximity for indirect disturbance due to project activities.
Construction duration for the spillway modifications approximately 1 to 1-1/2 years.	Construction duration for the spillway modifications approximately 4 to 4-1/2 years.
Proposed borrow areas contained sufficient materials to construct the proposed modifications, with minimal import of materials needed.	More import of materials may be needed for both fill requirements as well as concrete amount to construct a new chute and chute walls.

1.5 OBJECTIVES, PURPOSE, AND NEED

In accordance with 40 CFR 1502.13 and CEQA guidelines 15124, this section provides an explanation of

the "underlying purpose and need to which USACE is responding in proposing the alternatives including the 2021 Proposed Action" and "clearly stated objectives of the Proposed Project."

Statement of Purpose

The purpose of the 2021 Proposed Action (hereafter referred to as Proposed Action) is to modify the existing spillway to reduce the flood and life risk posed by risk-driving potential failure modes (PFMs) at Prado Dam to a tolerable level and increase the flood risk management benefits provided by the dam for San Bernardino, Riverside, Los Angeles, and Orange Counties, which are continuing to urbanize. Objectives of the Proposed Action are to finish construction of the authorized SARMP features at Prado Dam and reduce risk of failure of the Dam. The primary objective of SARMP is to provide flood protection to areas from a Standard Project Flood, which is a flood resulting from the most severe combination of rainfall and hydrologic conditions that are considered reasonable in the region.

Statement of Need

The SARMP was designed to provide flood protection to communities within the counties of Orange, Riverside, and San Bernardino. All other features of SARMP have been completed or are currently being built as authorized. Raising the spillway to the authorized height is the final phase of the Prado Dam raise and the final constructable element of SARMP. The authorized raise of the spillway crest to 563', however, cannot proceed as originally designed. Prado Dam Spillway was reclassified as very high risk in 2019. The USACE considers the very high risk associated with the existing Prado Dam Spillway to be unacceptable and requires immediate action. The primary potential failure mode contributors to the risk include:

- Floodwater flowing over an area between the existing spillway and raised main dam embankment.
- Extensive erosion of the spillway foundation following structural failure of a chute slab during spillway operation.
- Instability of the ogee weir during large spillway discharges.
- Fault rupture that damages the outlet works structure resulting in an inability to use the conduits to pass flows and leading to early spillway discharge.
- Erosion downstream of the spillway during spillway discharge.

Without the Prado Dam Spillway Modifications, the most severe flood likely to occur along the Santa Ana River resulting from overtopping and structure failure could inundate more than 170 square miles to an average depth of three feet and result in billions of dollars in economic damages and endanger lives and property of millions of people. **Figure 1-4** below shows the potential flooding zone in red.

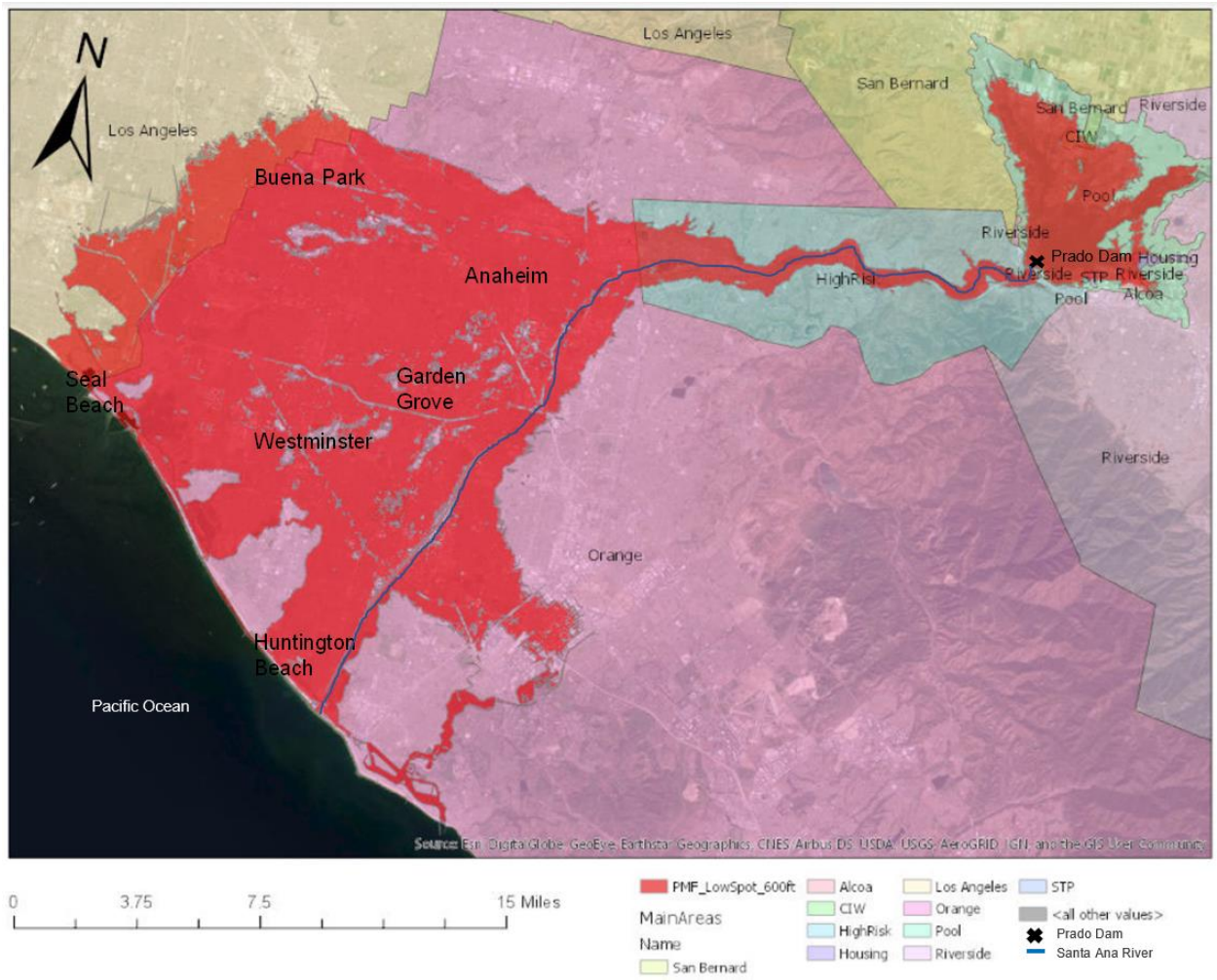

Figure 1-4. Areas at Risk for Inundation During Flooding

2 PROPOSED ACTION AND ALTERNATIVES

2.1 ALTERNATIVES EVALUATED AND ELIMINATED

2.1.1 No Construction Alternative

A No Construction Alternative was previously addressed in the 2001 SEIS/EIR but did not account for additional potential failure modes. A 2019 life safety risk analysis identified additional potential failure modes that were previously unknown.

The DSMS denotes a No Construction Alternative as the Future Without Action Condition, defined as

neither the SARMP Spillway Raise Project nor dam safety modification measures occurring. In the DSADS, the Future Without Action Condition (FWAC) is based on the existing ogee weir at a spillway crest elevation at 543 feet NGVD 29. Due to high risk of life loss to the large downstream population, critical infrastructure, and substantial property downstream of the dam, addressing all safety concerns is imperative. Therefore, the No Construction Alternative is not carried forward for further analysis in this SEA/EIR Addendum.

2.2 PROJECT ALTERNATIVES

The RMPs developed as part of DSMS were evaluated based on cost, risk reduction, and the specific screening criteria from US Army Corps of Engineers Regulations. The screening criteria included effectiveness, efficiency, acceptability, robustness, redundancy, resiliency, impacts to the affected environment, doing no harm, and the ability to implement the measure. The definitions of these screening criteria are as follows:

- Effectiveness: The degree to which measures meet the study objective. This considers the amount of life safety and dam safety risk reduction due to the implementation of the plan.
- Efficiency: The extent to which measures are the most cost-effective means of reducing life safety and dam safety risk.
- Acceptability: The extent to which measures are acceptable in terms of laws, regulations, and policies.
- Robustness: The ability of a system to continue to operate as intended across a wide range of operational conditions (the wider the range of conditions, the more robust the system), with minimal damage, alteration, or loss of functionality.
- Redundancy: Duplication of critical components of a system with the intention of increasing the reliability of the system, usually in the case of a backup or failsafe.
- Resiliency: The ability to avoid, minimize, withstand, and recover from the effects of adversity, whether natural or manmade, under circumstances of use.
- Impacts to Affected Environment/Cultural Resources: The extent to which each RMP has the potential to impact or affect significant statutorily protected or regulated resources.
- Do No Harm: The principle of “Do No Harm” must underpin all actions intended to reduce dam safety risk (i.e. the action does not increase risk or unacceptably transfer risk to different population areas).
- Ability to Implement: Feasibility of design and construction of the risk reduction measure.

The risks being addressed in the DSMS are focused on risks associated with the spillway as originally designed and constructed in 1941. Therefore, the analysis of solutions to the associated risks focuses on the spillway as originally constructed in order to evaluate and determine which dam safety alternative the Corps would propose to adopt. However, raising the spillway as the final element of SARMP has been authorized, analyzed, and agreed upon by both USACE and the local sponsors for this separable element in a Local Cooperation Agreement . Therefore, a single design effort to include both the Dam Safety and Spillway Raise elements as the Prado Dam Spillway Modification project is appropriate, and the RMPs are incorporated into a spillway with a crest elevation of 563 feet NGVD 29. Therefore, the following discussion of alternatives focuses on the project as previously authorized along with the updated spillway design with additional risk reduction measures.

Three Spillway Modification alternatives and the No Action Alternative (previously authorized project

from 2001) have been carried forward for detailed analysis in this SEA/EIR Addendum. The Spillway Modification alternatives include the three dam safety RMPs, in conjunction with the SARMP Prado Dam Spillway Raise Project (**Table 2-1**). The alternatives carried forward are:

- No Action Alternative (Previously authorized Design Alternative for the Prado Spillway Raise, No Dam Safety Elements)
- The Proposed Action - Updated Spillway Raise Design and Dam Safety RMP 5A- Replace the spillway ogee weir with labyrinth weir, replace chute slabs, chute walls and embankment connections (hereafter referred to as Alternative 1; Proposed Action)
- Updated Spillway Raise Design and Dam Safety RMP 3A- ogee replacement, embankment connections, and chute slab replacement (hereafter referred to as Alternative 2)
- Updated Spillway Raise Design and Dam Safety RMP 6B- ogee replacement, embankment connections, chute slab replacement and chute wall replacement (hereafter referred to as Alternative 3)

Table 2-1 provides a breakdown of the differences between each project feature, from each of the three alternatives and the previously approved plan.

Table 2-1 Design feature differences between the 2001 design and the alternatives

Feature	2001 SEIS/EIR Addendum Proposed Action (baseline)	Alternative 1 (RMP 5A) 2021 Proposed Action	Alternative 2 (RMP 3A)	Alternative 3 (RMP 6B)
Weir (control structure)	1,000 ft long (crest length) ogee weir	Labyrinth weir (similar crest length and function but within a narrower footprint)	No significant change from 2001 SEIS	No significant change from 2001 SEIS
Approach walls	Construct approx. 1,200 ft of training walls/approach walls	Construct approx. 900 ft of approach walls	No significant change from 2001 SEIS	No significant change from 2001 SEIS
Auxiliary Dike connection	Construct approx. 600 ft long embankment	Construct approx. 750 ft long embankment	No significant change from 2001 SEIS	No significant change from 2001 SEIS
Main Embankment connection	Construct approx. 250 ft long embankment	Construct approx. 550 ft long embankment	No significant change from 2001 SEIS	No significant change from 2001 SEIS
Chute slab (upper and lower)	No modification – leave existing in place	Replace approx. 3/4 of chute slab (approx. 500 ft wide area)	Replace 100% of chute slab (entire spillway)	Replace 100% of chute slab (entire spillway)
Chute walls	Armor above chute walls and repair wall joints	New chute walls	No significant change from 2001 SEIS	New chute walls

Flip bucket	No modification – leave existing in place	Modify flip bucket	Modify flip bucket	Modify flip bucket
Training wall	Construct training wall extension on west side.	No wall extension	No wall extension	No wall extension
Erosion protection slab	None	Add erosion protection slab and wall	Add erosion protection slab	Add erosion protection slab

Several utilities will also be relocated prior to construction start due to overlap with the construction footprint. This includes a Southern California Gas Company (SoCalGas) natural gas pipeline, AT&T fiber optic lines, and Southern California Edison electric lines. The additional tasks are comparatively small in scale and at this time impacts to these utilities are not able to be assessed, therefore separate Environmental Assessment documents (NEPA) will be developed separately. The SoCalGas natural gas pipe project has complete NEPA and started construction November 2021. In addition, the mural on the Prado Spillway steep chute will be removed as the Proposed Action includes the removal and replacement of the entire spillway chute. The mural contains lead-based paint and will be removed and disposed of in a proper manner. Further information can be found in sections 3.7 and 4.7 (Aesthetics) and 3.13 and 4.13 (Hazardous Materials).

2.2.1 NO ACTION ALTERNATIVE (Previously Authorized Design Alternative for the Prado Spillway Raise)

For purposes of NEPA and CEQA, the No Action Alternative is the prior authorized project (the 2001 Proposed Action). The Future Without Action Condition alternative, as explained in 2.1.1, does not include modification to address two risk driving PFMs (spillway erosion of the chute slabs and erosion at the end of the chute); therefore, if the 2001 Proposed Action is implemented without the dam safety measures, Prado Dam would continue to be classified as high risk.

The 2001 Proposed Action is the Spillway Raise Project according to the plan presented in the 2001 SEIS/EIR, and is the same plan analyzed in the 1988 Phase II GDM SEIS. The design includes raising the existing ogee weir from its crest at elevation 543 feet to elevation 563 feet (NGVD 29) by the addition of a concrete overlay. Spillway chute walls would be extended by the addition of a concrete vertical or sloped (battered) wall depending on the location and terrain condition in the vicinity of the existing structure. Training dikes (to control flow and sediment) would be provided on both sides of the approach channel and would extend 300 feet upstream from the spillway crest and, in general, would be earth-filled structures (**Figure 2-1**). On the east side of the spillway, the top width of the dike would be 16 feet at elevation 589.9 (NGVD 29), and side slopes would be revetted. Due to the location of the west dike near the entrance of the outlet works, the top of the dike would be limited to elevation 553 (NGVD 29); and a concrete training wall would be provided between elevations 553 feet and 589.9 feet (NGVD 29).

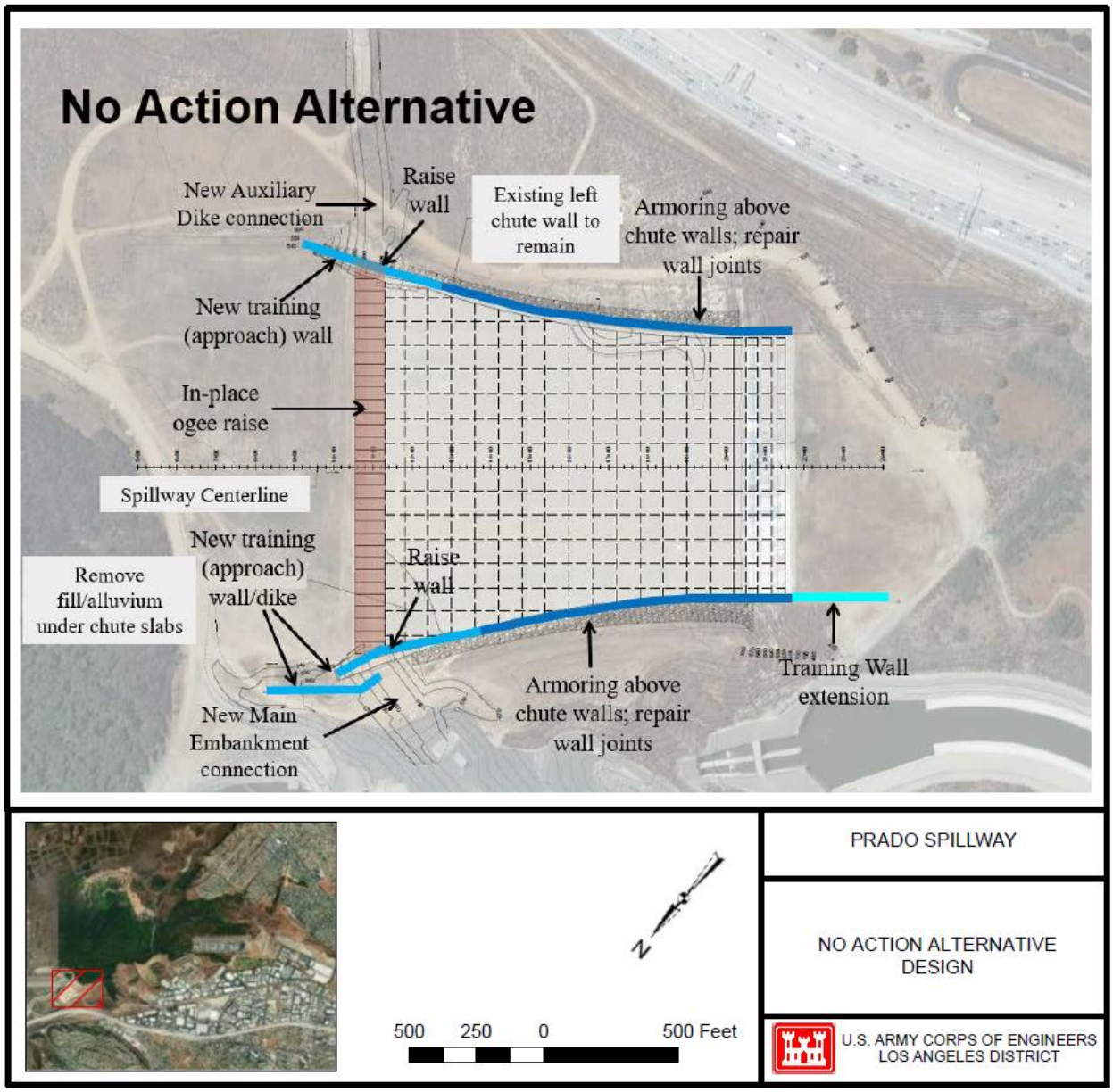

Figure 2-1 No Action Alternative Conceptual Design

To avoid inducing additional loads and surcharging the existing gravity wall on each side of the spillway, the maximum 28.9-foot-high retaining wall would be located at least 40 feet away from the gravity wall. The alignment of the retaining wall was selected to minimize its length. The height of the retaining wall would vary in accordance with the computed water surface over the spillway. The area between the existing gravity wall and the retaining wall would be paved with 6 inches of concrete for protection against erosion of the retaining wall footing.

The downstream portion of the spillway wall extension would be provided by constructing an earthen

berm with a top width of 8 feet and a maximum height of 4 feet. A concrete slab would be provided between the top of the berm and the top of the existing wall. This project feature is identical to the feature approved as part of the Phase II GDM and analyzed in the 1988 Phase II GDM SEIS.

The size and project area were not described in detail in the Phase II GDM SEIS nor the 2001 SEIS/EIR. Staging areas and the overall footprint size were not delineated at that time; however, borrow areas were described. The Spillway Raise was proposed to utilize materials from nearby "Borrow Site No. 1" (**Figure 2-2**). The environmental effects related to utilization of Borrow Area No. 1 were analyzed by the USACE in the 1988 Phase II GDM and in the 2001 SEIS/EIR. These documents determined that the design of the spillway raise construction would have no significant impact to traffic since existing haul roads would be utilized. The haul roads would not impact any existing public roads.

The total construction time for this alternative was estimated to be approximately 12-18 months. Subsequent to construction activities, periodic maintenance would be required to ensure continued integrity of the structural enhancements. Anticipated maintenance activities would include:

- Periodic weed abatement of the embankment, concrete paving, and access road areas
- Repair of access roads, as required
- Repair of the concrete structure and associated fill, as required
- Maintenance of access road gate and fencing
- Any emergency activities, as may be required
- Debris removal

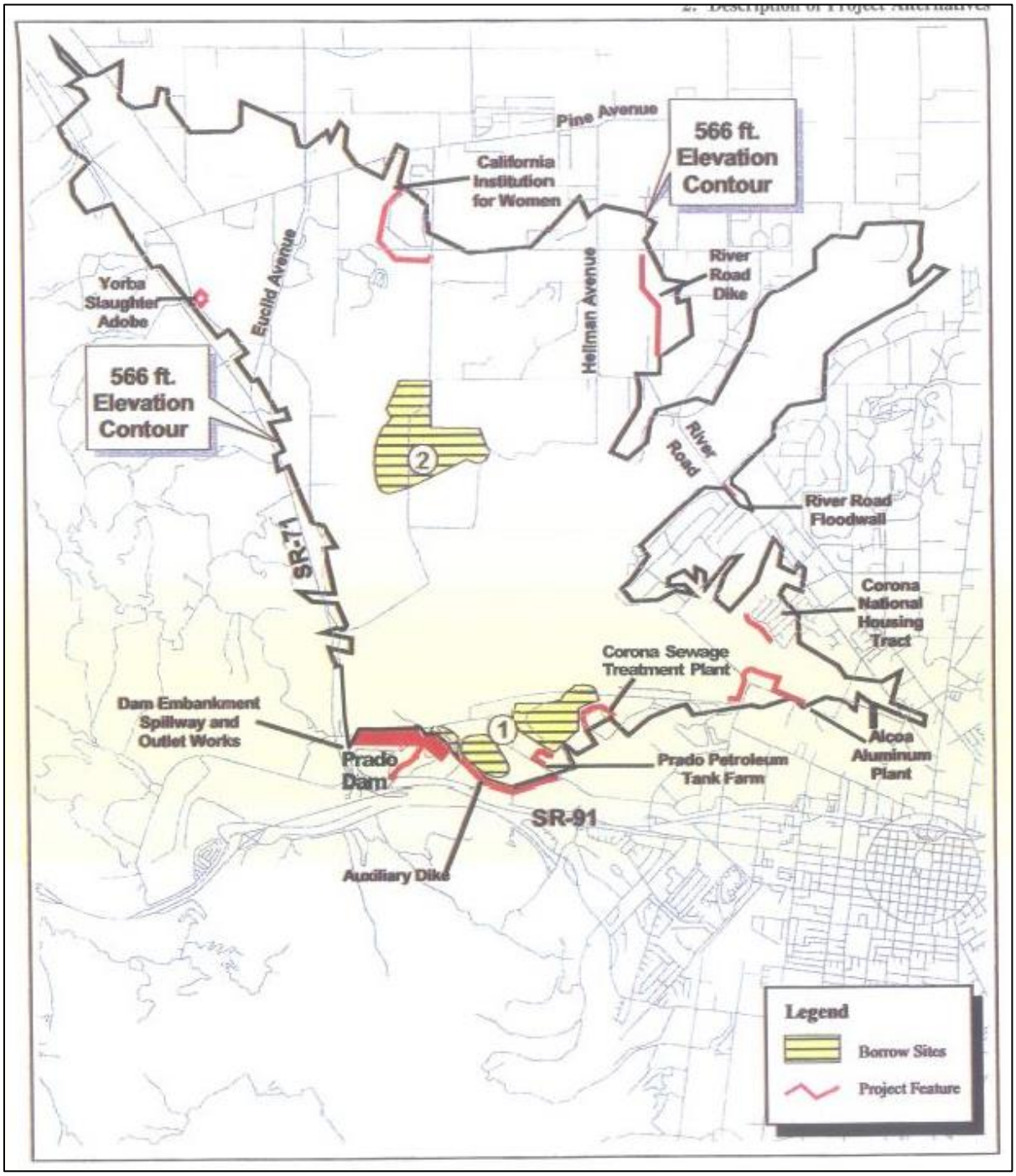

Figure 2-2. Borrow Areas as Proposed in Previously Approved Design

2.2.2 ALTERNATIVE 1 (Proposed Action)

- Demolish the existing ogee weir.
- Construct a new labyrinth weir and approach walls.
- Construct earthen embankment connections (tie-ins) to main dam embankment (to the west) and Auxiliary Dike (to the east).
- Demolish existing chute slabs and construct new chute slabs.
    - Upper (flat) chute: construct a new chute slab approximately 500-foot-wide with an underdrain system, anchors, and a structural concrete slab.
    - Lower (steep) chute: construct a 500-foot-wide concrete slab with drainage system and anchors..
- Construct new left and right concrete chute walls with a drainage system.
- Modify the flip bucket and construct a concrete erosion protection slab and wall downstream of the flip bucket.
- Temporarily construct a cofferdam upstream of the weir to prevent flooding of the work area.

The Proposed Action is similar to the No Action Alternative in that it also raises the Spillway to the authorized height of 563 feet NGVD29, and has a similar project footprint. However, the Proposed Action differs by changing the weir structure and including several additional modifications as detailed in this section. As part of the Dam Safety Modification Project, the existing ogee would be demolished and replaced with a labyrinth control structure, new approach and chute walls constructed due to the narrower labyrinth, chute slab replaced, flip bucket modified, and a scour pad downstream of the flip bucket constructed. As part of the authorized SARM Spillway Raise Project, the labyrinth control structure, approach and chute walls, and embankment connections would be raised an additional 20 feet. Both the Dam Safety Modification Project and the SARM Spillway Raise Project require the same construction footprint for access, laydown, borrow, care and diversion of water (cofferdam), and active construction area.

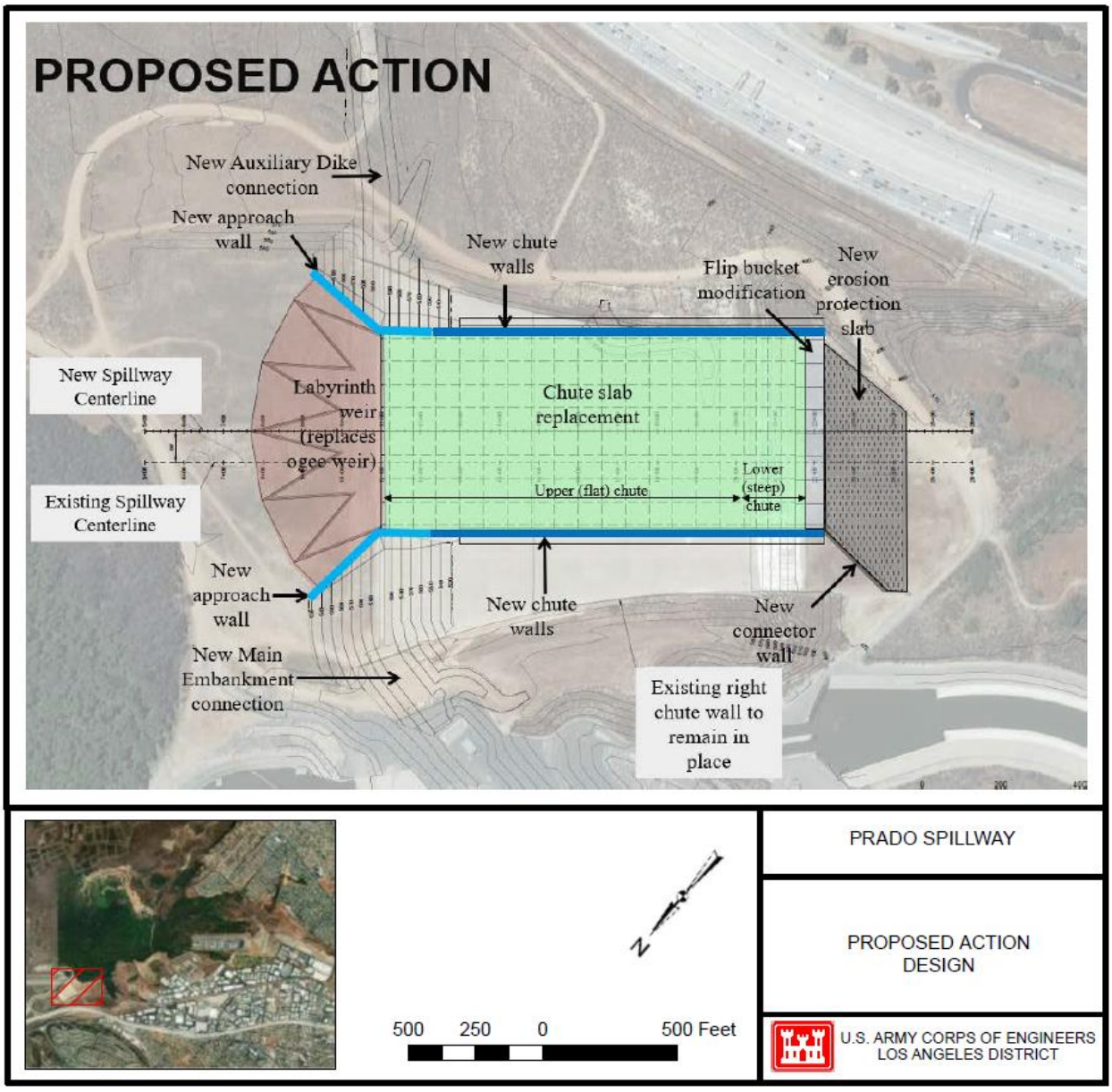

Figure 2-3. Alternative 1 (Proposed Action) Conceptual Design

Labyrinth Weir and Approach Walls

The existing ogee weir would be demolished and would be replaced with a labyrinth weir structure slightly upstream of the existing ogee weir. Conceptual level designs indicate that this new reinforced concrete structure would be up to approximately 35 feet high with staggered crest elevations of 563.0 feet and 567.0 feet, NGVD29 designed to be very similar to the hydraulic performance of the upstream ogee raise alternatives. The upstream-to-downstream length of approximately 330 feet and the arc length at the downstream nose of the labyrinth weir would be approximately 550 feet. Other labyrinth weir designs are being considered including a rectangular shaped and skewed shaped structure. These other designs would be within the footprint of Alternative 1, as shown in **Figure 2-3**. Portions of the existing ogee weir would be demolished and removed for disposal to accommodate the footprint of the new labyrinth weir structure. Mass gravity concrete approach channel walls would be constructed upstream of and at each end of the labyrinth crest structure to convey flows into the spillway and to protect the upstream slope and toe of the embankment connections from approach velocities. Mass gravity concrete walls would be constructed on each side of the labyrinth weir to retain the embankment connections.

Connection to Main Dam Embankment and Auxiliary Dike

The connections would be zoned earth-fill embankments connecting the existing main embankment to the new west spillway wall and connecting the existing Auxiliary Dike embankment to the new east spillway wall. This is similar to the No Action Alternative except the Main Dam Embankment connections would extend further into the existing spillway footprint to connect to the labyrinth weir structure. The embankment connections would consist of a low permeability core, filters, drains, and coarse-grained shell material. The upstream embankment slopes would be subject to erosion and scour and therefore, would be covered with stone protection. The crest would include a continuation of the existing maintenance roads. The connection to the Auxiliary Dike would incorporate a 200-foot-wide vegetated ramp to accommodate wildlife movement over the dike.

Chute Slab Replacement

The new reinforced concrete chute constructed within the footprint of the existing spillway would be approximately 500 feet wide, conveying spillway discharges from the labyrinth weir to the existing flip bucket.

The upper chute replacement would include demolition of the existing chute slab and underdrain system, excavation, backfill, construction of a new underdrain system, installation of passive anchors, and placement of a structural concrete slab.

The lower chute replacement would include demolition of the existing chute slab and underdrain system, excavation, and construction of a new drainage system, RCC, anchors, and a structural concrete slab **(Figure 2-3**).

Chute Walls

The new chute walls would be reinforced concrete cantilever walls or mass gravity concrete walls. A portion of the existing chute wall would be demolished on the east side and a temporary excavation slope constructed to accommodate construction of the new chute wall. A drainage system would be constructed behind the wall and backfilled with gravel or soil.

Flip Bucket Modification, Connector Wall, and Erosion Protection

Modification to the flip bucket is being considered to safely direct flows away from the spillway chute. The preliminary design includes a 5 feet thick structural concrete overlay that is anchored into the existing flip bucket. The upstream portion of the flip bucket would be demolished and replaced with structural concrete to tie into the steep chute slab. The purpose of the RCC pad is to provide erosion (scour) protection downstream of the flip bucket. The extent of the erosion protection may be limited due to environmental constraints, especially on the left side of the spillway where a wildlife corridor exists, along the existing access road. The purpose of the connector wall is to tie into the existing training wall along the right side of the flip bucket to keep flows moving in the downstream direction and reduce the potential for erosion in the area of the existing wall.

Project Footprint

The proposed project area is provided in Figure 2-5. Within this Temporary Construction Easement (TCE) are two staging areas for staging construction equipment and a concrete batch plant (S1, S2). Five borrow areas are proposed, all of which occur within the previously authorized project and analyzed borrow area, except for B5. The borrow areas may be used as staging areas prior to reclamation of the borrow areas. **(**B1:5; **Figure 2-2,** Figure 2-5**)**. The Proposed Action footprint falls mostly within the No Action Alternative footprint. The difference being that the No Action Alternative had identified different borrow areas. Additional borrow areas were identified, based on availability and because more material is needed to construct the dam safety modification elements of the project and not just the raise element (the only element of the No Action Alternative).

Project Access

Construction vehicles would access the site using the existing haul route that continues from Auto Center Drive, which transitions from a paved road to a dirt road called Pomona Rincon Road. Other unpaved maintenance roads that surround the existing project area would be accessed by construction vehicles as well, some widening may need to occur to safely accommodate large vehicles and equipment.

Haul Routes

Haul roads and vehicular access roads would be needed during construction of the spillway. The location and quantity of access ramps into the chute would vary during construction and depend on the location of work and the needs of the contractor. One example of an access ramp is shown on **Figure 2-2**. Haul roads will be used to transport equipment, stone, fill material, and other construction materials from the borrow sites, commercial quarries, or the staging areas. Haul routes within the TCE would be located on government property.

Disposal Sites

Construction of the Proposed Action would produce organic, inorganic, and unsuitable construction materials which must be disposed of as specified below so that the project site would be restored after completion of construction. Therefore, if the project results in more excavation than fill placement, such as the borrow areas that have been excavated, the excess earth materials would be placed in fill areas. The contractor may recycle or reuse materials, depending on contract requirements. Other material

would be disposed of offsite at approved disposal locations. Site cleanup shall include, but shall not be limited to, the removal of fences, concrete, asphalt pavement, abandoned equipment, and trash. When feasible, concrete will be recycled and used in the RCC process or as aggregates for construction of project features as appropriate.

Topsoil containing organic material would be spread on borrow areas as part of site restoration. Organic materials, trees, shrubs, and abandoned timber structures would be disposed of by hauling to a local commercial site. Disposal of any materials by burning or burying at the project site would not be permitted. Inorganic materials would include, but are not limited to, broken concrete, rubble, asphalt, concrete, concrete reinforcement, metal, and other types of construction materials. These materials would be taken to recycling facilities when possible and to a commercial landfill when recycling or reuse of these materials is not possible. For the purposes of this analysis, it is assumed that the nearest landfill (El Sobrante Landfill, 10910 Dawson Canyon Rd., Corona, CA) and material recycling facility (Philadelphia Recycling Mine, 12000 Philadelphia Ave. Mira Loma, CA) would be used.

Source of Material

For the embankment connections, approximately 260,000 cy of fill would come from the borrow areas delineated in Figure 2-5; approximately 22,000 cy of fill would be imported from a commercial site; 9,000 cy of stone protection and 5,000 cy of bedding material would be imported from a local quarry. For the purposes of this analysis, it is assumed that the nearest quarry would be used. Approximately 120,000 cy of imported fill and 400,000 cy of concrete is estimated for the labyrinth weir, chute slab, and chute walls. Approximately 2,500 cy of imported backfill material and 50,000 cy of concrete is estimated for downstream erosion protection.

Water Source

Water would be required for construction activities such as dust control and concrete construction. Water may be obtained from the City of Corona water line adjacent to the Duralum Plant along Auto Center Drive and Railroad Street.

Reclaimed water could potentially be obtained from the Corona Sewage Treatment Plant. During the Prado Dam embankment raise construction between 2003 to 2009, the water from the sewage treatment plant was used for construction. The reclaimed water was tested, and it met the cleanliness requirements at that time. It is anticipated that the water from the sewage treatment plant could also be used for landscaping restoration. The temporary pipe from the treatment plant is still in place and is currently being used by a separate contractor to irrigate their landscaping.

Water from dewatering operations may be used for dust control and construction activities, subject to permit requirements and payment to Orange County Water District who is the owner and water purveyor. Water inside the dam reservoir or in the outlet channel may not be used for construction due to impacts to environmental resources and existing water rights.

Water used for concrete construction would first be tested to ensure it meets contract requirements. The construction contractor would be responsible for acquiring access to water for construction.

Construction Equipment

Construction equipment would include a combination of dozers, excavators, haul trucks, wheeled backhoes, and scrapers to remove material to foundation grade. The foundation would be prepared with air compressors, vacuum trucks, power brooms attached to skid steers, front end loaders, excavators, and haul trucks. Front end loaders, backhoe loaders, dozers, and skid steers may be used for placement or movement of materials and stockpile maintenance. A motor grader may be used to finish grades and smooth out surfaces. A motor grader would be used throughout construction with a water truck or water tanker to maintain haul roads. Drill rigs would be used to install foundation anchors. A crane would be used to install formwork and rebar. Batch plants would likely be established onsite to mix concrete; however, delivery of conventional concrete via truck from local ready-mix plants is also a possibility. Concrete pump trucks and conveyor belt systems may be used to deliver concrete from concrete delivery trucks or on-site batch plants to the point of placement. Vibratory equipment would be used for mass concrete placements. Roller compacted concrete would be batched with an onsite plant, transported with trucks or conveyors, spread with dozers, and compacted with smooth drum compaction equipment. Hydraulic excavators, haul trucks, scrapers, sheepsfoot and smooth drum compactors, tractors pulling a disc, water trucks, motor graders, and dozers would be used for embankment construction. Walk behind and other small compactors along with miscellaneous hand tools and hand power tools would also be used for embankment construction. Front end loaders, excavators, and haul trucks would be used for stone protection and riprap bedding placement. Haul trucks, motor graders, and smooth drum compactors would be used for aggregate base and asphalt concrete placement. Water trucks would also be used for frequent dust mitigation. Tractors, discs, harrows, drill seeder, hydro-mulch trucks, and haul trucks would be used for reclamation activities. Miscellaneous 3-ton trucks and smaller vehicles would be used to convey personnel around the site. Aerial drones would be used for surveying and photography.

Equipment that could be used for demolition of concrete include diamond wire saws, hydraulic excavators with boom mounted hydraulic hammers, hydraulic excavators with boom mounted hydraulic shears, hydraulic excavators, articulated haul trucks, dozers, loaders, back hoe and skid steer, street legal dump/haul trucks if demolished concrete need to be hauled off site, pneumatic drills, water trucks for dust control, blast mats, and hand operated equipment including demolition hammers, jack hammers and cutoff saws.

Mechanical methods of demolition with hydraulic hammers and diamond wire sawing techniques will be used to remove concrete from the spillway. If in the future, concrete blasting is determined to be a desired method of demolition, a blasting plan will be developed and USACE will coordinate with USFWS.

Care and Diversion of Water during Construction

During a major flood event, a cofferdam would be necessary to divert water away from project features under construction and protect the work area. More importantly, it serves to reduce the risk of a dam/spillway breach (failure) as a result of a major flood event during construction which could result in significant impacts to lives and property downstream of the dam. Specifically, large open excavations and exposure of earth materials (soil or rock) within flow surfaces typically protected with concrete (e.g. the spillway chute area) could significantly increase dam safety and life safety risk without a carefully developed construction sequence and water control and diversion plan during construction.

A preliminary diversion concept has been developed (**Figure 2-4)**. It consists of earthen cofferdams constructed at the northern end of the project area. The cofferdam would be constructed upstream

of the labyrinth weir. A pilot channel would divert rising reservoir flows to the right side of the proposed new spillway structure. This would serve as a temporary emergency spillway during construction. Potential flood flows would be contained within the existing spillway chute diversion channel via the existing spillway chute walls on the right and with temporary panels on the left. After the majority of construction is completed for the labyrinth weir and chute, the cofferdam upstream of the labyrinth weir would be removed and another cofferdam constructed to the west for construction at the main dam embankment connection.

Figure 2-4 shows the proposed preliminary concept; however, it is expected that additional analysis and consultation with dam safety decision makers will be required before the design is finalized. Preliminary quantities include 220,000 cy of fill, 100,000 cy of excavation, and 24,000 cy of concrete.

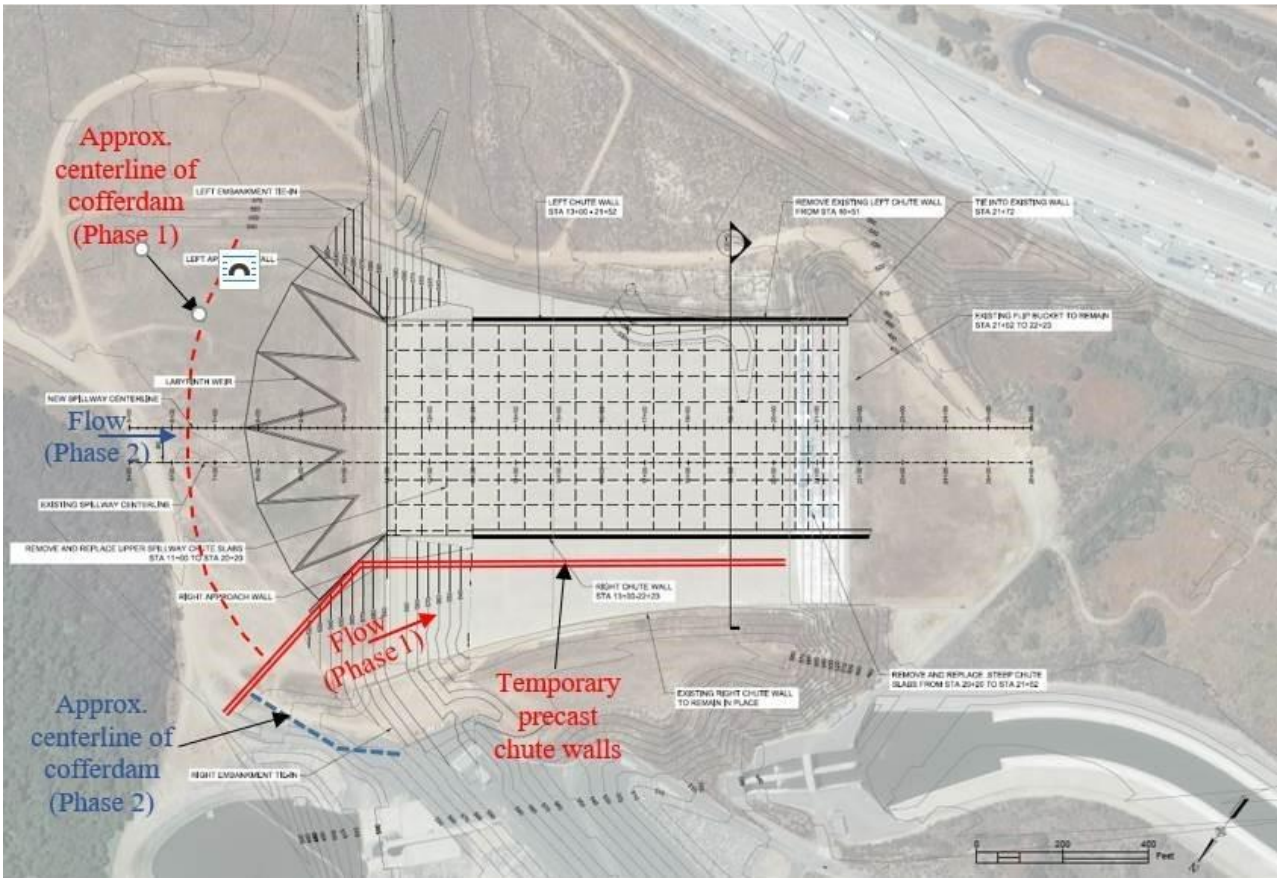

Figure 2-4. Initial Concept for Cofferdam During Construction

Construction Duration and Phasing

Construction is scheduled to commence in 2023 to 2024 and last approximately 4 to 4-1/2 years. It is possible that the proposed project may be built in stages, with multiple start dates and construction periods for various sections of the proposed project depending on land acquisition and utility relocations schedule, environmental windows, estimated downstream life safety risks during construction, and weather delays. Construction phasing may result in an extension of the overall project duration, however, i.e. beyond the

approximate duration stated above.

Proposed construction hours would be 7:00 a.m. to 6:00 p.m., Monday through Saturday. However, night construction efforts are likely to be required during placement of concrete, which requires continuous, uninterrupted placement of material to ensure bonding between layers of concrete. In addition, nighttime placement of concrete is required to ensure concrete placement temperatures can be achieved to limit the potential for significant concrete cracking. Concrete placement may also be accomplished by two shifts, a day shift and a night shift. Work hours beyond the regular hours may be required to maintain the construction schedule but would remain in compliance with local noise ordinances.

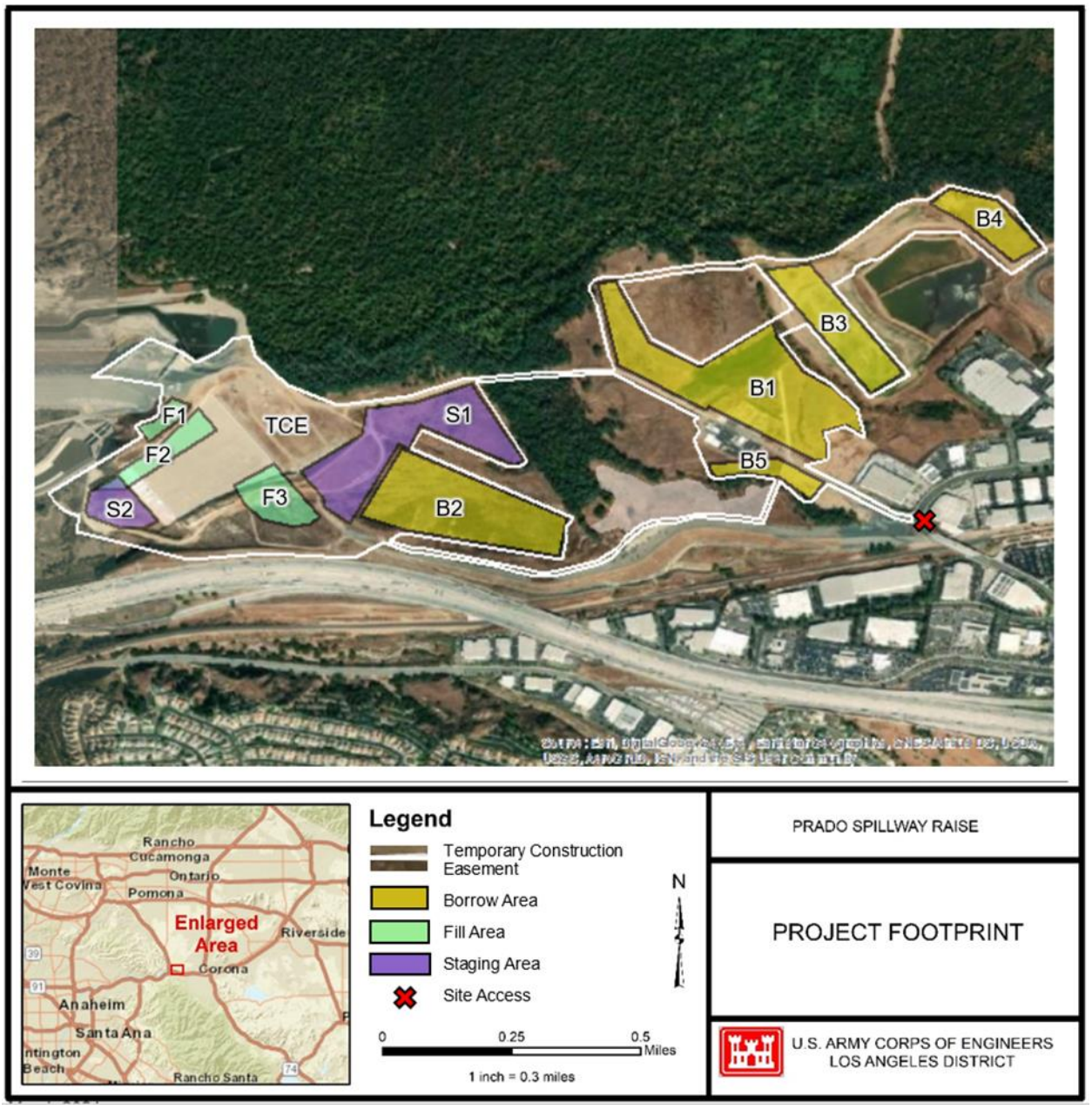

Figure 2-5. Proposed Project Footprint or Temporary Construction Easement (TCE)

Future Operation, Maintenance, Repair, Replacement and Rehabilitation

Maintenance, including routine inspections and minor repairs, of the Prado Dam and Spillway, its associated features, or adjacent features would be required after construction is complete, including:

- Routine inspections, special inspections, reading of instrumentation, and vehicle patrols, as needed. Inspections and monitoring would be increased to daily or continuous during flood events depending on the severity of the event;
- Dump truck mobilization to haul materials and use of hydraulic excavators to place materials along eroded areas of the embankment and spillway to protect and reinforce the structure, as necessary, including during flood fighting activities;
- Periodic vegetation management in accordance with EP 1110-2-18 – At a minimum, the entire dam (or dike) embankment surface and upstream and downstream areas within 50 feet of the embankment toe must be a vegetation free zone (VFZ). For spillways, the VFZ includes the spillway, spillway channel, including spillway slopes and approaches. The VFZ applies to all vegetation except for grasses for the purpose of erosion control.
- Repair of maintenance roads and ramps;
- Periodic drain and underdrain inspections and clean out;
- Periodic clearing of debris and sediment in and around the upstream side of the spillway, embankment connections, flip bucket area, drainage structures and weep holes;
- Repair of damaged concrete as needed (e.g. spalls, cracks, broken or displaced concrete, sealing concrete joints, and repairing offset joints);
- Periodic rodent control and repair of damage;
- Periodic mending and painting of staff gages, signage, guardrails, fences and gates;
- Reading piezometers, survey monuments, inclinometers, and other dam safety instrumentation;
- Periodic maintenance and operation of the two gated opening (if implemented) at the base of the labyrinth weir.

Rarely, following large and erosive flood flows or an earthquake, larger-scale maintenance and repairs may be required, which could require access and use of heavy equipment within the floodplain adjacent to the structure. A temporary work area may need to be established around repair sites. Specific impacts from a major storm event or earthquake cannot be evaluated until or unless damage occurs, and repair work is defined. Therefore, this scenario is not evaluated further within this document.

2.2.3 ALTERNATIVE 2

- Demolish the existing ogee weir and approach walls.
- Construct a new ogee weir and approach walls.
- Construct earthen connections to main dam embankment and Auxiliary Dike.
- Demolish existing chute slabs and construct new chute slabs:
    - Upper (flat) chute: construct a new chute slab with an underdrain system, anchors, and a structural concrete slab.
    - Lower (steep) chute: Construct a roller compacted concrete (RCC) slope with drainage system, anchors, and structural concrete slab.
- Construct slope protection above the existing chute walls. Grind offset wall joints and seal wall joints.
- Modify the flip bucket and construct erosion protection downstream of the flip bucket.

Alternative 2 is similar to the No Action Alternative as it continues with an ogee weir design. However, Alternative 2 constructs a new ogee weir at a specific height instead of adding to the existing weir structure as proposed in the No Action Alternative. In addition, Alternative 2 includes replacement of the chute slab, modification of the flip bucket, and construction of erosion protection downstream of the flip bucket.

Ogee Weir and Approach Wall Replacement

The existing ogee weir would be replaced with a new ogee weir along the same existing axis alignment. However, the new ogee weir would have a larger foundation and would utilize an upstream slope or "batter" to gain additional mass for stability purposes. The majority of the existing ogee weir would be demolished.

The right and left spillway wall raise for the embankment connections include modifications to the existing monolith walls by incorporating the existing structure and raising the height up to approximately 30 feet, the highest point would be 596 feet (NAVD 29). New upstream approach walls would extend from the existing walls in an approximately northly direction to direct flows into the spillway.

Connections to Main Dam Embankment and Auxiliary Dike

The main dam embankment and auxiliary dike connections would be constructed as described in the No Action Alternative.

Chute Slab Replacement

The new reinforced concrete chute would convey spillway discharges from the ogee weir to the existing flip bucket. The chute is divided into the upper (flat) chute and the lower (steep) chute. The chute slab replacement would include the full existing chute (from the ogee weir to the flip bucket in the upstream-downstream directions) and between the existing chute walls in the cross-canyon or transverse direction. The chute walls would remain in place.

Chute slab replacement for the upper (flat) chute and lower (steep) chute would be similar to Alternative 1 (Proposed Action) but would require a larger footprint.

Chute Walls

The existing chute walls and slope protection above the existing walls would remain in place for higher flow events, similar to the No Action Alternative. The existing walls joint offsets would be ground down and sealant would be placed in all joints.

Flip Bucket Modification and Erosion Protection

Modification to the flip bucket and the erosion protection is similar to Alternative 1 (Proposed Action), except with a larger footprint due to the wider chute. The connector wall would not be constructed.

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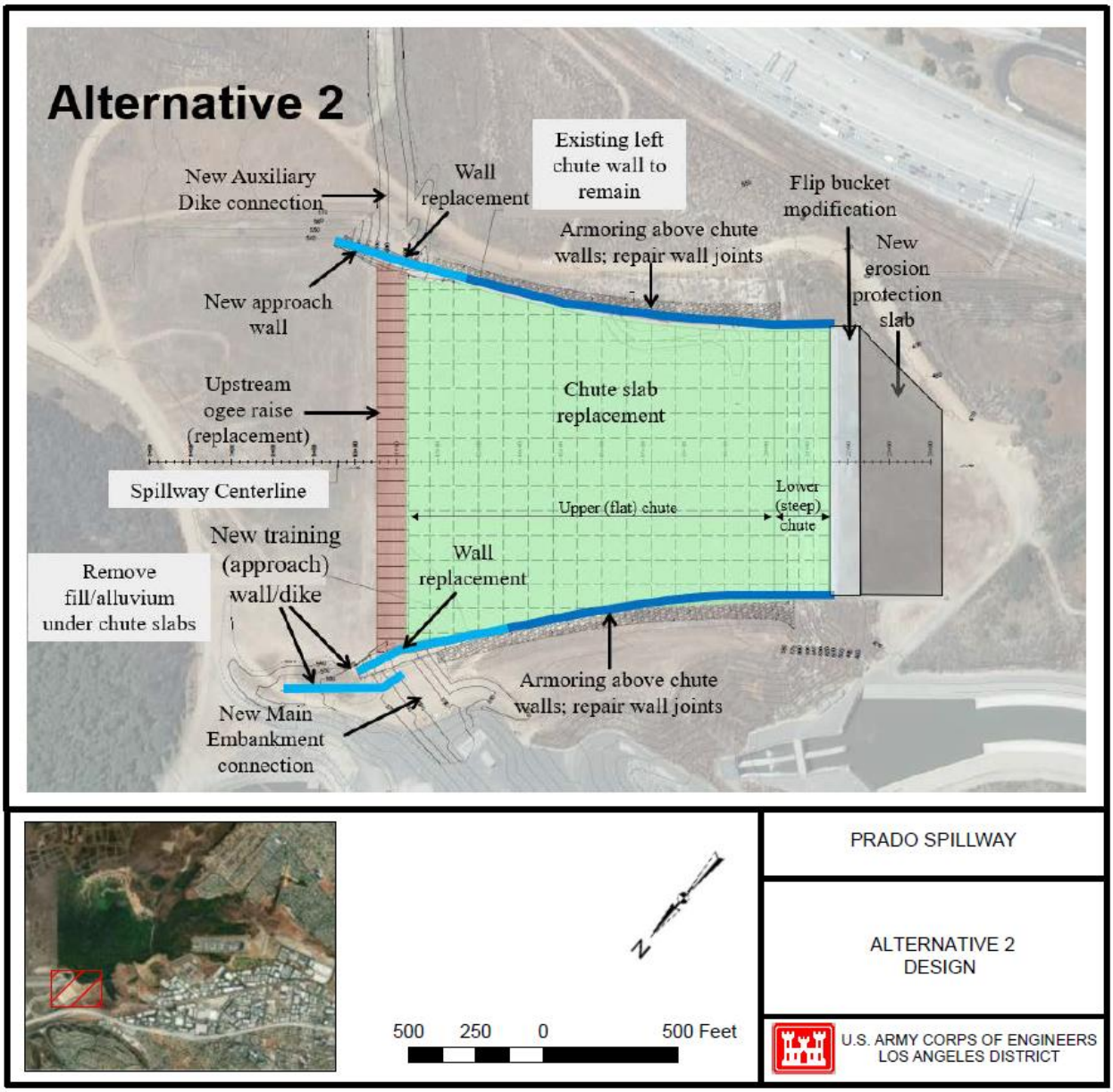

Figure 2-6. Alternative 2 conceptual design

Project Footprint

The project footprint would be the same as the No Action Alternative. The Alternative 2 construction footprint is smaller at the flip bucket and the weir, but maintains the same width of the existing spillway chute (No Action Alternative) (Figure 2-6).

Project Access

Project access would be similar to that described for Alternative 1 (Proposed Action) (Figure 2-5).

Haul Routes

Haul roads and vehicular access roads would be the same as described for Alternative 1 (Proposed Action).

Disposal Sites

Disposal sites would be the same as described for Alternative 1 (Proposed Action).

Source of Materials

For the embankment connections, approximately 85,000 cy of fill would come from the borrow areas delineated in Figure 2-5; approximately 11,000 cy of fill would be imported from a commercial site; 4,500 cy of stone protection and 2,500 cy of bedding material would be imported from a local quarry. For the purposes of this analysis, it is assumed that the nearest quarry would be used (e.g. FST Sand & Gravel, 21780 Temescal Canyon Rd., Corona, CA). Approximately 120,000 cy of imported fill and 300,000 cy of concrete is estimated for the ogee weir and chute slab. Approximately 80,000 cy of concrete is estimated for downstream erosion protection.

Water Source

The water source would be the same as described for Alternative 1 (Proposed Action).

Construction Equipment

Construction equipment would be the same conventional equipment that was described for Alternative 1.

Care and Diversion of Water during Construction

An earthen berm would be constructed at the northern end of the project area within the TCE, similar to what is described in Alternative 1 (Proposed Action).

Construction Duration and Phasing

Construction is scheduled to commence in 2023 to 2024 and last approximately 5 years. It is possible that the proposed project may be built in stages, with multiple start dates and construction periods for various sections of the proposed project depending on land acquisition and utility relocations schedule, environmental windows, estimated downstream life safety risks during construction, and weather delays. Construction phasing may result in an extension of the overall project duration, i.e. beyond the approximate duration stated above.

Proposed construction hours would be 7:00 a.m. to 6:00 p.m., Monday through Saturday. An exception is when night construction efforts are likely to be required during placement of concrete, which requires continuous, uninterrupted placement of material to ensure bonding between layers of concrete. In addition, nighttime placement of concrete is required to ensure concrete placement temperatures can be achieved to limit the potential for significant concrete cracking. Concrete placement may be accomplished

by two shifts, a day shift and a night shift. Overtime work may be required to maintain the construction schedule but would remain in compliance with local noise ordinances.

Future Operation, Maintenance, Repair, Replacement and Rehabilitation

Future operation and maintenance activities would be to the same as those described for Alternative 1 (Proposed Action).

2.2.4 ALTERNATIVE 3

Alternative 3 is nearly identical to Alternative 2, except the existing chute walls would be demolished and replaced with new walls. The amount of material used in this alternative would be approximately 120,000 CY more than Alternative 1(Proposed Action) and approximately 30,000 CY more than Alternative 2.

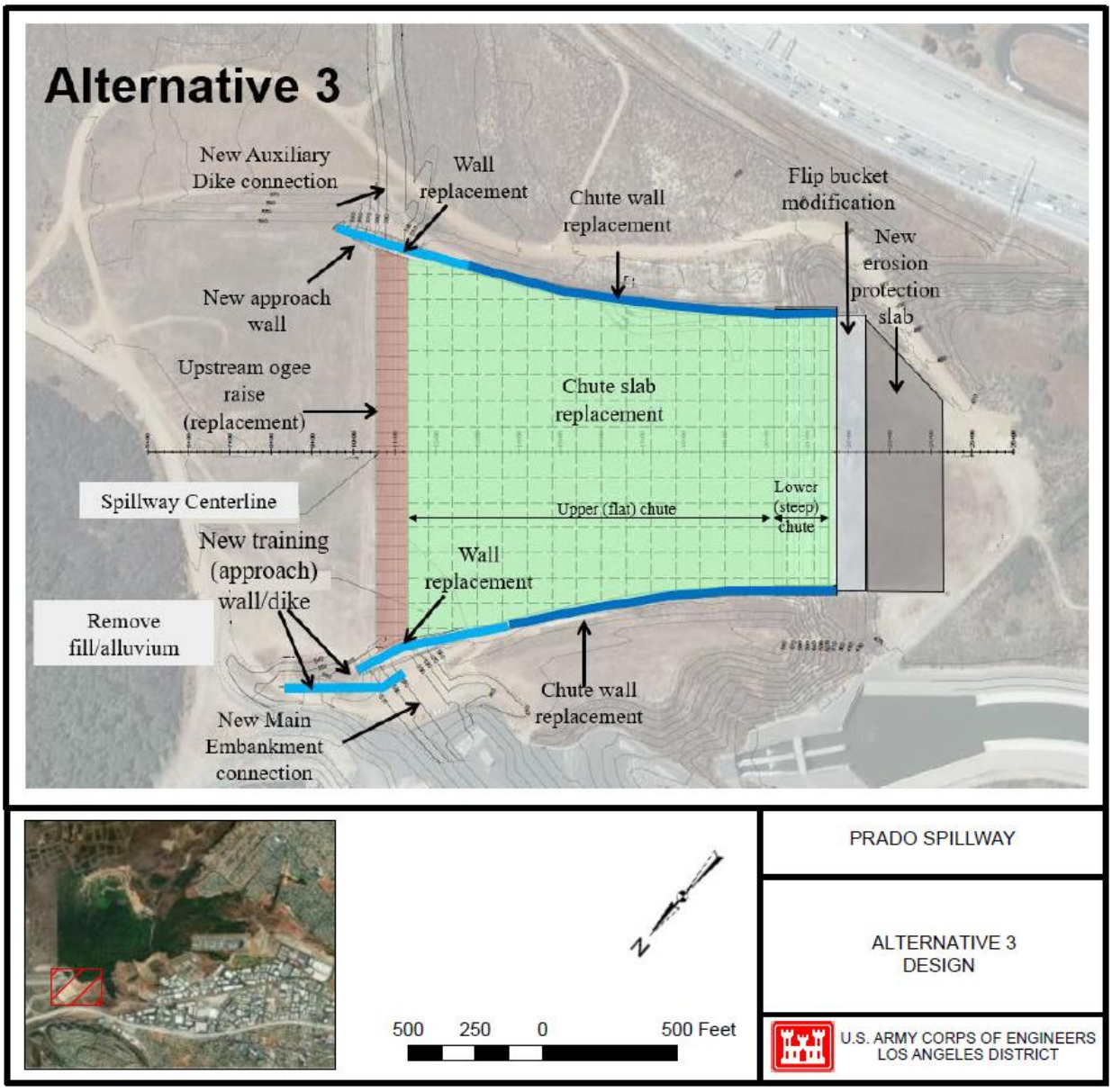

Figure 2-7. Alternative 3 Conceptual Design

Ogee and Approach Wall Replacement

The conceptual level design of the new ogee weir and approach walls are the same as Alternative 2.

Connections to the Main Embankment and Auxiliary Dike

The conceptual level design of the left and right connections is the same as the No Action Alternative.

Chute Slab Replacement

The conceptual level design of the upper (flat) chute slab and lower (steep) chute slab replacements would be the same as Alternative 2.

Chute Walls

Alternative 3 includes replacement of the chute walls. The chute walls would be demolished, the excavation temporarily sloped back, the foundation prepared, and new cantilever walls and drainage system constructed. The area behind the chute wall would be backfilled with gravel or soil.

Flip Bucket Modification and Erosion Protection

The conceptual level design of the flip bucket modification and erosion protection would be the same as Alternative 2.

Project Footprint

The project footprint would be the same as described for Alternative 2, which is smaller than Alternative 1 but slightly larger than the No Action Alternative (Figure 2-7).

Project Access

Project access would be the same as described for Alternatives 1 and 2.

Haul Routes

Haul roads and vehicular access roads would be the same as described for Alternatives 1 and 2.

Disposal Sites

Disposal sites would be the same as described for Alternatives 1 and 2.

Source of Material

For the embankment tie-ins, approximately 85,000 cy of fill would come from the borrow areas delineated in Figure 2-5; approximately 11,000 cy of fill would be imported from a commercial site; 4,500 cy of stone protection and 2,500 cy of bedding material would be imported from a local quarry. For the purposes of this analysis, it is assumed that the nearest quarry would likely be used (e.g. FST Sand & Gravel, 21780 Temescal Canyon Rd., Corona, CA). Approximately 120,000 cy of imported fill and 420,000 cy of concrete is estimated for the ogee weir, chute slab, and chute walls. Approximately 80,000 cy of concrete is estimated for downstream erosion protection.

Water Source

The water source would be that the same as described for Alternatives 1 and 2.

Construction Equipment

Construction equipment would be the same conventional equipment that what was described for

Alternatives 1 and 2.

Construction Duration and Phasing

Construction is scheduled to commence in 2023 to 2024 and last approximately 5-1/2 years. It is possible that the proposed project may be built in stages, with multiple start dates and construction periods for various sections of the proposed project depending on land acquisition and utility relocations schedule, environmental windows, estimated downstream life safety risks during construction, and weather delays. Construction phasing may result in an extension of the overall project duration, i.e. beyond the approximate duration istated above.

Proposed construction hours would be 7:00 a.m. to 6:00 p.m., Monday through Saturday. An exception is when night construction efforts are likely to be required during placement of concrete, which requires continuous, uninterrupted placement of material to ensure bonding between layers of concrete. In addition, nighttime placement of concrete is required to ensure concrete placement temperatures can be achieved to limit the potential for significant concrete cracking. Concrete placement may be accomplished by two shifts, a day shift and a night shift. Occasional overtime work may be required to maintain the construction schedule but would remain in compliance with local noise ordinances.

Future Operation, Maintenance, Repair, Replacement, and Rehabilitation

Future operation and maintenance activities would be the same as those described for Alternatives 1 and 2.

3 AFFECTED ENVIRONMENT

Environmental resources within the project area remain similar to those described in the 2001 SEIS/EIR, which is incorporated by reference, per 40 CFR 1502.21 and CEQA Guidelines, § 15162. This SEA/EIR Addendum summarizes the relevant information of existing conditions which remain very similar to those previously analyzed to offer ease of public review. This document will provide updated information obtained from recent surveys, literature reviews, and coordination with regulatory agencies and technical experts to state when a resource condition has changed.

3.1 WATER RESOURCES AND HYDROLOGY

The project area is located entirely within the Prado Dam Flood Control Reservoir, which is within the Santa Ana River Basin. This area is within the jurisdiction of the Santa Ana Regional Water Quality Control Board (RWQCB) and is included in the Water Quality Control Plan (Basin Plan) for the Santa Ana Region.

The climate in this area is classified as Mediterranean with hot, dry summers, and cool, wet winters. Most precipitation occurs between October and the end of February and is characteristically in the form of rainfall, although snow may occur at higher elevations. Under natural conditions, much of the Santa Ana River and its tributaries would be intermittent with little or no flow in the summer months, except in areas with high groundwater. The urbanization of the valley areas of the Santa Ana River Basin has significantly increased runoff into the river and tributaries. Rainfall occurring over an urbanized part of the basin generates higher peak discharges with a shorter peaking time and a greater volume than if it occurred over the natural basin. Water from the upper Santa Ana River contributes to municipal and domestic supply, agriculture, groundwater recharge, hydropower generation, water contact and noncontact recreation, as well as fresh water and associated habitats. Water resources were previously analyzed in the 1988 Phase II GDM, and have not changed considerably, as stated in the 2001 SEIS/EIR. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to original document.

In addition, a climate change assessment of the climate in the Santa Ana River was conducted in 2021 using scientific literature, trends in observed peak streamflow, analysis of model based predictions projected through 2100, and a vulnerability assessment of USACE business lines relevant to Prado Dam's authorized purposes. Peak streamflow records from five USGS gauges were analyzed using the Non-Stationary detection tool. Projected trends in annual peak streamflow were based on zonal statistics of the Southern California Coastal HUC-4 1807 watershed. Business lines relevant to the authorized purposes for Dam were analyzed using the USACE Vulnerability Assessment tool.

Scientific literature relevant to the climate in the Santa Ana River Basin is presented in statewide assessments and regionally-focused reports. Temperatures have increased over the 100-year observed record and are projected to continue to increase through the end of the 21st century. The relevant scientific literature has a strong consensus that average and maximum temperatures will increase, with less consensus about minimum temperatures. The projected trends in minimum temperature do not pose a risk to Prado Dam because snowmelt is not a major contribution of runoff in the watershed. However, the trend in maximum temperature will result in increased potential evapotranspiration which will impact streamflow and reservoir losses. Observed and projected trends in precipitation are less certain than temperature, but there is a strong consensus that extreme precipitation and drought will become more frequent by the end of the 21st Century. Prado Dam is located in an urbanized watershed

with the largest runoff events characterized as short-duration pulses. The combination of the projected increases in magnitude and frequency in extreme precipitation events and an urbanized watershed with runoff dominated by short-duration pulses poses a climate risk for Prado Dam.

Three out of the five peak streamflow records (11059300, 11073495, and 11073360) had statistically significant change points that were identified based on multiple statistical tests. Two of the gauges (11059300 and 11073360) are located downstream of other water infrastructure and the annual peak streamflow records appear to deviate from a natural flow regime. USGS gauge 11073360 is located on Chino Creek had two change points (1984 and 1991) that bounded an extended period of low flow. USGS (1986) indicates there were significant groundwater withdrawals upstream and the peak annual streamflow record for USGS Gauge 11073360 for that period was estimated by the USGS. USGS gauge 11059300 is located on the mainstem Santa Ana River downstream of Seven Oaks Dam and had an abrupt change point detected in 2010. The peak annual streamflow record at USGS gauge 11059300 appears influenced by changes in operations at Seven Oaks Dam and the change point is most likely related to watershed modifications than Climate. USGS Gauge 11073495 is located on Cucamonga Creek and is in a subbasin that does not have any major water infrastructure. The peak streamflow record for USGS gauge 11073495 appears to be natural and had an identified changepoint in 1990. All three of the gauges with identified change points also had statistically significant increasing trends in peak streamflow using a non-parametric Mann-Kendall Test. A regression analysis of peak annual instantaneous streamflow only produced a statistically significant trend for USGS gauge 11073495. An analysis of observed and downscaled streamflow models increases by the end of the century, with the mean projection showing only a slight increase.

The climate of the Santa Ana River Basin has observed and projected trends that indicate vulnerabilities to the flood risk reduction, water supply, and recreational USACE business lines. The flood risk reduction and water supply business lines are vulnerable in both climate (i.e. dry, wet) and future (2050, 2085) scenarios. The dominant indicator contribution towards vulnerability in flood risk reduction is the areal extent of urban areas within the 500-year floodplain. Increased frequency and magnitude of extreme precipitation events will inundate the 500-year floodplain. The Recommended Plan includes resilience measures for more frequent and greater magnitude events as discussed in Section 5.2.1.2 Robustness, Redundancy, and Resilience of the main report. The dominant indicator contributions towards a vulnerability in the water supply are related to the coefficient variation of peak annual streamflow. Large amounts of variation in annual streamflow will reduce the amount of water that can be conserved in Prado Reservoir. The dominant vulnerability indicator for recreation is related to projected monthly stream flows will be considered low-flow for more than 90% of the time.

Based on this assessment it is likely climate change has already impacted streamflow in the Santa Anna watershed. Continued changes in peak streamflow are expected as temperature and precipitation extremes are expected to be transient through the end of the 21st century. All business lines relevant to Prado Dam and Reservoir authorized purposes of flood risk reduction, water supply, and recreation appear to be vulnerable under either wet and dry future scenarios.

Table 3-1: Climate Change Impacts to Prado Dam

Feature or Measure	Trigger	Hazard	Harm	Qualitative Likelihood
Spillway	Increased precipitation from larger,	Future flow volumes may be larger than present.	Longer duration spillway flows, and potentially more	Likely

	slower moving storms.	Large floods will increase the frequency of spillway flows.	frequently, potentially damaging the spillway	

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3.1.1 Hydrology

The Santa Ana River Basin is the largest watershed in southern California, with a drainage area of about 2,450 square miles. The watershed is separated into an upper and a lower basin divided by Prado Dam and Reservoir. Prado Dam was constructed at the convergence of Chino Creek, Cucamonga Creek, Temescal Wash, and the Santa Ana River. The reservoir behind Prado Dam includes these watercourses and a storage capacity upstream of the dam to the current elevation of 543 ft. NGVD 29. The storage capacity is approximately 170,000 acre-feet. The Prado Dam and Reservoir project is a "dry dam", and the project does not maintain any permanent impoundment. Any impoundment of water behind the Dam is directly in response to rainfall runoff, which is temporarily stored and then discharged, at a rate that does not exceed available downstream channel capacity.

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

The Santa Ana River serves several major purposes to the economic well-being and environmental values of the region. It provides extremely important wildlife habitat and supports aquatic organisms and several endangered species. These beneficial uses have influenced the design of projects that have been constructed and planned to manage the flows in the riverbed. Historically, the Santa Ana River has been considered one of the greatest flood hazards in the western U.S. due to the potential property damage that would occur in response to a levee breach. Flood protection improvements recently constructed and those underway have aimed at reducing the risk of flooding.

The majority of the watershed draining into the Prado reservoir include Mill Creek, Bear Creek, City Creek, San Timoteo Creek, Lytle Creek, Cajon Wash, Warm Creek, and Day Creek, which flow into the Santa Ana River; Deer Creek, Cucamonga Creek, Temescal Creek, San Antonio Creek, and Chino Creek, which all contribute to the influx of water to the Prado Reservoir. These tributaries also lie within the San Gabriel and San Bernardino Mountains of the 2,450 sq-mi of the Santa Ana River Basin watershed, of which, Prado Dam and Reservoir controls approximately 2,250 sq-mi of runoff.

On average, approximately 200,000 acre-feet per year of natural stream flow (or "baseflow") pass through Prado Dam into Orange County. Since 2001, average flows into the Prado reservoir, some of which generated from rainfall runoff, have been 1,034 cfs during the "flood season" (1 Oct through the end of Feb), 562 cfs in March to May, and 193 cfs during summer months (June through September). These values are averages and do not fully represent the maximum range of flows and, are not typical flows especially during times of drought.

3.1.2 Prado Dam Operations

During the "flood season" (1 Oct through the end of Feb), or during a significant storm event any time of year, the rainfall runoff impoundment behind Prado Dam could result in the need for higher than normal discharge from the project. Generally, flood risk management could be handled with discharges that do not exceed 5,000 cfs, which also helps to limit impacts to ongoing construction in the downstream channel. The current water control plan allows for food risk management discharge of up to 10,000 cfs, as necessary. During the "non-flood seasons" (1 March through 30 September), in particular the drier months of June, July, and August, the project generally passes baseflow through the dam, which could range from 50 cfs to 200 cfs. The historic maximum controlled outlet discharge from Prado Dam occurred in January 2005 with 10,000 cfs, which was also made through the original outlet works. The original outlet work structure's maximum discharge capacity was 10,000 cfs, and the current approved water control plan still implements that maximum discharge, although the new outlet works can discharge a maximum of 30,000 cfs. Discharge up to 30,000 cfs cannot yet be implemented until the water control plan for higher than 10,000 cfs discharge is approved, and until all downstream channel improvements construction (Reach 9 Project) is complete. The original outlet works structure was abandoned after the new outlet works structure became operational in June 2008. The water control plan update to maximize discharge up to 30,000 cfs is currently in development.

3.1.3 Surface Water Quality

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

Waterways in the Santa Ana River Basin are listed on the 2016 Clean Water Act Section 303(d) List of Water Quality Limited Segments Requiring Total Maximum Daily Loads for the following pollutants: pathogens (Chino Creek - Reach 1A/B and Reach 2; Mill Creek, Prado Area; Santa Ana River - Reach 4; Prado Park Lake; San Timoteo Creek - Reach 1A and 2), nutrients (Chino Creek – Reach 1A/B and Prado Park Lake) Metals, pH and other pollutants (Chino Creek- Reach 2; Cucamonga Creek – Reach 1 & 2; Mill Creek; Prado Flood Control Basin; Santa Ana River - Reach 6; Santiago Creek - Reach 4). These pollutants most likely originate from non-point agricultural and urban sources that commonly occur throughout the watershed. A Total Daily Maximum Load (TMDL) is in the implementation phase for bacteria indicator in the middle Santa Ana River stretch including Chino Creek - Reach 1 & 2, Cucamonga Creek – Valley Reach, Mill Creek – Prado Area, Santa Ana River – Reach 3 and Prado Park Lake. A TMDL was also developed and implemented for nitrate at Santa Ana River – Reach 3.

3.1.4 Groundwater

Groundwater is the main source of water supply in the Santa Ana River watershed, providing about 66

percent of the consumptive water demand. Inland aquifers underlie roughly 1,200 square miles of the watershed upstream of Prado Dam, while coastal aquifers underlie roughly 400 square miles downstream of Prado Dam. Thickness of these aquifers ranges from several hundred to more than 1,000 feet. Depth to ground water ranges from several hundred feet below ground surface near the mountains to near land surface along rivers, wetlands, and in the coastal plain.

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

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

Groundwater data was collected during field investigations and monitoring wells were installed to monitor seasonal fluctuations. The data collected in the vicinity of the ogee show groundwater elevations ranging from 507 to 528 (NAVD 88) (7 feet to 23 feet below the existing ground). Groundwater resources contribute to the water supply of the city of Corona. There are several wells within the city boundaries, all of which meet federal and state drinking water standards.

3.1.5 Jurisdictional Waters and Wetlands

The project area is located adjacent to, but not within, the floodplain of the upper Santa Ana River. The USFWS Wetlands Mapper (https://www.fws.gov/wetlands/data/mapper.html) was initially consulted to determine whether jurisdictional waters or wetlands occur within the project area, and then field visits were conducted to confirm this information. As shown in **Figure 3-1**, a natural, vegetated drainage occurs within the proposed TCE east of the spillway, in Borrow Area 2. A previous jurisdictional delineation was conducted for the larger Borrow Area 1 in 2018 for the Alcoa Dike Project; therefore, a formal jurisdictional delineation was not conducted again. The current project footprint overlaps the previous temporarily impacted 0.5 acres of "Waters of the State" as stated in the Alcoa Dike Clean Water Act Section 401 Water Certification SARWQCB WDID # 3320190-8 . Neither wetlands nor "Waters of the U.S." are within the project footprint.

"Waters of the U.S."

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

"Waters of the State"

The Dickey Water Pollution Act of 1949 and Porter Cologne Act of 1969 established the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCB) in the State of California. The SWRCB and each RWQCB regulate activities in "Waters of the State" which include "Waters of the U.S." "Waters of the State" are defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." In coordination with RWQCB, it was determined that impacts to Waters of the State may occur as part of this project, have been mitigated as part of another SARMP project using the same area as a borrow site. As stated above Alcoa Dike Clean Water Act Section 401 Water Certification SARWQCB WDID # 3320190-8, includes impacts that overlap with the Proposed Action footprint. No other potential impacts to Waters of the State were determined.

"Wetlands"

The USACE has defined the term "wetlands" as follows:

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

The three parameters listed in the Interim Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual: Arid West Region (U.S. Army Corps of Engineers 2006) that are used to determine the presence of wetlands are: (1) hydrophytic vegetation, (2) wetland hydrology, and (3) hydric soils. According to the Manual:
"...evidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil, and vegetation) must be found in order California Department of Fish and Wildlife (CDFW) to make a positive wetland delineation."

As previously stated, wetlands are not present within the project footprint.

3.1.5.1 **CDFW Jurisdictional Waters**

The CDFW jurisdiction is defined as the bed, bank and channel of rivers, lakes and streams to the landward edge of riparian vegetation. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation. Approximately 0.85 acres of CDFW jurisdictional waters occur within the Proposed Action area.

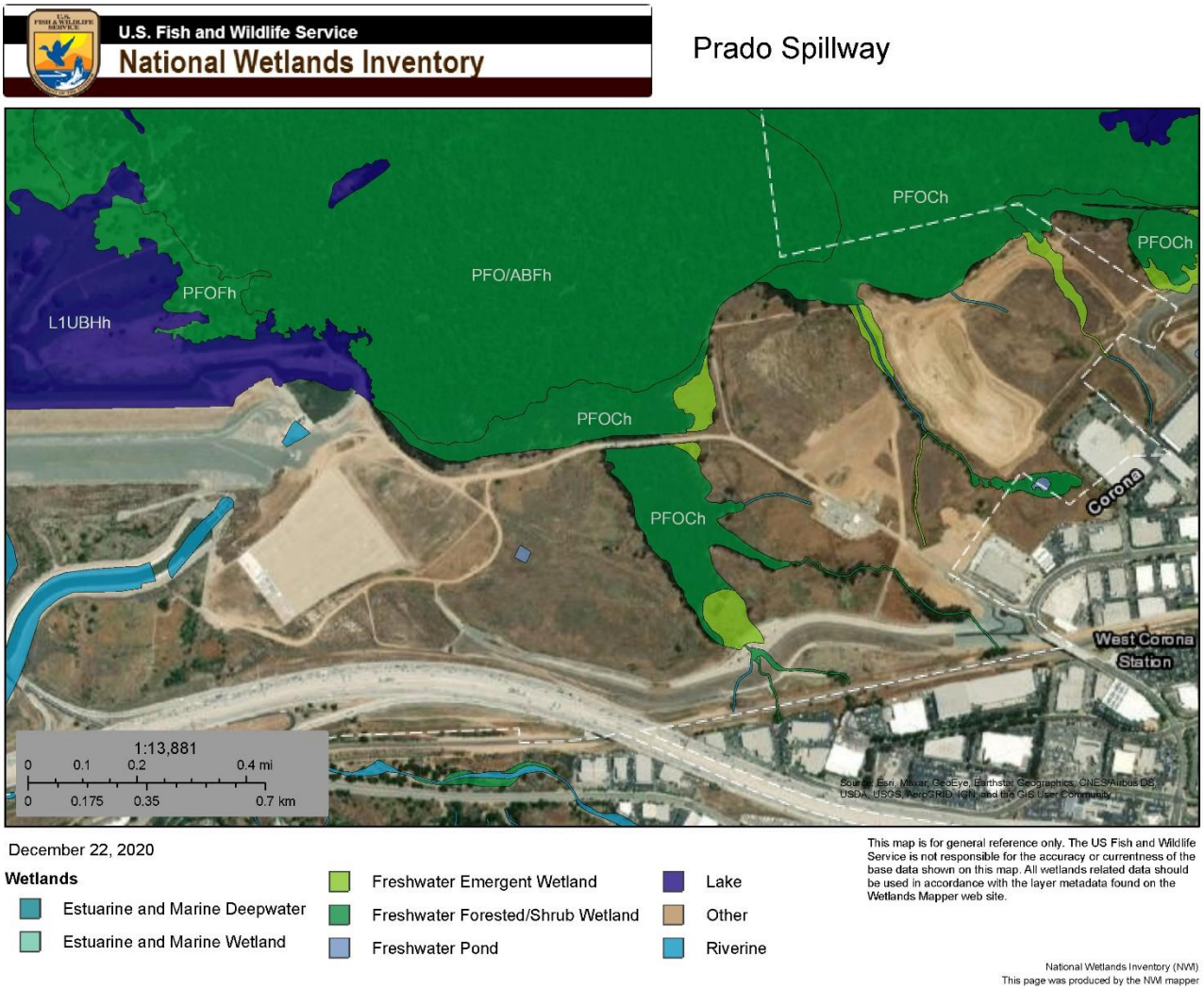

Figure 3-1. USFWS Wetlands Mapper Results

3.2 AIR QUALITY

The project area is located in the central part of the South Coast Air Basin (SCAB) of California, an approximate 6,600 square mile (mi^2) area encompassing Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. SCAB is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. Air quality in the SCAB is regulated the South Coast Air Quality Management District (SCAQMD). Air Quality conditions have not changed considerably since the analysis was conducted and presented in the 2001 SEIS/EIR. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to original document.

3.2.1 National Ambient Air Quality Standards

The federal Clean Air Act identified and established the National Ambient Air Quality Standards (NAAQS) for a number of criteria pollutants in order to protect the public health and welfare. The criteria pollutants include ozone (O_3), carbon monoxide (CO), suspended particulate matter (PM), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), and lead (Pb). PM emissions are regulated in two size classes: Particulates up to 10 microns in diameter (PM_{10}) and particulates up to 2.5 microns in diameter ($PM_{2.5}$).

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

General Conformity Rule

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

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

A conformity determination is required for each criteria pollutant or precursor where the total of direct and indirect emissions of the criteria pollutant or precursor in a nonattainment or maintenance area caused by the federal action would equal or exceed rates specified in 40 C.F.R. 93.153. The SCAB is currently in extreme nonattainment for ozone (precursors: VOC or NO_x); nonattainment for $PM_{2.5}$; attainment/maintenance for PM_{10}; attainment/maintenance for NO_2; and attainment/maintenance for CO; and nonattainment for lead (Table 3-2). Based on the present attainment designation for the SCAB, a Federal action would conform to the SIP if annual emissions are below 100 tons of PM2.5, 10 tons of VOC or NOx, or 25 tons of lead.

In addition to demonstrating compliance with the CAA, General Conformity Rates applicable to the SCAB

are also used as significance thresholds for purposes of evaluating environmental impacts under NEPA.

Table 3-2. NAAQS Attainment Designation and General Conformity Applicability Rates

Pollutant	NAAQS Attainment Designation	General Conformity Applicability Rates (tpy)
Ozone (VOC as precursor)*	Nonattainment (Extreme)	10
Ozone (NOx as precursor)*	Nonattainment (Extreme)	10
Carbon Monoxide (CO)	Attainment (Maintenance)	100
Nitrogen Dioxide (NO2)	Attainment (Maintenance)	100
Particulate Matter (PM10)	Attainment (Maintenance)	100
Particulate Matter (PM2.5)*	Nonattainment (Serious)	70
Lead (Pb)	Attainment	25
Sources: 40 CFR 93.53(b)(1) and 40 CFR 93.53(b)(2) VOC = Volatile Organic Chemical tpy = tons per year * non-attainment pollutants assessed for compliance with General Conformity Rules		

3.2.2 SCAQMD Air Quality Significance Thresholds

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

Table 3-3. SCAQMD Daily Emission Construction Thresholds

Pollutant	Construction Emission Rates (lb./day)	Operational Emission Rates (lb./day)
Nitrogen Oxide (NOx)	100	55
Reactive Organic Gas (ROG)	75	55
Particle Pollution (PM10)	150	150
Particle Pollution (PM2.5)	55	55
Sulfur Oxides (SOx)	150	150
Carbon Monoxide (CO)	550	550
Lead	3	3
1. Source: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2 2. ROG (SCAQMD Significance Thresholds) and VOC (General Conformity Applicability Rates) are in general the same.		

3.2.3 Greenhouse Gas Emissions

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

natural processes and human activities. Examples of GHGs that are produced both by natural processes and industry include carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O).

Currently, there are no Federal standards for GHG emissions, and no Federal regulations have been promulgated. Therefore, a GHG significance threshold to assess impacts is not proposed. Rather, in compliance with NEPA implementing regulations, estimated emissions are disclosed for each alternative without expressing a judgment as to their significance.

Pursuant to CEQA, the SCAQMD has adopted a 10,000 MT/yr CO2eq for GHGs. However, this threshold specifically applies to industrial facilities. This threshold does not apply to the Proposed Action since an industrial facility would not be constructed. Rather, in compliance with CEQA implementing regulations, estimated emissions are disclosed for each alternative without expressing a judgment as to their significance.

3.3 EARTH RESOURCES

USACE has conducted numerous geotechnical and field investigations in the Prado Reservoir since the 1930s and as recently as 2021, including mapping of the various geologic formations and exploring the subsurface to determine the nature and extent of soil and bedrock materials, as well as the character of local faults. Prado Reservoir is situated at the southwestern edge of the Upper Santa Ana Valley, a broad inland alluvial plain which is part of the larger South Coastal Basin of southern California. This area is bounded to the north and northeast by the San Gabriel and San Bernardino Mountains, to the south by the San Timoteo Badlands, a series of granitic hills, and a low bedrock plateau, and to the west and southwest by the Chino Hills and Santa Ana Mountains. The project area has geology and geotechnical challenges such as high groundwater, poor bedrock (i.e. soft, expansive, weathered, and unconsolidated), and faulting across the site. Earth resources conditions have not changed considerably since the analysis was conducted and presented in the 2001 SEIS/EIR. The following provides clarifications or information to validate that the previous documents provide adequate CEQA documentation for the proposed Project and serves as an Addendum to original document.

3.3.1 Geology and Soils

The mountain ranges along the north and northeast, and the west and southwest boundaries of the area indicate that the area has been subjected to extensive folding and faulting. The entire Santa Ana River basin is underlain by a basement complex of crystalline metamorphic and igneous rocks, which only appear on the surface in the mountainous parts of the area. In the foothills and valleys, the basement complex is overlain by a series of sandstones and shales. Unconsolidated alluvial deposits range in depth from a few feet at the base of the mountains to more than 1,000 feet on the cones and in the valleys. The soils in the mountains, which are derived mainly from metamorphic and igneous rocks, are shallow and stony. On the lower slopes of the mountains and in the foothills, the soils are mainly loams and sandy loams, ranging from less than 1 to 6 feet deep. In the valleys, where the soils are usually more than 6 feet deep, the surface soils range from light, sandy alluvium to fine loam and silty clays with heavier subsoils.

Prado Spillway is located at the east tip of the Chino Hills known as the Eastern Puente Hills in the head of Santa Ana Canyon. These hills are composed of Tertiary sediments of Miocene and lower Pliocene age (10 to 25 million years old) called the Puente Formation. The Puente Formation is predominantly sandstone with siltstones and shale interbeds and conglomerate units which contain gravels and cobbles of granite, quartz, and gneiss in a sand matrix. This formation is steeply inclined to the north-northeast. The Chino Hills and the Puente Hills to the northwest comprise a structural unit that has been uplifted between the Whittier fault zone, which is near the southwestern margin, and the Chino fault zone, which forms the northeast margin.

The bedrock exposed and underlying the project area is the Sycamore Canyon Member of the Puente Formation. It is at or near the ground surface around the spillway with an average regional stratigraphic thickness of 1,650 feet. The original as-built data indicates the ogee weir and most of the associated spillway structures are supported on shallow bedrock. Quaternary alluvium is exposed unconformably overlying bedrock around the site and extends to lower elevations at the northeast corner of the spillway where some wall foundations and potentially a portion of the spillway slab itself are founded on alluvium. The ogee weir in the northeast portion of the spillway consists primarily of massive concrete gravity

structures supported on deeper bedrock due to excavations required to remove deeper alluvium and/or zones of sheared bedrock due to the proximity to the Chino fault.

In the area of the spillway, the bedrock strikes in a northwest to south east direction and dips at about 61 to 86 degrees to the northeast. The coherency of all bedrock groups (except for cemented zones) when wet is very poor. Holocene and Pleistocene alluvium is present in the area of the spillway. The newer Holocene sediments occur on the reservoir floor, in the Santa Ana River channel, and areas downstream from the dam and spillway. They consist of very fine to coarse sand, with lenses of silt, gravel, and clay, becoming generally coarser with spillway depth, with cobbles 8 or 10-inches in diameter. The older Pleistocene sediments lies unconformable on the eroded surface of the Sycamore Canyon bedrock. It is prevailing in irregular thicknesses throughout the existing spillway approach, in the terraces adjoining it, and capping on the ridges adjacent to the right and left Spillway abutments. The older alluvium is composed of poorly consolidated sands and gravels and silt layers. Boulders over 12 inches in diameter are also common. This unit was extensively exposed during excavation for the new outlet works through the left abutment of the dam. The sand and gravel unit is overlain by a relatively thin discontinuous reddish silt, clayey fine-grained sand deposit considered a paleosoil. The paleosoil was not encountered everywhere in the older alluvium.

3.3.2 Tectonic Setting

Faults are plane-like surfaces on which movement of the earth's rock formations and soils can occur. Faults generally cut through multiple stratigraphic formations. Movement can occur rapidly (earthquakes) or may occur slowly (creep). When an earthquake occurs, the released energy travels in the form of seismic waves; such seismic events introduce a certain risk of infrastructure damage.

The Prado Spillway is located in the Peninsular Ranges Geomorphic Province, a region characterized by a series of northwest trending mountain ranges separated by valleys and subparallel faults branching from the San Andreas fault. The Peninsular Ranges butt against the Transverse Ranges Geomorphic Province in the north, where a left bend in the San Andreas fault has resulted in the east-west trending San Gabriel and San Bernardino mountain ranges and a north-south compressional regime that dominates the tectonics of southern California, resulting numerous active northwest-southeast trending faults.

The Elsinore fault is a major right-lateral strike-slip fault that is part of the San Andreas fault system. The Elsinore-Glen Ivy fault system is a major strike-slip and oblique-slip fault that branches northward into the Elsinore-Chino and Elsinore-Whittier faults and continues into the Prado Dam site vicinity. The Chino fault lies within the project site, approximately 500 feet northeast of Prado Spillway. Various unmapped fault splays and shear zones cross the project site. The Chino fault and associated splay are designated Alquist-Priolo Earthquake Fault Zones by the California Geological Survey. The Elsinore fault sections have produced long-term uplift and deformation of the northern Santa Ana Mountains and Chino Hills.

Based on a historical catalog compiled for Southern California (1769-2019), 20 earthquakes of M5 or greater and eight events of M6 or greater have occurred within 50 km of Prado Dam. It is estimated that Prado Dam has experienced ground motions up to 0.1g which was from the 2008 Chino Hills Earthquake.

In 2020, AECOM conducted a Site-Specific Seismic Hazard Analysis for the Prado Dam Spillway Modifications. The operating basis earthquake (OBE) is an earthquake that can reasonably be expected to occur within the service life of the project. That is, with a 50-percent probability of exceedance during the service life, often 100 years (a return period of 144 years). The OBE is determined by a probabilistic

analysis. The maximum design earthquake (MDE) is the maximum level of ground motion for which a structure is designed to perform without loss of life or catastrophic failure. For critical features, such as Prado Dam, the MDE is the same as the maximum credible earthquake (MCE). Based on AECOM's analyses, the OBE is 0.32g and the MDE/MCE is 1.14g.

3.4 BIOLOGICAL RESOURCES

The potential occurrence of protected and sensitive species in the project area was determined with a combination of recent database searches and focused surveys. The potential presence of sensitive species was determined by querying the California Natural Diversity Database (CDFW 2020), the Information, Planning, and Conservation tool (IPAC; USFWS 2020), and the California Native Plant Society (CNPS 2021) database, and field surveys were then conducted to evaluate actual occurrences. In addition, historic survey data from the Santa Ana Watershed Association (SAWA), Orange County Water District (OCWD), and the USACE were also considered. Only species known to occur, or with a moderate to high likelihood of occurring, are discussed. While vegetation communities and wildlife presence were considered during the previous analysis of the authorized project, these resources within the project area have been updated to reflect the new existing condition. In summary, vegetation communities and acreages of respective communities to be impacted by the project have changed, in addition to an increased number of listed species found within the project area with potential to be impacted. Wildlife movement within the vicinity of the project has not changed substantially since previously analyzed. The following provides clarifications or information to validate that the previous documents provide adequate NEPA/CEQA documentation for the proposed Project and serves as an Addendum to original document.

3.4.1 Vegetation Communities

Past vegetation surveys within the project area were described in the 2001 SEIS/EIR. Supplemental field surveys were conducted in 2020 and 2021 throughout the TCE, includingan additional 500-foot buffer. Results from recent vegetation mapping were generally consistent with the previous findings. However, since the 2001 SEIS/EIR, habitat restoration has occurred within the TCE, creating new coastal sage scrub habitat in the project area. These areas are largely comprised of California buckwheat (*Eriogonum fasciculatum*), various sages (*Salvia spp*.) and mulefat (*Baccharis salicifolia).* Native and non-native vegetation communities are interspersed amongst each other, therefore breaks in community type are determined based on dominant species type and professional judgment of the biologist performing the survey.

There are four broad vegetation types within the TCE (**Figure 3-2; Table 3-4**), as referenced in the Manual of California Vegetation (CNPS 2020)

Native Riparian (Mulefat Scrub)
Riparian vegetation in the project area is dominated by mulefat and is best classified as mulefat scrub. Other riparian species such as arroyo willow (*Salix lasiolepis*) were also observed in this community. The native riparian vegetation is present in a small swale within Borrow Site 1, in an area otherwise dominated by non-native upland vegetation.

Native Upland (Coastal Sage Scrub)
Upland vegetation in the project area is best classified as coastal sage scrub and is dominated by California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), and brittlebush (*Encelia farinosa*). All native upland vegetation within the project area was restored as part of previous

work at Prado Dam over the last twenty years.

Non-Native Upland (Non-Native Grassland)
Non-native upland habitats within the project area are dominated by non-native grasses and herbs such as ripgut brome (*Bromus diandrus*), foxtail brome (*Bromus madritensis ssp. rubens*), wild oat (*Avena sp*.), wall barley (*Hordeum murinum*), and Russian thistle (*Salsola tragus*). The species are widespread in and adjacent to the project area. Non-native upland species are present in patches surrounding the spillway and throughout much of the borrow areas.

Developed
Developed areas include the existing spillway, portions of Prado Dam, and a network of unpaved access roads throughout the project area. These developed areas are either unvegetated or sparsely vegetated with non-native species such as those discussed in the non-native upland section above.

Table 3-4. Vegetation Types in the Project Area

Vegetation Type	Total Acres	% of Total Acres
Native Riparian (Mulefat Scrub)	0.85	<1
Native Upland (Coastal Sage Scrub)	60.5	30
Non-native Upland (Non-Native Grassland)	90.65	44
Developed	53.94	26
Total	205.94	100

Staging areas were selected to be close in proximity to the spillway structure while minimizing impacts to native vegetation, when possible. Staging Areas 1 and 2 are composed of predominantly non-native grasses and weeds.

All of the five Borrow Areas have been previously disturbed to some level and the majority have been used for staging and stockpile of various projects in the basin. Borrow Areas 1, 4 and 5 remain highly disturbed. Borrow Area 3 was hydroseeded with native vegetation in 2021 and supports immature native vegetation. Borrow Area 2 has been previously restored and supports high-quality native habitat with intermixed pockets of non-native vegetation.

Fill Area 3 currently supports high quality restored habitat directly adjacent to Borrow Area 2. Fill Area 1 consists of non-native vegetation directly adjacent to the spillway structure, while Fill Area 2 overlaps the existing spillway structure.

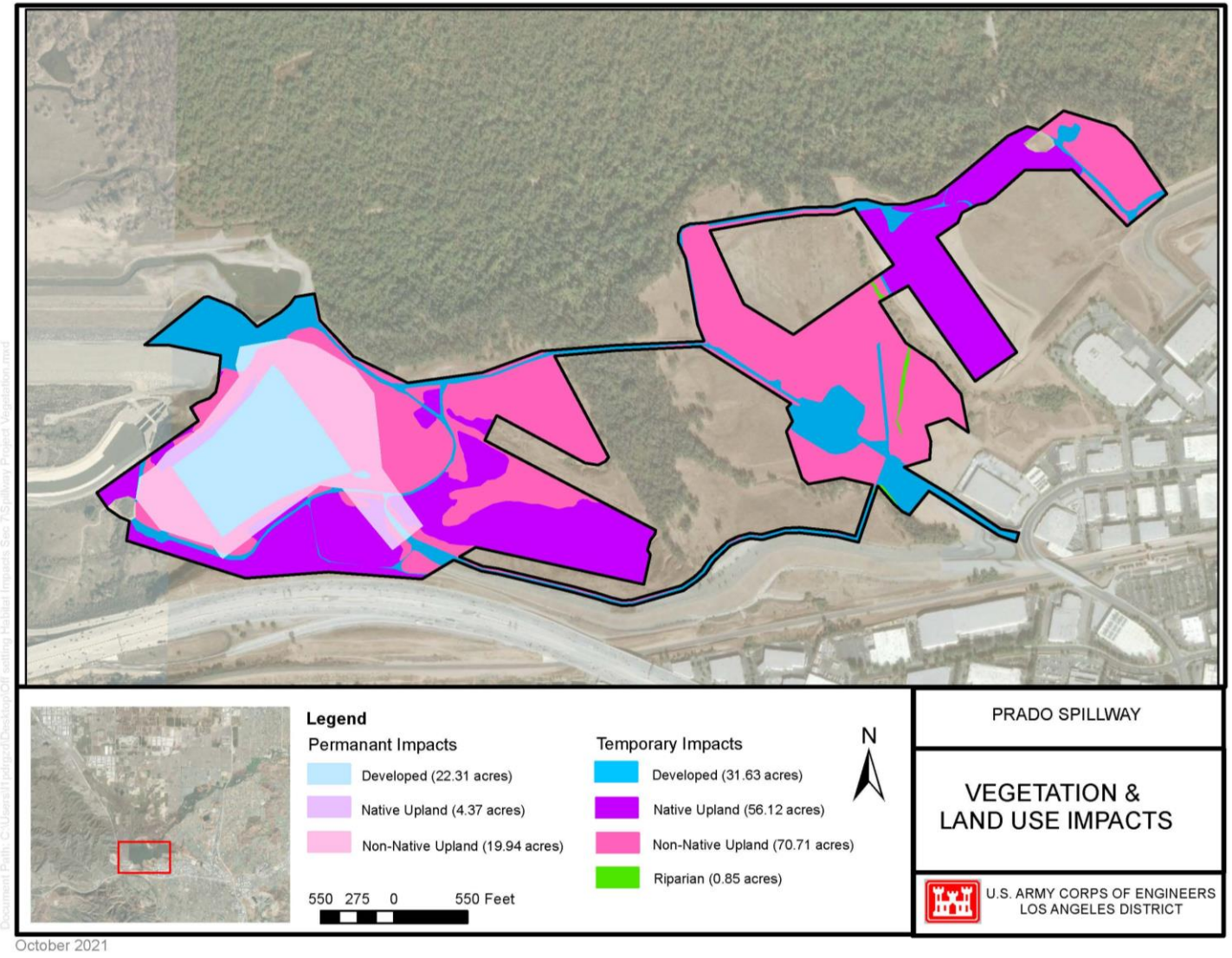

Figure 3-2. Vegetation Types within the Project Area

Potential Special-Status Plant Species

A list of special status plant species known to occur, or with a moderate to high potential to occur, are shown in **Table 3-5**. For the purposes of this EA, special-status plants are defined as species listed as threatened or endangered under the Federal or California Endangered Species Acts, species proposed for listing, and other unique and rare species identified by the USFWS or CDFW, or local jurisdictions. The CNPS listing is sanctioned by CDFW and serves as the list of candidate plant species for state-listing. CNPS's California Rare Plant Ranks (CRPR) (formerly CNPS List) 1B and 2 species are considered eligible for state-listing as endangered or threatened. Species were assessed for their potential to occur within the proposed project area, and species that were determined not likely to occur are not discussed further in this document.

Table 3-5. Special-status Plant Species and their Probability to Occur within the Project Area

Common Name (Scientific Name)	Conservation Status	Plant Type and Habitat	Occurrence Potential
Smooth tarplant (*Centromadia pungens ssp. laevis)*	Fed: none Calif: none CRPR: 1B.1	Annual herb. Chenopod scrub, meadows, seeps, playas, riparian woodlands, and grasslands in alkaline soils at about 300-2000 ft. elev.	**Moderate.** Habitat present and previously found near the project, but not found during 2020-2021 surveys.
Paniculate tarplant (*Deinandra paniculata)*	Fed: none Calif: none CRPR: 4.2	Annual herb. Coastal scrub, vernal pools, and grasslands about 50 - 3000 ft. elev.	**Present.** Observed in upstream staging area during 2020-2021 surveys.
White rabbit-tobacco (*Pseudognaphalium leucocephalum)*	Fed: none Calif: none CRPR: 2.2	Perennial herb. Sandy and gravelly chaparral, foothill woodlands, coastal scrub and riparian woodlands up to 7000 ft. elev.	**Moderate**. Habitat present, but not found during surveys.

As shown in **Table 3-5**, three special status plants were identified as either occurring or having a moderate potential to occur in the project area, with no federal or state listed plant species identified as being likely to occur. Of the species with a moderate potential to occur only a single species was identified during vegetation surveys, the paniculate tarplant.

3.4.2 Special Status Wildlife Species

The 2001 SEIS/EIR analyzed potential effects to a variety of special-status wildlife species. This SEA/EIR Addendum updates the special-status wildlife species that could potentially occur within the project area. Special-status wildlife are defined as those listed as threatened or endangered under the federal or California Endangered Species Acts, species proposed for listing, species of special concern and other species which have been identified by the USFWS or CDFW. Each of these species was assessed for its potential to occur within the proposed project area using updated survey efforts, occurrence information, distribution maps, literature, and correspondence with local experts. Database queries resulted in 34 special status wildlife species in the project vicinity. Of these, 20 have the potential to occur within the project area. Therefore these individuals and nearby individuals have the potential to be impacted by ongoing construction noise both during and outside of the nesting season to due proximity and type of construction activities required.

While extensive riparian and aquatic habitat occurs within the adjacent Prado Basin, the project area supports relatively minimal high-quality habitat for wildlife. The project area lies entirely within upland habitats, much of which is developed or degraded. Special status wildlife known to occur or likely to occur in the project area are listed in **Table 3-6.**

Table 3-6. Special-status Wildlife Species and their Probability to Occur within the Project Area

Common Name (*Scientific Name)*	Conservation Status	Habitat and Seasonal Presence	Occurrence Probability in Project Area
BIRDS			
Cooper's Hawk (*Accipiter cooperii*)	Fed: none Calif: SSC	Nests and hunts in forests, woodlands, and open areas.	**Present.**
Burrowing owl *(Athene cunicularia)*	Fed: none Calif: SSC	Occurs in open grasslands, agricultural fields and sparse scrublands with low-growing vegetation. Requires mammal burrows (particularly California ground squirrels) for nesting.	**Moderate.** Suitable habitat (mammalian burrows) exists within the project area, but burrowing owls have not been observed during recurring surveys and have rarely been documented in the Prado Basin.
White-tailed kite *(Elanus leucurus)*	Fed: none Calif: FP	Typically nests at lower elevations in riparian trees, including oaks, willows, and cottonwoods. Forages over open grasslands and agricultural fields.	**Present.**
Yellow-breasted chat *(Icteria virens)*	Fed: none Calif: SSC	Found in dense, riparian thickets of willow, vine tangles, and dense brush along water courses. Nests in low, dense riparian vegetation within 10 feet of ground. Summer resident.	**Present.**
Coastal California gnatcatcher *(Polioptila californica californica)*	Fed: THR Calif: SSC	Prefers coastal sage scrub in arid washes, on mesas and slopes. Uses nearby riparian areas for foraging and dispersal. Year-round resident.	**Present.**
Yellow warbler *(Setophaga petechia)*	Fed: none Calif: SSC (nesting)	In CA, prefers open canopy riparian woodlands composed of willows, cottonwoods, sycamores, and alders. Summer resident.	**Moderate.** No suitable habitat within the project area but seen on an annual basis in the adjacent Prado Basin during breeding season and may occur within a 500 ft buffer of the project area.
Least Bell's vireo *(Vireo bellii pusillus)*	Fed: END Calif: END	Inhabits low, dense riparian growth along water or dry parts of intermittent streams, typically in willows, cottonwood, and mulefat scrub. Summer resident.	**Present.**
MAMMALS			
San Diego black-tailed jackrabbit *(Lepus californicus bennettii)*	Fed: none Calif: SSC	Prefers open scrub, woodlands and grasslands for long distance sprints.	**High.** Suitable habitat within the project area. Species has not been observed during recent surveys. However, it has been observed nearby at the auxiliary

Common Name (*Scientific Name)*	Conservation Status	Habitat and Seasonal Presence	Occurrence Probability in Project Area
			dike.

Cooper's Hawk- Present

The Cooper's hawk is a CDFW Species of Special Concern. This species is found in a variety of habitats including forests, quiet neighborhoods and urban parks. Within the range in California, it most frequently uses dense stands of live oak, riparian deciduous, or other forest habitats near water (Zeiner *et al.* 1990). Cooper's hawks build nests typically 25-50 feet high in trees. Nesting and foraging usually occur near open water or riparian vegetation. This species is common in southern California and is very tolerant of human presence. Cooper's hawks have been observed flying over the project area during recent field surveys.

Burrowing Owl- Moderate Potential

The burrowing owl is a CDFW Species of Special Concern. Although the preferred habitat (grasslands and some forms of agriculture land with abandoned small mammal burrows) used to be common within Riverside County, the recent locations of the burrowing owl are clumped in only a few locations. Within the project area, there is the presence of ground squirrels, abandoned burrows, and grassy ruderal habitat that is considered suitable for this species. However, this species likely does not occupy the project area due to frequent human presence and activity. No burrowing owls have been observed during recent surveys in the project area.

White-Tailed Kite- Present

The white-tailed kite is a CDFW Fully Protected Species. The white-tailed kite is a resident in California, southern Texas, Washington, Oregon, and Florida (Dunk, 1995). In California, this species inhabits coastal and valley lowlands and is typically found in agricultural areas. Its population size and range have increased in recent decades (Zeiner et al. 1990). This species is regularly observed over the nearby USACE Auxiliary Dike. Breeding is strongly suspected, though not confirmed in the area. The white-tailed kite is a known year-round visitor and it was observed in the project area in 2020/2021 field surveys. Therefore, we consider this species present in the project area.

Yellow-breasted Chat- Present

Yellow-breasted chat is a CDFW species of special concern. This species is found throughout the United States and Mexico but is an uncommon breeder in southern California. This species is typically found in dense riparian scrub along the edges of streams or ponds. It is commonly found in the area and was observed during 2020/2021 surveys in the project area.

Coastal California Gnatcatcher (CAGN)- Present

The coastal California gnatcatcher (CAGN) is listed as federally threatened. The CAGN is primarily restricted to coastal sage scrub habitats of coastal southern California and northern Baja California. Coastal sage scrub shrubs (particularly California buckwheat) provide roosting, nesting and cover where they forage for insects and spiders. Although breeding territories have been reported in non-sage scrub habitats, these habitats are typically used for foraging and/or dispersal (Atwood, 1990; Rotenberry and Scott, 1998). The project area contains abundant suitable habitat and there are approximately 16 known CAGN pairs residing around the spillway and within the borrow areas just east of the spillway (Leatherman 2019; SAWA 2019). Therefore, this species is considered present within the project area. Mitigation measures will be outlined for these permanent residents.

Yellow Warbler- Moderate Potential

The yellow warbler is a CDFW Species of Special. In southern California, this species breeds in riparian woodlands situated within the lowlands and canyons (Garrett and Dunn, 1981). Suitable habitat typically consists of riparian forests containing sycamores, cottonwoods, willows, and/or alders. This species was not observed during 2020/2021 project area surveys and the project area does not support suitable

habitat. However, the species is known to occur in the adjacent Prado Basin during breeding season.

Least Bell's Vireo (LBV)- Present

The least Bell's vireo (LBV) is a Federal and State Listed Endangered Species. Historically common in lowland riparian habitat from coastal southern California through Sacramento and San Joaquin Valleys, the species now only occurs in riparian woodlands in southern California. The vireo is a summer resident of southern California (approximately May to September) and generally breeds in willow thickets and other dense low riparian growths found along permanent streams. This species breeds in the adjacent Prado Basin within 500 feet of the project boundaries, though it does not occur within the boundaries of the project area due to a lack of suitable habitat.

In 1994, USFWS designated approximately 48,000 acres as critical habitat for LBV, including much of Prado Basin. As shown in Figure 3-3, parts of the proposed project area (specifically, staging and borrow areas) are located within designated critical habitat for the least Bell's vireo.

San Diego Black-tailed Jack Rabbit- High Potential

The San Diego black-tailed jackrabbit is a CDFW Species of Special Concern. This subspecies occurs in coastal southern California and into Baja California, Mexico (Hall 1981). The black-tailed jackrabbit occurs in a variety of open habitats including grasslands, agricultural fields, or sparse coastal sage scrub. This subspecies was not observed within the project area during 2020/2021 field surveys. However, it is commonly observed in the Prado Basin and was recently observed near the USACE Auxiliary Dike. Therefore, there is a high potential for the species to occur in the project area.

3.4.3 Sensitive and Protected Natural Communities

For the purposes of this SEA/EIR Addendum, a sensitive and protected natural community is defined as any community identified in policies or regulations by federal law, or by the USFWS or CDFW. Three such natural communities have been identified as occurring within or in close proximity to the project area (**Table 3-7**). The only sensitive and protected natural community identified within the project area is least Bell's vireo critical habitat. However, this area of critical habitat consists predominantly of non-native upland vegetation and minor amounts of native upland vegetation. This area of critical habitat does not contain the physical and biological features of LBV critical habitat and is not generally suitable for LBV nesting or foraging.

Table 3-7. Sensitive and Protected Natural Communities in or Near the Project Area.

Sensitive Natural Community	Source	Description	Occurrence
Least Bell's Vireo Designated Critical Habitat	ESA	Riparian woodland vegetation that generally contains both canopy and shrub layers and includes some associated upland habitats.	Approximately 138 acres occur within the TCE.
Santa Ana Sucker Designated Critical Habitat	ESA	Open flowing water with a variety of microhabitats to provide shelter, breeding and rearing safety and food.	Does not occur within TCE, but is found within 500 feet of TCE boundary

Southwestern Willow Flycatcher Critical Habitat	ESA	Dense and mature Riparian woodland vegetation that generally contains multiple layers of vegetation.	Does not occur within TCE, but is found within 500 feet of TCE boundary

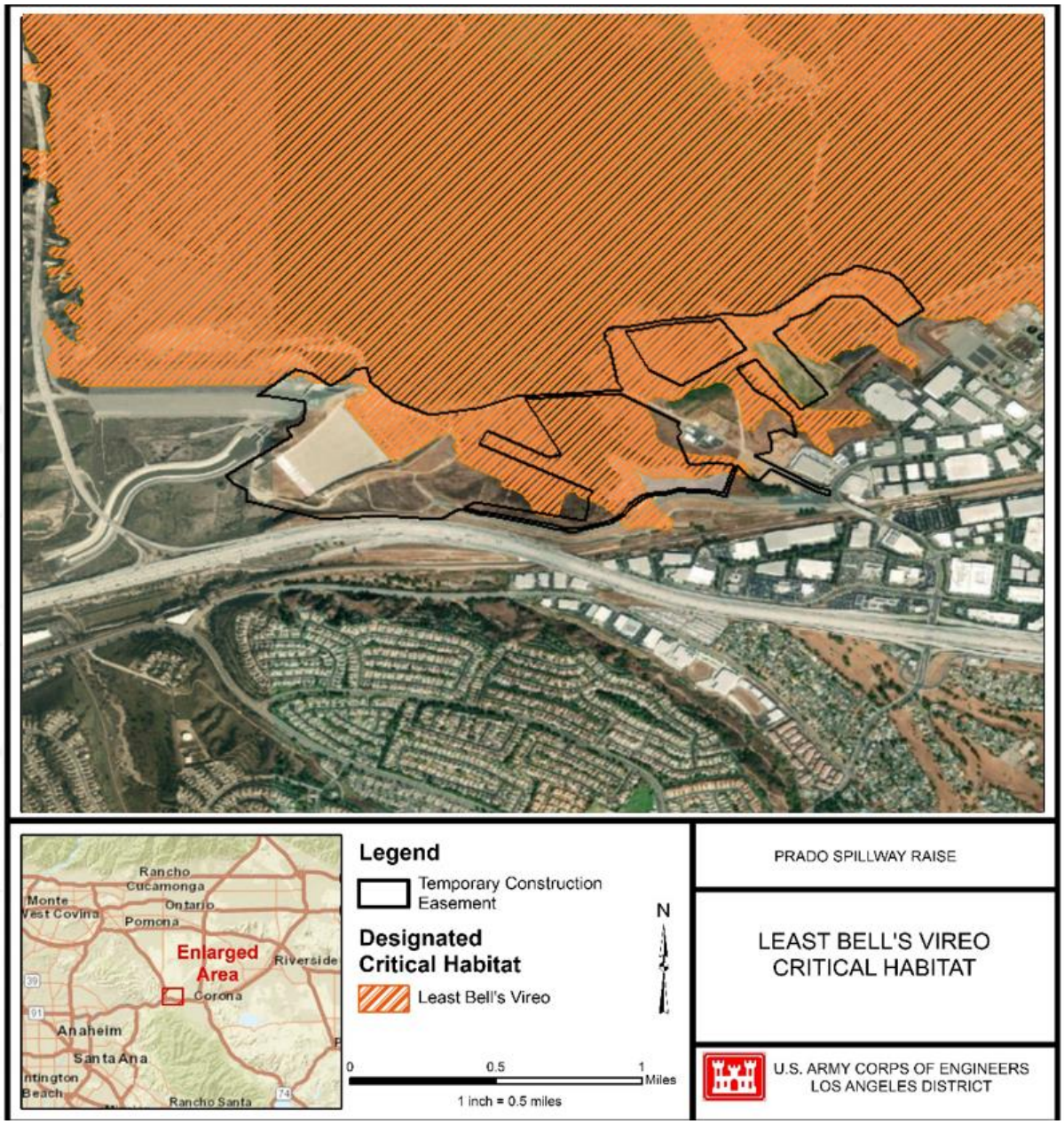

Figure 3-3. Least Bell's vireo critical habitat near the project area

3.4.4 Wildlife Movement

Wildlife movement corridors and habitat linkages facilitate regional animal movement and are generally centered near waterways, riparian corridors, and contiguous upland habitat (Hilty et al. 2012). Section 3.3.5 of the 2001 EIS/EIR discusses the role and importance of wildlife movement corridors in detail. Wildlife movement corridors contribute to population stability and offer unobstructed terrain for foraging, dispersal, and migration. Impediments to wildlife movement corridors include barriers to movement, such as roads, urban development, and agriculture. Barriers may threaten wildlife survival and reduce genetic connectivity between populations, potentially resulting in reduced population sizes

For the purposes of this SEA/EIR Addendum, the narrative below focuses on the location of such corridors within and adjacent to the project area that could be affected.

The project area is in a regionally significant wildlife corridor at the junction of the Santa Ana Mountains (to the southwest), Chino Hills State Park (to the west), and Prado Basin (to the north), which are all relatively large, contiguous blocks of habitat within the region. The Santa Ana River (and its associated uplands) is recognized as a vital corridor for regional wildlife movement. Several migratory songbirds utilize the riparian vegetation within the Santa Ana River corridor for breeding, nesting, foraging, and as transient rest sites during migration. In addition, large, wide-ranging animals, such as mountain lion, bobcat, and coyote have been documented within the Santa Ana River watershed and may utilize the Santa Ana River corridor in search of prey, water resources, or cover.

Following construction of several SARMP features, USACE has assessed wildlife movement in the project area, focusing specifically on the main Prado Dam embankment, the outlet works channel and the Auxiliary Dike. Several important wildlife crossing hotspots occur near the project area including vegetated ramps over the main Prado Dam Embankment and over the Auxiliary Dike Embankment, the State Route 71 (SR-71) underpass and the pinch point directly south of the Prado Spillway (**Figure 3-4**). Each of these locations is critical to maintaining regional connectivity between wildlife populations in the Prado Basin, Chino Hills State Park and the Santa Ana Mountains. One particular corridor stands out due to the immediate proximity to the Proposed Action construction and other future projects, as seen in **Figure 3-5**. The corridor pointed out in **Figure 3-5**, exists in a narrow space between the existing spillway, a steep slope and SR-91. Wildlife use both the vegetated habitat as well as the unpaved access road shown in **Figure 3-5** to traverse the area below the dam and access the large and undeveloped riparian and wetland habitat behind the dam. This corridor provides an important connection from below the Prado Dam to the middle an upper reaches of the Santa Ana River Watershed and headwaters.

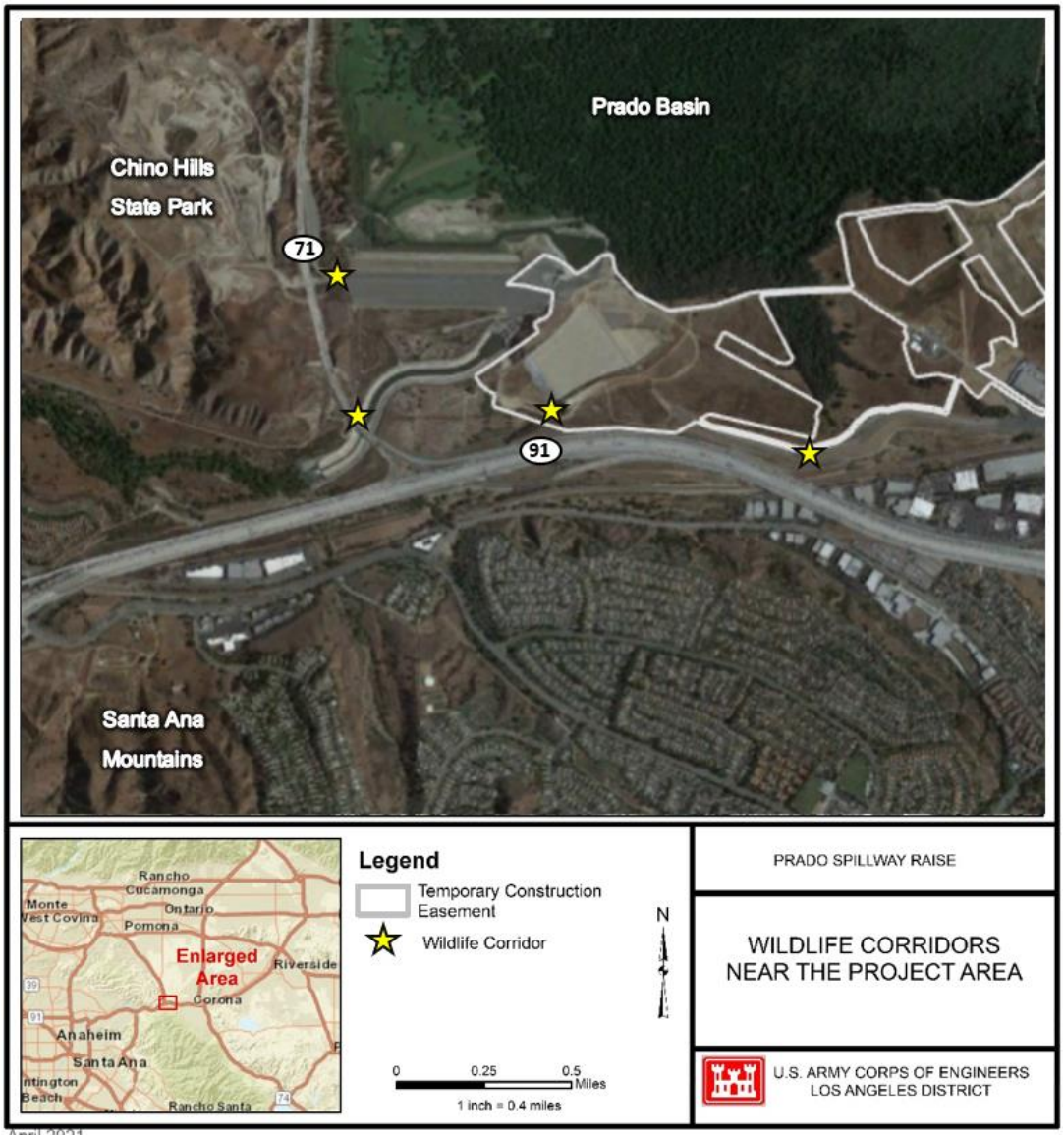

Figure 3-4. Wildlife Corridor Hotspots within the Project Vicinity

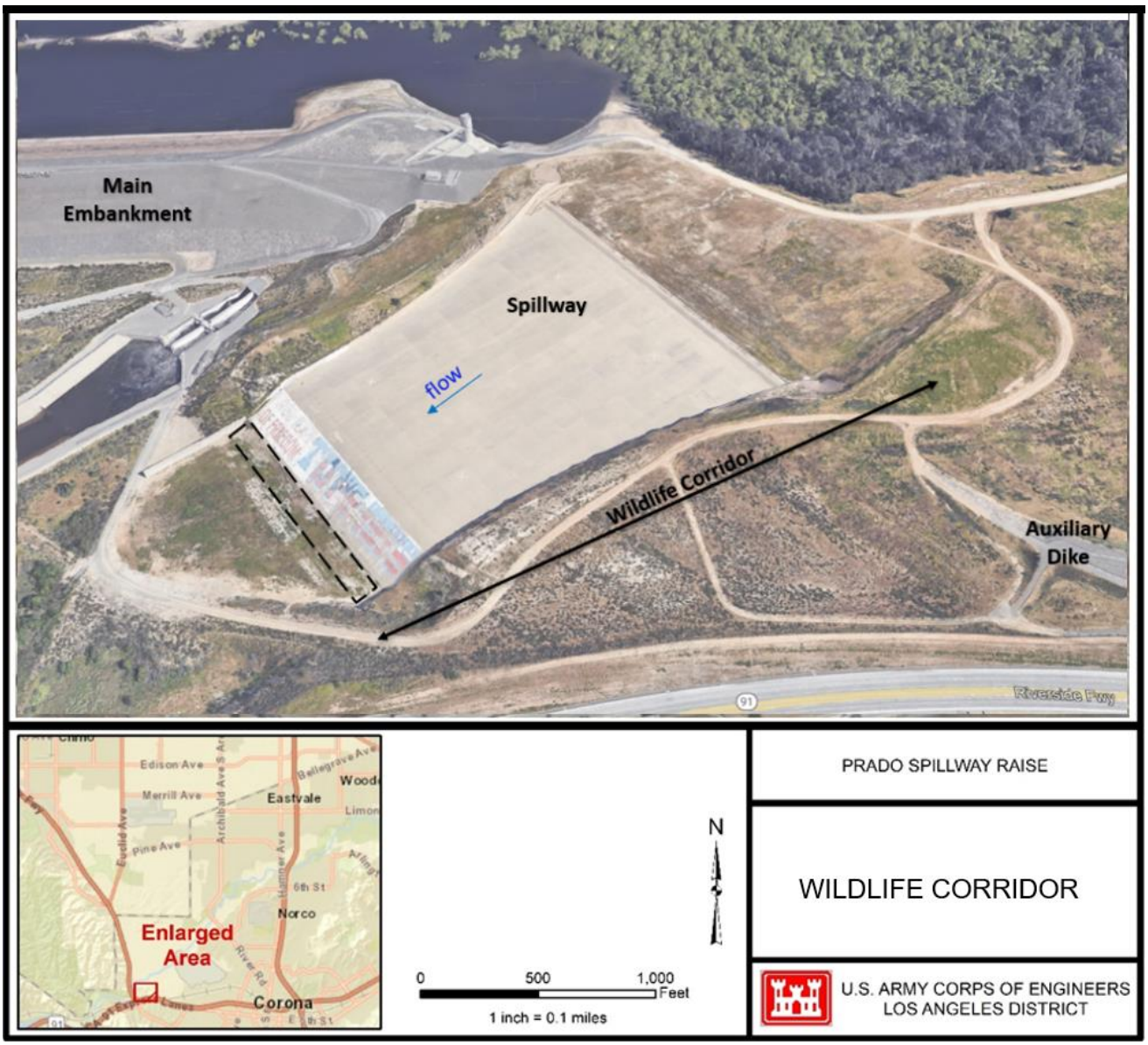

Figure 3-5 Prado Spillway Wildlife Corridor

3.5 CULTURAL RESOURCES

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

As previously discussed in the introduction, the current undertaking (raising the spillway to complete the dam raise and resolving existing safety issues) is just one feature of the larger SARMP, a comprehensive flood risk management project that was approved in 1986, analyzed in a supplemental EIS 1988 and analyzed again in the 2001 SEIS/EIR. In order to comply with Section 106 of the NHPA, the USACE, State Historic Preservation Office (SHPO), and the Advisory County on Historic Preservation (ACHP) executed a programmatic agreement (PA) in 1993 for the entire SARMP of which the current undertaking is just one small piece (Appendix G). The PA is still valid and will expire once construction of the SARMP is complete.

Prior to the PA's execution, the entire SARMP area of potential effect (APE), including the footprint of the spillway construction and the proposed staging and borrow areas were surveyed for the presence of historic and prehistoric resources (Brook and Langenwalter, 1985). This survey covered the Prado Dam flood control basin and the downstream portion of the Santa Ana River all the way to the Pacific Ocean. The 1985 survey covered the entire spillway project area including all of the currently proposed borrow and staging areas (**Figure 3-6**).

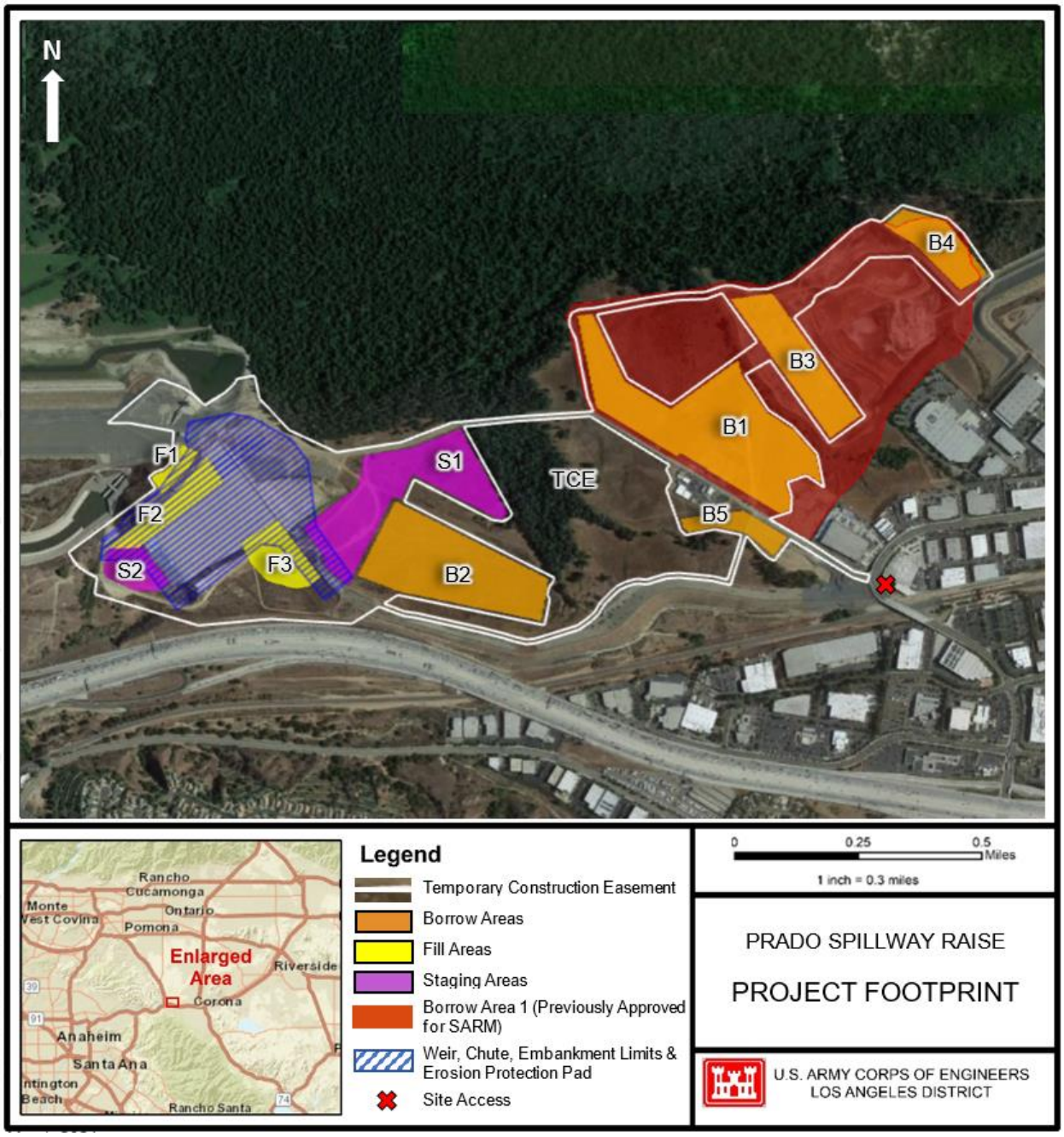

Figure 3-6. Map of Project Area with Borrow Area 1 (Previously Approved) represented.

+ Beyond the 1985 survey, several additional cultural resource investigations have specifically occurred at the spillway and the borrow area that was identified in the 2001 SEIS/EIR, known as Borrow Area 1. Borrow Area 1 was first identified in the 1980's as a material source as part of the analysis for the larger SARMP. In anticipation of the borrow area being utilized the feature was extensively investigated for cultural resources. This body of work includes historical and archaeological investigations of the Prado/Rincon town site CA-RIV-3698 (Greenwood et al. 1987); test excavations at CA-RIV-2802 and CA-RIV-3698 (Greenwood and Foster 1987); recordation and evaluation of Prado Dam (Swanson and Hatheway 1989); data recovery at CA-RIV-2802 and 28 features within CA-RIV-3698 (Foster et al. 1995); the testing of 11

historical period sites within the Basin including CA-RIV-1039 and CA-RIV-1044 (Foster et al. 1996); HAER documentation of Prado Dam (Hatheway et al. 1996); and finally large scale data recovery at CA-RIV-1039 and CA-RIV-1044 (Sterner 2004). One of two major borrow areas to be used for the entire SARMP, Borrow Area 1 contains the currently proposed borrow areas B1, B3, and B4. (**Figure 3-6**).

Due to the age of the last comprehensive survey of the project area, the USACE completed a pedestrian survey of S1, B2, and B5 in July of 2020. No cultural resources were located during the survey. The USACE is currently preparing a cultural resource report and will be submitting it to the SHPO in accordance with Stipulation 1 of the PA. B1, B3, and B4 were not included in the survey area since the area is an active borrow area.

3.5.1 Cultural Resources Within the Project Area

Prado Dam Construction Area

The Prado Dam complex (P-33-004730/CA-RIV-4730/CA-178), which includes the spillway, was determined eligible for listing on the National Register in 1991 under Criteria A, C, and D. SARMP included proposed modifications to several key features of the dam, including raising the height of the main embankment, replacing the inlet and outlet works, increasing the height and width of the spillway and constructing a series of levees. To mitigate the loss of the eligible property, the dam was documented in a Historic American Engineering Record (HAER) which was filed with the National Park Service in 1996. Pursuant to the PA, the mitigation was coordinated with the SHPO and the ACHP. Subsequent to the mitigation, the main embankment was raised and lengthened, the maintenance building was removed, the inlet tower was reconstructed, the outlet works were redesigned including the approach channel, the outlet conduits, the stilling basin, and the outlet channel.

Despite the demolition of several features and the impending removal of the spillway, the resource still appeared as an eligible resource in the State of California's records. In June of 2020, the USACE re-engaged with the SHPO to provide a clear consultation record that the dam, including the spillway, is no longer eligible for the National Register either individually or as part of the Prado Dam complex. The SHPO concurred with the USACE determination. In 2019, the Keeper of the National Register determined that the bicentennial mural painted on the spillway was not eligible for the National Register (Appendix G).

Borrow Areas, Staging Areas, and Access Routes

A total of seven (7) cultural resources have been recorded either within the boundaries of the proposed borrow and staging areas and access routes or within a quarter mile (**Table 3-8**). Four (4) have been determined to be eligible for inclusion on the NRHP, and two have been determined to be ineligible for the NRHP. Two of these eligible sites, CA-RIV-1039 and CA-RIV-1044, were excavated in the early 2000s in anticipation of the area being used as Borrow Area 1. Both sites have been destroyed by the use of Borrow Area 1. The two sites that had been determined to be ineligible were also located within Borrow Area 1 and have also been destroyed. The remaining eligible sites and unevaluated site, CA-RIV-2802, CA-RIV-3694, and CA-RIV-3372, are outside of the direct impact area for the project and are being protected in place.

Table 3-8. Cultural Resources Detected within the Proposed Borrow Locations

Site Number	Description	NRHP Status	Comment
CA-RIV-3694	Rincon/Pomona	Eligible (D)	Partial Excavation (Foster et al 1995, outside of the direct impact area
CA-RIV-1039*	Ashcroft Ranch	Eligible (D)	Excavated (Sterner et al 2004); Destroyed.
CA-RIV-5523*	Remnants of farm	Not Eligible	Destroyed
CA-RIV-5524*	Homestead	Not Eligible	Destroyed
CA-RIV-2802	Adobe Structure	Eligible	Excavated (Foster et al 1995), outside of direct impact area
CA-RIV-1044*	Pate/Carrillo Farm	Eligible (D)	Excavated (Sterner et al 2004); Destroyed
CA-RIV-3372	Rincon Cemetery	Unevaluated	Fenced and outside of direct impact area

** Located within Borrow Area Number 1 and no longer extant*

3.6 LAND USE

The Prado Dam and Basin lie within the County of Riverside, County of San Bernardino, City of Corona and City of Chino. The Prado Basin consists of approximately 9,740 acres of land up to the 566-ft elevation. Communities downstream of Prado Basin are predominantly in Orange County. The U.S. Government is the major landowner in the Prado Basin owning approximately 6,623 acres and has acquired flood easements on all lands it does not own within the inundation area of the reservoir. OCWD is the second largest landowner owning approximately 2400 acres. Land uses on property held by OCWD are constrained by flowage easements held by the U.S. Government. Historically, Prado Basin was used primarily for agriculture purposes, such as dairies, ranches and farms. Currently, the primary purpose of lands within the basin is flood risk management and all other uses are subordinate. All land uses within the basin must be consistent with the flood control purpose. The Land Use conditions have not changed considerably since the analysis was conducted and presented in the 2001 SEIS/EIR. The following provides clarifications or information to validate that the previous documents provide adequate NEPA/CEQA documentation for the proposed Project and serves as an Addendum to original document. The updated information reflects development and updated Riverside County General Plan.

The Prado Dam and Spillway lie in the southwest corner of Prado Basin. The project area is immediately northeast of the SR-71 (Corona Expressway) and SR-91 (Riverside Freeway) interchange (**Figure 3-7**)**.** The Chino Hills lie immediately to the west and the Santa Ana Mountains are to the southwest. The City of Corona lies to the east and south of the Prado Spillway. Single family residential homes are south of SR-91 and light industrial uses exist to the east.

The immediate project area is owned entirely by the Federal Government and managed by USACE primarily for flood risk reduction and related purposes. USACE has issued and may issue outgrants for compatible purposes such as utilities, low-density recreational development and habitat restoration.

Land uses surrounding the project area fall into one of four general categories:

1. **Open Space** is land that is not intensively developed for residential, commercial, industrial or institutional use. It can serve many purposes including undeveloped scenic lands, water bodies, public parks and recreation. The open space within Prado Basin provides a variety of functions including flood risk management, water storage, and natural habitat for plants and wildlife.
2. **Developed** land use represents residential communities, commercial businesses, and public facilities that have been developed for human use. Vegetation within developed parcels is largely comprised of non-native turf grasses and ornamental trees.
3. **Vacant/Ruderal:** There are several vacant lots surrounding the project area. These were previously used for construction or other purposes and are now colonized by weedy species, also known as ruderal habitat.
4. **Agriculture:** Prado Basin was historically a productive agricultural region; however, the area has experienced large-scale land use conversion from agricultural to developed or open space use. A handful of agricultural parcels remain around the proposed project area.

Per the 2020 Riverside County General Plan (Riverside County 2020), the project area is located within Open Space Conservation land use (**Figure 3-8**). This designation is designed to protect open space for natural hazard protection, cultural preservation, and natural and scenic resource preservation. In addition, the project area and all of Prado Basin occur within the Santa Ana River Policy Area, which has policies in place to preserve and protect this important natural and recreational feature.

The proposed project area is also within the boundaries of the MSHCP. The MSHCP is one of several large, multi-jurisdictional habitat-planning efforts in southern California with the overall goal of maintaining biological and ecological diversity within a rapidly urbanizing region, and is intended to allow Riverside County and its cities to better control local land-use decisions while addressing the requirements of the State and federal Endangered Species Acts.

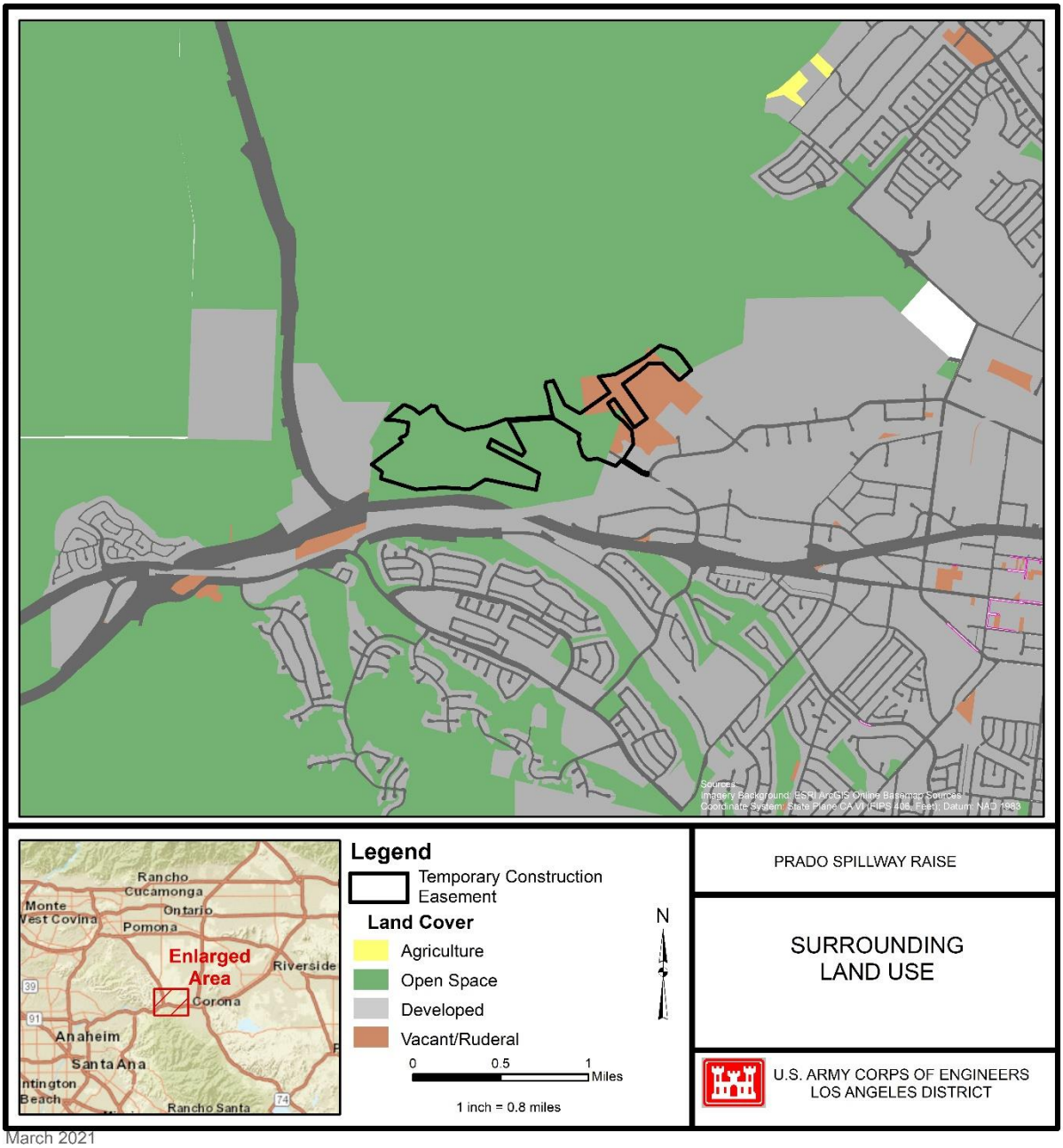

Figure 3-7. Exisitng Land Use Surrounding the Proposed Project Area

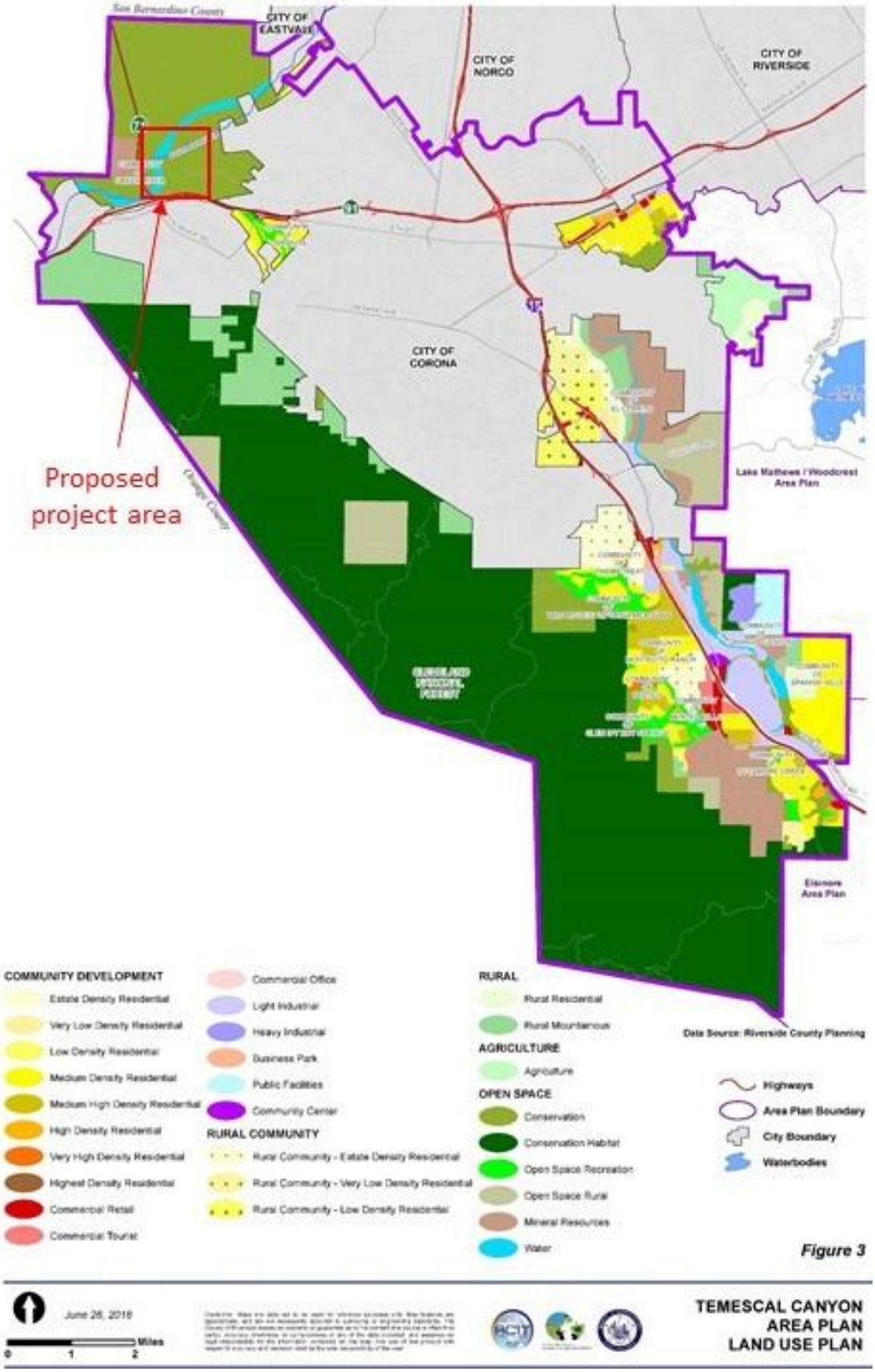

Figure 3-8. Riverside County Land Use Plan

3.7 AESTHETICS

The project lies within the Prado Flood Control Basin, which is comprised of open space recreational land uses. The northern boundary of the project area encompasses a scenic vista of undeveloped riparian areas along the Santa Ana River and the surrounding open space areas (**Figure 3-9**). The southern and western boundaries of the project site are surrounded by large highways (SR-71 and SR-91) and the eastern boundary is predominantly industrial development. Aesthetic conditions have not changed considerably since analysis was conducted in 1988 Phase II GDM. The following provides clarifications or information to validate that the previous documents provide adequate NEPA/CEQA documentation for the proposed Project and serves as an Addendum to original document.

Painted onto the lower (steep) chute section of the spillway is the Prado Bicentennial Mural (**9**). The mural is over 100 feet tall and 640 feet wide and is highly visible from SR-91 and SR-71. It was painted in 1976 by a group of students from Corona High School to celebrate the U.S. Bicentennial. The mural originally stated the words “200 Years of Freedom 1776-1976”. Subsequent graffiti modified the mural to now state “200 Years of Freedom TOPS 1996”. The mural is not eligible for listing in the National Register of Historic Places.

Figure 3-9. Aesthetic Resources in the Project Vicinity: Riparian Areas and Bicentennial Mural

3.8 RECREATION

Recreational resources and opportunities are limited within the proposed project area. Existing recreational uses within the project area include dispersed recreation such as walking, birdwatching, and general outdoor enjoyment. However, several formal parks and recreational facilities exist in the vicinity of the project area (**Table 3-9).** Recreational resources have not changed considerably since the analysis was conducted and presented in the 2001 SEIS/EIR, and beneficial uses above and below the dam are REC1 (water contact activities) and REC2 (non-water contact activities). The following provides clarifications or information to validate that the previous documents provide adequate NEPA/CEQA documentation for the proposed Project and serves as an Addendum to original document.

Table 3-9. Recreation Facilities and Amenities in Project Vicinity

Facility	Location	Amenities
Corona Municipal Airport	Two miles east of the project area.	Small, single runway, recreation airport used mostly by small private planes; home to about 350-400 general aviation aircraft.
Butterfield Park	Two miles east of the project area.	Ball fields, jogging course, barbecue, covered shelters, playground equipment, picnic areas, restrooms, and drinking fountains.
Ridgeline Park	About a mile southeast of the project area.	Softball field, splash pad, barbeque, covered shelter, picnic area, restrooms, and drinking fountain.
Serfas Club Park	1.5 miles southeast of the project area.	Softball field, playground, basketball court, picnic area, covered shelter, barbeque, and drinking fountain.
Fresno Canyon Trail	0.6 miles southwest of the project area.	Year-round 4.4-mile trail for hiking, running, nature trips, and bird watching.
Chino Hills State Park	About 0.5 miles west of the project area.	14,102-acre park provides scenic vistas, hiking, biking, and equestrian opportunities.
Riverside County Prado Basin Park	About 2 miles northeast of the project area.	Approximately 1,000-acre park offers hiking and open space habitat.
Prado Regional Park	About 2.5 miles north of the project area.	585-acre park including Prado Park Equestrian Center, Prado Olympic Shooting Park, Oranco Bowen Archery Club, a dog park, camping, a large meeting room, disc golf, fishing, and hiking trails.
El Prado Golf Course	About 3 miles north of the project area.	Year-round, 18-hole golf course open to the public.
Green River Golf Course	Begins about 1.5 miles west of the project area.	Year-round, 18-hole golf course open to the public.

In addition, the Riverside County Regional Park and Open Space District is proposing to construct the Corona-Norco-Eastvale segment of the Santa Ana River Trail (SART) in the project vicinity. This segment would run along the eastern and southern edges of Prado Basin. The SART will be one of the longest recreational trails in the nation, totaling 110 miles from the San Bernardino Mountains to the Pacific Ocean (Huntington Beach). The National Park Service has established the SART as a "National Recreation Trail."

The proposed project area lies in one of two gaps in the SART. The Riverside County Regional Park and Open Space District has requested permission from USACE to fill this gap to allow the SART to continue through the project area, linking the SART system in Orange County with segments in Riverside County. The proposed SART segment would be a dual-track trail that would include a paved bike and pedestrian path and a non-paved equestrian path. The Riverside County Parks and Recreation Department is coordinating with the USACE on the alignment of the bike/pedestrian and equestrian paths. A separate environmental document is being prepared to support a potential action of providing real estate permits for construction and operation of this trail, which has no bearing on the proposed spillway construction (Proposed Action).

3.9 NOISE

Ambient noise at the project site is primarily characterized by its close proximity to the SR-91 and SR-71 interchange. SR-91 is immediately south of the project site, where noise levels are generally high with an average of 250,000 commuters per day. Noise monitoring approximately 200 feet north of SR-91 and adjacent to the TCE indicated ambient noise levels from SR-91 freeway traffic is approximately 65 dB on average (measurement taken May 29, 2020 at 7:42 AM). The BNSF railroad line also lies south of the project site and generates noise from various cargo and commuter trips. Operation of the Prado Dam and outlet works in the immediate vicinity of the spillway also contributes to the ambient noise levels to a lesser degree. Noise levels drop off substantially along the northern and eastern boundaries of the project area where open space provides a buffer from other noise sources. The primary noise sources within the project area are traffic on SR-91 to the south, traffic on SR-71 to the west, and operation of the Prado Dam and outlet works.

3.9.1 Sensitive Receptors

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

The closest sensitive receptor is a residential area about a half mile south of the project site, south of SR-91. Since the project area is surrounded by open space to the north and west and industrial land use to the east, there are no other sensitive receptors within one mile of the project area (**Figure 3-7**).

3.10 SOCIOECONOMICS

Socioeconomics were not explicitly described in the 2001 SEIS/EIR, however, this resource was analyzed in the previous NEPA documents and projected future development and population growth (e.g., Appendices H & J in USACE 1980 and Table I-6 in USACE 1988 Vol. 9). An environmental justice analysis was conducted (see Appendix O in USACE 2001). This chapter includes an updated Environmental Justice analysis, similar to the 2001 analysis.

The EPA has lead responsibility for implementation of Executive Order 12898. In exercising its responsibility, the EPA developed EJSCREEN, an online environmental justice screening and mapping tool, to assist federal agencies. The Council on Environmental Quality (CEQ) has oversight of the federal government's compliance with this Executive Order and NEPA. The CEQ, in consultation with the EPA and other agencies, has prepared guidance to assist federal agencies in NEPA compliance in its Environmental Justice: Guidance under the National Environmental Policy Act (CEQ Guidance). The CEQ Guidance provides an overview of Executive Order 12898; summarizes its relationship to NEPA; recommends methods for the integration of environmental justice analysis into NEPA documents; and definitions of key terms and concepts contained in the order. Per the CEQ Guidance, minority refers to people who are Hispanic or Latino of any race, as well as those who are non-Hispanic or Latino of a race other than White or European-American. The same CEQ Guidance suggests low-income populations be identified using the national poverty thresholds from the U.S. Census Bureau.

Demographic data from the EPA's EJSCREEN, an online environmental justice screening and mapping tool, served as the source data for evaluation. EJSCREEN incorporates demographic data from the U.S. Census Bureau. Two analyses recommended by the CEQ Guidance, Meaningfully Greater analysis and Fifty Percent analysis, were used to determine whether cities adjacent to the dam had a notable presence of minority or low-income population. Notable presence of either population would require either of the following results:

- Fifty Percent Analysis: The ratio of minority or low-income population of the area of analysis equals to or exceeds 50% of the total population of the area of analysis.
- Meaningfully Greater Analysis: The percentage of minority or low-income population relative of the area of analysis equals to or exceeds 50 percentile relative to the surrounding area.

The area of analysis is defined as a 1-mile radius around the project site. For the purposes of this discussion of Socioeconomics, demographic data for the city of Corona and the county of Riverside are presented below in Table 3-10. The demographic data are based on the 2019 U.S. Census Bureau's Population Estimates Program (PEP), which produces estimates of the population for the United States, its states, counties, cities, and towns. The timing of the release of PEP estimates varies according to the level of geography.

Table 3-10. Demographic Data for the City of Corona and Riverside County

	Subject	City of Corona	Riverside County
Population	Total Population	169,868	2,470,546
	Population, 2010 Census	152,374	2,189,641
	Population Change, 2010 to 2019	11.5%	12.8%

Age and Sex	Persons under 5 Years	6.5%	6.3%
	Persons under 18 Years	25.4%	24.9%
	Persons 65 Years and Over	9.9%	14.8%
	Female Persons	50.3%	50.1%
Housing	Number of Households	49,658	718,349
	Average Household Size	3.32	3.27
Income	Median Household Income	$79,081	$63,948
	Persons in Poverty (%)	10.5%	12.7%
Education	High School Graduate or Higher	85.3%	81.7%
	Bachelor's Degree or Higher	27.2%	21.8%
Ethnicity	White	64.2%	79.6%
	Black or African American	5.9%	7.3%
	American Indian and Alaska Native	0.3%	1.9%
	Asian	11.1%	7.2%
	Native Hawaiian and Other Pacific Islander	0.5%	0.4%
	Two or More Races	4.7%	3.6%
	Persons of Hispanic or Latino Origin (Any Race)	43.9%	50.0%

Source: 2019 U.S. Census Bureau Population Estimates Program (https://www.census.gov/quickfacts)

3.10.1 Population

The city of Corona has an estimated population of 169,868, representing 6.8% percent of the Riverside County population of 2,470,546. The population growth rate was slightly higher in Riverside County as a whole (12.8%) compared to the city of Corona (11.5%). The city of Corona has an estimated 49,658 households, representing 6.9% percent of Riverside County's 718,349 households.

3.10.2 Age and Sex

The age and sex demographics of the city of Corona and the county of Riverside are nearly identical, with the exception that Riverside County has a higher percentage of persons 65 years of age or over (14.8%) compared to Corona (9.9%).

3.10.3 Income and Poverty

The median household income of $79,081 in Corona is higher than the county's median of $63,948. The poverty rate for the city of Corona is estimated to be 10.5%. In comparison, the Riverside County unemployment rate is 12.7%. The Census Bureau's definition for poverty uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. If a family's total income is less than the family's threshold, then that family and every individual in it is considered in poverty. The higher median income and lower poverty rate suggest that the City of Corona is more affluent than Riverside County as a whole.

3.10.4 Ethnicity

According to the 2019 PEP estimate, the ethnic makeup of the city of Corona consists of Whites at 64.2 percent and Hispanics at 43.9 percent. This total is greater than 100 percent because Hispanics may

be of any race, and therefore, are also included in other applicable race categories. Otherwise, the ethnic makeup of the city of Corona consists of Black/African Americans at 5.9 percent, Asians at 11.1 percent, American Indian and Alaskan Native at 0.3 percent, and Native Hawaiian and Other Pacific Islander at 0.5 percent.

3.11 PUBLIC SERVICES AND UTILITIES

The project area includes the typical array of municipal public services and utilities that support residential, commercial, and industrial uses, including:

Fire protection	Wastewater	Water
Police protection	Schools	Waste disposal/recycling
Electricity	Natural gas	

3.11.1 Public Services

Fire Protection: The city of Corona Fire Department provides a full range of fire protection services to the citizens of Corona. There are currently seven fire stations located within the city of Corona. Corona Fire Station #5, located at 1200 Canyon Crest is the closest station to the project area.

Police Protection: The city of Corona Police Department provides complete law enforcement services to the city population. The mission of the Corona Police Department is to achieve excellence in policing, by ensuring the safety and security of the public through strong community partnerships and investment in our people.

Schools: The Corona-Norco Unified School District serves the school needs for the city of Corona. The School District has 47 K-12 schools, with over 53,000 students enrolled. None of these schools are located within the project area. Prado View Elementary School, located two miles south at 2800 Ridgeline Drive, is the closest to the proposed project area.

3.11.2 Utilities and Service Systems

The project area is served by Riverside County and city of Corona utility and service systems**.** A variety of local purveyors in these areas provide and maintain utility and service system facilities associated with electricity, water, stormwater and wastewater, solid waste, and natural gas. Underground Service Alert (also known as USA or “Dig Alert”), a non-profit organization supported by utility firms, provides specific information on the location of underground utilities to contractors upon request, prior to construction.

USACE will continue to actively coordinate with utility and service entities during design of this project. There are 3 existing utilities located within the proposed project TCE: Southern California Edison power lines, a Southern California Gas Company gas line, AT&T aerial lines, and AT&T buried lines (**Figure 3-9**). Utilities located within project disturbance limits will be relocated prior to construction or protected in place. The Southern California Gas Company Gas Line project has completed NEPA and the project started November 2021. The Southern California Gas Company is responsible for offsetting temporary impacts to 8.2 acres of coastal sage scrub and 6 acres of non-native upland habitat by purchasing credits at a mitigation bank and revegetating areas disturbed by construction.

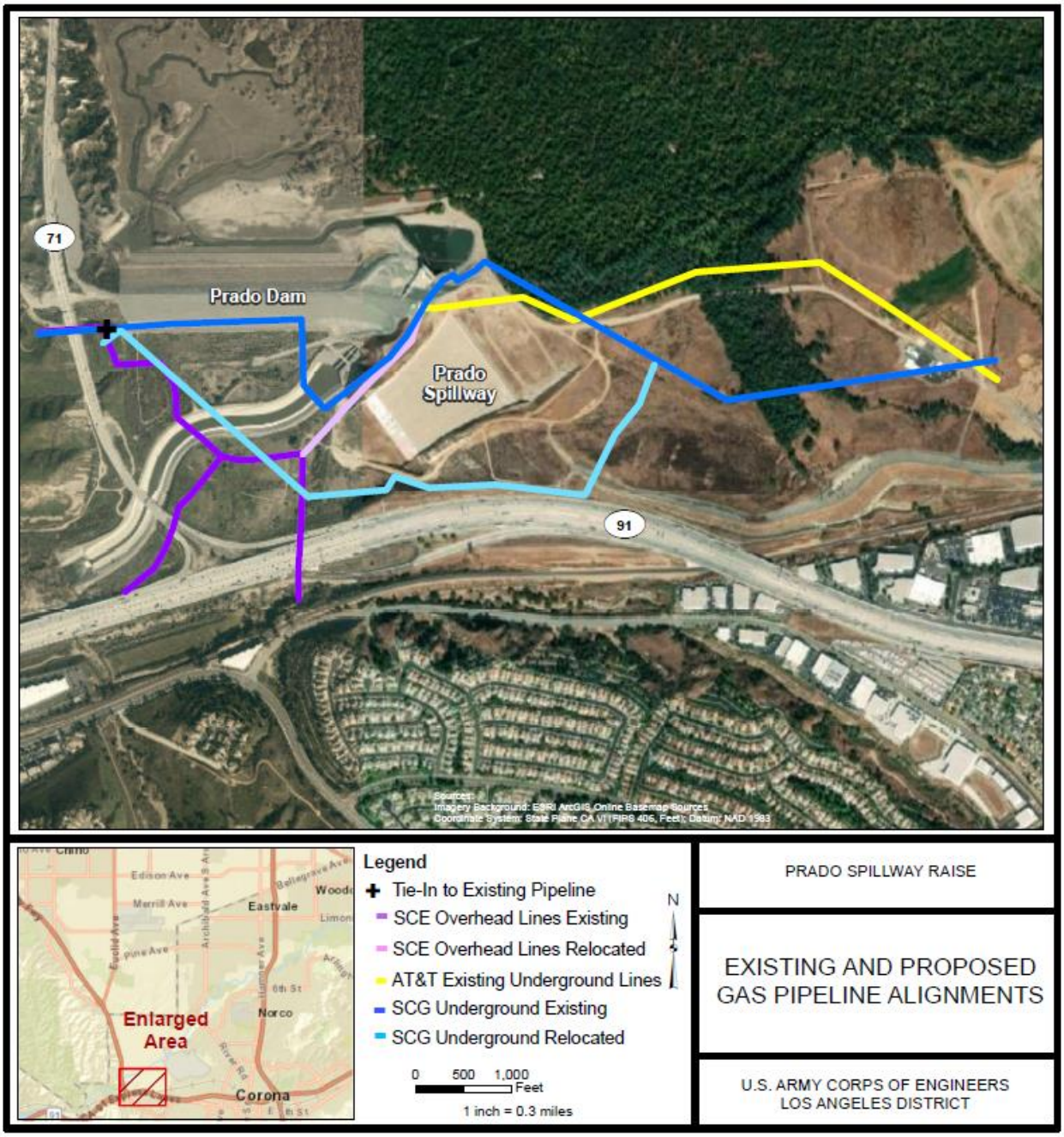

Figure 3-9. Utilities and Service Systems within the Project Footprint

3.12 TRANSPORTATION

Major roadways providing regional access to the project area include SR-71, SR-91 and Interstate 15 (I-15), which are maintained by Caltrans. Local access to the site would be provided by Auto Center Drive, which has on/off ramps to SR-91 southeast of the project area. Construction vehicles would access the site locally from Auto Center Drive from the south and Railroad Street from the north. These local roadways are maintained by the City of Corona Public Works Department. Lane and directional configurations of roadways providing access to the area are summarized below. Average daily traffic (ADT) volumes measured for State Routes and local roadways in the vicinity of the project area are presented in Table 3-11.

- **SR-91** is a fourteen lane east-west freeway south of the project site.
- **SR-71** is a four lane north-south freeway to the west of the project site.
- **I-15** is an eight lane north-south freeway merging with SR-91 to the east of the project site.
- **Auto Center Drive** is a four-lane roadway with a center turning lane running north-south at the SR-91 on/off ramp, turning west after its intersection with Pomona-Rincon Road. It transitions to a two-lane roadway to the west after its crosses the Metrolink tracks. Auto Center Drive turns into Railroad Street to the east.
- **Railroad Street** is a four lane east-west roadway east of the project site.

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

Roadway	2020 ADT
SR-71 southbound at SR-91	77,000
SR-91 westbound at SR-71	253,000
SR-91 eastbound at Auto Center/Serfas Club Drive	256,000
SR-91 at I-15	233,000
Auto Center Drive at Pomona-Rincon Road/Railroad Street	10,887

Source: City of Corona 2020, Caltrans 2020

Other transportation related land uses in the vicinity include Corona Municipal Airport, located approximately 2 miles east-northeast of the project area, and the BNSF railroad line, which runs east-west a quarter of a mile south of the project area. Metrolink commuter trains also utilize this rail line. The nearest Metrolink station is the West Corona Station at 155 S. Auto Center Dr., about one mile east of the project area. This rail line is also currently used by Amtrak commuter carrier's Southwest Chief train, although the train does not stop at this station. The Riverside Transit Agency is a bus service in the vicinity responsible for providing transit service to all citizens in western Riverside County. The City of Corona also operates a fixed-route bus system and a demand responsive service (Dial-A-Ride) within the city.

The Riverside County Regional Park and Open Space District is planning to build the Corona-Norco-Eastvale segment of the Santa Ana River Trail (SART). This proposed segment would connect with the existing Santa Ana River Trail system downstream of the Prado Dam and at the Hidden Valley Wildlife Area upstream of the basin, linking the SART system in Orange County with segments in Riverside County.

3.13 HAZARDOUS MATERIALS

This section focuses on existing public health and safety issues related to hazardous materials near the project area. Hazardous materials are not generally considered part of Hazardous, Toxic and Radioactive Waste (HTRW) impacts until they have been released to the environment, at which point they are considered a hazardous substance or waste, according to Comprehensive Environmental Response Cleanup and Liability Act (CERCLA) and Resource Conservation and Recovery Act (RCRA).

The California State Water Resources Control Board's Geotracker environmental database was referenced for environmental pollutant information (https://geotracker.waterboards.ca.gov/). A Geotracker database search on 30 March 2021 resulted in one HTRW property of concern within one mile of the proposed site: Owl Rock Products (T0606500384), located west of SR-71 (**Figure 3-10**). However, this site has been completely cleaned and the case is closed. Therefore, the proposed project area is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

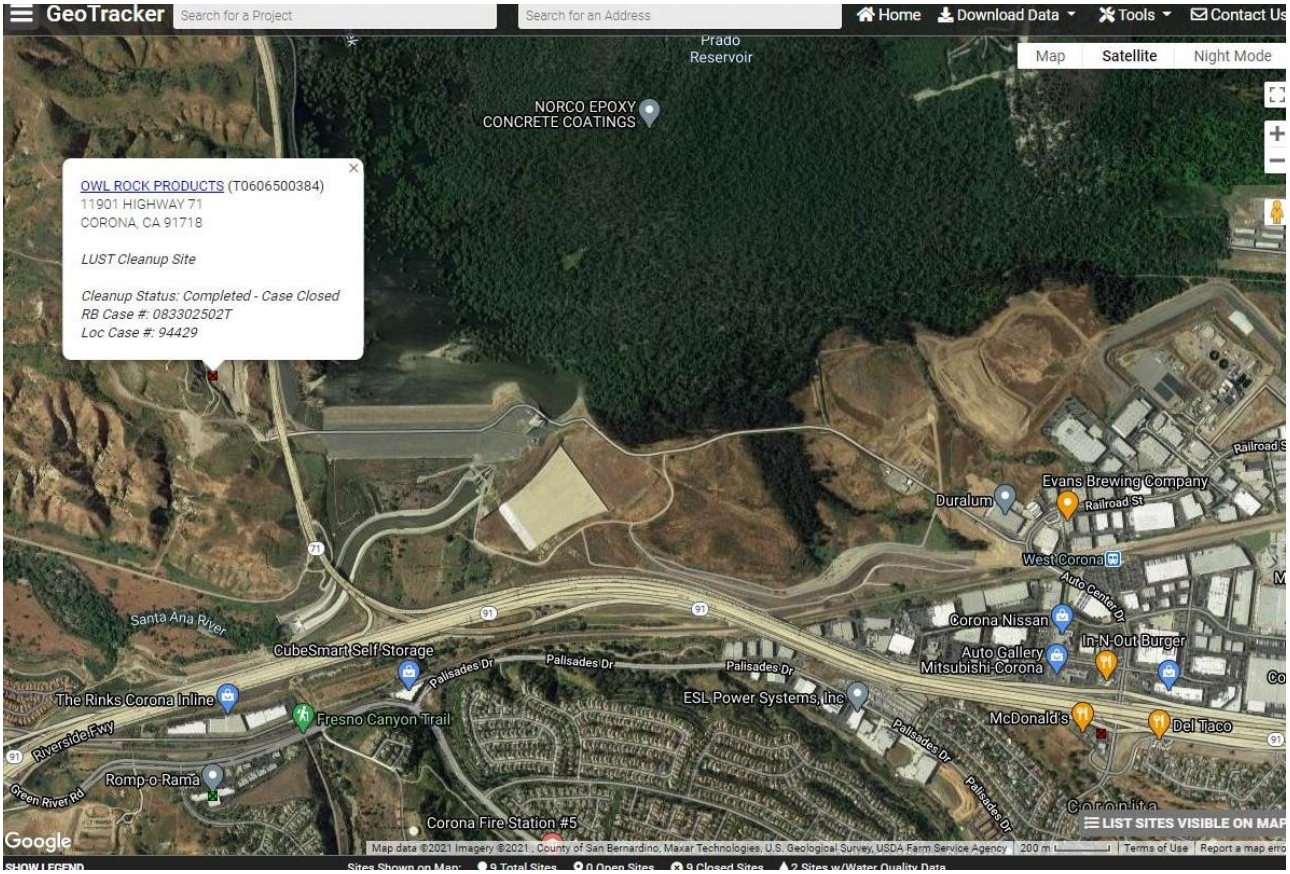

Figure 3-10. Geotracker Database Results in the Project Vicinity

There may be HTRW or pollutant impacts to the study area which were not fully disclosed in the Geotracker database. For instance, there is one known stationary source of hazardous waste pollution at the project site. The Prado Spillway steep chute area has a mural rendering that originally depicted “200 Years of Freedom 1776-1976” in a red, white and blue color scheme to celebrate the Bicentennial of the United States (**Figure 3-9**). This paint was lead-based, reportedly donated by the Navy in 1975. Subsequent graffiti was added, modifying the mural to depict “TOPS 1996”. In 2014, USACE tested paint chip samples from the mural and downstream soils for lead and other heavy metals. Results indicate lead-based paint was used and as the mural deteriorates, chips are peeling from the surface into the surrounding environment. The downstream soil analysis found that no soil samples exceeded the California Human Health Screening Level all were within background levels for California and Riverside County (University of California 1996).

4 ENVIRONMENTAL CONSEQUENCES

This section provides an assessment of potential direct and indirect impacts to each environmental resource associated with the Proposed Action and other Alternatives, including the No Action Alternative. Impact analysis were conducted to define the consequence or effects to the human and/or natural environment resulting from the Proposed Action and Action Alternatives. Both elements of the Proposed Action share the same construction footprint, and thus impacts were analyzed together. There are three types of impacts: 1) direct impacts, 2) indirect impacts and 3) cumulative impacts. Direct and indirect are discussed in this section. Direct impacts which caused by the action occurring at the same time and place, while indirect impacts are removed in distance or occur after the action occurs. Cumulative impacts are discussed in Chapter 5.

In analyzing potential impacts of the Proposed Action, significance is determined by applying a threshold known as "thresholds of significance" for each resource. Significance varies with resource type and considers both context and locality. Impacts to each resource will be described as either: no impact, less than significant impacts, significant impacts or significant and unavoidable impacts.

The effects on resources have been previously analyzed as part of the final 2001 SEIS/EIR for Prado Basin and Vicinity, which was prepared and certified on December 19, 2001 pursuant to State and County CEQA Guidelines. Therefore, conclusions are presented throughout this chapter to address that the proposed project would not create a new significant impact or a substantial increase in the severity of impacts previously identified 2001 SEIS/EIR.

4.1 WATER RESOURCES AND HYDROLOGY

The area of analysis for water resources effects from the Proposed Action and Alternative Actions extends 0.5 miles downstream and upstream of the Prado Dam and Spillway and encompasses small drainages found within the project footprint. As described in the 2001 SEIS/EIR, effects to this resource would not be significant; however, this document provides a more robust analysis to be consistent with other recent SARMP environmental documents

4.1.1 Hydrology

This section evaluates the potential for the Proposed Action and other alternatives to affect hydrological characteristics within the floodplain, including surface water elevation, flow velocity, channel capacity and configuration. Effects are similar to those addressed in the 1988 Phase II GDM, which were also found to be valid and not reanalyzed in the 2001 SEIS/EIR. The following analysis summarizes and updates this information to focus more specifically on effects related to Spillway construction, but does not identify new substantive information or impacts. Measures to reduce or avoid impacts were provided in the 1988 Phase II GDM and referenced in the 2001 SEIS/EIR. However, these measures have been updated language from more recent SARMP projects which exceed the water resources commitments outlined in the 1988 Phase II GDM.

SIGNIFICANCE THRESHOLDS

Impacts would be considered significant if the alternative caused:

- Substantial changes drainage patterns that would result in flooding onsite or offsite;
- Substantial changes to the flow pattern that would cause severe change to erosional/depositional patterns.

4.1.1.1 Alternative 1 (Proposed Action)

Construction Impacts

Alternative 1 (Proposed Action) would not substantially affect flow pattern or velocity as the action to modify the permanent structure would occupy only dry upland habitat. Without the proposed modifications there would be high risk of failure during an extreme storm event. Construction of this alternative would reduce flood risk substantially for future storm events.

During implementation of Alternative 1 (Proposed Action), measures will be included to minimize or avoid potential effects related to drainage and flooding onsite during construction. The proposed measures meet and exceed the commitments provided in the 1988 Phase II GDM, which were referenced in the 2001 SEIS/EIR. These measures include construction of a cofferdam and installation of groundwater wells to pump groundwater out of excavations. There will also be requirements to follow measures to manage spills and runoff onsite through mechanisms such as a Storm Water Pollution Prevention Plan (SWPPP) (EC-WR-1 through 3). If extreme flooding were to occur during construction, the cofferdam would serve as an emergency berm to prevent flows from entering the project area and flowing over the spillway. This would protect the existing low areas adjacent to the spillway until the embankment connections are fully constructed. The borrow areas that will be excavated to construct the various features of the project will not be excavated to a depth that would substantially changing the drainage for the area. In addition, material excavated from the project site that is not suitable for constructing the project features will be placed in the borrow areas as feasible. Any existing ephemeral drainages will be maintained or returned to functioning conditions post construction. Additionally, no work is being proposed within close enough proximity to the Santa Ana River to effect drainage to or flow within the river. Therefore, the Proposed Action would not result in substantial changes in flow and deposition patterns onsite, excess runoff, substantial changes in flow of the Santa Ana River or flood risk to communities; therefore, the effect to hydrology is considered less than significant.

Operation/Maintenance Impacts

Future maintenance related to Alternative 1(Proposed Action) would include routine inspections and minor repairs of the spillway and its associated features after construction is completed. Regular maintenance activities detailed in section 2.2.2 include nuisance vegetation removal in areas such as constructed drains, minor repairs of feature equipment and replacement of topsoil as needed on structures such as the flip bucket. Under normal operating conditions there are no existing streams or drainages that will be impacted by vehicles or equipment accessing the feature, as all water is contained behind the dam and continues downstream through the concrete outlet works (**Figure 2-3**).

Completion of the features of Alternative 1(Proposed Action) would help reduce flood risk long term for the region by ensuring the potential failure modes of the dam are reduced. Raising the height of spillway crest would in turn increase the amount of water capacity to be held upstream as part of the operation of Prado Dam for an SPF event. Although water has never flowed over the spillway during a high flow event, Alternative 1 (Proposed Action) would increase the dam capacity to 334,000 ac-ft, which is the same outcome as the previously authorized project in the No Action Alternative. Alternative 1 (Proposed Action) is designed to allow for a larger pool to be held behind the dam before the spillway would convey flows, in order to have more control over how much water is released downstream. The increased pool size does not drastically change the existing hydrology onsite. The various flood control features of SARMP constructed upstream of the dam protect properties not purchased by Orange County up to the authorized 566 feet (NGVD29) take line. Future maintenance activities would not alter the overall hydrology of the area and are not expected to cause substantial changes in surface water elevation, flow

velocity, channel capacity or configuration. Impacts to hydrology due to regular future maintenance and long-term operation would not be potentially significant.

4.1.1.2 Alternative 2

Construction Impacts

Under Alternative 2, project impacts from construction would be the same as those described for Alternative 1. This alternative would also include implementation of measures to minimize or avoid potential short- or long-term effects related to onsite drainage or flooding as stated in Alternative 1. This alternative would also construct a cofferdam to protect the spillway from onsite flows during construction. The use of borrow areas will be the same as described in Alternative 1. As with Alternative 1, Alternative 2 proposes no work activities within the Santa Ana River. Alternative 2, does not substantially change the basic function of the dam or spillway, but it does provide better protection from flood risk. Therefore, no substantial changes to flow patterns or drainage will result from this alternative. Construction of this alternative will have the same long-term effects on flooding for the region as described in Alternative 1. Potential impacts of Alternative 2 on hydrology would be less than significant.

Operation/Maintenance Impacts

Operational impacts under Alternative 2 would be the same as those described for Alternative 1. As with the Proposed Action, Alternative 2 would include routine inspections and minor repairs of the spillway and its associated features after construction is complete. Other maintenance activities include nuisance vegetation removal from areas such as constructed drains and sediment replacement as needed. Future maintenance activities would not alter the overall hydrology of the area in a significant way.

4.1.1.3 Alternative 3

Construction Impacts

Under Alternative 3, project modifications to prevent flood risk to downstream communities during extreme high flow events would be the same as described for Alternative 1 and 2. Alternative 3 has the same access roads, borrow area, construction equipment, phasing, and similar materials and duration as Alternative 2. This alternative would also include implementation of measures to minimize or avoid potential short- or long-term effects related to onsite drainage or flooding. ground water wells would be installed as needed for construction of the embankment connections. Potential impacts of Alternative 3 on hydrology would be less than significant as stated for Alternative 2. No work is proposed within the Santa Ana River, and the borrow area excavation will either have no impact on drainages or will be returned to a state that provides the same function, therefore no changes to flow patterns will result from this alternative. Long-term effects of constructing Alternative 3 are the same as described in Alternative 1 and 2.

Operation/Maintenance Impacts

Operational impacts under Alternative 3 would be the same as those described for Alternative 1 and 2. As with the other alternatives, Alternative 3 would include routine inspections and minor repairs of the spillway and its associated features after construction is completed. Other maintenance activities include nuisance vegetation removal from areas such as drains and sediment replacement as needed. Future maintenance activities would not alter the overall hydrology of the area.

4.1.1.4 No Action Alternative (Previously Approved Design for SARMP Spillway Raise)

Construction Impacts
Under the Previously Approved Design described in the 2001 SEIS/EIR, only the existing ogee weir would be raised from 543 feet to 563 feet. Effects of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on hydrology would be less than significant, as described in the 2001 SEIS/EIR. As with the previously described alternatives the use of the borrow areas will be similar in nature and not substantially impact existing drainage or flow patterns.

Operation/Maintenance Impacts
Under the Previously Approved Design, regular maintenance impacts would be similar to those described for Alternatives 1, 2 and 3. The project operation and maintenance impacts would be as described in the 2001 SEIS/EIR. The impacts of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on hydrology would be considered less than significant, as described in the 2001 SEIS/EIR. Without the dam safety measures constructed the operation of the dam spillway would potentially result in a dam failure or uncontrolled release of the reservoir, as the known risks with the spillway chute would not be addressed and therefore the risk of the dam would remain high. New information gathered shows that increasing the height of the spillway without addressing the chute instability and potential erosion could lead to greater impacts than previously discussed in the 2001 authorized project.

ConclusionThere are no new or more significant impacts on hydrology resulting from implementation of Proposed Action than was previously analyzed

4.1.2 Surface Water Quality

SIGNIFICANCE THRESHOLDS

Impacts would be considered significant if the alternative results in:

- Substantial increases in the rate or amount of surface runoff resulting in flooding on-site or off-site, or contributing to runoff water that would exceed the capacity of an existing or planned stormwater drainage system; and
- Substantial changes the existing water quality causing degradation

4.1.2.1 Alternative 1 (Proposed Action)

Construction Impacts
Alternative 1 has the potential to impact surface water quality during construction. Some examples include oil, gas or chemical spills occurring during work activities or areas with bare ground and/or sediment stockpiles experiencing erosion during rain events. These types of incidences would cause surface water degradation via onsite runoff. Therefore, the project will include implementation of measures to minimize or avoid potential short- or long-term effects related to flooding, surface runoff, and water quality. These measures include site protection mechanisms such as a Stormwater Pollution Prevention Plan (SWPPP) which would be developed prior to construction start and filed with the Santa Ana Regional Water Quality Control Board (RWQCB), as outlined in **Section 6.1**. SWPPP require onsite mechanisms to prevent potentially polluted runoff from entering water bodies or groundwater during construction (EC-WR-1, EC-WR-2, EC-WR-3). A cofferdam for water diversion during construction would

be in place to divert flows away from exposed surfaces during construction. Additionally, planting of vegetation during the site restoration phase would minimize the amount of surface runoff and risk of on- and off-site flooding.. While there is potential for construction to impact surface water quality during construction, measures will be taken to reduce those potential impacts. Therefore, effects on surface water are considered less than significant.

Operation/Maintenance Impacts

Future maintenance of Alternative 1 would include routine inspections and minor repairs of the spillway and its associated features after construction is completed. Future maintenance activities would not alter the overall surface water and drainage patterns. Although future maintenance may introduce potential water quality impacts associated with the use of motorized vehicles and equipment and minor soil-disturbing activities, potential impacts would be avoided or minimized through measures outlined in the Operation and Maintenance Manual. These activities are not different than those of the existing structure. Operation of the newly constructed feature under normal conditions would not have any impact on surface water quality. The feature is designed to allow for surface water to enter and exit the feature in a manner that would not substantially degrade water quality. Surface water would only flow over the spillway during extreme flooding events, in which the water quality would already be extremely degraded. Therefore, operation and maintenance impacts would be less than significant on surface water quality.

4.1.2.2 Alternative 2

Construction Impacts

Under Alternative 2, project modifications would be the same as those described for Alternative 1. The construction impacts would address potential effects related to flooding, surface runoff, and water quality. This alternative would also include implementation of measures to minimize or avoid potential short- or long-term effects related to flooding on site and off site. Potential impacts of Alternative 2 on surface water would be less than significant.

Operation/Maintenance Impacts

Future maintenance of the Alternative 2 would be similar to Alternative 1 and include routine inspections and minor repairs, of the spillway and its associated features after construction is completed. Future maintenance activities would not alter the overall surface water and drainage patterns. Although future maintenance may introduce potential water quality impacts associated with the use of motorized vehicles and equipment and soil-disturbing activities, potential impacts would be avoided or minimized through the implementation of the BMPs and design criteria. Operation and maintenance impacts would be less than significant on surface water quality.

4.1.2.3 Alternative 3

Construction Impacts

Under Alternative 3, project modifications would be the same as those described for Alternatives 1 and 2. The construction impacts would address potential effects related to flooding, surface runoff, and water quality. This alternative would also include implementation of measures to minimize or avoid potential short- or long-term effects related to flooding on site and off site. Potential impacts of Alternative 3 on surface water quality would be less than significant.

Operation/Maintenance Impacts
Future maintenance of the Alternative 3 would be similar to Alternatives 1 and 2, and would not have different impacts than current maintenance of the existing features. This alternative would include routine inspections and minor repairs of the Spillway and its associated features after construction is completed. Future maintenance activities would not alter the overall surface water and drainage patterns. Although future maintenance may introduce potential water quality impacts associated with the use of motorized vehicles and equipment and soil-disturbing activities, potential impacts would be avoided or minimized through the implementation of the BMPs and design criteria. Operation and maintenance impacts would be less than significant on surface water quality.

4.1.2.4 No Action Alternative (Previously Approved Design for SARMP Spillway Raise)

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

Operation/Maintenance Impacts
Under the Previously Approved Design, operation and maintenance impacts would be similar to those described for Alternatives 1, 2 and 3. The project operation and maintenance impacts would be as described in the 2001 SEIS/EIR. The impacts of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on surface water quality would be considered less than significant, as described in the 2001 SEIS/EIR.

Conclusion
The impacts that would be considered significant in regard to surface water quality account for: substantial increases in the rate or amount of surface runoff resulting in flooding on-site or off- site, or contributing to runoff water that would exceed the capacity of an existing or planned stormwater drainage system, and substantial changes the existing water quality causing degradation. In conclusion the finding of no significant impacts regarding surface water quality is consistent with the 2001 SEIS/EIR, which analyzed the project as a whole.

4.1.3 Groundwater

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

SIGNIFICANCE THRESHOLDS

Impacts would be considered significant if the alternative caused:

- A substantial reduction in the ability to recharge the underlying aquifer;

- or substantial groundwater contamination
- or substantial groundwater depletion.

4.1.3.1 Alternative 1 (Proposed Action)

Construction Impacts

Alternative 1 (Proposed Action) would not substantially reduce the ability to recharge the underlying aquifer since construction is occurring in upland habitat. During construction, there may be areas that require deeper excavations due to the presence of the shear zones or unsuitable foundation material. Existing structures may need to be temporarily supported in areas that require deep excavation and dewatering will be necessary. If dewatering is necessary, the construction contractor would first need to obtain and comply with conditions of a dewatering permit from the CRWQCB. Incidental water from dewatering wells will be provided as an option for the contractor for re-use during construction; however, the use of such water may be subject to approval by Orange County Water District. Use of reservoir water would not be allowed for construction. Implementation of BMPs and environmental commitments such as a Construction Stormwater Pollution Prevention Plan, Hazardous Materials Management Plan and Emergency Response Plan, would allow for the avoidance or minimization of potential effects to groundwater quality. As the Proposed Action would not affect groundwater recharge or result in groundwater contamination, potential effects on groundwater are considered less than significant.

Operation/ Maintenance Impacts

Future maintenance of Alternative 1 (Proposed Action) would include routine inspections and minor repairs of the spillway and its associated features after construction is completed. Future maintenance activities would not alter the ability to recharge the underlying aquifer or result in groundwater contamination or depletion. Water diversion features would be removed after construction, such as the cofferdam. Implementation BMPs and environmental commitments would reduce the risk of accidental leaks and spills while avoiding or minimizing potential effects to groundwater quality. Therefore, potential effects on groundwater are considered less than significant.

4.1.3.2 Alternative 2

Construction Impacts

Under Alternative 2, project modifications would be the same as those described for Alternative 1 (Proposed Action). The construction impacts would address potential effects related to the underlying aquifer and ground water quality. This alternative would also include implementation of BMPs and measures to minimize or avoid potential effects related to ground water quality. Potential impacts of Alternative 2 on groundwater would be less than significant.

Operation/Maintenance Impacts

Future maintenance of Alternative 2 would be the same as Alternative 1 (Proposed Action) and would include routine inspections and minor repairs of the spillway and its associated features after construction is completed. Future maintenance activities would not alter the ability to recharge the underlying aquifer or result in groundwater contamination or depletion. Potential impacts on ground water quality would be avoided or minimized through the implementation of the BMPs and environmental commitments. Operation and maintenance impacts would be less than significant

4.1.3.3 Alternative 3

Construction Impacts
Under Alternative 3, project modifications would be the same as those described for Alternatives 1(Proposed Action) and 2. The construction impacts would address potential effects related to the underlying aquifer and ground water quality. This alternative would also include implementation of BMPs and measures to minimize or avoid potential effects related to ground water quality. Potential impacts of Alternative 3 on groundwater would be less than significant.

Operation/Maintenance Impacts
Future maintenance of Alternative 3 would be the same as those described Alternatives 1 (Proposed Action) and 2 and would include routine inspections and minor repairs of the spillway and its associated features after construction is completed. Future maintenance activities would not alter the ability to recharge the underlying aquifer or result in groundwater contamination or depletion. Potential impacts on groundwater quality would be avoided or minimized through the implementation of the conservation measures. Operation and maintenance impacts would be less than significant.

4.1.3.4 No Action Alternative (Previously Approved Design for SARMP Spillway Raise)

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

Operation/Maintenance Impacts
Under the Previously Approved Design, operation and maintenance impacts would be similar to those described for Alternatives 1, 2 and 3. The project operation and maintenance impacts would be as described in the 2001 SEIS/EIR. The impacts of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on groundwater would be considered less than significant, as described in the 2001 SEIS/EIR.

Conclusion
In conclusion the finding of no significant impacts regarding groundwater quality is consistent with the 2001 SEIS/EIR, which analyzed the Prado Basin and Vicinity as a whole.

4.1.4 Jurisdictional Waters and Wetlands

The discussion below describes how the proposed modifications would impact jurisdictional wetlands and waters within the project area. This SEA/EIR Addendum provides an updated accounting and description of impacts on and identifies avoidance/minimization measures for riparian and wetland areas. Alcoa Dike Project prepared a 404(b)(1) evaluation and 401 certification permit pursuant to the USACE Clean Water Act implementing regulations (33 CFR 336.1[a][1]) in 2018 and 2020 that covered the same area as the Proposed Action. These documents are contained in Appendix B.

SIGNIFICANCE THRESHOLDS

Impacts would be considered significant if the alternative caused a:

- Substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act; or
- Substantial adverse effect on riparian habitat identified by regulating agencies.

4.1.4.1 Alternative 1 (Proposed Action)

Construction Impacts

Alternative 1 (Proposed Action) construction does not impact Waters of the State, non-wetland Waters of the U.S. or wetland Waters of the U.S. One 0.5 acre area was previously mapped as Waters of the State within Borrow Area 1. However, this area has previously been impacted due to use as a borrow area for Alcoa Dike Project.. A 401 certification was recently completed for Alcoa Dike Project stating the same area being impacted by construction of the dike and the required offsite mitigation for impacts. This mitigation for impacts to the area has already been completed, and no additional impacts are proposed as part of Alternative 1 (Proposed Action) Therefore, the impacts to jurisdictional waters and wetlands are less than significant.

Operation/Maintenance Impacts

Future maintenance would only take place on the flood control structure and within adjacent upland habitats that do not contain any jurisdictional wetlands or waters. The increase in pool height from raising the spillway height would be temporary and therefore not substantially effect wetlands or jurisdictional waters.

4.1.4.2 Alternative 2

Construction Impacts

Alternative 2, has the same impacts as described in Alternative 1 (Proposed Action). Therefore, the impacts to jurisdictional waters and wetlands are less than significant.

Operation/Maintenance Impacts

Future maintenance would only take place on the flood control structure and within adjacent upland habitats that do not contain any jurisdictional wetlands or waters. The increase in pool height from raising the spillway height would be temporary and therefore not substantially effect wetlands or jurisdictional waters.

4.1.4.3 Alternative 3

Construction Impacts

Alternative 3, has the same impacts as described in Alternative 1 (Proposed Action). Therefore, the impacts to jurisdictional waters and wetlands are less than significant.

Operation/Maintenance Impacts
Future maintenance would only take place on the flood control structure and within adjacent upland habitats that do not contain any jurisdictional wetlands or waters. The increase in pool height from raising the spillway height would be temporary and therefore not substantially effect wetlands or jurisdictional waters.

4.1.4.4 No Action Alternative (Previously Approved Design for SARMP Spillway Raise)

Construction Impacts
The No Action Alternative as described in the 2001 SEIS/EIR did not determine any jurisdictional wetlands or waters within the project footprint. However, one of the proposed borrow areas in this alternative overlaps with the borrow area 1 in Alternative 1.Therefore, impacts to jurisdictional wetlands and water are considered “no impact” for the No Action Alternative.

Operation/Maintenance Impacts
Future maintenance would only take place on the flood control structure and within adjacent upland habitats that do not contain any jurisdictional wetlands or waters. Therefore, the No Action Alternative would have no impact on jurisdictional waters and wetlands.

Conclusion
In conclusion the finding of no significant impacts regarding jurisdictional waters and wetlands is consistent with the 2001 SEIS/EIR, which analyzed the Prado Basin and Vicinity as a whole.

4.2 AIR QUALITY

The 2001 SEIS evaluated air quality impacts for spillway raise as an element within a larger aggregate of construction activities at Prado Dam known as Component B. Estimated daily emissions for Component B are found in Table 4-11 of 2001 SEIS. In contrast, the air quality analysis in this SEA/EIR Addendum focuses exclusively on the spillway raise element. Thus, numerical comparison of estimated emissions between the 2001 SEIS and this SEA/EIR Addendum is not possible.

Regardless, the estimated emissions in this SEA/EIR Addendum, fall withing or are lower than previously analyzed since more stringent engine emissions requirement known as the Tier 4 standard have been in effect since 2004. Tier 4 engines emit decreased levels of oxides of nitrogen, particulate matter, and hydrocarbons. These engines are now present throughout the commercial construction fleet. In contrast, the 2001 SEIS based emissions estimates on non-Tier 4 engines. Thus, all construction assumptions being equal, use of Tier 4 engines would result in decreased emissions.

SIGNIFICANCE THRESHOLDS

Impacts would be considered significant if the alternative:

- Exceeds General Conformity Rule de minimis thresholds.
- Exceeds SCAQMD Air Quality Significance Thresholds

Emission Estimates Methodology

Emissions were estimated using CalEEMod.2020.4.0 emission modeling software, the California Air Resources Board-approved emissions modeling software used by all air districts in California.

Estimates of lead emissions were not calculated. Lead emissions from mobile sources in California have significantly decreased due to the near elimination of lead in fuels. Little to no quantifiable and foreseeable lead emissions would be generated by any of the alternatives. Thus, CalEEMod.2020.4.0 does not calculate lead emissions.

Ozone (O3) formation is driven by two major classes of directly emitted precursors: nitrogen oxides (NOx) and volatile organic compounds (VOC). The relation between O3, NOx and VOC is driven by complex nonlinear photochemistry. Due to the variability in rates of O3 formation, CalEEMod.2020.4.0 does not provide estimates for the compound. Instead, the emission estimates for VOC and NOx are used as a surrogate for reporting O3 emissions per the General Conformity Applicability Rates. Since the consumption of VOC or NOx in O3 formation reaction is variable, actual O3 levels are lower than those reported

General Conformity Rule makes a distinction between NOx as an ozone precursor and NO2 for reporting purposes. CalEEMod.2020.4.0 has emission factors for NOx but not for NO2. Because NO2, a form of NOx, forms the majority of NOx emission from internal combustion engines, estimated emissions of NOx are used as a surrogate for NO2 emissions.

Additional details on methodology and assumption are documented in the Air Quality Appendix (Appendix C).

4.2.1 Alternative 1 (Proposed Action)

Construction Impacts

Alternative 1 would result in construction activities involving use of on-road and off-road equipment. Major off-road equipment includes generators, excavators, loaders, tractor/crawlers, graders, compressors and off-highway trucks. On-road equipment primarily consists of 18 cubic yard trucks for import of fill material. Construction would occur over a five-year period from 2024 through 2028.

To reduce potentially significant impacts, environmental commitments AQ-1 through AQ-17 would be implemented. Central to the air quality impact analysis is AQ-1. With implementation of AQ-1, 75% minimum of each class of off-road construction equipment would be equipped with Tier 4 engines. Tier 4 engines are designed to substantially reduce NO_x and PM emissions. Estimated emissions are less than the General Conformity applicability rates and the SCAQMD daily emission thresholds. Thus, impacts would be less than significant.

Table 4-1. Alternative 1: Comparison of Annual Estimated Emissions to General Conformity Applicability Rates

Pollutant	General Conformity Applicability Rates (tpy)	2023 (tpy)	2024 (tpy)	2025 (tpy)	2026 (tpy)	2027 (tpy)
Ozone (VOC as precursor)	10	0.09	0.07	1.2	0.37	0.25
Ozone (NO_x as precursor)	10	0.53	4.5	7.43	2.28	1.58
Carbon Monoxide (CO)	100	2.16	20.23	32.80	9.37	6.46
Nitrogen Dioxide (NO_2)	100	0.53	4.5	7.43	2.28	1.58
Particulate Matter (PM_{10})	100	0.02	0.16	0.26	0.08	0.05
Particulate Matter ($PM_{2.5}$)	100	0.01	0.15	0.25	0.07	0.05
Lead (Pb)	25	n/a	n/a	n/a	n/a	n/a
GHG*	n/a	417	3,531	5,720	1,742	1,180

tpy = tons per year
*GHGs are not part of the General Conformity Rates and are not evaluated under NEPA but are included in this table for disclosure purposes only.

General Conformity Rule Compliance: Estimated emissions for all construction years would not exceed applicable General Conformity Rates. As a result, a General Conformity Analysis would not be required, and the proposed action would be in compliance with the General Conformity Rule.

Table 4-2. Alternative 1: Comparison of Daily Estimated Emissions to SCAQMD Daily Construction Thresholds

Pollutant	SCAQMD Daily Thresholds (lb/day)	2023 (lb/day)	2024 (lb/day)	2025 (lb/day)	2026 (lb/day)	2027 (lb/day)

Reactive Organic Gases (ROG)	75	0.69	5.68	9.25	2.86	1.93
Oxides of Nitrogen (NO_x)	100	4.02	34.77	57.13	17.66	12.10
Carbon Monoxide (CO)	550	16.57	155.75	252.35	72.46	49.50
Oxides of Sulfur (SO_x)	150	0.03	0.30	0.5	0.15	0.10
Particulate Matter (PM_{10})	150	0.17	1.25	2.03	0.63	0.43
Particulate Matter ($PM_{2.5}$)	55	0.14	1.18	1.94	0.57	0.39
Lead (Pb)	3	n/a	n/a	n/a	n/a	n/a
GHG*	n/a*	434 tpy				

tpy = tons per year
*SCAQMD GHG threshold is not applicable to the Proposed Action. Estimated GHG emissions are disclosed in compliance with CEQA. GHG emissions are calculated per SCAQMD methodology amortizing construction emissions over 30 years and summing the results with operational emissions.

Operation/ Maintenance Impacts

Future maintenance of Alternative 1 would include routine inspections and minor repairs. These activities typically require no more than five medium duty trucks operating over a two-week period. Equipment may include generators, concrete saws, or small concrete mixers as needed. Estimated emissions associated with routine operations and maintenance activities would not exceed General Conformity applicability rates (**Table 4-3**). Impacts would be less than significant.

Table 4-3. Comparison Routine Operations and Maintenance Emissions to General Conformity Applicability Rates.

Pollutant	General Conformity Applicability Rates (tpy)	Annual O&M Emissions (tpy)
Ozone (VOC as precursor)	10	0.008
Ozone (NO_x as precursor)	10	0.07
Carbon Monoxide (CO)	100	0.09
Nitrogen Dioxide (NO_2)	100	0.07
Particulate Matter (PM_{10})	100	0.003
Particulate Matter ($PM_{2.5}$)	100	0.003
Lead (Pb)	25	n/a
GHG	n/a	14

tpy = tons per year
*GHGs are not part of the General Conformity Rates and are not evaluated under NEPA but are included in this table for disclosure purposes only.

Table 4-4. Comparison Routine Operations and Maintenance Emissions to SCAQMD Daily Operational

Thresholds.

Pollutant	SCAQMD Daily Thresholds (lb/day)	Estimated Emissions (lb/day)
Reactive Organic Gases (ROG)	55	1.73
Oxides of Nitrogen (NO_x)	55	14.46
Carbon Monoxide (CO)	550	8.8
Oxides of Sulfur (SO_x)	150	0.032
Particulate Matter (PM_{10})	150	0.61
Particulate Matter ($PM_{2.5}$)	55	0.59
Lead (Pb)	3	n/a
GHG*	n/a*	3,096
*There is no daily GHG threshold for operational emissions. Estimated GHG emissions are disclosed in compliance with CEQA.		

During certain unexpected circumstances such as flood fighting events vehicles and equipment may be needed more frequently, and inspections could occur daily. During more severe flooding events, additional maintenance equipment outside of what would be used for routine inspections and minor repairs. The number and type of maintenance equipment needed during severe flood events would be dependent on repairs needed. However, similar to routine maintenance activities, the limited number of equipment and duration of use would not result in emissions exceeding General Conformity applicability rates or the SCAQMD daily emission thresholds for operation. Impacts would be less than significant.

General Conformity Rule Compliance: Emissions from maintenance activities are exempt from the Clean Air Act General Conformity Rule per 40 CFR 93.153(c)(2)(iv).

4.2.2 Alternative 2

Construction Impacts

Alternative 2 would utilize the same suite of off-road construction equipment and on-road vehicles as in Alternative 1. Construction would occur over a five-year period from 2023 through 2027.

Similar to Alternative 1, AQ-1 through AQ-17 would be implemented to reduce emissions. Implementation of these environmental commitments would result in emissions less than the General Conformity applicability rates and the SCAQMD daily emission thresholds. Thus, impacts would be less than significant.

Table 4-5. Alternative 2: Comparison of Annual Estimated Emissions to General Conformity Applicability Rates

Pollutant	General Conformity Applicability Rates (tpy)	2023 (tpy)	2024 (tpy)	2025 (tpy)	2026 (tpy)	2027 (tpy)
Ozone (VOC as precursor)	10	0.09	0.96	0.72	0.60	0.29
Ozone (NO_x as precursor)	10	0.61	6.35	4.7	4.02	1.98
Carbon Monoxide (CO)	100	2.56	25.37	19.64	16.49	8.06

Nitrogen Dioxide (NO_2)	100	0.61	6.35	4.7	4.02	0.01
Particulate Matter (PM_{10})	100	0.03	0.23	0.17	0.14	0.07
Particulate Matter ($PM_{2.5}$)	100	0.02	0.22	0.16	0.13	0.06
Lead (Pb)	25	n/a	n/a	n/a	n/a	n/a
GHG	n/a	428	4,373	3,358	2,793	1,321

General Conformity Rule Compliance: Estimated emissions for all construction years would not exceed applicable General Conformity Rates. As a result, a General Conformity Analysis would not be required and the proposed action would be in compliance with the General Conformity Rule.

Table 4-6. Alternative 2: Comparison of Daily Estimated Emissions to SCAQMD Daily Construction Thresholds

Pollutant	SCAQMD Daily Thresholds (lb/day)	2023 (lb/day)	2024 (lb/day)	2025 (lb/day)	2026 (lb/day)	2027 (lb/day)
Reactive Organic Gases (ROG)	75	1.93	7.38	5.58	4.68	2.25
Oxides of Nitrogen (NO_x)	100	12.1	48.81	36.5	31.02	15.25
Carbon Monoxide (CO)	550	49.50	195.20	151.21	127.27	62.09
Oxides of Sulfur (SO_x)	150	0.10	0.38	0.29	0.24	0.11
Particulate Matter (PM_{10})	150	0.43	1.80	1.31	1.12	0.56
Particulate Matter ($PM_{2.5}$)	55	0.39	1.69	1.24	1.05	0.62
Lead (Pb)	3	n/a	n/a	n/a	n/a	n/a
GHG*	n/a*	423 tpy				

tpy = tons per year
*SCAQMD GHG threshold is not applicable to the Proposed Action. Estimated GHG emissions are disclosed in compliance with CEQA. GHG emissions are calculated per SCAQMD methodology amortizing construction emissions over 30 years and summing the results with operational emissions.

Operation/ Maintenance Impacts

Impacts under Alternative 2 would be similar to those described for Alternative 1. Operation and maintenance impacts would be less than significant. Emissions from maintenance activities are exempt from the Clean Air Act General Conformity Rule per 40 CFR 93.153(c)(2)(iv).

4.2.3 Alternative 3

Construction Impacts

Alternative 3 would utilize the same suite of off-road construction equipment and on-road vehicles as in Alternative 1. Construction would occur over a five-year period from 2023 through 2027.

Similar to Alternative 1, AQ-1 through AQ-17 would be implemented to reduce emissions. Implementation of these environmental commitments would result in emissions less than the General Conformity applicability rates and the SCAQMD daily emission thresholds. Thus, impacts would be less than significant.

Table 4-7. Alternative 3: Comparison of Daily Estimated Emissions to SCAQMD Daily Construction Thresholds

Pollutant	General Conformity Applicability Rates (tpy)	2023 (tpy)	2024 (tpy)	2025 (tpy)	2026 (tpy)	2027 (tpy)
Ozone (VOC as precursor)	10	0.10	0.39	0.96	0.35	0.58
Ozone (NO_x as precursor)	10	0.65	2.62	6.22	2.4	3.79
Carbon Monoxide (CO)	100	2.68	10.6	26.49	10.02	16.15
Nitrogen Dioxide (NO_2)	100	0.65	2.62	6.22	2.4	3.79
Particulate Matter (PM_{10})	100	0.028	0.097	0.22	0.087	0.13
Particulate Matter ($PM_{2.5}$)	100	0.023	0.089	0.21	0.081	0.12
Lead (Pb)	25	n/a	n/a	n/a	n/a	n/a
GHG	n/a	449	1,826	4,536	1,642	2,752

General Conformity Rule Compliance: Estimated emissions for all construction years would not exceed applicable General Conformity Rates. As a result, a General Conformity Analysis would not be required and the proposed action would be in compliance with the General Conformity Rule.

Table 4-8. Alternative 3: Comparison of Daily Estimated Emissions to SCAQMD Daily Construction Thresholds

Pollutant	SCAQMD Daily Thresholds (lb/day)	2023 (lb/day)	2024 (lb/day)	2025 (lb/day)	2026 (lb/day)	2027 (lb/day)
Reactive Organic Gases (ROG)	75	0.76	7.38	7.45	2.72	4.53
Oxides of Nitrogen (NO_x)	100	5.00	48.8	47.85	18.72	29.16
Carbon Monoxide (CO)	550	20.47	195.2	203.78	77.03	124.32
Oxides of Sulfur (SO_x)	150	0.04	0.38	0.39	0.14	0.24
Particulate Matter (PM_{10})	150	0.21	1.8	1.73	0.67	1.06
Particulate Matter ($PM_{2.5}$)	55	0.17	1.69	1.63	0.62	0.09
Lead (Pb)	3	n/a	n/a	n/a	n/a	n/a
GHG*	n/a*	388 tpy				

tpy = tons per year

*SCAQMD GHG threshold is not applicable to the Proposed Action. Estimated GHG emissions are disclosed in compliance with CEQA. GHG emissions are calculated per SCAQMD methodology amortizing construction emissions over 30 years and summing the results with operational emissions.

Operation/ Maintenance Impacts

Impacts under Alternative 3 would be similar to those described for Alternatives 1. Operation and maintenance impacts would be less than significant. Emissions from maintenance activities are exempt

from the Clean Air Act General Conformity Rule per 40 CFR 93.153(c)(2)(iv).

4.2.4 No Action Alternative (Previously Approved Design for SARMP Spillway Raise)

Construction Impacts

Impacts were previously analyzed in the 2001 SEIS/EIR. Implementation of the Previously Approved Design for the SARMP Prado Spillway Raise feature would result in significant impacts from NO_x emissions, subsequent to implementation of mitigation measures. Pursuant to Clean Air Act regulations at 40 CFR 932.158(a)(5)(v), emissions of ozone (i.e., VOC and NOx – the precursors to ozone) or NO_2 are deemed to be in compliance with applicable SIP for projects where the action involves regional water and/or wastewater projects. Furthermore, the project is sized to meet the population projection in the SIP. As a result, emissions of VOC, NOx, and NO_2 are deemed to be in compliance with the SIP and a General Conformity analysis is not required for these pollutants. Additionally, impacts would be temporary and would not result in substantial long-term air quality impacts. Therefore, impacts would be less than significant.

Operation/Maintenance Impacts

Operation and maintenance impacts would be similar to those described for Alternatives 1, 2 and 3 and would be considered less than significant.

Conclusion

There are no new or more significant impacts on Air Quality resulting from implementation of the Proposed Action than was previously analyzed

4.3 EARTH RESOURCES

The affected environment for earth resources is presented in **Section 3.3** and does not include any substantially different conditions than were present when the Spillway Raise Project was previously approved (2001 SEIS/EIR).

The differences between the Previously Approved Design and the Proposed Action and Alternatives, as relevant to earth resources include: removal of additional topsoil, inclusion of chute slab replacement (all Alternatives), chute wall replacement (Alternatives 1 and 3), and construction of the labyrinth weir instead of an ogee weir replacement (Alternative 1). For the purposes of this SEA/EIR Addendum, analysis of potential earth resource impacts associated with project modification under the Proposed Action is provided below.

SIGNIFICANCE THRESHOLDS

Impacts would be considered significant if the alternative:

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

4.3.1 Alternative 1 (Proposed Action)

Construction Impacts

The project area would be prepared for construction by clearing and grubbing, cutting vegetation, and grading. Clearing activities would likely require the use of a loader or bulldozer to scrape topsoil, which would be stockpiled for subsequent project use, including material to supplement plantings in areas temporarily impacted by project activities. The removal of topsoil would be temporary and topsoil removed during clearing and grubbing operations would be replenished. The excavation required to expose the foundation rock for the labyrinth weir new chute walls, and new chute slabs would be accomplished using conventional methods and equipment such as dozers, hydraulic excavators, and wheeled backhoes. Foundation preparation for the labyrinth weir, chute walls, and chute slabs would likely require excavation of soil and poor-quality foundation rock including sheared bedrock and expansive siltstone/claystone and backfilling with concrete. Alternative 1 would require approximately 370,000 cy of excavation for the labyrinth weir, chute slab, and chute walls; and approximately 65,000 cy of excavation for the downstream erosion protection, for a total of 435,000 cy of excavation. Excavated material could also be temporarily stored at one of the fill areas (Figure 2-5) at the project site for later use during construction.

Alternative 1 would include design aspects and implementation of BMPs and measures that would address potential effects related to flooding, erosion and, siltation. These include, but are not limited, to preparation of a SWPPP, inclusion of drainage features, and planting vegetation for soil stabilization. As described, Alternative 1 would not result in any significant flooding impacts. Design aspects such as the cofferdam would serve to reduce life safety risk during construction. The borrow pit and other temporary work areas used during construction would be re-seeded and re-vegetated following completion of construction, thereby minimizing and/or avoiding potential erosion or siltation-related effects associated with soil disturbance. Therefore, impacts on earth resources are considered less than significant.

Operation/Maintenance Impacts

Future maintenance of Alternative 1 would include routine inspections and minor repairs of the spillway and its associated features after construction is completed. Future maintenance activities would not alter the overall geologic characteristics of the area and are not expected to cause substantial flooding, erosion, siltation, unstable earth conditions, changes in geologic substructure or expose people or structures to major geologic hazards. Larger scale maintenance and repairs may be required in response to a large earthquake event, which would require access and use of heavy equipment adjacent to the structure. A temporary work area may need to be established around repair sites. Specific impacts from an earthquake cannot be evaluated until or unless damage occurs, and repair work is defined. Therefore, impacts are expected to be less than significant.

4.3.2 Alternative 2

Construction Impacts

Under Alternative 2, impacts would be similar to those described for Alternative 1. The construction impacts would address potential effects related to flooding, erosion, siltation, geologic hazards, and unstable earth conditions. Potential impacts of Alternative 2 on earth resources would be less than significant. Alternative 2 would require approximately 300,000 cy of excavation for the ogee weir and chute slab, and approximately 120,000 cy of excavation for the downstream erosion protection, for a total of 420,000 cy of excavation. Alternative 2 requires 15,000 cy less of excavation material than alternative 1 and 200,000 cy less of excavation material than alternative 3.

Operation/Maintenance Impacts

Under Alternative 2, operation and maintenance impacts would be similar to those described for Alternative 1. The future project operation and maintenance impacts would not alter the overall geologic characteristics of the area and is not expected to cause substantial flooding, erosion or siltation, expose people or structures to major geologic hazards; or result in unstable earth conditions or changes in geologic substructure. Potential impacts of Alternative 2 on earth resources would be considered less than significant.

4.3.3 Alternative 3

Construction Impacts

Under Alternative 3, project modifications would be similar to those described for Alternatives 1 and 2. Construction impacts would address potential effects related to flooding, erosion, siltation, geologic hazards, and unstable earth conditions. Potential impacts of Alternative 3 on earth resources would be less than significant. Alternative 3 would require approximately 500,000 cy of excavation for the ogee weir, chute slab, and chute walls; and approximately 120,000 cy of excavation for the downstream erosion protection, for a total of 620,000 cy of excavation. Alternative 3 requires 185,000 cy more of excavation material than Alternative 1 and 200,000 cy more of excavation material than Alternative 2.

Operation/ Maintenance Impacts

Under Alternative 3, operation and maintenance impacts would be similar to those described for Alternatives 1 and 2. The future project operation and maintenance impacts would not alter the overall geologic characteristics of the area and is not expected to cause substantial flooding, erosion or siltation, expose people or structures to major geologic hazards; or result in unstable earth conditions or changes in geologic substructure. Potential impacts of Alternative 3 on earth resources would be considered less

than significant.

4.3.4 No Action Alternative (Previously Approved Design for SARMP Spillway Raise)

Construction Impacts
Under the Previously Approved Design, the project would be constructed as described in the 2001 SEIS/EIR. Effects of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on earth resources would be less than significant, as described in the 2001 SEIS/EIR.

Operation/Maintenance Impacts
Under the Previously Approved Design, operation and maintenance impacts would be similar to those described for Alternatives 1, 2 and 3. The project operation and maintenance impacts would be as described in the 2001 SEIS/EIR. The impacts of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on earth resources would be considered less than significant, as described in the 2001 SEIS/EIR.

Conclusion
The impacts that would be considered significant in regard to earth resources account for: causing substantial flooding, erosion, or siltation, exposing people or structures to major geologic hazards, or resulting in unstable earth conditions or changes in geologic substructure. In conclusion the finding of no significant impacts regarding earth resources is consistent with the 2001 SEIS/EIR, which analyzed the Prado Basin and Vicinity as a whole.

4.4 BIOLOGICAL RESOURCES

In order to avoid, minimize and offset potential impacts to biological resources, a series of environmental commitments have been identified. These commitments are documented in Section 6.4 of this SEA/EIR Addendum and referenced in the analyses below. The proposed commitments have been updated from the 1988 Phase II GDM and 2001 SEIS/EIR to reflect the Proposed Action and commitments outlined in the current Biological Opinion measures.

SIGNIFICANCE THRESHOLDS

Impacts would be significant if the Proposed Action would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any special status species (as defined in Section 3.4.2) to the extent that the regional population is diminished.
- Have a substantial adverse effect on any sensitive natural communities (as defined in Section 3.4.3).
- Interfere substantially with the movement of any native resident migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

4.4.1 Alternative 1 (Proposed Action)

Construction Impacts

Vegetation clearing and grading activities are expected to occur throughout the project area (**Figure 2-5**) to prepare the site for construction. Alternative 1 would result in temporary impacts to 126.9 acres of existing habitat and permanent impacts to 24 acres of existing habitat (**Table 4-9; Figure 3-2**). The majority of the impacts to vegetation would occur to low quality non-native upland habitat (87.2 acres), although impacts would also occur to native coastal sage scrub habitats (60.7 acres) and riparian habitats (3.0 acres). Temporary impacts associated with construction are estimated to last approximately four years.

Table 4-9. Alternative 1 Temporary and Permanent Impacts to Existing Vegetation Communities

	Native Riparian	Native Upland	Non-Native Upland	Total Habitat	Developed	Total Acres
Temporary Impacts	0.85	60.5	67.6	126.9	31.6	158.5
Permanent Impacts	0.0	4.4	19.6	24.0	51.6	75.6
Total	0.85	60.7	87.2	150.9	83.2	234.1

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 the extent practicable (EC-BR-2). To limit the effects of vegetation removal and ground-disturbing, construction activities would be limited to designated construction boundaries and delineated by visible boundaries (EC-BR-7). Additionally, dust control measures would be implemented to reduce excessive dust emissions (EC-BR-12). 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 silt fences, would be implemented, as necessary, to prevent potential effects to existing topography and hydrological regimes that could impact the health of vegetation communities (EC-WR-1). Upon construction completion, all temporarily disturbed areas would be revegetated with native species (EC-BR-5 and EC-BR-6). Post-construction restoration will result in the conversion of poor-quality non-native upland habitats temporarily impacted to high quality coastal sage scrub habitat, improving the overall quality of habitat within the project area compared to existing conditions.

USACE will coordinate with the appropriate jurisdictions prior to and during construction to ensure that only temporary disruptions to the biological resources by the utilities relocation may occur in the project area. The SoCalGas line removal and installation is in process and is covered in a standalone EA coordinated by SoCalGas and USACE. AT&T buried and aerial lines and Southern California Edison aerial lines removal and installation designs have not been fully determined. At this time impacts are not able to be assessed, therefore separate Environmental Assessment documents will be developed at a later time. Any utility modifications determined to be required will be equitable in replacement, protection, or relocation. Impacts to biological resources would be temporary. Therefore, construction impacts would be less than significant.

Sensitive Plant Species

No sensitive plant species were identified in the project area in the 2001 EIS/EIR. As discussed in Section 3.4.1, recent surveys identified one species from the CRPR as present in the project area (paniculate tarplant). Two other species were determined to have a moderate potential to occur (**Table 3-4**), but comprehensive vegetation surveys performed in 2020 and 2021 failed to locate either of these species in

the project area. The area where the paniculate tarplant has been observed is within the upstream staging area (Figure 2-5), an area which has been frequently disturbed since the time of the 2001 EIS/EIR for a variety of construction and maintenance related purposes. This species is relatively common in open grasslands (including weedy annual grasslands) in much of western Riverside County and has demonstrated ability to recolonize the project area even after frequent disturbance. The impacts to this species as the result of construction are not expected to have a substantial effect on the regional population and the species would not be precluded from naturally recolonizing the area post-construction. As a result, Alternative 1 would not result in any substantial adverse effects to any special status plant species.

Special Status Wildlife Species

As described in Section 3.4.2, five species of special status wildlife are known to be present in or directly adjacent to the project area. Another three species were identified as having moderate to high potential to occur in the project area but have not been documented in the project area despite substantial survey and monitoring efforts. Noise will be an ongoing impact both during and outside of the nesting season. As per the 2021 BO, noise monitoring will take place to determine if the threshold is surpassed. Potential effects to each of the eight species of are described below.

Least Bell's Vireo

Fourteen vireo territories were detected within these buffer zones in total (**Figure 4-1**). A larger 800 foot buffer is applied to the concrete spillway structure, as demolition activities are expected to be loudest at that specific location. The majority of the temporary construction easement uses a 500 foot buffer to determine LBV territories with potential to be disturbed. Increased noise could disturb breeding vireo, affecting their ability to establish and defend territories, or locate their young and mates. If disturbed while actively nesting, construction activities could result in nest failure or abandonment. To minimize potential noise impacts, the Corps will construct a sound wall or other noise barrier at the edge of riparian habitat along the edge of the TCE prior to February 15 Since no LBV occupy the project area, impacts would be limited to indirect disturbances during nesting season. Noise monitoring commitments also include a commitment to offset any habitats impacted by excessive noise through additional restoration, if necessary. Noise and fugitive dust have the potential to effect LBV nesting in adjacent habitat. To avoid and reduce potential effects to LBV, a number of BMPs would be implemented (BR-1 through BR- 17). These BMPs include monitoring programs to track, document and avoid potential effects, confining work to the identified work areas, training staff on environmental awareness and sensitive species, and performing pre-construction surveys. In addition, specific dust control measures will be implemented and vegetation will only be removed during the non-breeding season. The Proposed Action will temporarily remove 79 acres, and permanently remove 9 acres of designated vireo critical habitat. These acres consist of upland habitat which contain the physical and biological features to support foraging vireo. It is unlikely that vireo within the large adjacent riparian forest use these upland areas for foraging. Also, the TCE was designed to ensure that riparian zones containing the physical and biological features of cover, nesting sites, nestling and fledgling protection, and foraging were avoided. Therefore, no riparian habitat restoration is proposed as part of the environmental commitments.

Although no LBV will be displaced by habitat removal, noise and human presence nearby may affect individuals during nesting season. Implementation of specific BMPs to avoid and minimize any potential indirect effects to LBV are outlined in Section 6.3 ensuring that substantial adverse effects that could diminish the local population would not occur. Thus, effects to LBV would be less than significant.

Coastal California Gnatcatcher

Based on surveys performed in 2020, there are 11 gnatcatcher territories within the action area in total, and 8 within the TCE (Figure 4-2). The territories that occur within the TCE would be directly impacted by the proposed construction activities, while those adjacent to the project area could be indirectly impacted by noise and fugitive dust. During construction, and until post-construction restoration is complete, CAGN are expected to be temporarily excluded from the project area.

Similar to LBV discussed above, several BMPs would be implemented to minimize effects to CAGN. Vegetation clearing would occur outside of the nesting season (EC-BR-3) and CAGN monitoring would occur throughout the duration of construction activities (EC-BR-1, EC-BR-4, EC-BR-14). Monitoring will allow the identification and tracking of any effects to CAGN that do occur, while also providing a method to identify, avoid and minimize effects throughout construction. Specific dust control measures will be implemented (EC-BR-12) and noise barriers will be constructed between construction areas and occupied habitat (EC-BR-9). Noise monitoring will be implemented, to include a commitment to offset any habitats impacted by excessive noise through additional restoration, if necessary (EC-BR-10). All temporarily impacted habitats would be restored following construction, which will result in an increase in the quantity of high-quality sage scrub habitat in the project area from 60.7 acres to 128.3 acres (EC-BR-5 and EC-BR-6).

With implementation of specific BMPs referenced above to avoid and minimize any potential direct and indirect effects to CAGN, effects will be minimized to the maximum extent practicable. Post-construction restoration will result in an overall increase in the quality and quantity of coastal sage scrub habitat available for CAGN. As a result, the temporary adverse effects to CAGN are not expected to diminish the local population and thus effects to CAGN would be less than significant.

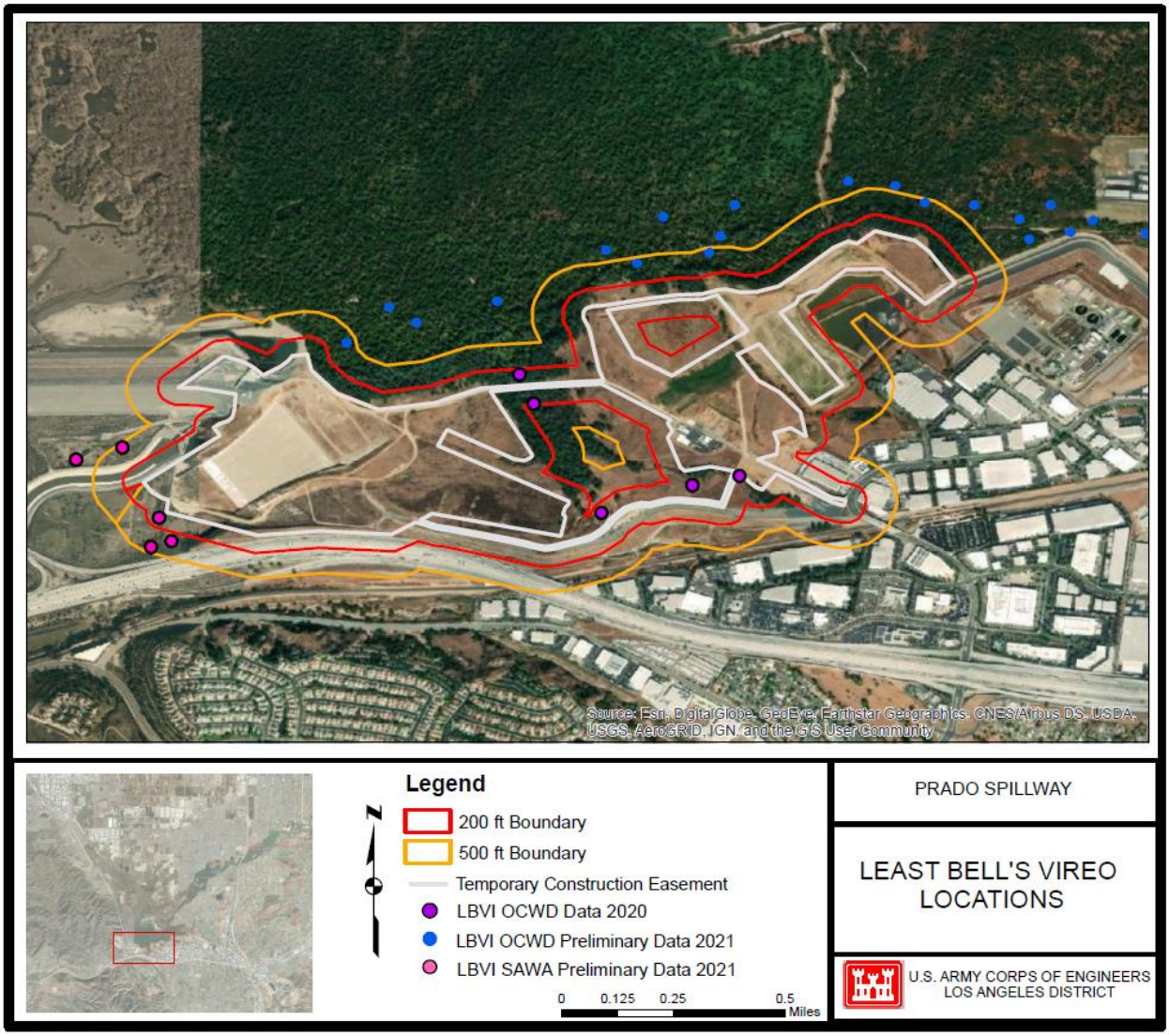

Figure 4-1. Least Bell's Vireo Territory centers near the Proposed Project Area

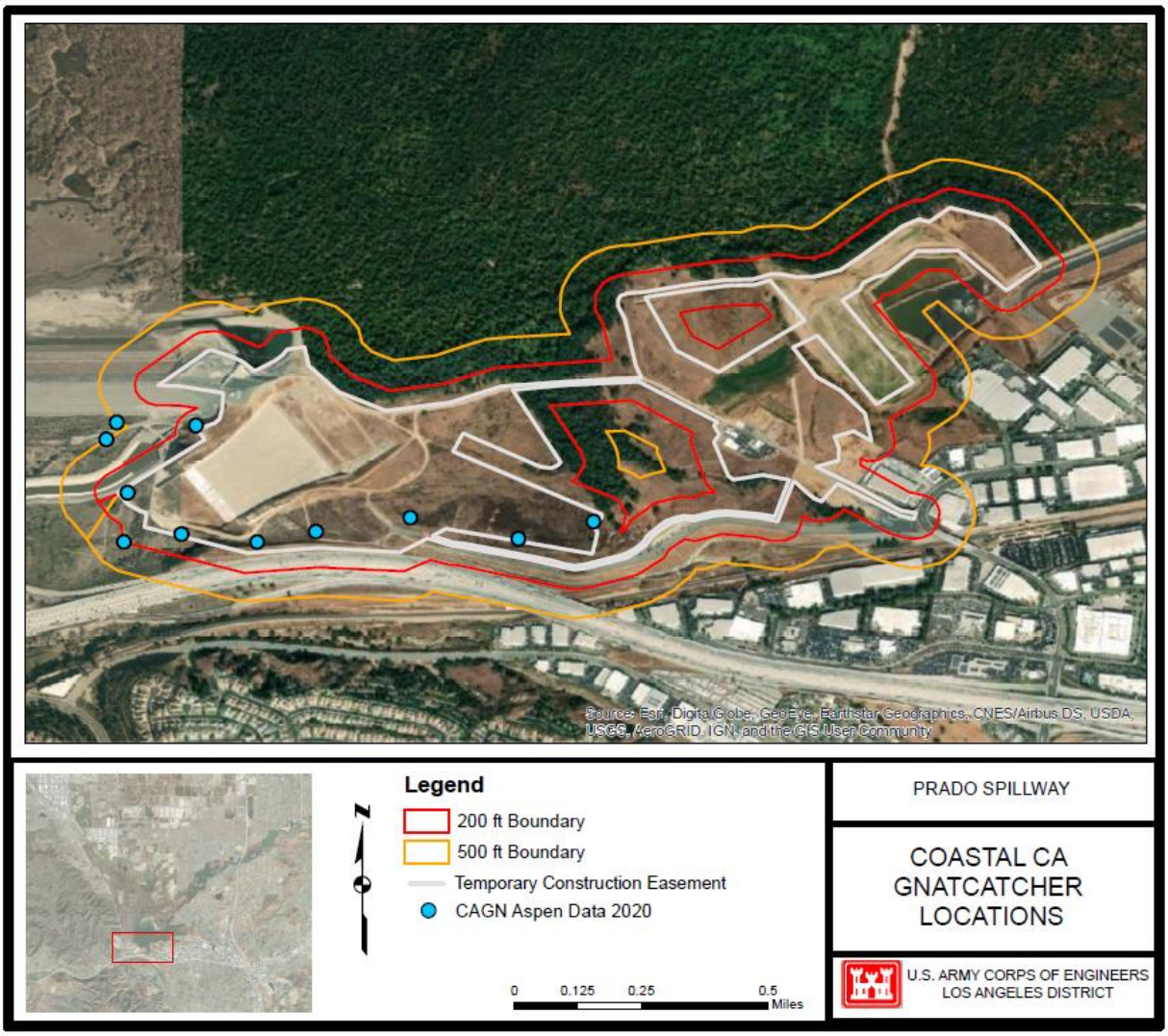

Figure 4-2. Coastal California Gnatcatcher Territory Centers near the Proposed Project Area

Cooper's Hawk, Yellow Breasted Chat, Yellow Warbler and White-Tailed Kite

Four bird species of special status in the state of California are known to occur either in the project area or within a 500-foot buffer: Cooper's hawk, yellow breasted chat, yellow warbler, and white-tailed kite (**Table 3-5**). No suitable nesting habitat for any of these species exists within the project area. Recent sightings of these species in or near the project area likely represented foraging or dispersing individuals which could potentially nest nearby. None of these species are considered common or abundant in the project area. Construction could result in temporary indirect impacts to these species similar to those described above for LBV and CAGN. In addition, throughout the duration of construction, use of the project area is expected to be precluded. Specific dust control measures will be implemented (EC-BR-12) and noise barriers will be constructed between construction areas and occupied habitat (EC-BR-9). Noise monitoring will also occur (EC-BR-10), and though focused on potential impacts to federally listed LBV and CAGN, this commitment will also avoid and minimize effects to other bird species using similar habitats.

All temporarily impacted habitats would be restored following construction, which will result in an increase in the quantity of high-quality sage scrub habitat in the project area from 60.7 acres to 128.3 acres (EC-BR-5 and EC-BR-6). The temporary adverse effects are not expected to diminish the local population of Cooper's hawk, yellow breasted chat, yellow warbler or white-tailed kite, and implementation of the referenced environmental commitments will avoid and reduce impacts to the maximum extent practicable. Thus, effects would be less than significant.

Burrowing Owl and San Diego Black Tailed Jackrabbit

Portions of the project area could provide potentially suitable habitat for burrowing owls and San Diego black tailed jackrabbits. However, neither of these species have been documented in any of the recent survey efforts of the project area. Commitments to perform monitoring prior to and throughout construction (EC-BR-4, EC-BR-13, EC-BR-14) and provide environmental training to staff (EC-BR-11) will provide a mechanism to identify whether either of these species colonizes the area prior to or during construction, as well as provide a mechanism to avoid and minimize any potential effects, if either species is discovered. Since neither the burrowing owl nor jackrabbit are currently present in the project area, and measures will be implemented to avoid and minimize and potential effects should they occur, Alternative 1 would not diminish the local populations to either burrowing owl or jackrabbit and impacts would be less than significant.

Sensitive and Protected Natural Communities

As described in Section 3.4.3, one sensitive and protected natural community overlaps with the project area (least Bell's vireo critical habitat) and two occur adjacent to the project area (Santa Ana sucker critical habitat and southwestern willow flycatcher critical habitat). Construction activities will not have a substantial adverse effect any of the physical and biological features of either sucker or flycatcher critical habitat.

Approximately 138 acres of LBV critical habitat overlap the project area. As designated, the physical and biological features of LBV critical habitat include riparian woodland vegetation that generally contains both canopy and shrub layers and includes some associated upland habitats. However, only 3 acres of the habitat within the project area contains riparian habitat, and this 3-acre area does not include the principal and biological features of LBV critical habitat. Proposed access routes, staging and borrow areas were chosen to avoid additional potential impacts to LBV critical habitat by utilizing existing road corridors and previously disturbed areas.

Despite the abundance of LBV in the adjacent Prado Basin, no LBV utilize the critical habitat area within the project area, further highlighting that the habitat is not suitable for LBV. The Santa Ana River supports over 9,000 acres of LBV critical habitat. The critical habitat in the project area comprises less than 2% of this area by acreage. Due to the poor quality of LBV critical habitat in the project area and the lack of physical and biological features, construction activities associated with Alternative 1 will not have a substantial adverse effect on LBV critical habitat. Overall, construction of Alternative 1 would have less than significant effects on sensitive and protected natural communities.

Wildlife Movement

As discussed in the 2001 SEIS/EIR, any construction activities within the Santa Ana River watershed that may impede wildlife movement have the potential to result in significant impacts. The Santa Ana River

watershed has significant ecological importance for wildlife using the area and provides a transition between fragmented habitats in the region. Past SARM features, such as the Prado Dam raise, dikes within the Prado Basin and features built in Reach 9 considered regional wildlife movement in their design. Implemented minimization features include strategically placed vegetated ramps and underpass culvert designs that encourage continued wildlife movement through the watershed. Follow-up studies are currently underway to evaluate wildlife movement following implementation of such features.

Implementation of avoidance and minimization developed as part of Alternative 1 would ensure that neither construction nor operations/maintenance of the project would result in significant impacts to wildlife movement corridors and habitat linkages in the project area. Along the primary movement corridor at the base of the spillway (Figure 3-5), the width of the construction zone has been limited to ensure a continuous corridor is maintained throughout construction. The corridor will not be blocked by equipment, however if a temporary or partial block is needed, measures will be put in place to facilitate safe movement of wildlife. If night work is required, lighting plans would be developed to avoid impacts to resident wildlife (EC-BR-16). Each acre of native vegetation that is temporarily disturbed by construction related activities would be restored following construction (EC-BR-5 and EC-BR-6). Sound walls, as necessary, would be designed to minimize impacts to wildlife movement (EC-BR-9), including strategically placed openings to avoid impeding movement. Alternative 1 would not interfere substantially with the movement of any native resident migratory fish or wildlife species or with established native resident or migratory wildlife corridors. Therefore, potential effects to wildlife movement are considered less than significant.

Routine Maintenance Impacts

Future routine maintenance of Alternative 1 would include routine inspections and minor repairs, including removal of vegetation and debris from the spillway and associated features (to ensure proper function of the features). Inspections, minor repairs, and vegetation removal would occur in close proximity to the spillway and related structures. Vegetation removal and herbicide application would be conducted at the minimum amount to avoid over-application and minimize impacts to native vegetation (EC-BR-17). Since maintenance would occur regularly, habitat and wildlife would not be able to establish on operations and maintenance features. The amount of vegetation removed is expected to be minimal and all vegetation clearing would occur outside of nesting season to avoid impacts to nesting birds (EC-BR-17).

Minor repairs and inspections, and associated vegetation removal, would not have a substantial adverse effect on any special status species. Maintenance needs are generally limited to structures and immediately adjacent areas. No special status species utilize the structures themselves, and routine maintenance ensures that habitat for special status species does not encroach upon structures. With implementation of EC-BR-17, maintenance actions will further avoid indirect effects to any special status bird species that could occur adjacent to the maintenance areas. Approximately 10 acres of LBV critical habitat overlaps portions of the maintenance area. However, these areas are already maintained as part of the existing dam structure, and do not provide and of the physical and biological features of LBV critical habitat. Maintenance and vegetation removal will be limited to the direct vicinity of structures and would not affect the wildlife movement corridors adjacent to the dam. Overall, routine maintenance associated with Alternative 1 would have less than significant impacts on biological resources.

4.4.2 Alternative 2

Construction Impacts

Impacts under Alternative 2 would be similar to those described for Alternative 1. The construction footprint and project area would be only slightly smaller than for Alternative 1, but it is the same construction footprint as the existing feature aside from the embankment connector aspect. Haul routes, borrow areas, staging areas and required equipment for construction would generally be the same as for Alternative 1. With respect to potential impacts to biological resources, the primary difference between Alternative 2 and Alternative 1 is construction duration. Whereas Alternative 1 is anticipated to take nearly four years to construct, Alternative 2 would take approximately five years. Other than the longer duration of construction, the potential effects of Alternative 2 would be the same as those described for Alternative 1. Alternative 2 would include implementation of the same environmental commitments described for Alternative 1 to avoid, minimize and offset impacts (as summarized in Section 6.4).

As discussed under Alternative 1, Alternative 2 would not have a substantial adverse effect on any special status species, would not have any substantial adverse effects on sensitive or protected natural communities, and would not interfere substantially with the movement of any native resident migratory fish or wildlife species. Overall, Alternative 2 would result in less than significant impacts to biological resources.

Routine Maintenance Impacts

The future routine maintenance, inspections, and minor repairs for Alternative 2 would be the same as for Alternative 1. The structural areas requiring maintenance would be the same for Alternative 2 as for Alternative 1. Any necessary vegetation removal and herbicide application would be conducted in compliance with EC-BR-17. Impacts of routine maintenance under Alternative 2 would be similar to those described for Alternative 1 and impacts would be less than significant.

4.4.3 Alternative 3

Construction Impacts

Impacts under Alternative 3 would be similar to those described for Alternatives 1 and 2. The construction footprint and project area would be the same as for Alternatives 2. Haul routes, borrow areas, staging areas and required equipment for construction would generally be the same as for Alternatives 1 and 2. The primary difference between Alternative 3 and Alternative 1 is construction duration. Whereas Alternative 1 is anticipated to take up nearly four years to construct, Alternative 3 is expected to require a little over five years. Otherwise, the potential effects of both alternatives are the same. Alternative 3 would include implementation of the same environmental commitments described for Alternative 1 (as summarized in Section 6.4).

As discussed under Alternative 1, Alternative 3 would not have a substantial adverse effect on any special status species, would not have any substantial adverse effects on sensitive or protected natural communities, and would not interfere substantially with the movement of any native resident migratory fish or wildlife species. Overall, construction of Alternative 3 would result in less than significant impacts to biological resources.

Routine Maintenance Impacts

The future routine maintenance, inspections, and minor repairs for Alternative 3 would be the same as for Alternative 1. The structural areas requiring maintenance would be the same for Alternative 3 as for Alternative 1. Any necessary vegetation removal and herbicide application would be conducted in compliance with EC-BR-17. Impacts of routine maintenance under Alternative 3 would be similar to those described for Alternative 1 and impacts would be less than significant.

4.4.4 No Action Alternative (Previously Approved Design for SARMP Spillway Raise)

Construction Impacts
Under the Previously Approved Design, the project would be constructed as described in the 2001 SEIS/EIR. Effects to biological resources of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR (Section 4.3). Potential impacts of the No Action Alternative on biological resources would be less than significant, as described in the 2001 SEIS/EIR.

Operation/Maintenance Impacts
Under the Previously Approved Design, operation and maintenance impacts would be similar to those described for Alternatives 1, 2 and 3. The project operation and maintenance impacts would be as described in the 2001 SEIS/EIR. The impacts of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on biological resources would be considered less than significant, as described in the 2001 SEIS/EIR.

Conclusion
In conclusion the finding of no significant impacts regarding biological resources is consistent with the 2001 SEIS/EIR, which analyzed the Prado Basin and Vicinity as a whole.

4.5 CULTURAL RESOURCE

The affected environment land use is presented in **Section 5**. For the purposes of this SEA/EIR Addendum, analysis of Cultural Resources associated with project modification under the Proposed Action and Alternatives is provided below.

SIGNIFICANCE THRESHOLDS

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

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

4.5.1 Alternative 1 (Proposed Action)

Construction Impacts
Under Alternative 1, the existing ogee weir would be replaced with a new labyrinth weir with the same existing axis alignment but with a narrower foundation. The majority of the existing ogee weir would be demolished. The Prado Dam was determined to be eligible for the NRHP in 1991. Modifying the dam was a major component of the SARMP with the spillway being the final piece of the dam to be re-constructed. Pursuant to the PA, the USACE, in consultation with the SHPO and the ACHP mitigated the loss of the property's eligibility through the completion of a HAER which was filed with the National Park Service in 1996. The Spillway is no longer eligible for the National Register (Appendix G). The Bicentennial themed mural painted on the spillway has separately been evaluated for the NRHP and was determined to be not eligible for the NRHP in 2019 (Appendix G). The amount of ground disturbance under Alternative 1 is less than the previously approved design for the SARMP Spillway Raise. No additional consultation under

Section 106 of the NHPA is required for this portion of the project (CR-1, CR-2).

Three of the proposed borrow areas, B1, B3, and B4 fall within SARMP's "Borrow Area 1." The USACE has previously consulted with the SHPO regarding Borrow Area 1. Two sites, CA-RIV-1039 and CA-RIV-1044, were excavated in the early 2000s in anticipation of the area being used as a borrow site. The sites no longer exist, and they would not be affected by the use of B1, B3 and B4 (Appendix G). The remaining borrow areas and staging areas were designed to avoid impacting the remaining eligible and unevaluated sites. Due to the passage of time since the last cultural resource inventory, the USACE completed a cultural resource survey of B2, B5, and S1 in July of 2021. No new cultural resources were identified during the survey. In accordance with Stipulation 1 of the PA, the USACE is submitted the cultural resources survey report to the SHPO for their review and acceptance. The SHPO accepted the survey report on October 27, 2021. Under the terms of the PA, no further consultation is required because no cultural resources were found. The USACE is also providing the cultural resources survey report to the Federally recognized and non-Federally recognized Tribes who may attach religious and cultural significance to properties within the project area for their review and comment. No comments have been received to date.

In the 2001 SEIS/EIR, the rebuilding of Prado Dam and the destruction of NRHP eligible sites, CA-RIV-1039 and CA-RIV-1044 were identified as significant adverse impacts under NEPA. These significant impacts have both already occurred and have already been mitigated. The proposed project modifications being addressed in this document would not include any additional adverse effects to historic properties. Therefore, the construction impacts would be less than significant.

Operation/Maintenance Impacts

Future maintenance would include routine inspections and minor repairs of the spillway, and its associated features, after construction is completed. Most inspections and minor repairs would be confined to paved maintenance and access roads. These future maintenance activities and minor repairs would be to a non-eligible property. Therefore, operation and maintenance impacts would be less than significant.

4.5.2 Alternative 2

Construction Impacts
Impacts under Alternative 2 would be similar to those described for Alternative 1. Impacts to the spillway have already been addressed as part of the SARMP project and the spillway is not eligible for the NRHP. The same borrow areas, staging areas and access routes would be used. Construction impacts would be less than significant.

Operation/Maintenance Impacts
Impacts under Alternative 2 would be similar to those described for Alternative 1. Operation and maintenance impacts would be less than significant.

4.5.3 Alternative 3

Construction Impacts
This Alternative is the same as Alternative 2, except left and right chute walls would be demolished and replaced with new walls. Impacts under Alternative 3 would be the same as those described for Alternative 2 and would be less than significant.

Operation/Maintenance Impacts
Impacts under Alternative 3 would be the same as those described for Alternative 2. Operation and maintenance impacts would be less than significant.

4.5.4 No Action Alternative (Previously Approved Design for SARMP Spillway Raise)

Construction Impacts
Impacts were previously analyzed in the 2001 SEIS/EIR and were determined to be less than significant.

Operation/Maintenance Impacts
Operation and maintenance impacts would be similar to those described for Alternatives 1, 2 and 3 and would be considered less than significant.

Conclusion
In conclusion the finding of no significant impacts regarding cultural resources is consistent with the 2001 SEIS/EIR, which analyzed the Prado Basin and Vicinity as a whole.

4.6 LAND USE

The affected environment land use is presented in **Section 3.6**. For the purposes of this SEA/EIR Addendum, analysis of land use impacts associated with project modification under the Proposed Action and Alternatives is provided below.

SIGNIFICANCE THRESHOLDS

Impacts would be considered significant if the alternative results in:

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

4.6.1 Alternative 1 (Proposed Action)

Construction Impacts

The primary purpose of land within the basin is for flood risk management as stated in **Section 3.6** of this document and is designated as open space for natural hazard protection, cultural preservation, and natural and scenic resource preservation. Construction activities may temporarily affect natural resources, as described in earlier sections. However, BMPs and minimization measures would be implemented to avoid or minimize impacts (See **Section 4.4** Biological Resources). This alternative is compatible with existing land uses and does not conflict with applicable plans or policies, or land leases within the Prado Basin (Riverside County General Plan (2020). Alternative 1 would not result in permanent incompatibilities with existing land uses and would not prevent existing on-site land uses (riparian areas and open space) from continuing in essentially the same manner. Implementation of Alternative 1 would be consistent with existing goals and objectives because the land uses in Prado Basin would be able to continue after the implementation of this alternative. Therefore, construction impacts would be less than significant.

Operation/Maintenance Impacts

Future maintenance would include routine inspections and minor repairs of the spillway and its associated features after construction is completed. Implementation of this alternative would be consistent with existing land uses and would not conflict with applicable plans or policies. Therefore, operation and maintenance impacts to land use would be less than significant.

4.6.2 Alternative 2

Construction Impacts

Impacts under Alternative 2 would be similar to those described for Alternative 1. Construction impacts would not result in permanent incompatibilities with existing land uses and would not conflict with applicable plan and policies. Construction impacts would be less than significant.

Operation/ Maintenance Impacts

Under Alternative 2, operation and maintenance impacts would be similar to those described for Alternative 1. Existing land uses would continue after the implementation of this alternative and there would be no conflict with applicable plans or policies. Therefore, operation and maintenance impacts would be less than significant.

4.6.3 Alternative 3

Construction Impacts

Impacts under Alternative 3 would be similar to those described for Alternatives 1 and 2. Construction impacts would not result in permanent incompatibilities with existing land uses and would not conflict with applicable plan and policies. Construction impacts would be less than significant.

Operation/Maintenance Impacts

Under Alternative 3, operation and maintenance impacts would be similar to those described for Alternatives 1 and 2. Existing land uses would continue after the implementation of this alternative and there would be no conflict with applicable plans or policies. Therefore, operation and maintenance impacts would be less than significant.

4.6.4 No Action Alternative (Previously Approved Design for SARMP Spillway Raise)

Construction Impacts

Under the Previously Approved Design, the project would be constructed as described in the 2001 SEIS/EIR. Effects of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on land use would be less than significant, as described in the 2001 SEIS/EIR.

Operation/Maintenance Impacts

Under the Previously Approved Design, operation and maintenance impacts would be similar to those described for Alternatives 1-3. The project operation and maintenance impacts would be as described in the 2001 SEIS/EIR. The impacts of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on land use would be considered less than significant, as described in the 2001 SEIS/EIR.

Conclusion

In conclusion the finding of no significant impacts regarding land use is consistent with the 2001 SEIS/EIR, which analyzed the Prado Basin and Vicinity as a whole.

4.7 AESTHETICS

The affected environment for aesthetics is presented in **Section 3.7**. For the purposes of this SEA/EIR addendum, analysis of potential aesthetic impacts associated with project modification under the Proposed Action and Alternatives is provided below. Aesthetic effects are were not analyzed in the 2001 SEIS/EIR because they were previously analyzed in the Phase II GDM and found to not be significant impacts. The following information analysis summarizes and updates this information and focuses more specifically on effects related to Spillway construction, but does not introduce new substantive information or impacts.

SIGNIFICANCE THRESHOLDS

Impacts would be considered significant if the alternative results in:

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

4.7.1 Alternative 1 (Proposed Action)

Construction Impacts

Under Alternative 1, development of the project would be primarily visible from SR-91 and SR-71. Construction is anticipated to occur mostly during daylight hours 07:00 AM to 6:00 PM; however, Night construction will be required but not adversely affect nighttime views in the area. If artificial lighting is required during construction, a lighting plan would be developed by the contractor to outline and determine locations of the light sources as to minimize disturbances to wildlife and commuters.

The lead-based mural on Prado Spillway would be removed and the slabs on which it is painted would be replaced during construction.

The construction may temporarily obstruct the scenic riparian and open space vistas surrounding the Prado Spillway. Construction equipment and vehicles may be visible from certain recreational areas, such as Chino Hills State Park. Those who use the areas surrounding the Spillway may notice these temporary impacts. Given that construction activities are temporary (4 to 4.5 years), the mural would be eligible for repainting and visual character or quality of the site would be maintained long-term, aesthetic impacts would be considered less than significant.

Operation/Maintenance Impacts

Future maintenance of Alternative 1 would include routine inspections and minor repairs of the Prado Spillway and its associated features after construction is completed. The construction of the labyrinth weir to replace the existing ogee weir would create a minor, but permanent change in viewscape. The height of the labyrinth weir crest would vary between 563 and 567 (NAVD 29) feet in elevation. Therefore, there would be 26’ of head above the existing ogee weir crest. This would not substantially degrade the scenic vistas or existing visual character of the site or its surroundings, given the relatively small area it would occupy compared to the surrounding viewscape. The visual character and the quality of the site and its surroundings would not be adversely affected. Operation and maintenance impacts to aesthetics would be less than significant.

4.7.2 Alternative 2

Construction Impacts

Impacts under Alternative 2 would be similar to those described for Alternative 1 with the exception that the steep chute of the Spillway would not be permanently reduced in width after construction is completed. Therefore, impacts would be considered less than significant.

Operation/Maintenance Impacts

Impacts under Alternative 2 would be similar to those described for Alternative 1. The construction of the new ogee crest of 563.0' (565.3) in elevation would create a minor, but permanent change in viewscape. The height of the existing ogee crest is 543.0' (545.3), in elevation. Therefore, there would be 20' of additional concrete above the existing ogee weir crest. Future maintenance of Alternative 2 would include routine inspections and minor repairs of the Prado Spillway and its associated features after construction is completed. Future maintenance activities would not alter aesthetics. Operation and maintenance impacts to aesthetics would therefore be less than significant.

4.7.3 Alternative 3

Construction Impacts

Impacts under Alternative 3 would be similar to those described for Alternatives 1 and 2. Temporary construction impacts will not substantially degrade the existing visual character or quality of the site or its surroundings. Aesthetic impacts would be less than significant.

Operation/Maintenance Impacts

Impacts under Alternative 3 would be similar to those described for Alternatives 1 and 2. Scenic vistas and the quality of the site and surroundings would not be substantially or adversely affected. Operation and maintenance impacts would be less than significant.

4.7.4 No Action Alternative (Previously Approved Design for SARMP Spillway Raise)

Construction Impacts

Under the Previously Approved Design, the project would be constructed as described in the 2001 SEIS/EIR. Effects of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on aesthetics would be less than significant, as described in the 2001 SEIS/EIR and similar to those described in Alternatives 1, 2 and 3.

Operation/Maintenance Impacts

Under the Previously Approved Design, operation and maintenance impacts would be similar to those described for Alternatives 1-3. The project operation and maintenance impacts would be as described in the 2001 SEIS/EIR under the No Action Alternative. The impacts of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on aesthetics would be considered less than significant, as described in the 2001 SEIS/EIR.

Conclusion

In conclusion the finding of no significant impacts regarding aesthetics is consistent with the 2001 SEIS/EIR, which analyzed the Prado Basin and Vicinity as a whole.

4.8 RECREATION

The affected environment for recreation is presented in **Section 3.8**. For the purposes of this SEA/EIR addendum, analysis of potential recreational impacts associated with project modification under the Proposed Action and Alternatives is provided below.

SIGNIFICANCE THRESHOLDS

Impacts would be considered significant if the alternative results in:

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

4.8.1 Alternative 1 (Proposed Action)

Construction Impacts

As described in **Section 3.8**, a variety of parks and recreational facilities are located in the vicinity (within 2 miles) of the Spillway Project. There are no official recreational areas within the temporary work limits of the construction area; however, unofficial recreation occurs. Recreation includes unofficial bike routes through the project area. Construction would temporarily preclude access to unofficial trails through the project area. However, it would not be considered significant considering the large number of alternative recreational trail options available in the vicinity. Surrounding recreational facilities are not likely to experience impacts. The temporary closure of unofficial trail access within the project area would be unavoidable due to safety reasons. For safety purposes, signage for access during the construction period will be added. The contractor would ensure the appropriate signage is displayed to notify the public of temporary trail closures (R1). The Proposed Action would not impact existing widely used trails. Currently, unofficial trails are used as official trails downstream of the project exist. The Proposed Action would not exclude official trails from being constructed in the future and there is coordination occurring with Riverside County. Impacts to recreation would be considered less than significant.

Operation/Maintenance Impacts

Future operations and maintenance of Alternative 1 would be limited to the project site and would not interfere with any adjacent recreational activities. Alternative 1 would not require the permanent closure of any trails. Once constructed, trails will be available for continued use. This would include routine inspections and minor repairs, of the spillway and its associated features after construction is completed. Recreation facilities would resume normal operation. For safety reasons, bicycle or pedestrian access would be temporarily unavailable at this location during maintenance activities. Because closures would be temporary, future maintenance activities would not create impacts to public safety. Therefore, potential operation and maintenance impacts from Alternative 1 would be less than significant.

4.8.2 Alternative 2

Construction Impacts

Under Alternative 2, project modifications would be similar to those described for Alternative 1. The construction impacts would address potential usage, quality, and/or availability of recreational areas, including the SART. Potential impacts of Alternative 2 on recreation would be less than significant.

Operation/Maintenance Impacts
Future operations and maintenance of Alternative 2 would be similar to those described for Alternative 1. This would include routine inspections and minor repairs of the spillway and its associated features after construction is completed. Maintenance activities would be limited to the project site and would not interfere with any adjacent recreational activities. Recreation facilities would resume normal operation. Future maintenance activities would not create impacts to public safety. Therefore, potential operation and maintenance impacts from Alternative 2 would be less than significant.

4.8.3 Alternative 3

Construction Impacts
Under Alternative 3, project modifications would be similar to those described for Alternatives 1 and 2. The construction impacts would address potential usage, quality, and/or availability of recreational areas, including the SART. Potential impacts of Alternative 3 on recreation would be less than significant.

Operation/Maintenance Impacts
Future operations and maintenance of Alternative 3 would be similar to those described for Alternatives 1 and 2. This includes routine inspections and minor repairs of the spillway and its associated features after construction is completed. Maintenance activities would be limited to the project site and would not interfere with any adjacent recreational activities. Recreation facilities would resume normal operation. Future maintenance activities would not create impacts to public safety. Therefore, potential operation and maintenance impacts from Alternative 3 would be less than significant.

4.8.4 No Action Alternative (Previously Approved Design for SARMP Spillway Raise)

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

Operation/Maintenance Impacts
Under the Previously Approved Design, operation and maintenance impacts would be similar to those described for Alternatives 1, 2 and 3. The project operation and maintenance impacts would be as described in the 2001 SEIS/EIR. The impacts of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on recreation would be considered less than significant, as described in the 2001 SEIS/EIR.

Conclusion
In conclusion the finding of no significant impacts regarding recreation is consistent with the 2001 SEIS/EIR, which analyzed the Prado Basin and Vicinity as a whole.

4.9 NOISE

The affected environment for noise is presented in **Section 3.9**. For the purposes of this SEA/EIR Addendum, analysis of potential noise impacts associated with project modification under the Proposed

Action and Alternatives is provided below. Long-term impacts would not occur from the operational characteristics of the project. However, short-term noise impacts could occur as a result of construction activity.

SIGNIFICANCE THRESHOLDS

Impacts would be considered significant if the alternative results in:

- Conducting construction outside of allowable hours per County and City ordinances without obtaining a variance or exemption. To remain within compliance of all policies, this SEA/EIR Addendum will assume the most restrictive applicable city and county ordinances.

Riverside County Ordinances

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

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

The Riverside County Municipal Code Chapter 9.52 (Noise Ordinance 847 § 2, 2006) specifies sound level standards by land use type. Per Article 9.52.020 (Exemptions), noise from construction within 1/4 mile of an occupied residence is exempt from these standards if it occurs between the hours of 6:00 a.m. and 6:00 p.m. (June through September) or between the hours of 7:00 a.m. and 6:00 p.m. (October through May). Because there are no sensitive receptors within 1/4 mile of the proposed project area, this code is not applicable.

City of Corona Ordinances

The City of Corona Municipal Code provides exterior/interior noise standards and specific noise restrictions, exemptions, and variances for exterior point and stationary noise sources (City of Corona, 2012). Those requirements applicable to the proposed project are identified below.

Section 17.84.040 (c) – Noise Standards. The noise ordinance provides noise standards for two separate types of noise sources: mobile and stationary. The noise standards for stationary noise sources are identified in Table 4-10 below.

Table 4-10 Typical Noise Levels for Construction Equipment

Equipment	dBA at 50 feet
Backhoe	80
Cranes (moveable)	85
Dozers	85
Loader	80

Graders, Scrapers	85
Trucks	88
Excavator	85
Diamond Wire Saw	90
Roller, Spreader	85
Tractor	84
Pick-up truck	55

Source: FHWA Construction Noise Handbook, 2006

4.9.1 Alternative 1 (Preferred Alternative)

Construction Impacts

It is possible that the Proposed Action would be built in stages, with multiple start dates and construction periods for various sections of the project depending on schedule needs, environmental windows, estimated life safety risks during construction, and weather delays. Construction phasing may result in an extension of the overall project duration.

Construction of Alternative 1 would require approximately 100 to 300 maximum daily haul trips for fill material from borrow sites within the TCE (refer to Figure 2-5) and 30 to 100 maximum daily haul trips from a local quarry for riprap and other materials. Construction vehicles would access the site from Pomona-Rincon Road, Auto Center Drive/Serfas Club Drive, SR-71 and SR-91. These trips would result in only short-term periodic increases in noise levels during normal construction hours and trucks would not travel through any locations surrounding the project site where residential neighborhoods or other sensitive receptors are located.

The closest sensitive receptor is a residential area about a half mile south of the project site, south of SR-91. With open space to the north and west and industrial land use to the east, there are no other sensitive receptors within a mile of the project area.

The installation of sound walls around all riparian, sensitive, and occupied habitats adjacent to the TCE would be installed prior to nesting bird season. These sound walls will also designate the limits of the construction activities. These barriers will be maintained until the completion of all construction activities.

The proposed construction would be in compliance with city and county noise ordinances and measures would be taken to reduce noise during construction. Night work is necessary as part of this project in order to meet schedule and for construction methodology. The contractor will be required to obtain a variance from local governments to work outside the noise ordinance windows. Therefore, less than significant impacts would occur from construction equipment noise generated during construction of the Proposed Action.

Operation/Maintenance Impacts

Future maintenance of Alternative 1 would include routine inspections and minor repairs. These activities could result in temporary, short-term periodic noise from construction equipment use. Timing of these activities would generally occur from 7:00 AM to 6:00 PM, Monday through Saturday, with the exception of emergency repairs or flood fighting activities that are required to protect life and property. Due to the short-term nature of maintenance and repair activities, and due to construction activities being exempt if

conducted within the indicated time periods, potential effects of future maintenance activities on noise are considered less than significant.

4.9.2 Alternative 2

Construction Impacts

Impacts under Alternative 2 would be similar to those described for Alternative 1. Construction of Alternative 2 would require approximately 13 maximum daily haul trips for fill material from borrow sites within the TCE (refer to Figure 2-5) and 32 maximum daily haul trips from a local quarry for riprap and other materials. Construction impacts would create temporary noise during exempted periods of time, during normal construction hours. The closest noise receptor is over half a mile away and measures will be taken to reduce noise during construction. Construction impacts would be less than significant.

Operation/ Maintenance Impacts

Impacts under Alternative 2 would be similar to those described for Alternative 1. Operation and maintenance impacts would result in temporary, short-term periodic noise from construction equipment use during exempted time periods, with exception to emergency repairs. Potential effects of future maintenance activities on noise are considered to be less than significant.

4.9.3 Alternative 3

Construction Impacts

Impacts under Alternative 3 would be similar to those described for Alternatives 1 and 2. Construction of Alternative 2 would require approximately 13 maximum daily haul trips for fill material from borrow sites within the TCE (refer to **Figure 2-5**) and 31 maximum daily haul trips from a local quarry for riprap and other materials. Construction impacts would be less than significant. Construction impacts would create temporary noise during exempted periods of time, during normal construction hours. The closest noise receptor is over half a mile away and measures would be taken to reduce noise during construction. Construction impacts would be less than significant.

Operation/ Maintenance Impacts

Impacts under Alternative 3 would be similar to those described for Alternatives 1 and 2. Operation and maintenance impacts would result in temporary, short-term periodic noise from construction equipment use during exempted time periods, with exception to emergency repairs. Potential effects of future maintenance activities on noise are considered to be less than significant

4.9.4 No Action Alternative (Previously Approved Design for SARMP Spillway Raise)

Construction Impacts

Under the Previously Approved Design, the project would be constructed as described in the 2001 SEIS/EIR. Effects of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on noise would be less than significant, as described in the 2001 SEIS/EIR and similar to those described in Alternatives 1-3.

Operation/Maintenance Impacts

Under the Previously Approved Design, operation and maintenance impacts would be similar to those described for Alternatives 1-3. The project operation and maintenance impacts would be as described in

the 2001 SEIS/EIR under the No Action Alternative. The impacts of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on noise would be considered less than significant, as described in the 2001 SEIS/EIR.

Conclusion

In conclusion the finding of no significant impacts regarding noise is consistent with the 2001 SEIS/EIR, which analyzed the Prado Basin and Vicinity as a whole.

4.10 SOCIOECONOMICS

The affected environment for socioeconomics is presented in **Section 3.10**. For the purposes of this SEA/EIR Addendum, analysis of potential socioeconomic impacts associated with project modification under the Proposed Action and Alternatives is provided below.

SIGNIFICANCE THRESHOLDS

Impacts would be considered significant if the alternative results in:

- Substantial shifts in population trends; or
- Adversely affect regional spending and earning patterns.

4.10.1 Alternative 1 (Proposed Action)

Construction Impacts

Alternative 1 involves no construction of new housing, commercial, or industrial development and would not facilitate such development. Construction activities associated with Alternative 1 would generate a limited amount of short-term and seasonal employment opportunities within the project vicinity. It is expected that majority of these employment opportunities would be filled by currently employed and unemployed labor force participants from the local and surrounding areas. Therefore, substantial shifts in population growth or trends would not be expected. Local spending would be expected to increase nominally due to an increase presence of workers in the project vicinity. Regional spending/earning patterns would not be adversely affected. Therefore, potential impacts to socioeconomics within the study area would be less than significant.

Operation/Maintenance Impacts

Long-term operation and maintenance would generate a limited amount of employment opportunities. It is expected that the majority of these employment opportunities would be filled by currently employed individuals from the local and surrounding areas. Substantial shifts in population growth or trends would not be expected. Local spending would be expected to increase nominally due to an increase presence of workers in the project vicinity. Operation and maintenance impacts would therefore be less than significant.

4.10.2 Alternative 2

Construction Impacts

Impacts under Alternative 2 would be similar to those described for Alternative 1. Construction impacts would be less than significant.

Operation/ Maintenance Impacts

Impacts under Alternative 2 would be similar to those described for Alternative 1. Operation and maintenance impacts would be less than significant.

4.10.3 Alternative 3

Construction Impacts

Impacts under Alternative 3 would be similar to those described for Alternatives 1 and 2. Construction

impacts would be less than significant.

Operation/ Maintenance Impacts
Impacts under Alternative 3 would be similar to those described for Alternatives 1 and 2. Operation and maintenance impacts would be less than significant.

4.10.4 No Action Alternative (Previously Approved Design for SARMP Spillway Raise)

Construction Impacts
Under the Previously Approved Design, the project would be constructed as described in the 2001 SEIS/EIR. Effects of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on socioeconomics would be less than significant, as described in the 2001 SEIS/EIR and similar to those described in Alternatives 1, 2 and 3.

Operation/Maintenance Impacts
Under the Previously Approved Design, operation and maintenance impacts would be similar to those described for Alternatives 1-3. The project operation and maintenance impacts would be as described in the 2001 SEIS/EIR under the No Action Alternative. The impacts of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on socioeconomics would be considered less than significant, as described in the 2001 SEIS/EIR.

Conclusion
In conclusion the finding of no significant impacts regarding socioeconomics is consistent with the 2001 SEIS/EIR, which analyzed the Prado Basin and Vicinity as a whole.

4.11 PUBLIC SERVICES AND UTILITIES

The affected environment for public services and utilities is presented in **Section 3.11**. For the purposes of this SEA/EIR Addendum, analysis of potential impacts to public services and utilities associated with project modification under the Proposed Action and Alternatives is provided below.

SIGNIFICANCE THRESHOLDS

Impacts would be considered significant if the alternative results in:

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

4.11.1 Alternative 1 (Proposed Action)

Construction Impacts

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

Alternative 1 would also not create added pressures on the public service system. As described in the Socioeconomics section (**section 4.10**), a majority of the construction-related jobs are expected to be filled by both currently employed and unemployed labor force participants from the surrounding area, and construction of the proposed project would not increase the region's population.

The Proposed Action would also not substantially impact water supply. Water would be required for dust abatement, cleaning of construction equipment, and irrigation for vegetation activities. The amount of water required would depend on the length of access roads, weather conditions, road surface conditions, and other site-specific conditions. However, water use for the Proposed Action would not affect availability of water for the local population or other needs of the City of Corona.

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

construction is not expected to significantly impact the capacity of the City of Corona in providing wastewater services to the project area.

The Proposed Action would not substantially change any solid waste products. Organic materials, trees, shrubs, a, would be disposed of by hauling to a commercial site or be chipped / recycled for use in habitat restoration activities, if approved by USACE. Topsoil containing organic material would not be disposed of at a commercial site, but would be stockpiled and spread on embankment slopes or borrow areas as a part of site restoration. Disposal of these materials by burning at the proposed project site would not be permitted. Inorganic materials would include, but are not limited to, broken concrete, rubble, asphaltic concrete, , concrete reinforcement, metal, and other types of construction materials. Where possible, soil from excavation would be screened and separated for use as backfill materials at the site of origin to the maximum extent possible. Spoils unsuitable for backfill use would be disposed of at appropriate disposal sites. A number of utilities currently exist within the Proposed Action TCE, and some will require protection or relocation due to the proposed project. **Figure 2-5** shows known utilities located in the project TCE. These include:

- Southern California Edison: Aerial lines
- So Cal Gas: Transmission Gas Line
- AT&T: Aerial and Buried line

USACE will coordinate with the appropriate jurisdictions prior to and during construction to ensure that only temporary disruptions to the services provided by the utilities mentioned above occur. The various utility line would be relocated prior to construction of the proposed action.

Operation/Maintenance Impacts

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

4.11.2 Alternative 2

Construction Impacts

Impacts under Alternative 2 would be similar to those described for Alternative 1. A majority of the construction-related jobs are expected to be filled by both currently employed and unemployed labor force participants from the surrounding area, and construction of the proposed project would not increase the region's population. An increase in demand for service that could result in capacity constraints to existing public service and utilities providers would only be temporary. Alternative 2 would not cause capacity constraints to existing telephone, power, natural gas, sewer, or water public services and utilities providers. Utility systems would be relocated or protected. Therefore, construction impacts would be less

than significant.

Operation/Maintenance Impacts
Impacts from future operation and maintenance under Alternative 2 would be similar to those described for Alternative 1. Operation and maintenance would not generate any additional population that would exceed the capacity of local public service providers. Periodic maintenance would require relatively small amounts of material and would typically occur for only short periods of time. Demands on utilities during maintenance would also be temporary and relatively minor. Therefore, operation and maintenance impacts to public services and utilities would be less than significant.

4.11.3 Alternative 3

Construction Impacts
Impacts under Alternative 3 would be similar to those described for Alternatives 1 and 2. A majority of the construction-related jobs are expected to be filled by both currently employed and unemployed labor force participants from the surrounding area, and construction of the proposed project would not increase the region's population. An increase in demand for service could result in capacity constraints to existing public service and utilities providers; however, it will only be temporary. Alternative 3 would not cause capacity constraints to existing telephone, power, natural gas, sewer, or water public services and utilities providers. Utility systems will be relocated or protected. Therefore, construction impacts would be less than significant.

Operation/Maintenance Impacts
Impacts from future operation and maintenance under Alternative 3 would be similar to those described for Alternatives 1 and 2. Operation and maintenance would not generate any additional population that could exceed the capacity of local public service providers. Periodic maintenance would require relatively small amounts of material and would typically occur for only short periods of time. Demands on utilities during maintenance would also be temporary and relatively minor. Therefore, impacts to public services and utilities would be less than significant.

4.11.4 No Action Alternative (Previously Approved Design for SARMP Spillway Raise)

Construction Impacts
Under the Previously Approved Design, the project would be constructed as described in the 2001 SEIS/EIR. Effects of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on public services and utilities would be less than significant, as described in the 2001 SEIS/EIR and similar to those described in Alternatives 1,2 and 3.

Operation/Maintenance Impacts
Under the Previously Approved Design, operation and maintenance impacts would be similar to those described for Alternatives 1-3. The project operation and maintenance impacts would be as described in the 2001 SEIS/EIR. The impacts of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on public services and utilities would be considered less than significant, as described in the 2001 SEIS/EIR.

Conclusion

In conclusion the finding of no significant impacts regarding public services and utilities is consistent with the 2001 SEIS/EIR, which analyzed the Prado Basin and Vicinity as a whole.

4.12 TRANSPORTATION

The affected environment for transportation is presented in **Section 3.12**. For the purposes of this SEA/EIR Addendum, analysis of potential transportation impacts associated with project modification under the Proposed Action and Alternatives is provided below.

SIGNIFICANCE THRESHOLDS

Impacts would be considered significant if the alternative results in:

- an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).

California Department of Transportation (Caltrans) Applicable Regulations

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

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

Riverside County General Plan.

The 2016 Riverside County General Plan Circulation Element includes the following applicable policies:

• Policy C.2.1. Maintain the following countywide target Levels of Service: LOS C along all County maintained roads, and to all development proposals in any area of the county not located within the boundaries of an Area Plan, and to several other specifically identified Area Plans (REMAP, Eastern Coachella Valley, Desert Center, Palo Verde Valley, and those non- Community Development areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans); LOS D to all development proposals located in other identified Area Plans (Eastvale, Jurupa, Highgrove, Reche Canyon/Badlands, Lakeview/Nuevo, Sun City/Menifee Valley, Harvest Valley/Winchester, Southwest Area, The Pass, San Jacinto Valley, Western Coachella Valley and those Community Development Areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans); LOS E may be allowed by the Board of Supervisors within designated areas where transit oriented development and walkable communities are proposed.

4.12.1 Alternative 1 (Proposed Action)

Construction Impacts

Alternative 1 would result in temporary, short-term increases in local traffic as a result of construction-

related vehicle trips. It is assumed construction-related traffic would be dispersed amongst SR-91 and I-15 for regional access to the project area and Auto Center/Serfas Club Drive and Pomona-Rincon Road/Railroad Street for local access. Therefore, these roadways would likely experience the majority of construction-related traffic. Given the high volume of existing traffic on these roadways, the anticipated increase in construction-related would account for a minimal increase of existing average daily traffic volumes along utilized roadways. This short-term increase in daily traffic volumes is unlikely to exceed the capacity of these roadways or exceed any applicable Riverside County General Plan performance standard. Therefore, temporary construction-related traffic impacts to the existing traffic load and capacity of the utilized roadway system would be less than significant.

In the event any oversize loads would occur on public roadways during construction, they must comply with Caltrans regulations regarding oversize load limits and permits. Additionally, all site access points will be clearly designated and would likely have controlled entrance, thus eliminating roadway hazards. Therefore, less than significant safety impacts would occur to local roadways during construction.

Operation/Maintenance Impacts

Future maintenance of Alternative 1 would include routine inspections and minor repairs after construction is completed. Similar to construction traffic, these trips would be dispersed amongst I-15 and SR-91 for regional access and Auto Center/Serfas Club Drive and Pomona-Rincon Road/Railroad Street for local site access. Any permanent increase in traffic would be infrequent and would account for a negligible increase to average daily trips along utilized. As discussed above, maintenance related traffic would account for a negligible increase of daily trips along utilized roadways. Therefore, future maintenance activities would not have a significant effect on roadway capacity, traffic, or roadway hazards.

4.12.2 Alternative 2

Construction Impacts

Construction impacts under Alternative 2 would be similar to those described for Alternative 1. Temporary short-term traffic increases will occur as a result of construction related trips. The traffic on the highways (I-15 and SR-91) leading to the construction site generally have a high volume of traffic and the anticipated increase in construction-related vehicles would account for a minimal increase of existing average daily traffic volumes along utilized roadways. Therefore, construction impacts to transportation would be less than significant.

Operation/Maintenance Impacts

Impacts under Alternative 2 would be similar to those described for Alternative 1. Similar to construction traffic, O&M trips would be dispersed amongst I-15 and SR-91 for regional access and would utilize Auto Center/Serfas Club Drive and Pomona-Rincon Road/Railroad Street for local access. Maintenance related traffic would account for a negligible increase of daily trips along utilized roadways. Therefore, future operation and maintenance activities would not have a significant impact on roadway capacity, traffic, or roadway hazards.

4.12.3 Alternative 3

Construction Impacts

Construction impacts under Alternative 3 would be similar to those described for Alternatives 1 and 2. Temporary short-term traffic increases will occur as a result of construction related trips. The traffic on the highways (I-15 and SR-91) leading to the construction site generally have a high volume of traffic and

the anticipated increase in construction-related vehicles would account for a minimal increase of existing average daily traffic volumes along utilized roadways. Therefore, construction impacts to transportation would be less than significant.

Operation/Maintenance Impacts

Impacts under Alternative 3 would be similar to those described for Alternatives 1 and 2. Similar to construction traffic, these trips would be dispersed amongst I-15 and SR-91 for regional access and utilize Auto Center/ Serfas Club Drive and Pomona-Rincon Road/Railroad Street for local site access. Maintenance related traffic would account for a negligible increase of daily trips along utilized roadways. Therefore, future operation and maintenance activities would not have a significant impact on roadway capacity, traffic, or roadway hazards

4.12.4 No Action Alternative (Previously Approved Design for SARMP Spillway Raise)

Construction Impacts

Impacts were previously analyzed in the 2001 SEIS/EIR and were determined to be less than significant.
Under the Previously Approved Design, the project would be constructed as described in the 2001 SEIS/EIR. Effects of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on transportation would be less than significant, as described in the 2001 SEIS/EIR and similar to those described in Alternatives 1, 2 and 3.

Operation/Maintenance Impacts

Under the Previously Approved Design, operation and maintenance impacts would be similar to those described for Alternatives 1, 2 and 3. The project operation and maintenance impacts would be as described in the 2001 SEIS/EIR. The impacts of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on transportation would be considered less than significant, as described in the 2001 SEIS/EIR.

Conclusion

In conclusion the finding of no significant impacts regarding transportation is consistent with the 2001 SEIS/EIR, which analyzed the Prado Basin and Vicinity as a whole.

4.13 HAZARDOUS MATERIALS

The affected environment for hazardous materials is presented in **Section 3.13**. For the purposes of this SEA/EIR Addendum, analysis of potential hazardous material impacts associated with project modification under the Proposed Action and Alternatives is provided below.

SIGNIFICANCE THRESHOLDS

Impacts would be considered significant if the alternative results in:

- A potential public health hazard involving the use, production, or disposal of materials which pose a hazard to people or animal or plant populations in the area; or
- A significant hazard to the public or the environment through reasonably foreseeable conditions involving the release of hazardous materials into the environment.

4.13.1 Alternative 1 (Proposed Action)

Construction Impacts

Hazardous materials were not found in the project area according to the Geotracker database search However, there is one known stationary source of hazardous waste pollution at the site: the painted portion of the spillway steep chute including the mural and subsequent graffiti. The paint thereon has been tested and has been determined to be lead-based.

The proposed method for mural paint removal would involve high pressure water blast with a high pressure collection shroud. This system would recycle the water after separating out the paint, concrete and other solid particles. A high pressure hydro-blasting unit with a vacuum recovery assembly would remove and collect the matrix for handling and storage. Liquids would be reused to the extent practicable to mitigate the volume of water used. Wastes would be characterized for handling and final disposal at an approved site (HR-1). Other than motor exhaust from a small amount of machinery used for this process, waste would at no time be released to the environment. Safety and health risks due to lead exposure would be reduced and the potential for lead contamination in the surrounding environment would cease to occur.

Other small quantities of hazardous materials would be stored, used, and handled during construction of each alternative, including petroleum hydrocarbons and their derivatives (e.g., diesel, gasoline, oils, lubricants, and solvents) to operate construction equipment. These materials would be contained within vessels engineered for safe storage. Storage of substantial quantities of these materials in the project area is not anticipated. Furthermore, construction vehicles may require on-site fueling, or routine or emergency maintenance that could result in the release of oil, diesel fuel, transmission fluid or other materials; however, the materials would not be used in quantities or stored in a manner that would pose a significant hazard to the public or the workers themselves. Therefore, impacts from general construction activities would be less than significant. The potential for an accidental release of toxic materials from construction vehicles (e.g., oil and diesel fuel) would be mitigated by the fueling and servicing of construction vehicles in protected areas so that fluids would be contained within an isolated or impervious area a safe distance from the active flow path. Spills or leaks would be cleaned up immediately, and any contaminated soil would be disposed of properly.

If dewatering is required, the construction contractor will prepare and provide a general dewatering permit to the appropriate local regulatory agency or State Water Board. The permit will be reviewed by

the regulatory agency and details regarding any specific dewatering requirements, such as monitoring or sampling for HTRW in groundwater, will be given by the regulators as provisions within this permit.

The Contractor may have to provide a worker safety plan of action and personal protection equipment for construction workers in the event that HTRW is encountered in soils or ground water at the project site. This plan, if needed, will need to be reviewed and approved by the USACE Safety Office, prior to implementation.

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

Operation/Maintenance Impacts
Future operations and maintenance of Alternative 1 would include routine inspections and minor repairs of the Spillway and its associated features after construction is completed. Hazardous lead-based painted would be removed to prevent future public health and environmental hazards. Future maintenance activities would not create impacts to public safety. Therefore, operation and maintenance impacts would be less than significant.

4.13.2 Alternative 2

Construction Impacts
Under Alternative 2, project modifications would be similar to those described for Alternative 1. The construction impacts would address potential public health hazards involving the use, production, or disposal of materials, which pose a hazard to people or animal or plan population in the area. Potential impacts of Alternative 2 on hazards would be less than significant.

Operation/ Maintenance Impacts
Future operations and maintenance of Alternative 2 would be similar to those described for Alternative 1 and include routine inspections and minor repairs, of the Spillway and its associated features after construction is completed. Hazardous lead-based painted would be removed to prevent future public health and environmental hazards. Future maintenance activities would not create impacts to public safety. Therefore, potential operation and maintenance impacts from Alternative 2 would be less than significant.

4.13.3 Alternative 3

Construction Impacts
Under Alternative 3, project modifications would be similar to those described for Alternatives 1 and 2. The construction impacts would address potential public health hazards involving the use, production, or disposal of materials, which pose a hazard to people or animal or plan population in the area. Potential impacts of Alternative 3 on hazards would be less than significant.

Operation/ Maintenance Impacts
Future operations and maintenance of Alternative 3 would be similar to those described for Alternatives

1 and 2 and include routine inspections and minor repairs of the Spillway and its associated features after construction is completed. Hazardous lead-based painted would be removed to prevent future public health and environmental hazards. Future maintenance activities would not create impacts to public safety. Therefore, potential operation and maintenance impacts from Alternative 3 would be less than significant.

4.13.4 No Action Alternative (Previously Approved Design for SARMP Spillway Raise)

Construction Impacts

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

Operation/Maintenance Impacts

Under the Previously Approved Design, operation and maintenance impacts would be similar to those described for Alternatives 1, 2 and 3. The project operation and maintenance impacts would be as described in the 2001 SEIS/EIR. The impacts of the Previously Approved Design were analyzed and disclosed in the 2001 SEIS/EIR. Potential impacts of the No Action Alternative on hazardous materials would be considered less than significant, as described in the 2001 SEIS/EIR.

Conclusion

In conclusion the finding of no significant impacts regarding hazardous materials is consistent with the 2001 SEIS/EIR, which analyzed the Prado Basin and Vicinity as a whole.

5 CUMULATIVE IMPACTS

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

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

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

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

Table 5-1. Cumulative projects in the project vicinity

Project Name	General Location	Description
71/91 Interchange Expansion	The site is located at the interchange of SR-71 and SR-91, immediately southwest of the Proposed Action.	The purpose of this project is to expand the existing interchange to enhance public safety and reduce traffic congestion in local roadways. *Construction is scheduled to start in 2022 and complete in 2024.*
Southern California Gas Line Relocation	The gas line relocation project site would overlap significantly with the TCE of the Proposed Pction.	The purpose of this project is to remove and relocate the existing buried 30-inch gas transmission line prior to the Proposed Action. The existing gas line travels through the Proposed Action TCE and thus would be disturbed during construction unless it is removed prior. *Construction is scheduled to start Fall 2021 and complete Spring 2022.*
Santa Ana River Trail	The proposed Santa Ana River Trail would travel directly through the project area. This system is currently continuous to the north and to the south, but a gap in the trail exists through the project area.	The 22-mile Santa Ana River trail includes bicycle trails and hiking/equestrian trails. To fill in gaps in the SART, proposed trail alignments would cross through the spillway project area. *Construction of some segments is on-going and anticipated to be completed in 2025 or later. If approved, construction within the Proposed Action TCE would depend on timing for completion of SARMP features.*

5.1 WATER RESOURCES AND HYDROLOGY

Construction activities for the Proposed Action would not have water resources and hydrology impacts above and beyond those determined in the 2001 SEIS/EIR, which were largely characterized by other flood control projects within and downstream of the Prado Basin. As discussed in previous sections, the Proposed Action would be in full compliance with applicable laws and regulations, as well as environmental commitments identified in the 2001 SEIS/EIR and in Section 6 of this document. As such, potential impacts to water resources and hydrology would be site-specific and not significant. Water resources and hydrology impacts of the Proposed Project would not singly, or cumulatively, combine with similar impacts of other projects as significant impacts. Therefore, cumulative impacts on water resources and hydrology from the Proposed Action would be less than significant.

Conclusion
There are no new or more significant impacts on hydrology resulting from implementation of the Proposed Action than was previously analyzed.

5.2 AIR QUALITY

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

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

Conclusion
There are no new or more significant impacts on Air Quality resulting from implementation of the Proposed Action than was previously analyzed.

5.3 EARTH RESOURCES

Construction activities for the Proposed Action would not have earth resources impacts above and beyond those determined in the 2001 SEIS/EIR. As discussed in previous sections, the Proposed Action would be

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

Conclusion
There are no new or more significant impacts on Earth Resources resulting from implementation of the Proposed Action than was previously analyzed.

5.4 BIOLOGICAL RESOURCES

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

Conclusion
There are no new or more significant impacts on Biological Resources resulting from implementation of the Proposed Action than was previously analyzed.

5.5 CULTURAL RESOURCES

The proposed action would not result in any impacts to significant/NRHP eligible cultural resources, and therefore, would not contribute to any cumulative loss or damage to significant cultural resource. The Proposed Action, in conjunction with ongoing and future actions, would not contribute significantly to the loss of cultural values or data within Prado Basin. Therefore, cumulative impacts on cultural resources from the Proposed Action would be less than significant.

Conclusion
There are no new or more significant impacts on Cultural Resources resulting from implementation of the Proposed Action than was previously analyzed.

5.6 LAND USE

Land use impacts tend to be localized, affecting properties in the immediate vicinity of the project. As discussed in **Section 4.6**, the Proposed Action would be compatible with existing land uses and would not conflict with applicable plans and policies. Potential land use impacts from the Proposed Action would not

affect existing recreational land uses surrounding the site. Therefore, cumulative impacts on land use from the Proposed Action would be less than significant.

Conclusion
There are no new or more significant impacts on Land Use resulting from implementation of the Proposed Action than was previously analyzed.

5.7 AESTHETICS

The activities associated with the Proposed Action would be short-term, localized, and would not significantly impact or conflict with visual resources (see **Section 4.7**). EC-A-1 requires a lighting plan to reduce impacts to reduce potential impacts from night work. Therefore, the proposed project would not contribute to a degradation or alteration of the scenic viewscape. As such, cumulative aesthetic impacts would be less than significant.

Conclusion
There are no new or more significant impacts on Aesthetics resulting from implementation of the Proposed Action than was previously analyzed.

5.8 RECREATION

As described in **Section 4.8**, implementation of the Proposed Action would temporarily interfere with recreational activities in the immediate vicinity, including access to informal recreation trails. Because of the temporary nature of impacts to recreational activities and the low recreational use in the project area, the potential effects would be less than significant. The cumulative projects listed in Table 5-1 would not result in the elimination or replacement of recreational facilities. The Santa Ana River Trail, listed in Table 5-1, would improve and increase recreational opportunities in the project vicinity. With the implementation of environmental commitments for recreation described in Section 6, no contribution to cumulative impacts in the region would occur.

Conclusion
There are no new or more significant impacts on Recreation resulting from implementation of the Proposed Action than was previously analyzed.

5.9 NOISE

With regard to a cumulative increase in temporary noise levels of the Proposed Action construction in conjunction with construction of cumulative projects identified in Table 5-1, the Proposed Action construction would temporarily increase ambient noise levels in the vicinity of the project area. As discussed in **Section 3.9**, the nearest sensitive receptors (residential neighborhood) are located ½ mile south of the TCE, separated by SR-91, a 12 lane highway. Construction activities associated with other projects in close proximity to the Proposed Action could potentially occur at the same time as the Proposed Action, further increasing noise levels in the project area. However, due to the distance of these projects from sensitive receptors, it is unlikely that

construction noise from the Proposed Action would combine with construction noise from those projects to increase potential cumulative construction noise impacts to sensitive receptors. In the event this occurred, these impacts would be temporary and of short duration. Vehicles bringing construction supplies to cumulative project sites could share travel routes with the Proposed Action. However, it is assumed these shared routes would be limited to regional access roadways (e.g., I-15, SR-91). Due to the existing traffic volume on these roadways, no significant cumulative noise from construction vehicles would occur to sensitive receptors along shared travel routes.

Each cumulative project identified in Table 5-1 would be required to comply with local noise ordinances. However, per discussion in **Section 4.9**, as long as construction activities occur during 7:00 a.m. to 6:00 p.m., Monday through Saturday (exempted time periods per county and city ordinances; any changes to that schedule would require obtaining a variance from local authorities), the project would be in compliance with local ordinances. As a result, the Proposed Action would not result in significant construction or operational noise impacts. Therefore, while overall development of the spillway project could result in cumulative temporary increases to existing ambient noise levels, the Proposed Action would have a minimal cumulative contribution to these potential noise impacts. Therefore, noise impacts of the Proposed Action would not combine with impacts of present and reasonably foreseeable projects to result in a significant cumulative impact.

Conclusion
There are no new or more significant impacts on Noise resulting from implementation of the Proposed Action than was previously analyzed.

5.10 SOCIOECONOMICS

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

Conclusion
There are no new or more significant impacts on Socioeconomics resulting from implementation of the Proposed Action than was previously analyzed.

5.11 PUBLIC SERVICES AND UTILITIES

The Proposed Action would have no significant impacts on public services and utilities (**Section 4.11**). As such, the proposed project would not contribute to an incremental impact on public services and utilities that would be cumulatively considerable.

Conclusion
There are no new or more significant impacts on Public Services and Utilities resulting from implementation of the Proposed Action than was previously analyzed.

5.12 TRANSPORTATION

Cumulative projects within the area (Table 5-1) would generate trips to and from the respective project sites using local roadways. The combined contribution of these vehicle trips could result in an increase to existing roadway network levels of service. However, each project would be required to comply with the minimum target levels of service identified in the Riverside County General Plan (see **Section 4.12**). While development of cumulative projects would result in a cumulative addition to traffic volumes on study area roadways, the Proposed Action's contribution to this impact would be minimal during both construction and operation. Therefore, the contribution of the Proposed Action to cumulative impacts would be less than significant.

Conclusion
There are no new or more significant impacts on Transportation resulting from implementation of the Proposed Action than was previously analyzed.

5.13 HAZARDOUS MATERIALS

As discussed in **Section 4.13**, the Proposed Action would not substantially increase the risks associated with hazardous materials. The construction of the proposed project would be a beneficial impact because the lead-based paint would no longer have potential to be released into the surrounding environment. Therefore, safety risks due to hazardous materials associated with the proposed project would not result in significant cumulative impacts.

Conclusion
There are no new or more significant impacts on Hazardous Materials resulting from implementation of the Proposed Action than was previously analyzed.

6 ENVIRONMENTAL COMMITMENTS

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

6.1 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 contaminates are not discharged from the construction sites. The SWPPP would define areas where hazardous materials would be stored, where trash would be placed, where construction equipment would be parked, fueled and serviced, and where construction materials such as reinforcing bars, stockpiles and structural steel members would be stored. Erosion control during grading of the construction sites and during subsequent construction shall be in place and monitored as specified by the SWPPP. A siltation ponds shall 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 shall be developed prior to initiation of construction. The plan shall identify types of hazardous materials to be used during construction and the types of wastes that would be generated. All appropriate project personnel shall 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.

6.2 AIR QUALITY

EC-AQ-1 A minimum of 75% of each class of off-road equipment shall be equipped with Tier 4 compliant engines.

AQ-2 The project construction contractor shall electrify equipment, where feasible.

AQ-3 The project construction contractor shall restrict the idling of construction equipment to 10 minutes.

AQ-4 The project construction contractor shall use catalytic converters on all gasoline equipment (except for small [2-cylinder] generator engines).

AQ-5 The project construction contractor shall use only solar powered traffic signs (no gasoline-powered generators shall be used).

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

AQ-6 The project construction contractor shall apply non-toxic soil stabilizers according to manufacturers' specification to all inactive construction areas (previously graded areas inactive for 10 days or more; soil stockpiled for 2 days or more).

AQ-7 The project construction contractor shall enclose, cover, water twice daily, or apply non-toxic soil binders according to manufacturers' specifications to exposed stockpiles (i.e., gravel, sand, dirt) with 5 percent or greater silt content.

AQ-8 In areas where dewatering is not required, the project construction contractor shall water active grading/excavation sites at least twice daily.

AQ-9 The project construction contractor shall increase dust control watering when wind speeds exceed 15 miles per hour for a sustained period of greater than 10 minutes, as measured by an anemometer. The amount of additional watering shall depend upon soil moisture content at the time; but no airborne dust should be visible.

AQ-10 The project construction contractor shall suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph (40 kph).

AQ-11 The project construction contractor shall ensure that trucks hauling materials on public roads to and from the site are covered and maintain a 50 mm (2 in) differential between the maximum heights of any hauled material and the top of the haul trailer. Haul truck drivers shall cover the load prior to leaving the site to prevent material loss during transport.

AQ-12 The project construction contractor shall ensure that graded surfaces used for off-road

parking, materials lay-down, or awaiting future construction are stabilized for dust control, as needed.

AQ-13 The project construction contractor shall sweep streets in the project vicinity once a day if visible soil material is carried to adjacent streets.

AQ-14 The project construction contractor shall install rumble pads or wheel washers where vehicles enter and exit unpaved roads onto paved roads or wash off trucks and any equipment leaving the site each trip.

AQ-15 The project construction contractor shall apply water three times daily or apply non-toxic soil stabilizers according to manufacturers' specifications to all unpaved parking, staging areas, or unpaved road surfaces where active construction is occurring. Stockpiles not currently in use will be covered or treated to reduce dust.

AQ-16 The project construction contractor shall ensure that traffic speeds on all unpaved roads to be reduced to 25 mph (25 kph) or less.

AQ-17 Prior to the approval of plans and specifications, the USACE shall ensure that plans and specifications specify that all heavy equipment shall be maintained in a proper state of tune as per the manufacturer's specifications.

6.3 BIOLOGICAL RESOURCES

The 2001 SEIS/EIR, 2001 BO and 2012 BO Amendment included a series of mitigation measures and environmental commitments that would be implemented to compensate for impacts to vegetation communities during construction of Santa Ana River Project features. These include measures to offset temporary and permanent effects to aquatic, riparian, and upland habitats. For Prado Basin projects, many of the anticipated permanent impacts had previously been mitigated following requirements in the 1988 GDM/SEIS and the 1989 BO. However, since not all impacts to wildlife and habitats at the project area had been anticipated in 2001, USACE will compensate for temporary and permanent impacts to these habitats following the precepts in the 2001 SEIS/EIR and BO (as amended). This will involve removing non-native vegetation from areas within the TCE and restoring the vegetation to native upland habitat onsite and at a nearby offsite location. This mitigation approach has been successfully applied for many other Santa Ana River Project features, and has resulted in hundreds of acres of fully restored habitat that far exceeds the impact acreage. While there are two elements to the Proposed Action, the SARMP Spillway Raise element and the Dam Safety Modification element, both require the same disturbance footprint. The amount and type of restoration to offset impacts to habitat is based on construction footprint and to a lesser degree the duration of the construction impacts. Both elements would disturb the same habitat, but the dam safety features would take longer to construct.

BR-1 The USACE will develop and implement a monitoring program for LBV and CAGN that entails surveys during the year prior to construction, and each year of construction.

EC-BR-1B The USACE shall develop and implement a monitoring program that entails surveys for bald eagles immediately prior to fall/winter construction near flowing water, and for golden eagles prior to initiating activities at Borrow Area #2 (all borrow areas). If eagles are foraging in the vicinity, the Corps will coordinate with the Contracting Officer Representative and FWS to develop appropriate avoidance measures.

EC -BR-2 The construction contractor will minimize grading activities and leave root systems intact, to the extent practicable.

BR-3 Any vegetation with the potential to support CAGN and LBV will be cleared outside of the nesting season, defined as February 15 to September 16.

BR-4 A biologist or environmental monitor will monitor construction activities to ensure environmental impacts remain consistent with those described in this document. This includes ensuring vegetation removal occurs only in designated areas and avoided riparian/coastal sage scrub areas are flagged and not encroached upon.

EC-BR-5 The Corps will restore all temporary disturbance areas, not including existing roads or operations areas, within the TCE with riparian, coastal sage scrub or other native habitat as appropriate to the location. All temporarily disturbed areas will be kept free of exotic plants for a period of 8 years. If the sites have not begun to recover within five years (i.e., 50 percent of the disturbed areas are not vegetated with native plants) then the site will be replanted or re-hydroseeded as needed. Acreage of actual disturbance will be

documented and compared to acreage restored; any shortfalls will be addressed through additional restoration as needed.

EC-BR- The Corps will offset temporary losses to occupied gnatcatcher habitat (i.e., both native and non-native) by restoring currently degraded areas to coastal sage scrub outside the TCE at a 2:1 ratio if restoration occurs after impact; or at a 1:1 ratio if restoration occurs prior to impact; or any combination thereof (i.e., if some restoration can occur prior to impact). This acreage will be managed and kept free of exotics for 8-years post-construction. Permanent impacts to occupied but non-native habitat will follow the same guidance. The Corps will offset permanent impacts to gnatcatcher-occupied native coastal sage scrub habitat at a 3:1 ratio by restoring currently degraded areas outside the TCE and managing those areas for 8 years post-construction. It is anticipated that 4.4 acres of impacts to coastal sage scrub will be offset with a total of 13.2 acres restored

EC-BR-7 Construction personnel will strictly limit their activities, vehicles, equipment, and construction materials to the temporary construction footprint identified in **Figure 2-5**, 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 construction footprint to designate limits of construction activities. These barriers will be maintained until the completion of all construction activities

EC-BR-8 The biological monitor will monitor noise regularly (twice weekly) during the nesting season (February 15 – August 15). Ambient noise levels will be recorded by the Corps biologists prior to construction to determine ambient noise levels. During construction, noise monitoring will ensure that 1) noise does not exceed 60 A-weighted decibels (dBA) of equivalent continuous sound level (Leq) hourly where ambient noise is less than 60 dBA Leq hourly or another agreed upon limit with the Service, within occupied gnatcatcher and vireo habitat during the nesting season; or, (2) noise does not exceed 5 dBA Leq hourly above ambient conditions if said levels are above 60 dBA Leq hourly, or another agreed upon limit with the Service, within occupied gnatcatcher and vireo habitat during the nesting season. If construction noise levels within occupied adjacent habitat cannot be reduced below 60 dBA Leq hourly, or 5 dBA Leq hourly above ambient, or another agreed upon limit with the Service, in adjacent occupied vireo or gnatcatcher habitat during nesting season of any year, the Corps or project proponent will offset impacts at a 1:1 ratio per any period during the breeding season affected by such noise levels. This 1:1 ratio will be based on the acreage of occupied coastal sage scrub or riparian habitat outside the project footprint subject to noise levels above agreed-upon thresholds during the nesting season, per the number of breeding seasons affected (e.g.,

1 acre of coastal sage scrub 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. The Corps will identify restoration areas for offsetting noise impacts in coordination with the Service and will maintain (continue weeding) those areas for a period of 8 years .

EC-BR-9 The contractor will construct sound walls/blankets prior to the vireo and gnatcatcher nesting season (i.e., prior to February 15) along sensitive vireo and gnatcatcher habitat adjacent to the TCE. The sound wall will be constructed of material typically used to lessen general noise impacts and at a height tall enough to account for construction equipment.

EC-BR-10 Prior to construction activities, a USACE qualified biologist (or the environmental monitor) shall conduct pre-construction environmental training for all construction crew members including those onboarding mid-Project. 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-11 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-12 Prior to any ground-disturbing activities (e.g. mechanized clearing or rough grading) for all project related construction activities, a USACE 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 (and borrow 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 lshall follow established protocols.

EC-BR-13 The USACE biologist or qualified biological monitor 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 listed species and designated habitat, or shall recommend additional measures as warranted.

EC-BR-14 Best management practices shall be implemented to reduce impacts to native habitats, including the following:

a. All equipment maintenance, staging, and dispending 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.

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 to the extent feasible, prior to mobilizing and before leaving the site to reduce the potential spread of invasive plants and/or seeds.

EC-BR-15 Prior to any construction activities occurring at night, a lighting plan will be developed in coordination with the project biologist or environmental monitor. The lighting plan will serve to reduce potential impacts resulting from lighting on resident and transitory species using the wildlife corridor to the maximum extent practicable.

EC-BR-16 Vegetation removal and herbicide application required for maintenance of the project shall be conducted at the minimum amount necessary. Any vegetation removal necessary shall be conducted outside of the nesting season, which is defined as February 15 to September 15.

EC-BR-17 Portable sound walls/blankets will be placed around demolition activities occurring on the spillway, regardless of nesting season to minimize potential noise impacts on resident gnatcatchers.

6.4 CULTURAL RESOURCES

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

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

6.5 AESTHETICS

EC-A-1 If artificial lighting is required during construction, a Lighting Plan will be developed by

the contractor to outline and determine locations of light sources. All night work will be coordinated with the City of Corona and the County of Riverside. At a minimum, coordination shall include the following: the expected start date and duration of night time work; a detailed description of the activities associated with night time work; a detailed description of expected maintenance activities that will occur in the future, which shall include the frequency and duration of such activities, and the procedures for notifying the City prior to maintenance activities in order to avoid disturbance to residents and wildlife.

6.6 RECREATION

R-1 Prior to construction start highly visible signage and fencing along existing roads and pathways will be erected to advise the public of access closure.

6.7 NOISE

Construction would normally occur between 7:00 a.m. and 6:00 p.m. on weekdays to remain in compliance with county ordinances. However, night work is planned as part of the construction methodology for building the new concrete structures. The project will assume the most restrictive ordinance, of applicable ordinances, to remain within compliance of both county and city policies. The contractor shall obtaina variance from local authorities per the following additional environmental commitments, which would be incorporated into contract specifications for the proposed project to reduce potential impacts to noise.

N-1 Prior to construction, the construction contractor shall obtain all required variances to comply with local noise ordinances. This includes but is not limited to Riverside County approval (exemption or variance) per Riverside County Municipal Code Section 847, Section 7.(a).1 – , Section Construction Related Exceptions, for all noise sources not exempt by Riverside County Municipal Code Section 847, Section 2.i. and exceeding Riverside County Municipal Code Section 847, Section 4 – General Sound Level Standards. Additionally, prior to any such activities occurring, the construction contractor shall obtain Riverside County approval (exemption or variance) for all operational and maintenance activities not compliant with Riverside County Municipal Code Section 847.

EC-N-2 Prior to approval of plans and specifications, the USACE shall ensure that plans and specifications include a restriction of not more than 316 construction truck trips per day on the streets designated for the haul route within the County of Riverside, County of San Bernardino, and City of Corona.

6.8 HAZARDOUS MATERIALS

HM-1 Removal of the painted mural prior to spillway chute demolition will be documented and conducted in a manner that contains any hazardous material preventing substantial exposure to humans or wildlife.

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7 COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

The following section provides a summary of the laws, regulations, Executive Orders, and other guidelines that are relevant to the proposed project activities and alternatives. Included in this summary is a discussion of the consistency of the proposed project with each of the plans, policies, and regulations listed below.

7.1 FEDERAL LAWS AND REGULATIONS

The National Environmental Policy Act (NEPA)

This SEA/EIR Addendum has been prepared in accordance with the National Environmental Policy Act (NEPA). Based on the analyses in Chapter 4, the Proposed Action will not have a significant effect on the human environment. OCFCD has determined the changes to the project design, construction, operation, and maintenance of the Spillway Raise element of the Proposed Action does not raise important new issues of significant effects on the environment, and therefore preparation of a Supplemental EIS is not required.

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

In order to comply with Section 106 of the NHPA, the USACE, State Historic Preservation Office (SHPO), and the Advisory County on Historic Preservation (ACHP) executed a programmatic agreement (PA) in 1993 for the entire SARMP of which the current undertaking is just one small piece (Appendix G). The PA is still valid and will expire once construction of the SARMP is complete. Prior to the PA's execution, the entire SARMP APE, including the footprint of the spillway construction and the proposed staging and borrow areas were surveyed for the presence of historic and prehistoric resources (Brook and Langenwalter, 1985).

Beyond the 1985 survey, several additional cultural resource investigations have specifically occurred at the spillway and the borrow area that was identified in the 2001 SEIS/EIR, known as Borrow Area 1. Borrow Area 1 contains the currently proposed borrow areas B1, B3, and B4. This body of work includes historical and archaeological investigations of the Prado/Rincon town site CA-RIV-3698 (Greenwood et al. 1987); test excavations at CA-RIV-2802 and CA-RIV-3698 (Greenwood and Foster 1987); recordation and evaluation of Prado Dam (Swanson and Hatheway 1989); data recovery at CA-RIV-2802 and 28 features within CA-RIV-3698 (Foster et al. 1995); the testing of 11 historical period sites within the Basin including CA-RIV-1039 and CA-RIV-1044 (Foster et al. 1996); HAER documentation of Prado Dam (Hatheway et al. 1996); and finally large scale data recovery at CA-RIV-1039 and CA-RIV-1044 (Sterner 2004).

The Prado Dam complex (P-33-004730/CA-RIV-4730/CA-178), which includes the spillway, was determined eligible for listing on the National Register in 1991 under Criteria A, C, and D through a consensus determination with the SHPO. The SARMP included proposed modifications to several key features of the dam, including raising the height of the main embankment, replacing the inlet and outlet works, increasing the height and width of the spillway and constructing a series of levees. These changes constituted an adverse effect. To mitigate the loss of the eligible property, the dam was documented in a Historic American Engineering Record (HAER) which was filed with the National Park Service in 1996. Pursuant to the PA, the mitigation was coordinated with the SHPO and the ACHP. The bicentennial themed mural that was painted on the spillway was separately evaluated for eligibility for listing on the NRHP.

The Keeper of the National Register determined that the bicentennial themed mural painted on the spillway was not eligible for the NRHP in 2019. Under the terms of the PA, no further consultation on the spillway modification is needed.

Similarly, consultation for Borrow Area 1, and therefore B1, B3, and B4 which are contained in Borrow Area 1, has already occurred. Four archaeological sites were recorded within the boundaries of Borrow Area 1, CA-RIV-5523, CA-RIV-5524, CA-RIV-1039 and CA-RIV-1044. Sites CA-RIV-5523 and CA-RIV-5524 were determined to be not eligible for the NRHP through a consensus determination with the SHPO. Sites CA-RIV-1039 and CA-RIV-1044 were determined to be eligible for the NRHP in 1996. In 1998, the USACE consulted with the California SHPO regarding the necessity of data recovery at both CA-RIV-1039 and CA-RIV-1044 in anticipation of the SARM project borrow area. Data recovery at CA-RIV-1039 included 19 mechanical stripping units, 26 backhoe trenches and 38 excavation units were excavated at the site. A similar level of effort occurred at CA-RIV-1044 and included 12 stripping units, ten backhoe trenches, and 19 excavation units (Sterner 2004).

For the modified spillway design, two new borrow areas (B2 and B5) are needed. Due to the passage of time since the last cultural resource inventory, the USACE completed a cultural resource survey of B2, B5, and S1 in July of 2021. No new cultural resources were identified during the survey. In accordance with Stipulation 1 of the PA, the USACE is submitted the cultural resources survey report to the SHPO for their review and acceptance. The SHPO accepted the survey report on October 27, 2021. Under the terms of the PA, no further consultation is required because no cultural resources were found. The USACE also provided the cultural resources survey report to the Federally recognized and non-Federally recognized Tribes who may attach religious and cultural significance to properties within the project area for their review and comment on October 4, 2021. No comments have been received to date.

Fish and Wildlife Coordination Act, as amended

The proposed project is in compliance. The SARMP has been fully coordinated with the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW) and other agencies. Two Coordination Act Reports have been prepared for the SARMP (1988 and 1999). These documents are included in the 1988 SEIS and the 2001 SEIS/EIR, and the recommendations continue to be carried forward during implementation of each SARMP feature. Since that time, numerous meetings have occurred between the USFWS, CDFW, other resource agencies, local sponsors and the USACE to discuss the various proposed projects in Prado Basin and the Lower Santa Ana River. Discussions included potential impacts to, mitigation for, and minimization and avoidance measures for nesting birds covered under the Migratory Bird Treaty Act (MBTA), species covered under the Federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA) (such as the least Bell's vireo and Santa Ana sucker), and wildlife movement issues. In addition, consultation with the USFWS under the ESA is ongoing as noted below.

The Dam Safety element of the Proposed Action does not trigger FWCA coordination because no new impoundment or modification of a body of water would occur.

Bald and Golden Eagle Protection Act, as amended

The proposed project is in compliance. The Bald and Golden Eagle Protection Act of 1940 protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: "disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best

scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior'' (72 FR 31132; 50 CFR 22.3).

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

The proposed project would not affect birds protected under this Act beyond those effects that were addressed in the 2001 SEIS/EIR and CESA permit (2081-2001-023-06). Golden eagles may occasionally forage within the borrow site and other upland habitats within Prado Basin, as do other raptors. However, no nesting habitat would be affected and no nests are known to occur in the immediate vicinity. Mitigation and compensation measures that were outlined in the 2001 SEIS/EIR for Norco Bluffs (BR-1B on 4-51) would be implemented as required for impacts related to the proposed project. This measure proposes USACE collect survey data immediately prior to fall/winter construction near flowing water for bald eagles and prior to ground disturbance in the borrow areas for golden eagles. If eagles are observed foraging in the vicinity, USACE will coordinate with USFWS to develop appropriate avoidance measures.

The Endangered Species Act, as amended

The Endangered Species Act (ESA), and subsequent amendments, provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. Section 7 requires federal agencies, in consultation with, and with the assistance of the Secretary of the Interior or the Secretary of Commerce, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. Potential effects of the Preferred Alternative on federally listed species and on designated critical habitat have been addressed in formal consultation with USFWS.

The Preferred Alternative is anticipated to have temporary adverse effects to least Bell's vireo and coastal California gnatcatcher. Vegetation removal and construction will exclude gnatcatcher use of the construction area during the construction period and until the site is restored post-construction. Construction noise may have temporary adverse effects to vireo and gnatcatcher adjacent to the construction area during construction. Post-construction restoration is expected to improve the quality and quantity of habitat available to these species once construction is completed and ensure effects are temporary in nature. The Preferred Alternative is not likely to adversely affect least Bell's vireo critical habitat. Analyses supporting these conclusions can be found in the Biological Assessment (Appendix D). The Biological Assessment was drafted with current information available, any updated design or project aspects were coordinated with USFWS and presented in the final Biological Opinion

Formal consultation with USFWS was requested on June 29, 2021 and a final Biological Opinion was received on November 26, 2021 (FWS-WRIV-08B0408-21F1233), completing formal consultation. Thus, the project is in full compliance with the ESA (Appendix E).

Migratory Bird Treaty Act

The proposed project is in compliance. The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711) makes it unlawful to possess, buy, sell, purchase, barter or "take" any migratory bird listed in Title 50 of the Code of Federal Regulations Part 10. "Take" is defined as possession or destruction of migratory birds, their nests or eggs. Birds protected under the MBTA include essentially all native birds in a given region.

The clearing or mowing of vegetation associated with proposed project construction is only allowed during periods when migratory birds are not nesting (February 15 through September 15). Construction may be done anytime of the year provided that the clearing or mowing of vegetation is done between August 16 and February 14 when migratory birds are not nesting. The current list of species protected by the MBTA includes several hundred species and essentially includes all native birds. Mitigation measures developed in the 2001 SEIS/EIR have been formulated to reduce impacts on migratory birds and will be implemented as part of the Proposed Action. Therefore the project is in compliance with the MBTA.

Clean Air Act, as amended

Under Section 176(c) of the Clean Air Act Amendments (CAA) of 1990, the Lead Agency is required to make a determination of whether the proposed project conforms with the State Implementation Plan (SIP). Conformity is defined in Section 176(c) of the CAAA as compliance with the SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards. However, if the total direct and indirect emissions from the Proposed Action are below the General Conformity Rule de minimis emission thresholds, the Proposed Action would be exempt from performing a comprehensive air quality conformity analysis, and would be considered to be in compliance with the SIP.

The Proposed Action would implement environmental commitments. With implementation of these environmental commitments, estimated emissions for all alternatives would not exceed the General Conformity Rule de minimis emission thresholds and would be in conformity with the SIP. Thus, the Proposed Action complies with the CAA.

Clean Water Act, as amended

The proposed project is in compliance with the guidelines in 40 CFR 230.10(c), promulgated by the Environmental Protection Agency (EPA) under Section 404(b)(1) of the Clean Water Act (CWA) Guidelines. The 2001 SEIS/EIR identified that the proposed project and other Prado Basin and Vicinity features would affect jurisdictional waters (Waters of the U.S.); however, construction does not impact any wetlands or waters of the U.S. All of the construction surrounding the spillway separated from drainages or water sources that would be considered waters of the U.S. or wetlands. The drainage would be avoided to the extent feasible and restored post construction to a functioning condition .

See Section 4.1, Water Resources and Hydrology, for an updated analysis, accounting, and description of impacts to Waters of the U.S. related to the proposed project. An updated 404(b)(1) will be prepared. Pursuant to the USACE Clean Water Act implementing regulations (33CFR 336.1(a)(1)), coordination will occur with the Santa Ana RWQCB to obtain 401 certification, and certification or a waiver will be included in the Final EA. The USACE contractor will obtain a National Pollution Discharge Elimination System (NPDES) construction stormwater permit (Section 402) prior to construction. A SWPPP including BMPs and Erosion and Sedimentation Control Plan would be developed and implemented by the construction

contractor prior to and during construction to minimize site erosion.

Executive Order 11988, Floodplain Management

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

Executive Order 11900, Protection of Wetlands

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

Executive Order 12898, Environmental Justice

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

The proposed project is in compliance. There will be no impacts resulting from the proposed project that would result in disproportionately high and adverse impacts to minority and low-income communities.

Executive Order 13112, Invasive Species

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

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7.2 STATE REGULATIONS

The State Regulations discussed below apply to the non-federal sponsor.

California Regional Water Quality Control Board (RWQCB)

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

California Air Resources Board

CARB has issued a number of California Ambient Air Quality Standard (CAAQS). These standards include pollutants not covered under the NAAQS and also require more stringent standards than those under the NAAQS.

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

California Clean Air Act

The California Clean Air Act (CCAA) regulates pollutants not covered under the NAAQS and requires more stringent standards for those under the NAAQS. The SCAQMD has established daily construction and operational emissions thresholds to ensure compliance with the CCAA.

The Proposed Action would implement environmental commitments AQ-1 to AQ-17 With implementation of these environmental commitments, estimated emissions for all alternatives would not exceed the SCAQMD's daily construction and operational emission thresholds and would comply the CCAA.

California Endangered Species Act

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

California Department of Fish and Wildlife Code, Section 1600

The Proposed Project is, or would be, in compliance. A 1601 Streambed Alteration Agreement (SAA No. 6-2001-263) was issued for the SARMP in 2002. This SAA had expired, and a new SAA (1600-2009-0031-

R6) was signed by OCPW in October 2009. OCPW is responsible for coordinating with CDFW, if necessary, for any additional updates. However, previous coordination with CDFW on other SARMP features indicated that neither CESA nor a SAA would be required, considering that construction will be overseen by the federal government, and routine OMRR&R conducted by the USACE would not result in additional effects to listed species. The same would apply for the Proposed Project. Applicable minimization and avoidance measures included in the 2009 amended SAA would be followed during construction of the Proposed Project.

California Environmental Quality Act (CEQA)

This SEA/EIR Addendum has been prepared in accordance with the California Environmental Quality Act (CEQA). Based on the analyses in Chapter 4, the Proposed Action will not have a significant effect on the human environment. OCFCD has determined the changes to the project design, construction, operation and maintenance of the Spillway Raise element of the Proposed Action does not raise important new issues of significant effects on the environment, and therefore preparation of a Supplemental EIR is not required.

7.3 LOCAL REGULATIONS

The local regulations discussed below apply to the non-federal sponsor.

South Coast Air Quality Management District (SCAQMD)

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

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

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

These rules limit the visible dust emissions from the project construction sites, prohibit emissions that can cause a public nuisance and require the prevention and reduction of fugitive dust emissions to the extent possible.

Riverside County Municipal Code

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

City of Corona Municipal Code

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

8 AGENCY COORDINATION

The Prado DSMS and Spillway Raise Project (presented as a combined Prado Dam Spillway Modification Project in this SEA/EIR Addendum) was coordinated formally and informally with numerous agencies, organizations, and individuals, including USFWS, CDFW, State Parks (also known as California Department of Parks and Recreation), SHPO, Santa Ana RWQCB, Caltrans, Orange County agencies, Riverside County agencies, and local cities. This SEA/EIR Addendum will be distributed to several public agencies and interested parties for review as identified in the Distribution List, Appendix A. A public review of the draft SEA/EIR Addendum started on August 18, 2021 and ended September 24th 2021. The comments from the public, including local agencies, and responses from USACE are found in Appendix H.

9 LIST OF PREPARERS AND REVIEWERS

Name	Role
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Jessica McCaffrey	Dam and Levee Safety Planner
Kristen Bedolla	Dam Safety Engineer
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Marissa McGowan	Biologist
Aelna Sakamoto	Biologist
Gabrielle Dodson	Physical Scientist
Danielle Storey	Archaeologist
Ken Wong	Biologist, Air Quality Analysis
Robert Kwan	Engineering Design Technical Lead
Arturo Orozco	Geotechnical Design

10 CONCLUSION

Based on the analysis and conclusions set forth in this SEA/EIR Addendum, environmental impacts from the proposed the Prado Dam Spillway Modification project are expected to be less than significant. Therefore, preparation of a Supplemental Environmental Impact Statement and Subsequent/Supplemental Environmental Impact Report is not required.

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Appendix A: Mail Distribution List

Prado Dam Spillway Modification Mailing List

Federal Agencies

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Office of Planning and Research
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Native American Heritage Commission
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West Sacramento, CA 95691
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State Water Resources Control Board
Environmental Services Unit
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Santa Ana, CA 92705

John Bulinski, Director
Caltrans, District 8
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J[redacted]

Jacob Mathew
Caltrans Office of Encroachment Permits 464 West 4th Street, Basement, MS 619 San Bernardino, CA 92401-1400

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CA Dept. of Toxic Substances Control
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Riverside, CA 92517
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Rubidoux, CA 92509
info@huertadelvalle.org

Audubon Society

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San Bernardino, CA 92408
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BNSF Railway
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San Bernardino, Ca 92408
[redacted]

Libraries

Corona Public Library
Attn: [redacted]
650 South Main Street
Corona, CA 91720

Norco Public Library
3954 Old Hamner Avenue
Norco, CA 91760

Riverside Public Library
Attn: Government Documents
3581 Mission Inn Avenue
Riverside, CA 92501

Chino Branch Library
13180 Central Avenue
Chino, CA 91710

Native American Contacts

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Gabrieleno/Tongva San Gabriel Band of Mission Indians
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Pauma Valley, CA, 92061
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Pechanga Band of Mission Indians
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1 West Tribal Road
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Soboba Band of Luiseno Indians
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P. O. Box 487
San Jacinto, CA, 92583
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Appendix B: RWQCB 401 Certification, USACE Regulatory 404(b)(1) Evaluation

From:	McGowan, Marissa C CIV USARMY CESPD (USA)
To:	Claudia.Tenorio@Waterboards
Cc:	Siddiqui, Naeem A CIV (USA)
Subject:	request amendment/modification language for the Clean Water Act (CWA) 401 Water Quality Certification (WQC) For The Santa Ana River Mainstem Project, Alcoa Dike SAWQCB WDID # 332019-08
Date:	Tuesday, November 30, 2021 10:50:00 AM
Attachments:	Prado Dam Spillway Modification Project Description for RWQCB.docx FWS_WRIV_08B0408-21F1233_Prado Spillway DSM.pdf Figure 3.2.3-1c. Phase I vs Phase II Waters (006).pdf

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Hello Santa Ana Regional Water Quality Control Board/ Claudia,

The U.S. Army Corps of Engineers, Los Angeles District (Corps), is requesting an extension/amendment/modification language to include the Prado Dam Spillway Modification Project activities for the Clean Water Act (CWA) 401 Water Quality Certification (WQC) The Santa Ana River Mainstem Project, Alcoa Dike SAWQCB WDID # 332019-08. The Spillway Modification Project anticipates temporary impacts to a small 0.3 acre Waters of the State drainage that was included in the Clean Water Act (CWA) 401 Water Quality Certification (WQC) The Santa Ana River Mainstem Project, Alcoa Dike SAWQCB WDID # 332019-08 but not impacted due to avoidance. However, the mitigation for this WQC has already been contracted out. In order to avoid double mitigation, the Corps is requesting that The Santa Ana River Mainstem Project Prado Spillway Modification be added to the WQC through an amendment as no new and unmitigated impacts are expected to occur from the Spillway Modification Project.

In addition, the Prado Dam Spillway Modification Project will restore the drainage to a topography providing the same function prior to the temporary disturbance. There is no expected impacts to water quality as all the work is going to be in upland environments and a SWPPP will be included as part of the construction contract. Please the attached Biological Opinion.

Thank you in advance for working with the Corps on a request for an amendment/modification for the Clean Water Act (CWA) 401 Water Quality Certification (WQC) The Santa Ana River Mainstem Project, Alcoa Dike SAWQCB WDID # 332019-08 to include the Santa Ana River Mainstem Project, Spillway Modification Project.

The Corps lead Biologist on the SARMP Prado Dam Spillway Modification Project Marissa McGowan, at phone number (213)XXXXXX or via e-mail at Marissa.C.McGowan@usace.army.mil .

If you have any questions on the subject, please contact me.

Thank you.

Marissa McGowan
Biologist
Planning Division
Los Angeles District

U.S. Army Corps of Engineers
☎ Office: [redacted]
[redacted]

From: Tenorio, Claudia@Waterboards
To: McGowan, Marissa C CIV USARMY CESPD (USA)
Cc: Siddiqui, Naeem A CIV (USA)
Subject: [Non-DoD Source] RE: Prado Dam Spillway Modification Project
Date: Monday, November 22, 2021 2:05:47 PM

Hi Marissa,

I confirmed with our program manager that an amendment to the Alco certification would be appropriate for the impacts to the drainage from the spillway project. However, before we can move forward with an amendment, all applicable conditions of the Alco certification must have been met. (annual reporting, notifications…).

The Corps needs to submit a formal request for an amendment and describe the project activities. Please also submit any applicable environmental documents. Once we confirm that all conditions have been met, the Regional Board can finalize an amendment.

Let me know if you have any questions.

Thank you,
Claudia

From: McGowan, Marissa C CIV USARMY CESPD (USA) <[redacted]>
Sent: Thursday, November 18, 2021 1:04 PM
To: Tenorio, Claudia@Waterboards <[redacted]
Cc: Siddiqui, Naeem A CIV (USA) <[redacted]mil>
Subject: RE: Prado Dam Spillway Modification Project

EXTERNAL:

Hi Claudia,

I just left you a voicemail. Have you been able to talk to your boss about the best path forward?

From: McGowan, Marissa C CIV USARMY CESPD (USA)
Sent: Tuesday, November 9, 2021 12:10 PM
To: [redacted]
Cc: Siddiqui, Naeem A CIV (USA) <[redacted]mil>
Subject: Prado Dam Spillway Modification Project

Hi Claudia,

I spoke with Naeem and the he confirmed that the drainage in question was able to be avoided (not needed) by Alcoa but also mitigation offsite for those potential impacts have been contracted out.

I just looked it up online and the drainage measures 0.38 acres which is supposedly 160 linear

feet..so I think we would fall under the 300 linear feet rule.

Please see the attached document…I probably gave you more than you needed.

Please let me know what your lead says would be the fastest way forward.

Thanks,
Marissa

From:	Tenorio, Claudia@Waterboards
To:	McGowan, Marissa C CIV USARMY CESPD (USA); Siddiqui, Naeem Ahmed (Sid) CIV (USA)
Cc:	Bostwick, Tiffany R CIV USARMY CESPL (USA)
Subject:	[Non-DoD Source] Prado Spillway Modification Project
Date:	Thursday, April 21, 2022 5:06:46 PM

Hi Marissa and Naeem,

I'm responding to your request to amend the Clean Water Act section 401 Certification (Certification) for Santa Ana River Mainstem Project, Alcoa Dike (Alcoa Dike Project; WDID # 332019-08). Santa Ana Water Board staff have reviewed the documents submitted with the amendment request and determined that an immediate amendment to the Alcoa Dike Project Certification is not needed to include activities related to the Prado Spillway Modification Project. Santa Ana Water Board staff have determined that the Prado Spillway Modification Project would not result in additional impacts to waters of the State, and the Alcoa Dike Project Certification conditions sufficiently address any potential impacts to water resources.

The amendment request includes activities related to the Prado Spillway Modification Project, which could impact an unnamed drainage that was originally proposed to be impacted by the Alcoa Dike Project but was ultimately avoided. There is still the possibility that the unnamed drainage could be avoided as part of the Prado Spillway Modification Project, which would not require an amendment to the Certification. Additionally, the USACE has provided compensatory mitigation for the impacts to the unnamed drainage, and no additional compensatory mitigation for impact to water of the State would be required for the Prado Spillway Modification Project.

Once construction of the Prado Spillway Modification Project has started, and it is confirmed that the unnamed drainage would be impacted, the Alcoa Dike Project Certification will be amended to reflect/include changes related to the Prado Spillway Modification Project.

The USACE is still responsible for submitting annual reporting per condition XIV.B.1 of the Alcoa Dike Project Certification (including activities related to the Prado Spillway Modification Project) until a Notice of Project Complete Letter is issued.

Thank you,

Claudia Tenorio
Environmental Scientist
Regional Planning Programs Section
Santa Ana Regional Water Quality Control Board

CALIFORNIA
Water Boards

GAVIN NEWSOM
GOVERNOR

JARED BLUMENFELD
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Santa Ana Regional Water Quality Control Board

April 11, 2019

Mr. Naeem Siddiqui (CESPL-PNR-N)
U.S. Army Corps of Engineers – Los Angeles District
915 Wilshire Boulevard
Los Angeles, CA 90017

Email: Naeem.a.siddiqui@usace.army.mil

CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION AND ORDER FOR THE SANTA ANA RIVER MAINSTEM PROJECT, ALCOA DIKE (SARWQCB WDID # 332019-08)

Dear Mr. Siddiqui:

Enclosed please find a Clean Water Act Section 401 Water Quality Certification and Order, authorized by Santa Ana Regional Water Quality Control Board Executive Officer, Hope A. Smythe. This Order is issued to you for the Santa Ana River Mainstem Project, Alcoa Dike (Project). Attachments A through C of the Enclosure are also part of the Order.

This Order is issued in response to an application submitted by the U.S. Army Corps of Engineers – Los Angeles District (USACE) for proposed Project discharge to waters of the State to ensure that the water quality standards for all waters of the State impacted by the Project are met. You may proceed with your Project according to the terms and conditions of the enclosed Order.

If you require further assistance, please contact me by phone at (951) 782-4963 or by email at Claudia.Tenorio@waterboards.ca.gov. You may also contact David Woelfel, Chief of Regional Planning Programs Section, by phone at (951) 782-7960 or by email at David.Woelfel@waterboards.ca.gov.

Sincerely,

Claudia Tenorio

Claudia Tenorio
Environmental Scientist
Regional Planning Programs Section
Santa Ana Regional Water Quality Control Board

Enclosures (1): Order for Santa Ana River Mainstem Project, Alcoa Dike

cc: [Via email only] (w/ enclosure):

U.S. Environmental Protection Agency, Region 9 – Wetlands Section –
Megan Fitzgerald – Fitzgerald.Megan@epa.gov
Melissa Scianni – Scianni.Melissa@epa.gov
U.S Fish and Wildlife Service – Rebecca Gordon – rebecca_gordon@fws.gov
State Water Resource Control Board, Office of Chief Counsel -- Teresita Sablan –
Teresita.Sablan@waterboards.ca.gov
State Water Resources Control Board, Division of Water Quality -- Water Quality
Certification Unit
Santa Ana Regional Water Quality Control Board – David Woelfel

Santa Ana Regional Water Quality Control Board

CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION AND ORDER

Effective Date: April 11, 2019

Program Type: Fill/Excavation

Project Type: Dams

Reg. Meas. ID:	429254
Place ID:	856751
SARWQCB WDID:	332019-08
USACE #:	Not Issued

Project: Santa Ana River Mainstem Project, Alcoa Dike (Project)

Applicant: U.S. Army Corps of Engineers – Los Angeles District

Applicant Contact: Naeem Siddiqui (CESPL-PDR-N)
Ecosystem Planning Section
U.S. Army Corps of Engineers – Los Angeles District
915 Wilshire Boulevard
Los Angeles, CA 90017
Phone: (213) 304-6272
Email: Naeem.a.siddiqui@usace.army.mil

Water Board Staff: Claudia Tenorio
Environmental Scientist
3737 Main Street, Suite 500
Riverside, CA 92501
Phone: (951) 782-4963
Email: Claudia.Tenorio@waterboards.ca.gov

Water Board Contact Person:
If you have any questions, please call Santa Ana Regional Water Quality Control Board (Santa Ana Water Board) staff listed above or (951) 782-4130 and ask to speak with the Regional Planning Programs Section Chief.

Table of Contents

I. Order

This Clean Water Act (CWA) section 401 Water Quality Certification action and Order (Order) is issued at the request of U.S. Army Corps of Engineers – Los Angeles District (herein after Permittee) for the Project. This Order is for the purpose described in the application submitted by the Permittee. The application was received on March 4, 2019. The application was deemed complete on March 29, 2019.

Santa Ana Water Board staff requested additional information necessary to supplement the contents of the complete application, and the Permittee responded to the request for supplemental information as summarized in Table 1.

Table 1: Record of Supplemental Application Information

Date of Request for Supplemental Information	Date Requested Information Received
3/18/2019	3/20/2019
3/21/2019	3/21/2019

II. Public Notice

The Santa Ana Water Board provided public notice of the application pursuant to California Code of Regulations, Title 23, section 3858 from March 5, 2019 to the effective date of the Order. The Santa Ana Water Board did not receive any comments during the comment period.

III. Project Purpose

The Permittee is proposing to construct a dike (Alcoa Dike) to reduce flood risk to public and private property. The Project will provide protection from predicted future inundation associated with the planned increased height of the Prado Dam spillway to between the elevations of 556 feet and 566 feet above sea level.

IV. Project Description

The proposed dike will be approximately 7,530 feet in length (varying in elevation between 566 feet and 569.8 feet above sea level). The dike will have a top width of 15 feet and an average height of 20 feet with a maximum height of 30 feet above the existing ground surface. An estimated 264,768 cubic yards (CY) of onsite excavation and approximately 610,888 CY of fill material will be required. Approximately 478,889 CY of fill will be imported from a borrow site located about 1.5 miles west of the Project site. Additionally, approximately 27,261 tons of rock rip-rap will be required for the construction of the dike. The total Project size is 250.29 acres.

Implementation of the proposed Project will result in the permanent loss of approximately 7.25 acres of native riparian vegetation, 61.04 acres of non-native upland habitat (non-native grassland and non-native woodland), and 7.85 acres of developed areas. The Project will also result in temporary loss of approximately 19.38 acres of native riparian vegetation, 124.44 acres of non-native upland habitat (non-native grassland and non-native woodland), 12.83 acres of native upland, and 8.63 acres of developed areas. The construction of the proposed dike will not occur within the flows of the Temescal Creek nor the Santa Ana River.

To provide for local drainage, additional Project activities include the construction of a 1,200-foot long, concrete v-ditch and 36-inch wide drainage pipe to Temescal Creek; two (2) 36-inch drainage structure (culverts) extending through the main dike embankment; two (2) culverts extending through the Rincon Street embankment; and four (4) ponding areas. Additionally, a drainage swale to Temescal Creek adjacent to and east of Auburndale Street and a drainage swale to Temescal Creek adjacent to and west of Lincoln Street will be constructed. The purpose of these features is to provide interior drainage behind the dike. Two 15-foot wide maintenance access roads will be constructed, extending along the toe of the embankment on both sides of the dike (one on each side).

The Permittee is not anticipating encountering groundwater during excavation activities. If groundwater is encountered during active construction activities, dewatering of the construction site will be required to avoid and/or minimize potential impacts to groundwater supply and quality.

The Project may be built in stages, with multiple start dates and construction periods for various sections of the Project, depending on land acquisition, utility relocation schedule, environmental restrictions, and weather delays. Vegetation clearing activities commenced in December 2018, and the excavation/grading and filling of dike construction will begin in April 2019. Construction activities are anticipated to last approximately 36 months and are expected to be completed by November or December 2021. The construction phasing may result in an extension of the overall Project duration beyond the Winter of 2021 (beyond the approximate 36 months).

The Project staging area is located at the northwest corner of the intersection of Rincon Street and Lincoln Avenue. Additional staging, stockpile, and equipment staging areas have been identified within the proposed construction footprint. The staging areas have already been cleared and grubbed and are incorporated into the proposed Project footprint to minimize the amount of additional habitat disturbance. All the staging areas will be restored with appropriate native vegetation upon completion of the Project.

Haul roads and vehicular access roads will be needed during construction. The haul route and access roads will be used to bring equipment and construction materials from the borrow site, commercial quarries, or staging areas.

The dike will cross over Rincon Street, Butterfield Drive, and Auburndale Street. As a result, Phase 2 of the Project includes raising the existing Rincon Street to match the grade of the proposed dike, realigning Butterflied Drive, and tying in the eastern end of the proposed Alcoa dike to Lincoln Road bridge at Temescal Creek.

Routine maintenance inspections and minor repairs will be required after construction is complete. These activities may occur weekly to daily during the flood season and weekly to monthly during the non-flood season. The routine maintenance activities may include utilizing dump trucks and hydraulic excavators to haul and place stones along eroded areas of the dike to protect and reinforce the dike as necessary; periodic weeding, patching stone, and asphalt of maintenance roads; and periodic clearing of debris around drainage structures. Most inspections and minor repairs would be confined to paved maintenance and access roads.

V. Project Location

The Project site is located within the drainage basin of Temescal Creek, approximately 2.5 miles east of the Prado Dam embankment, in the City of Corona in Riverside County. The dike will be located adjacent to Smith Avenue and Rincon Street (33°52'15.54" N/-117°42'13.10" W). Maps showing the Project location are found in Attachment A of this Order.

VI. Project Impact and Receiving Waters Information

The Project is located within the jurisdiction of the Santa Ana Water Board. Receiving waters and groundwater potentially impacted by this Project are protected in accordance with the Water Quality Control Plan for the Santa Ana Basin (1995) and subsequent amendments (Basin Plan) and other plans and policies, which may be accessed online at: http://www.waterboards.ca.gov/plans_policies/. The Basin Plan includes water quality standards, which consist of existing and potential beneficial uses of waters of the State, water quality objectives to protect those uses, and the State and federal antidegradation policies.

Receiving Water:	Prado Basin Management Zone (Hydrological Unit: 802.21)
Existing or Potential Beneficial Uses:	Water Contact Recreation (REC1), Non-contact Water Recreation (REC2), Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), Rare, Threatened, or Endangered Species (RARE)

VII. Description of Direct Impacts to Waters of the State

The proposed Project, including Phase 2, will result in 26.63 acres of impact to waters of the State, of which 7.25 acres are permanent and 19.38 acres are temporary. Because certain elements of the Phase 2 design are not finalized, it is possible that additional impacts to waters of the United States (WOTUS) and waters of the State may occur. Therefore, the Permittee is requesting certification for a potential additional 3.5 acres of impact to waters of the State (3 acres permanent and 0.5 acre temporary), and 0.03-acre impacts to wetlands (0.01 acre permanent and 0.02 acre temporary). As a result, the total potential impact to waters of the State is 30.16 acres, as shown in Table 2. The direct permanent and temporary impacts will be the result of the loss of habitat and physical loss of area to riparian, stream channel, and wetland aquatic resource types from the construction of the proposed Alcoa Dike.

Impacts to native plant communities will occur as a result of the removal of vegetation during construction activities. The ground-disturbing activities include clearing and grading for the construction of the dike, access roads, ponding areas, road crossings, staging areas, stockpiling, and construction site access. The construction activities may also result in the temporary degradation of habitat values in adjacent areas to the Project site.

Construction, operation, and maintenance of the proposed Project will 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 were to occur while soils are actively disturbed. Additionally, potential impacts also exist to surface and groundwater quality from accidental leaks or spills of potentially hazardous materials, including fuels and lubricants required for operation of construction vehicles and equipment.

Additionally, surface drainage from upland areas may be impeded and accumulate behind the dike during storms; however, this impact is only anticipated to be temporary. Interior drainage

features will be constructed as part of the proposed Project to provide local drainage behind the dike.

There are several existing mitigation sites near the Project site, and the closest site encompasses two former wastewater treatment ponds on the northwest side of the proposed Alcoa Dike. The dike has been designed to avoid impacts to this and other mitigation sites. Neither the footprint of the dike nor the proposed raising of Rincon Street will directly affect the adjacent mitigation site. Hydrology in the area will also not be affected.

Any future maintenance activities are not expected to alter the overall hydrology or drainage patterns of the area but may introduce potential water quality impacts associated with the use of motorized vehicles and equipment.

Total Project fill/excavation quantities for all impacts are summarized in Table 2. Permanent impacts are categorized as those resulting in a physical loss in area and also those degrading ecological condition only.

Table 2: Total Project Fill/Excavation Quantity

Aquatic Resource Type	Temporary Impact[1]			Permanent Impact					
				Physical Loss of Area			Degradation of Ecological Condition Only		
	Acres	CY[2]	LF	Acres	CY	LF	Acres	CY	LF
Riparian Zone	19.38	--	--	7.25	--	--	--	--	--
Stream Channel	0.50	--	--	3.0	--	--	--	--	--
Wetland	0.02	--	--	0.01	--	--	--	--	--

VIII. Description of Indirect Impacts to Waters of the State

The Santa Ana Water Board recognizes the potential for indirect impacts to waters of the State associated with the Project. Indirect impacts could include alterations in existing topography and hydrology regimes. Other indirect effects of this disturbance include an increase in the amount of compacted or modified surface that may increase the potential for forceful surface runoff, increased erosion, and potential destruction of intact vegetation outside of the Project footprint.

IX. Avoidance and Minimization

The Permittee has proposed to implement standard construction Best Management Practices (BMPs) to minimize potential impacts to waters of the State. Additionally, the Permittee has proposed to implement several environmental commitments and conservation measures to avoid and minimize impacts to waters of the State and designated critical habitat.

X. Compensatory Mitigation

The Permittee has agreed to provide compensatory mitigation for direct temporary and permanent impacts to WOTUS and waters of the State. This mitigation is described in sections XIV.H and I. Additionally, all the staging areas will be restored with appropriate native vegetation upon completion of the Project.

[1] Includes only temporary direct impacts to waters of the State and does not include upland areas of temporary disturbance, which could result in a discharge to waters of the State.

[2] Cubic Yards (CY); Linear Feet (LF)

The potential areas that have been identified for off-site mitigation include the Permittee-owned section of Temescal Creek between Auburndale Street and Lincoln Avenue, as well as the 391-acre parcel shown in Attachment A (APN 1011110002).

The U.S. Federal Wildlife Service (USFWS) issued a final Biological Opinion (BO) to the Permittee on August 23, 2018, for the proposed Project and potential impacts to the federally endangered *Vireo bellii pusillus* (Least Bell's vireo) and its designated critical habitat and the federally threatened *Polioptila californica* (California gnatcatcher). The BO concluded that the Project is not likely to jeopardize the continued existence of the Least Bell's vireo or California gnatcatcher and will not result in the destruction nor adverse modification of designated critical habitat with the implementation of the conservation measures identified in the BO.

XI. California Environmental Quality Act (CEQA)

Pursuant to California Code of Regulations, Title 14, Chapter 3, section 15096, as a Responsible Agency, the Santa Ana Water Board is required to consider environmental documents prepared by the lead agency to determine whether a project should receive Certification. A responsible agency has the responsibility to mitigate and avoid only the direct and indirect environmental effects of those parts of the project that it decides to carry out, finance, or approve. Further, the responsible agency must make findings as required by section 15091 and, if necessary, section 15093 for each and every significant impact of the Project.

The Permittee, as lead federal agency for the National Policy Environmental Act (NEPA), approved in 2001 a final Supplemental Environmental Impact Statement and Environmental Impact Report (SEIS/EIR) for Prado Basin and Vicinity, including construction of the Alcoa Dike, and the proposed Project is covered under this SEIS/EIR. The Prado Basin and Vicinity project is a component of the Permittee's Santa Ana River Mainstem Flood Control Project. As the lead CEQA agency, Orange County Flood Control District (District) certified the SEIS/EIR.

As required by section 15096, in approving this Certification, the Santa Ana Water Board has considered the SEIS/EIR approved by the Permittee and certified by the District and subsequent information provided by the Permittee. More specifically, the Santa Ana Water Board considered those sections of the SEIS/EIR pertaining to impacts to water quality standards. Additionally, the Permittee completed in 2018 a Final Supplemental Environmental Assessment (SEA)/EIR Addendum to analyze changes to the Alcoa Dike Project design. The SEA/EIR Addendum includes an updated description and analysis of environmental resources that occur within the proposed Project area.

Based on the mitigation and conservation measures proposed in the SEA/EIR and the Conditions set forth in this Certification, potentially adverse impacts to water quality standards should be reduced to a less than significant level and beneficial uses protected, if all stated mitigation and conditions are performed.

XII. Petitions for Reconsideration

Any person aggrieved by this action may petition the State Water Resources Control Board to reconsider this Order in accordance with California Code of Regulations, Title 23, section 3867. A petition for reconsideration must be submitted in writing and received within thirty (30) calendar days of the issuance of this Order.

XIII. Fees Received

As an agency of the federal government, legal determination exempts the Permittee from paying fees.

XIV. Conditions

The Santa Ana Water Board has independently reviewed the record of the Project to analyze impacts to water quality and designated beneficial uses within the watershed of the Project. In accordance with this Order, the Permittee may proceed with the Project under the following terms and conditions:

A. Authorization

Impacts to waters of the State shall not exceed quantities shown in Table 2.

B. Reporting and Notification Requirements

The following section details the reporting and notification types and timing of submittals. Requirements for the content of these reporting and notification types are detailed in Attachment B, including specifications for photo and map documentation during Project construction. Written reports and notifications shall be submitted using the *Reporting and Notification Cover Sheet* located in Attachment B and signed by the Permittee or an authorized representative.

1. Project Reporting:

a. **Annual Reporting.** The Permittee shall submit an Annual Report each year on the anniversary of the effective date of this Order. Annual reporting shall continue until a *Notice of Project Complete Letter* is issued to the Permittee.

2. Project Status Notifications:

a. **Commencement of Construction.** The Permittee shall submit a *Commencement of Construction Report* at least seven (7) days prior to start of initial ground disturbance activities.

b. **Request for Notice of Completion of Discharges Letter.** The Permittee shall submit a *Request for Notice of Completion of Discharges Letter* following completion of active Project construction activities, including any required restoration and permittee-responsible mitigation. This request shall be submitted to the Santa Ana Water Board staff within thirty (30) days following completion of all Project construction activities. Upon acceptance of the request, Santa Ana Water Board staff will issue to the Permittee a *Notice of Completion of Discharges Letter*, which will end the active discharge period.

c. **Request for Notice of Project Complete Letter.** The Permittee shall submit a *Request for Notice of Project Complete Letter* when construction and any required post-construction monitoring is complete[3] and no further Project activities will occur. This request shall be submitted to Santa Ana Water Board staff within thirty (30) days following completion of all Project activities. Upon approval of the request, the

[3] Completion of post-construction monitoring will be determined by Santa Ana Water Board staff and will be contingent on successful attainment of restoration and mitigation performance criteria.

Santa Ana Water Board staff will issue to the Permittee a *Notice of Project Complete Letter*, which will end the post discharge monitoring period.

3. **Conditional Notifications and Reports:** The following notifications and reports are required as appropriate.

   a. **Accidental Discharges of Hazardous Materials.**[4] Following an accidental discharge of a reportable quantity of a hazardous material, sewage, or an unknown material, the following applies (Water Code section 13271):

      i. As soon as (A) Permittee has knowledge of the discharge or noncompliance, (B) notification is possible, and (C) notification can be provided without substantially impeding cleanup or other emergency measures then the Permittee shall:
         - first call – 911 (to notify local response agency)
         - then call – Office of Emergency Services (OES) State Warning Center at (800) 852-7550 or (916) 845-8911
         - lastly follow the required OES procedures as set forth in: http://www.caloes.ca.gov/FireRescueSite/Documents/CalOES-Spill_Booklet_Feb2014_FINAL_BW_Acc.pdf

      ii. Following notification to OES, the Permittee shall notify Santa Ana Water Board, as soon as practicable (ideally within twenty-four [24] hours). Notification may be via telephone, email, delivered written notice, or other verifiable means.

      iii. Within five (5) working days of notification to the Santa Ana Water Board, the Permittee shall submit an *Accidental Discharge of Hazardous Material Report.*

   b. **Violation of Compliance with Water Quality Standards.** The Permittee shall notify the Santa Ana Water Board of any event causing a violation of compliance with water quality standards. Notification may be via telephone, email, delivered written notice, or other verifiable means.

      i. Examples of noncompliance events include lack of storm water treatment following a rain event, discharges causing a visible plume in a water of the State, and water contact with uncured concrete.

      ii. This notification shall be followed within three (3) working days by submission of a *Violation of Compliance with Water Quality Standards Report* to the Santa Ana Water Board.

[4] "Hazardous material" means any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment. (Health & Safety Code section 25501.)

c. In-Water Work.

i. The Permittee shall notify the Santa Ana Water Board at least forty-eight (48) hours prior to initiating work in water or stream diversions. Notification may be via telephone, email, delivered written notice, or other verifiable means.

ii. Within three (3) working days following completion of work in water or stream diversions, the Permittee shall submit an *In-Water Work/Diversions Water Quality Monitoring Report* to Santa Ana Water Board staff.

d. Modifications to Project. Project modifications may require an amendment of this Order. The Permittee shall give advance notice to Santa Ana Water Board staff by submitting a *Modifications to Project Report*, if Project implementation as described in the application materials is altered in any way or by the imposition of subsequent permit conditions by any local, State, or federal regulatory authority. The Permittee shall inform Santa Ana Water Board staff of any Project modifications that will interfere with the Permittee's compliance with this Order. Notification may be made in accordance with conditions in the Certification Deviation section of this Order.

e. Transfer of Property Ownership. This Order is not transferable in its entirety or in part to any person or organization except after notice to the Santa Ana Water Board in accordance with the following terms:

i. The Permittee shall notify the Santa Ana Water Board of any change in ownership or interest in ownership of the Project area by submitting a *Transfer of Property Ownership Report*. The Permittee and purchaser shall sign and date the notification and provide such notification to the Santa Ana Water Board at least ten (10) days prior to the transfer of ownership. The purchaser shall also submit a written request to the Santa Ana Water Board to be named as the permittee in a revised order.

ii. Until such time as this Order has been modified to name the purchaser as the permittee, the Permittee shall continue to be responsible for all requirements set forth in this Order.

f. Transfer of Long-Term Best Management Practices (BMPs) Maintenance. If maintenance responsibility for post-construction BMPs is legally transferred, the Permittee shall submit to the Santa Ana Water Board a copy of such documentation and shall provide the transferee with a copy of a long-term BMP maintenance plan that complies with manufacturer or designer specifications. The Permittee shall provide such notification to the Santa Ana Water Board with a *Transfer of Long-Term BMP Maintenance Report* at least ten (10) days prior to the transfer of BMP maintenance responsibility.

C. Water Quality Monitoring

1. **General:** If surface water is present, continuous visual surface water monitoring shall be conducted to detect accidental discharge of construction related pollutants (e.g., oil, grease, turbidity plume, or uncured concrete).

2. **Accidental Discharges/Noncompliance:** Upon occurrence of an accidental discharge of hazardous materials or a violation of compliance with a water quality standard, Santa Ana Water Board staff may require water quality monitoring based on the discharge constituents and/or related water quality objectives and beneficial uses.

3. **In-Water Work or Diversions:** During planned work in water or stream diversions any discharge(s) to waters of the State shall conform to the following water quality standards:

   a. Oil and Grease. Waste discharges shall not result in deposition of oil, grease, wax, or other material in concentrations that result in a visible film or in coating objects in the water, or that cause a nuisance or adversely affect beneficial uses.

   b. Oxygen. The dissolved oxygen content of surface waters shall not be depressed below 5 mg/L for waters designated WARM, as a result of controllable water quality factors. In addition, waste discharge shall not cause the median dissolved oxygen concertation to fall below 85% of saturation or the 95th percentile concentration or fall below 75% of saturation or the 95th percentile concentration of fall below 75% of saturation within a 30-day period.

   c. pH. The pH of inland surface waters shall not be depressed below 6.5 or raised above 8.5 as a result of waste discharge.

   d. Turbidity. Increases in turbidity that result from controllable water quality factors shall comply with the following: where natural turbidity is between 0 and 50 Nephelometric Turbidity Units (NTU), increases shall not exceed 10 NTU, and where natural turbidity is greater than 100 NTU, increases shall not exceed 10%. Measurements of turbidity shall be taken 100 feet downstream of Project activities.

   e. Temperature. The temperature of waters designated WARM shall not be raised above 90°F June through October or above 78°F during the rest of the year as a result of controllable water quality factors

   Sampling shall be conducted in accordance with Table 3 sampling parameters.[5]

[5] Pollutants shall be analyzed using the analytical methods described in 40 Code of Federal Regulations Part 136; where no methods are specified for a given pollutant, a description of the method to be used must be submitted to the Santa Ana Water Board staff for approval. Grab samples shall be taken between the surface and mid-depth and not be collected at the same time each day to get a complete representation of variations in the receiving water. A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring shall be maintained onsite.

Table 3: Sample Type and Frequency Requirements			
Parameter	Unit of Measurement	Type of Sample	Minimum Frequency
Oil and Grease	N/A	Visual	Continuous
Dissolved Oxygen	mg/L & % saturation	Grab	Once per day during in-water work
pH	Standard Units	Grab	Once per day during in-water work
Turbidity	NTU	Grab	Once per day during in-water work
Temperature	°F (or as °C)	Grab	Once per day during in-water work

Baseline sampling shall be conducted at least at one location within the Project boundary. All other sampling shall take place at a minimum of two locations: the sample locations shall be upstream and downstream of the construction area. Results of the analyses shall be submitted to the Santa Ana Water Board by the 15th day of each subsequent sampling month. A map or drawing indication the locations of sampling points shall be included with each submittal.

4. **Post-Construction:** The Permittee shall visually inspect the Project site during the rainy season for five (5) years to ensure excessive erosion, stream instability, or other water quality pollution is not occurring in or downstream of the Project site. If water quality pollution is occurring, contact the Santa Ana Water Board staff member overseeing the Project within three (3) working days. The Santa Ana Water Board may require the submission of a *Violation of Compliance with Water Quality Standards Report*. Additional permits may be required to carry out any necessary site remediation.

D. Standards

1. This Certification will remain valid until April 11, 2026 unless an extension is authorized by the Executive Officer. Should an extension be needed, the Permittee shall submit that request at least thirty (30) days prior to April 11, 2026 and identify the rationale for such a request.

2. This Order is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Water Code section 13330 and California Code of Regulations, Title 23, chapter 28, Article 6 commencing with sections 3867-3869, inclusive. Additionally, the Santa Ana Water Board reserves the right to suspend, cancel, or modify and reissue this Order, after providing notice to the Permittee, if the Santa Ana Water Board determines: that the Project fails to comply with any of the conditions of this Order; or, when necessary to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act (Water Code sections 13000 et seq.) or federal Clean Water Act section 303 (Title 33, U.S. Code section 1313). For purposes of Clean Water Act section 401(d), the condition constitutes a limitation necessary to assure compliance with water quality standards and appropriate requirements of State law.

3. This Order is not intended and shall not be construed to apply to any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license, unless the pertinent certification application was filed pursuant to subsection 3855(b) of chapter 28, title 23 of the California Code of Regulations, and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

4. In the event of any violation or threatened violation of the conditions of this Order, the violation or threatened violation shall be subject to any remedies, penalties, processes, or sanctions as provided for under State and federal law. For purposes of Clean Water Act section 401(d), the applicability of any State law authorizing remedies, penalties, processes, or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this Order.

E. General Compliance

1. Failure to comply with any condition of this Order shall constitute a violation of the Porter-Cologne Water Quality Control Act and the Clean Water Act. The Permittee and/or discharger may then be subject to administrative and/or civil liability pursuant to Water Code section 13385.

2. If the conditions of this Order are changed, any of the criteria or conditions as previously described are not met, or new information becomes available that indicates a water quality problem, the Santa Ana Water Board may require that the Permittee submit a *Report of Waste Discharge* and obtain *Waste Discharge Requirements.*

3. Permitted actions shall not cause a violation of any applicable water quality standards, including impairment of designated beneficial uses for receiving waters, as adopted in the Basin Plan and subsequent Basin Plan Amendments or in any applicable State Water Resources Control Board water quality control plan or policy. The source of any such discharge shall be eliminated as soon as practicable.

4. In response to a suspected violation of any condition of this Order, the Santa Ana Water Board may require the holder of this Order to furnish, under penalty of perjury, any technical or monitoring reports the Santa Ana Water Board deems appropriate, provided that the burden, including costs, of the reports bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. The additional monitoring requirements ensure that permitted discharges and activities comport with any applicable effluent limitations, water quality standards, and/or other appropriate requirement of State law.

5. The Permittee shall, at all times, fully comply with engineering plans, specifications, and technical reports submitted to support this Order and all subsequent submittals required as part of this Order. The conditions within this Order and Attachments supersede conflicting provisions within Permittee submittals.

6. This Order and all of its conditions contained herein continue to have full force and effect regardless of the expiration or revocation of any federal license or permit issued for the Project. For purposes of Clean Water Act section 401(d), this condition constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements of State law.

F. Administrative

1. Signatory requirements for all document submittals required by this Order are presented in Attachment C of this Order.

2. This Order does not authorize any act that results in the taking of a threatened, endangered, or candidate species, or any act that is now prohibited or becomes prohibited in the future under either the California Endangered Species Act (Fish and Game Code sections 2050-2097) or the federal Endangered Species Act (Title 16, U.S. Codes sections 1531-1544). If a "take" will result from any act authorized under this Order held by the Permittee, the Permittee shall obtain authorization for the take prior to any construction or operation of the portion of the Project that may result in a take. The Permittee is responsible for meeting all requirements of the applicable endangered species act for the Project authorized under this Order.

3. The Permittee shall grant Santa Ana Water Board staff or an authorized representative (including an authorized contractor acting as a Water Board representative), upon presentation of credentials and other documents as may be required by law, permission to:

   a. Enter upon the Project or compensatory mitigation site(s) premises where a regulated facility or activity is located or conducted, or where records are kept;

   b. Have access to and copy any records that are kept and are relevant to the Project or the requirements of this Order;

   c. Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order;

   d. Sample or monitor for the purposes of assuring Order compliance.

4. A copy of this Order shall be provided to any consultants, contractors, and subcontractors working on the Project. Copies of this Order shall remain at the Project site for the duration of this Order. The Permittee shall be responsible for work conducted by its consultants, contractors, and any subcontractors.

5. A copy of this Order shall be available at the Project site(s) during construction for review by site personnel and agencies. All personnel performing work on the Project shall be familiar with the content of this Order and its posted location at the Project site.

G. Construction

1. **Construction General Permit Requirement:** The Permittee shall maintain compliance with conditions described in, and required by, NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ; NPDES No. CAS000002) and any subsequent approvals.

2. **Dewatering:** Construction dewatering discharges, including temporary stream diversions necessary to carry out the Project, are subject to regulation by Santa Ana Water Board Order No. R8 2015-0004, General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimis) Threat to Water Quality. For more information, please review Order No. R8-2015-0004 at https://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/orders/2015orders.html.

3. **Good Site Management "Housekeeping":**

   a. A Storm Water Pollution Prevention Plan (SWPPP) shall be developed by the construction contractor prior to Project implementation. The SWPPP shall include measures to prevent sediment from entering the watercourse during construction.

   b. BMPs for effective perimeter control shall be in place at all times to control the discharge of pollutants from the Project site during construction. Construction waste shall be contained and protected against wind and exposure to storm water at all times, unless being actively handled. Chemical, fuel, and lubricant containers shall be kept closed and protected from damage or upset at all times, unless being actively used. Dirt and landscaping material stockpiles shall have effective erosion control BMPs in place to prevent their transport in storm water or directly into the channel and shall not be located in any WOTUS. Discharges of wastewater from the Project site are prohibited.

   c. Substances resulting from Project-related activities and that could be harmful to aquatic life shall not be discharged to soils or waters of the State. These substances include but are not limited to petroleum lubricants and fuels, cured and uncured cements, epoxies, paints and other protective coating materials, Portland cement concrete or asphalt concrete, and washings and cuttings thereof. All waste concrete shall be removed from the Project site.

   d. Motorized equipment shall not be maintained or parked in or near any stream crossing, channel, or lake margin in such manner that petroleum products or other pollutants from the equipment might enter these areas under any flow conditions. Vehicles shall not be driven, or equipment shall not be operated in waters of the State onsite, except as necessary to complete the proposed Project.

   e. Prior to construction activities, the Permittee shall delineate the work area with brightly colored fencing or other methods to ensure temporary impacts to WOTUS and waters of the State do not exceed the limits authorized in this Certification.

4. **Hazardous Materials:** During construction activities, the Permittee shall comply with local, State, and federal laws and regulations regarding the handling and storage of hazardous substances.

5. **Invasive Species and Soil Borne Pathogens:** BMPs to stabilize disturbed soils shall include the use of native plant species whenever feasible.

6. **Special Status Species:** The Permittee shall implement the species-specific conservation measures identified in the final BO pertaining to the Project to avoid, minimize, and offset impacts to federally listed species and their designated critical habitats.

H. Mitigation for Temporary Impacts

1. The Permittee shall restore all areas of temporary impacts to waters of the State in accordance with the environmental commitments and conservation measures identified in the 2018 Final SEA/EIR Addendum and final BO issued by the USFWS and submit a

final plan of action that identifies restoration success criteria and monitoring requirements.

2. The action plan shall be submitted to the Santa Ana Water Board for review prior to the start of mitigation activities.

3. The Santa Ana Water Board may extend the monitoring period upon determination by Santa Ana Water Board Executive Officer that the performance standards have not been met or are not likely to be met within the monitoring period.

4. The Permittee shall provide compensatory mitigation for all temporary impacts at a ratio of 1:1 (mitigation: impact) by restoring all areas temporarily disturbed during construction activities.

5. The Permittee shall restore on-site (i.e., rehabilitation) one acre of riparian habitat for each acre of riparian habitat temporarily disturbed during construction-related activities. Additionally, the Permittee shall keep all temporarily disturbed areas free of exotic plants until riparian vegetation is re-established. If the site(s) has not begun to recover within five (5) years (i.e., fifty [50] percent of the disturbed areas are not vegetated with young riparian vegetation), then the site(s) will be replanted with cuttings from native riparian species.

6. The Permittee shall provide enhancement mitigation at a ratio of 1:1 by removing one acre of *Arundo donax* (Arundo) from the upper Santa Ana River watershed off-site for each acre of riparian habitat temporarily impacted.

7. The Permittee shall restore all wetland areas temporally impacted at a ratio of 1:1 to pre-Project conditions.

8. The restoration activities shall be initiated immediately following the completion of the Project activities. The restoration activities should occur during the non-breeding season for Least Bell's vireo.

Table 4 summarizes the total quantity of compensatory mitigation required for temporary impacts.

Table 4: Required Project Mitigation Quantity for Temporary Impacts								
Aquatic Resource Type	Mit. Type[6]	Units	Method[7]					
			Est.	Re-est.	Reh.	Enh.	Pres.	Unknown
Riparian Zone	PR	Acres	--	--	19.38	19.38	--	--
Stream Channel	PR	Acres	--	--	3.0	--	--	--
Wetland	PR	Acres	--	--	0.02	--	--	--

I. Compensatory Mitigation for Permanent Impacts[8]

1. The Permittee shall restore all areas of permanent impacts to waters of the State in accordance with the environmental commitments and conservation measures identified in the 2018 Final SEA/EIR Addendum and final BO issued by the USFWS and submit a final plan of action that identifies success criteria and monitoring requirements.

2. The action plan shall be submitted to the Satna Ana Water Board for review prior to the start of mitigation activities.

3. The Permittee shall provide 19 acres of enhancement compensatory mitigation through the removal of Arundo and non-natives off-site for permanent impacts to waters of the State stream channel.

4. The Permittee shall provide total of 37.41 acres of enhancement compensatory mitigation through the removal of Arundo and other non-native plants off-site for permanent impacts to waters of the State riparian habitat.

5. The Permittee shall provide compensatory mitigation at a ratio of 1:1 for permanent impacts to wetland by restoring 0.01 acre of wetland habitat.

Table 5 summarizes total compensatory mitigation required for permanent Project impacts.

[6] Mitigation type for onsite restoration of temporary impacts is Permittee Responsible (PR).

[7] Methods: establishment (Est.), reestablishment (Re-est.), rehabilitation (Reh.), enhancement (Enh.), preservation (Pres.). Unknown applies to advance credits with an unknown method and or location.

[8] Compensatory Mitigation is for permanent physical loss and permanent ecological degradation of a water of the State.

(footnote continued on next page)

Table 5: Required Project Compensatory Mitigation Quantity for Permanent Physical Loss of Area

Aquatic Resource Type	Comp Mit. Type[9]	Units	Method[10]					
			Est.	Re-est.	Reh.	Enh.	Pres.	Unknown
Stream Channel	PR	Acres	--	--	--	19.00	--	--
Riparian	PR	Acres	--	--	--	37.41	--	--
Wetlands	PR	Acres	--	--	0.01	--	--	--

J. Permittee-Responsible Compensatory Mitigation Responsibility

1. Compensatory mitigation for temporary and permanent impacts is in perpetuity. The Permittee shall continue exotic species removal and *Molothrus ater* (cowbird) control until the Santa Ana Water Board receives written documentation that local sponsors and/or another approved entity (like the Santa Ana Watershed Association [SAWA]) have accepted responsibility for managing the restored areas.

2. Written documentation shall include an estimated cost associated with the management responsibilities and a description of the funding mechanism(s) that will be used to ensure management for the life of the Project.

3. If the approved entity accepts management responsibilities and then becomes unwilling or unable to continue the management, the responsibility shall revert to the Permittee until the Permittee provides to the Santa Ana Water Board legal documentation showing that ultimate responsibility is with the local sponsors.

K. Certification Deviation

1. Minor modifications of Project locations or predicted impacts may be necessary as a result of unforeseen field conditions, necessary engineering re-design, construction concerns, or similar reasons. Some of these prospective Project modifications may have impacts on water resources. For purposes of this Certification, a *Certification Deviation* is a Project locational or impact modification that does not require an immediate amendment of the Order, because the Santa Ana Water Board has determined that any potential water resource impacts that may result from the change are sufficiently addressed by the Order conditions and the CEQA/NEPA Findings. After the termination of construction, this Order will be formally amended to reflect all authorized Certification Deviations and any resulting adjustments to the amount of water resource impacts and required compensatory mitigation amounts.

2. A Project modification shall not be granted a *Certification Deviation* if it warrants or necessitates changes that are not addressed by the Order conditions or the CEQA/

[9] Compensatory mitigation type may be: In-Lieu-Fee (ILF); Mitigation Bank (MB); Permittee-Responsible (PR)

[10] Methods: establishment (Est.), reestablishment (Re-est.), rehabilitation (Reh.), enhancement (Enh.), preservation (Pres.). Unknown applies to advance credits with an unknown method and or location.

NEPA environmental document such that the Project impacts are not addressed in the Project's environmental document or the conditions of this Order. In this case a supplemental environmental review and different Order will be required.

XV. Water Quality Certification

I hereby issue the Order (SARWQCB WDID # 332019-08) for the *Santa Ana River Mainstem Project, Alcoa Dike*. This Order certifies that any discharge from the referenced Project will comply with the applicable provisions of Clean Water Act sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards), as long as all of the conditions listed in the Order are met.

This discharge is also regulated pursuant to State Water Board Water Quality Order No. 2003-0017-DWQ which authorizes this Order to serve as Waste Discharge Requirements pursuant to the Porter-Cologne Water Quality Control Act (Water Code sections 13000 et seq.).

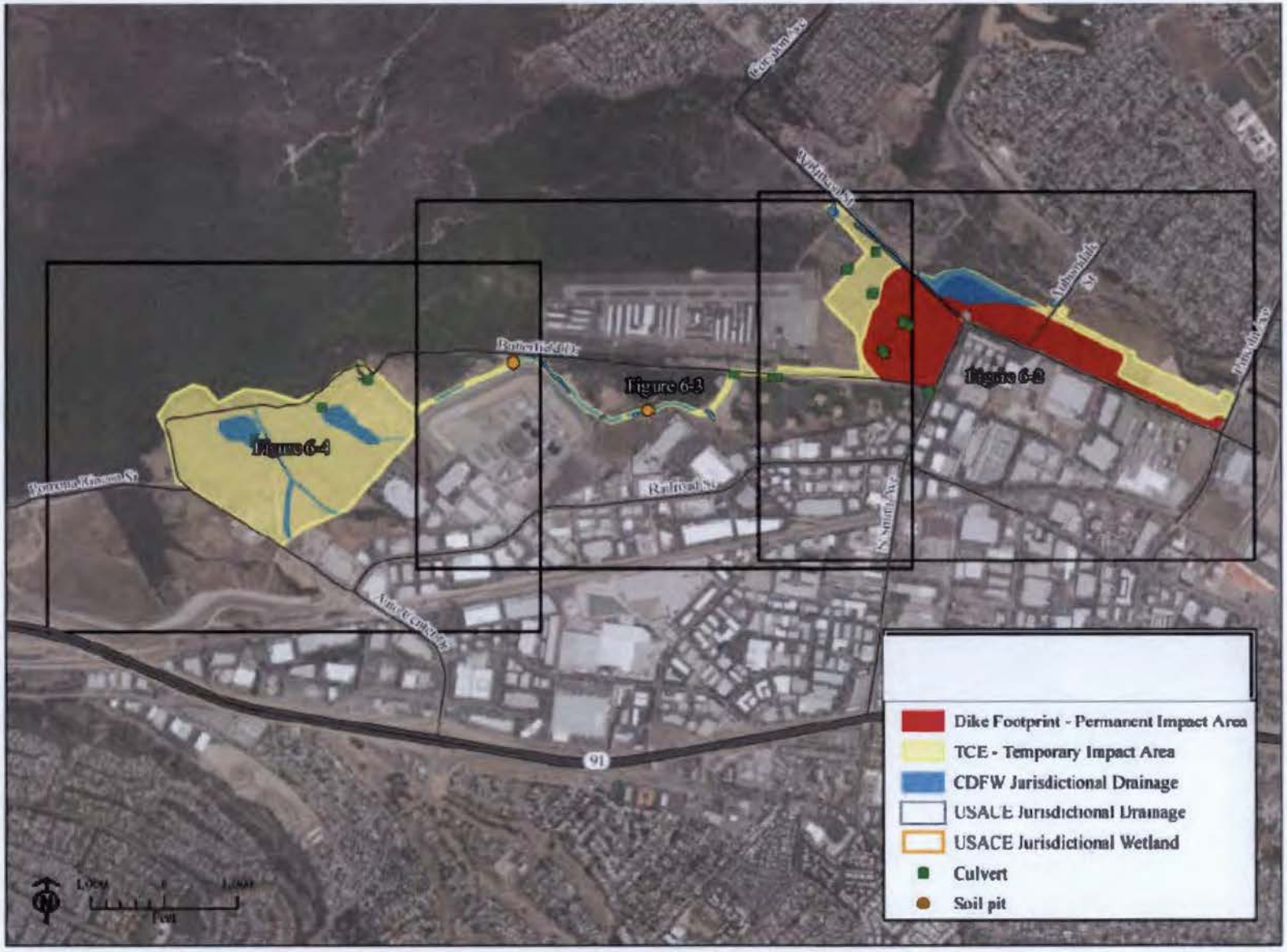
Except insofar as may be modified by any preceding conditions, all Order actions are contingent on: (a) the discharge being limited and all proposed mitigation being completed in strict compliance with the conditions of this Order and the attachments to this Order; and (b) compliance with all applicable requirements of Statewide Water Quality Control Plans and Policies and the Santa Ana Water Board's Basin Plan and Policies.

for Hope A. Smythe
Executive Officer
Santa Ana Water Quality Control Board

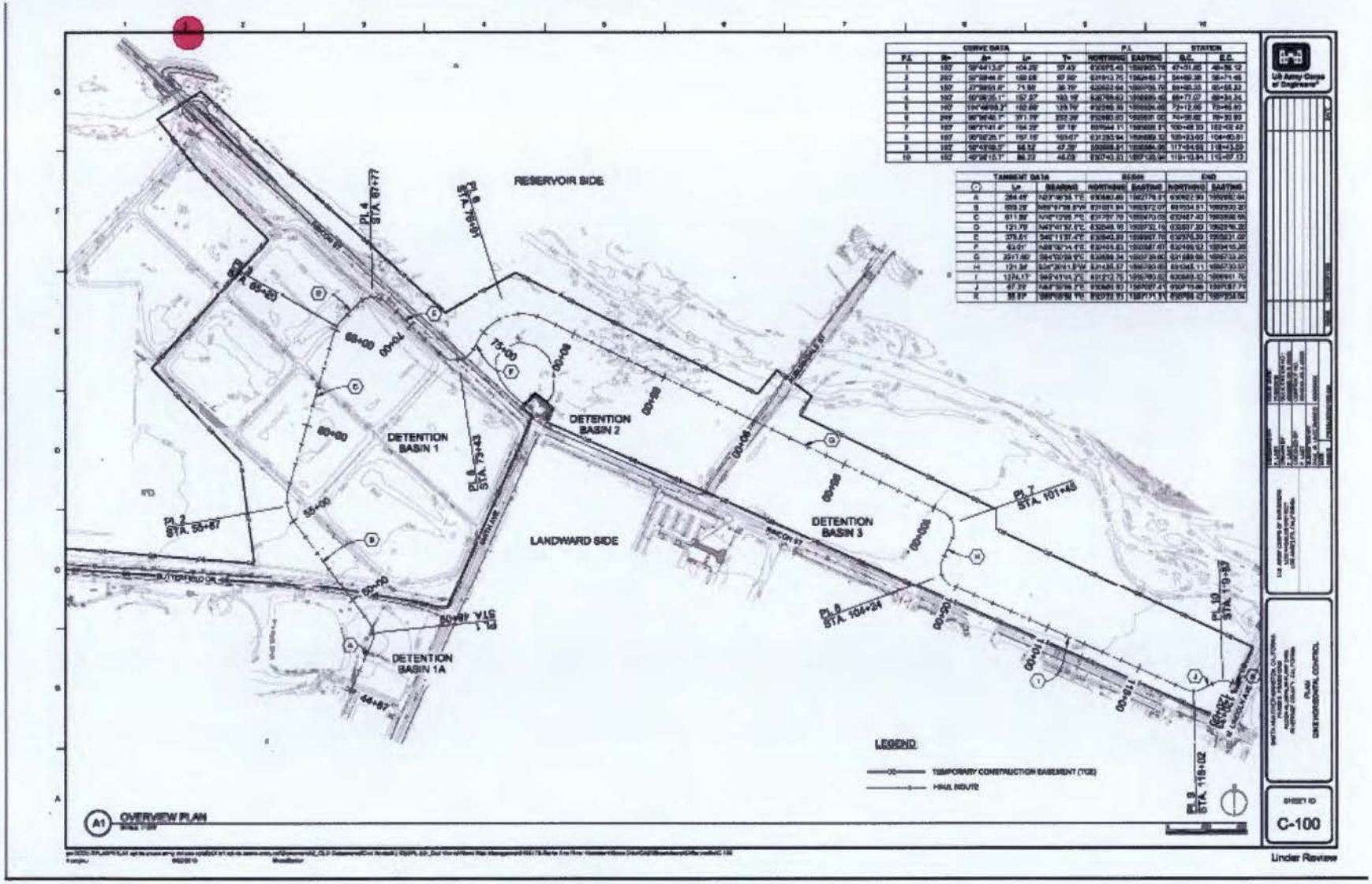
4/11/19
Date

Attachment A Project Map(s)
Attachment B Report and Notification Requirements
Attachment C Signatory Requirements

Project Vicinity



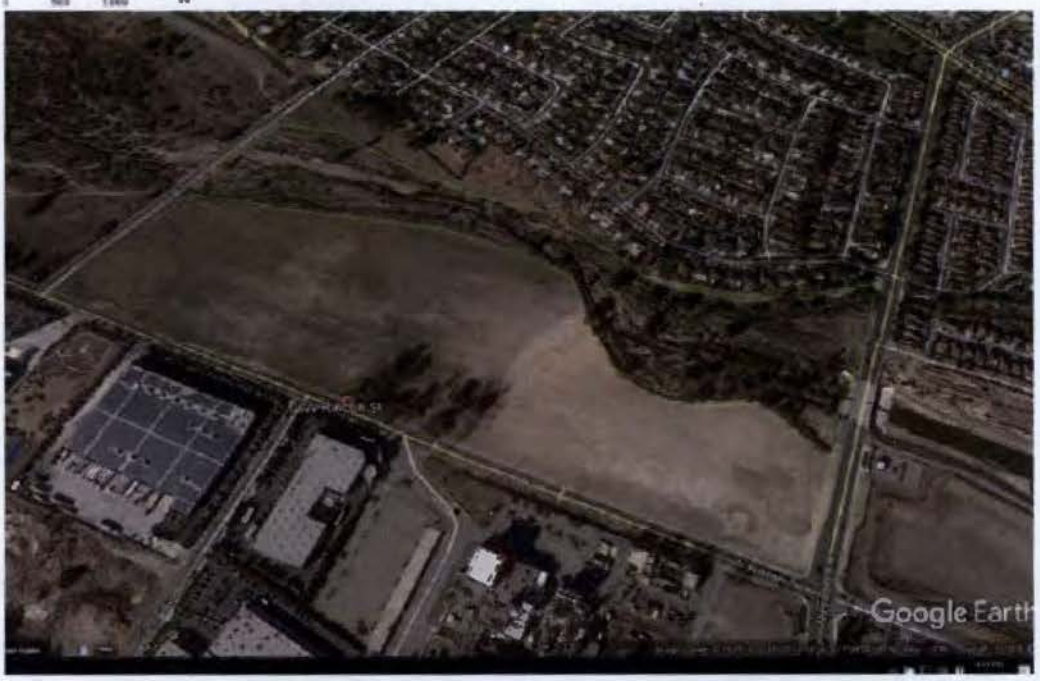
Jurisdictional Waters and Wetland within the Proposed Project Acrea



Ponding Areas (Detention Basins) Locations

Legend

Scale 1:7,800



Two Parcels Proposed for the Mitigation of Riparian Habitat from the Project Impacts

Copies of this Form

In order to identify your Project, it is necessary to include a copy of the Project-specific Cover Sheet below with your report. Please retain for your records. If you need to obtain a blank copy of the Cover Sheet, you may download it from https://www.waterboards.ca.gov/santaana/water_issues/programs/401_certification/ (go down to *Resources for Applicants* and select *Report Notification Cover Sheet*).

Report Submittal Instructions

1. Check the box on the *Report and Notification Cover Sheet* next to the report or notification you are submitting.
    - **Part A (Annual Report):** Submitted annually from the anniversary of Project effective date until a *Notice of Project Complete Letter* is issued.
    - **Part B (Project Status Notifications):** Used to notify the Santa Ana Water Board of the status of the Project schedule that may affect Project billing.
    - **Part C (Conditional Notifications and Reports):** Required on a case-by-case basis for accidental discharges of hazardous materials, violation of compliance with water quality standards, notification of in-water work, or other reports.
2. Sign the *Report and Notification Cover Sheet* and attach all information requested for the Report Type.
3. **Electronic Report Submittal Instructions:**
    - Submit signed *Report and Notification Cover Sheet* and required information via email to RB8-401Reporting@waterboards.ca.gov.
    - Include in the subject line of the email:
      Subject: ATTN: 332019-08 Santa Ana River Mainstem Project, Alcoa Dike ; Reg. Measure ID: 429254 Report.

Definition of Reporting Terms

1. **Active Discharge Period:** The active discharge period begins with the effective date of this Order and ends on the date that the Permittee receives a *Notice of Completion of Discharges Letter* or, if no post-construction monitoring is required, a *Notice of Project Complete Letter*. The Active Discharge Period includes all elements of the Project, including site construction and restoration, and any Permittee responsible compensatory mitigation construction.
2. **Request for Notice of Completion of Discharges Letter:** This request by the Permittee to the Santa Ana Water Board staff pertains to projects that have post construction monitoring requirements (e.g., if site restoration were required to be monitored for five (5) years following construction). Santa Ana Water Board staff will review the request and send a *Completion of Discharges Letter* to the Permittee upon approval. This letter will initiate the post-discharge monitoring period and a change in fees from the annual active discharge fee to the annual post-discharge monitoring fee.
3. **Request for Notice of Project Complete Letter:** This request by the Permittee to the Santa Ana Water Board staff pertains to projects that either have completed post-construction monitoring and achieved performance standards or have no post-construction monitoring requirements and no further Project

activities are planned. Santa Ana Water Board staff will review the request and send *a Project Complete Letter* to the Permittee upon approval. Termination of annual invoicing of fees will correspond with the date of this letter.

4. **Post-Discharge Monitoring Period:** The post-discharge monitoring period begins on the date of the *Notice of Completion of Discharges Letter* and ends on the date of the *Notice of Project Complete Letter* issued by the Santa Ana Water Board staff. The Post-Discharge Monitoring Period includes continued water quality monitoring or compensatory mitigation monitoring.

5. **Effective Date:** Date of Order issuance.

Map/Photo Documentation Information

When submitting maps or photos, please use the following formats.

1. **Map Format Information:**
   Preferred map formats of at least 1:24000 (1" = 2000') detail (listed in order of preference):
   - **GIS shapefiles**: The shapefiles shall depict the boundaries of all Project areas and extent of aquatic resources impacted. Each shape should be attributed with the extent/type of aquatic resources impacted. Features and boundaries should be accurate to within 33 feet (10 meters). Identify datum/projection used and, if possible, provide map with a North American Datum of 1983 (NAD83) in the California Teale Albers projection in feet.
   - **Google KML files** saved from Google Maps: My Maps or Google Earth Pro. Maps shall show the boundaries of all Project areas and extent/type of aquatic resources impacted. Include URL(s) of maps. If this format is used, include a spreadsheet with the object ID and attributed with the extent/type of aquatic resources impacted.
   - **Other electronic format** (CAD or illustration format) that provides a context for location (inclusion of landmarks, known structures, geographic coordinates, or USGS DRG or DOQQ). Maps shall show the boundaries of all Project areas and extent/type of aquatic resources impacted. If this format is used, include a spreadsheet with the object ID and attributed with the extent/type of aquatic resources impacted.
   - Aquatic resource maps marked on paper **USGS 7.5-minute topographic maps** or **Digital Orthophoto Quarter Quads (DOQQ)** printouts. Maps shall show the boundaries of all Project areas and extent/type of aquatic resources impacted. If this format is used, include a spreadsheet with the object ID and attributed with the extent/type of aquatic resources impacted.

2. **Photo-Documentation:** Include a unique identifier, date stamp, written description of photo details, and latitude/longitude (in decimal degrees) or map indicating location of photo. Successive photos should be taken from the same vantage point to compare pre/post construction conditions.

REPORT AND NOTIFICATION COVER SHEET

Project:	Santa Ana River Mainstem Project, Alcoa Dike
Permittee:	U.S. Army Corps of Engineers – Los Angeles District
SARWQCB WDID:	332019-08
Reg. Meas. ID:	429254 **Place ID:** 856751
Order Effective Date:	April 11, 2019

Report Type Submitted

Part A – Project Reporting	
Report Type 1	☐ **Annual Report**
Part B - Project Status Notifications	
Report Type 2	☐ **Commencement of Construction**
Report Type 3	☐ **Request for Notice of Completion of Discharges Letter**
Report Type 4	☐ **Request for Notice of Project Complete Letter**
Part C - Conditional Notifications and Reports	
Report Type 5	☐ **Accidental Discharge of Hazardous Material Report**
Report Type 6	☐ **Violation of Compliance with Water Quality Standards Report**
Report Type 7	☐ **In-Water Work and Diversions Water Quality Monitoring Report**
Report Type 8	☐ **Modifications to Project Report**
Report Type 9	☐ **Transfer of Property Ownership Report**
Report Type 10	☐ **Transfer of Long-Term Best Management Practices (BMPs) Maintenance Report**

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Print Name [1]	**Affiliation and Job Title**
Signature	**Date**

[1]STATEMENT OF AUTHORIZATION (include if authorization has changed since application was submitted)

I hereby authorize _____ to act in my behalf as my representative in the submittal of this report, and to furnish upon request supplemental information in support of this submittal.

_____ _____
Permittee's Signature Date

***This Report and Notification Cover Sheet must be signed by the Permittee or a duly authorized representative and included with all written submittals.**

Part A – Project Reporting

Report Type 1	**Annual Report**
Report Purpose	Notify the Santa Ana Water Board staff of Project status during both the active discharge and post-discharge monitoring periods.
When to Submit	Annual reports shall be submitted each year by the effective date. Annual reports shall continue until a *Notice of Project Complete Letter* is issued to the Permittee.
Report Contents	The contents of the annual report shall include the topics indicated below for each Project period. Report contents are outlined in Annual Report Topics below. **<u>During the Active Discharge Period</u>** • **Topic 1: Construction Summary** • **Topic 2: Mitigation for Temporary Impacts Status** • **Topic 3: Compensatory Mitigation for Permanent Impacts Status** **<u>During the Post-Discharge Monitoring Period</u>** • **Topic 2: Mitigation for Temporary Impacts Status** • **Topic 3: Compensatory Mitigation for Permanent Impacts Status**
Annual Report Topics (1-3)	
Annual Report Topic 1	**Construction Summary**
When to Submit	With the annual report during the Active Discharge Period.
Report Contents	**1.** Project progress and schedule, including initial ground disturbance, site clearing and grubbing, road construction, site construction, and the implementation status of construction storm water BMPs. If construction has not started, provide estimated start date and reasons for delay. **2.** Map showing general Project progress. **3.** If applicable: **a.** Summary of Conditional Notification and Report Types 6 and 7 (Part C below). **b.** Summary of Certification Deviations.
Annual Report Topic 2	**Mitigation for Temporary Impacts Status**
When to Submit	With the annual report during both the Active Discharge Period and Post-Discharge Monitoring Period.
Report Contents	**1.** Planned date of initiation and map showing locations of mitigation for temporary impacts to waters of the State and all upland areas of temporary disturbance which could result in a discharge to waters of the State. **2.** If mitigation for temporary impacts has already commenced, provide a map and information concerning attainment of performance standards contained in the restoration plan.

Annual Report Topic 3	Compensatory Mitigation for Permanent Impacts Status
When to Submit	With the annual report during both the Active Discharge Period and Post-Discharge Monitoring Period.
Report Contents	***If not applicable, report N/A.** **Part A. Permittee Responsible** **1.** Planned date of initiation of compensatory mitigation site installation. **2.** If installation is in progress, a map of what has been completed to date. **3.** If the compensatory mitigation site has been installed, provide a final map and information concerning attainment of performance standards contained in the compensatory mitigation plan. **Part B. Mitigation Bank or In-Lieu Fee (ILF)** **1.** Status or proof of purchase of credit types and quantities. **2.** Include the name of bank/ILF Program and contact information. **3.** If ILF, location of project and type if known.

Part B – Project Status Notifications

Report Type 2	Commencement of Construction
Report Purpose	Notify Santa Ana Water Board staff prior to the start of construction.
When to Submit	Must be received at least seven (7) days prior to start of initial ground disturbance activities.
Report Contents	**1.** Date of commencement of construction. **2.** Anticipated date when discharges to waters of the State will occur. **3.** Project schedule milestones, including a schedule for onsite compensatory mitigation, if applicable.

Report Type 3	Request for Notice of Completion of Discharges Letter
Report Purpose	Notify Santa Ana Water Board staff that post-construction monitoring is required and that active Project construction, including any mitigation and permittee responsible compensatory mitigation, is complete.
When to Submit	Must be received by Santa Ana Water Board staff within thirty (30) days following completion of all Project construction activities.
Report Contents	**1.** Status of storm water Notice of Termination(s), if applicable. **2.** Status of post-construction storm water BMP installation. **3.** Pre- and post-photo documentation of all Project activity sites where the discharge of dredge and/or fill/excavation was authorized. **4.** Summary of Certification Deviation discharge quantities compared to initial authorized impacts to waters of the State, if applicable. **5.** An updated monitoring schedule for mitigation for temporary impacts to waters of the State and Permittee responsible compensatory mitigation during the post-discharge monitoring period, if applicable.

Report Type 4	Request for Notice of Project Complete Letter
Report Purpose	Notify Santa Ana Water Board staff that construction and/or any post-construction monitoring is complete, or is not required, and no further Project activity is planned.
When to Submit	Must be received by Santa Ana Water Board staff within thirty (30) days following completion of all Project activities.
Report Contents	**Part A: Mitigation for Temporary Impacts** **1.** A report establishing that the performance standards outlined in the restoration plan have been met for Project site upland areas of temporary disturbance that could result in a discharge to waters of the State. **2.** A report establishing that the performance standards outlined in the restoration plan have been met for restored areas of temporary impacts to waters of the State. Pre- and post-photo documentation of all restoration sites. **Part B: Permittee Responsible Compensatory Mitigation** **1.** A report establishing that the performance standards outlined in the

	compensatory mitigation plan have been met. **2.** Status on the implementation of the long-term maintenance and management plan and funding of endowment. **3.** Pre- and post-photo documentation of all compensatory mitigation sites. **4.** Final maps of all compensatory mitigation areas (including buffers). **Part C: Post-Construction Storm Water BMPs** **1.** Date of storm water Notice of Termination(s), if applicable. **2.** Report status and functionality of all post-construction BMPs.

Part C – Conditional Notifications and Reports

Report Type 5	Accidental Discharge of Hazardous Material Report
Report Purpose	Notifies Santa Ana Water Board staff that an accidental discharge of hazardous material has occurred.
When to Submit	Within five (5) working days following the date of an accidental discharge. Continue reporting as required by Santa Ana Water Board staff.
Report Contents	**1.** The report shall include the *OES Incident/Assessment Form*, a full description and map of the accidental discharge incident (i.e., location, time and date, source, discharge constituent and quantity, aerial extent, and photo documentation). If applicable, the *OES Written Follow-Up Report* may be substituted. **2.** If applicable, any required sampling data, a full description of the sampling methods, including frequency/dates and times of sampling, equipment, locations of sampling sites. **3.** Locations and construction specifications of any barriers, including silt curtains or diverting structures and any associated trenching or anchoring.

Report Type 6	Violation of Compliance with Water Quality Standards Report
Report Purpose	Notifies Santa Ana Water Board staff that a violation of compliance with water quality standards has occurred.
When to Submit	The Permittee shall report any event that causes a violation of water quality standards within three (3) working days of the noncompliance event notification to Santa Ana Water Board staff.
Report Contents	The report shall include: the cause; the location shown on a map; and the period of the noncompliance, including exact dates and times. If the noncompliance has not been corrected, include: the anticipated time it is expected to continue; the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and any monitoring results, if required by Santa Ana Water Board staff.

Report Type 7	In-Water Work and Diversions Water Quality Monitoring Report
Report Purpose	Notifies Santa Ana Water Board staff of the completion of in-water work.
When to Submit	Within three (3) working days following the completion of in-water work. Continue reporting in accordance with the approved water quality monitoring plan.
Report Contents	As required by the approved water quality monitoring plan.

Report Type 8	Modifications to Project Report
Report Purpose	Notifies Santa Ana Water Board staff if the Project, as described in the application materials, is altered in any way or by the imposition of subsequent permit conditions by any local, State, or federal regulatory authority.
When to Submit	If Project implementation as described in the application materials is altered in any way or by the imposition of subsequent permit conditions by any local, State, or federal regulatory authority.
Report Contents	A description and location of any alterations to Project implementation. Identification of any Project modifications that will interfere with the Permittee's compliance with the Order.

Report Type 9	Transfer of Property Ownership Report
Report Purpose	Notifies Santa Ana Water Board staff of change in ownership of the Project or Permittee-responsible mitigation area.
When to Submit	At least ten (10) working days prior to the transfer of ownership.
Report Contents	**1.** A statement that the Permittee has provided the purchaser with a copy of this Order and that the purchaser understands and accepts: **a.** the Order's requirements and the obligation to implement them or be subject to administrative and/or civil liability for failure to do so; and **b.** responsibility for compliance with any long-term BMP[1] maintenance plan requirements in this Order. **2.** A statement that the Permittee has informed the purchaser to submit a written request to the Santa Ana Water Board to be named as the permittee in a revised order.

Report Type 10	Transfer of Long-Term BMP Maintenance Report
Report Purpose	Notifies Santa Ana Water Board staff of transfer of long-term BMP maintenance responsibility.
When to Submit	At least ten (10) working days prior to the transfer of BMPs maintenance responsibility.
Report Contents	A copy of the legal document transferring maintenance responsibility of post-construction BMPs.

[1] Best Management Practices (BMPs) is a term used to describe a type of environmental or water pollution control.

SIGNATORY REQUIREMENTS

All Documents Submitted In Compliance With This Order Shall Meet The Following Signatory Requirements:

1. All applications, reports, or information submitted to the Santa Ana Regional Water Quality Control Board (Santa Ana Water Board) shall be signed and certified as follows:

   a) For a corporation, by a responsible corporate officer of at least the level of vice-president.
   b) For a partnership or sole proprietorship, by a general partner or proprietor, respectively.
   c) For a municipality, or a State, federal, or other public agency, by either a principal executive officer or ranking elected official.

2. A duly authorized representative of a person designated in items 1.a through 1.c above may sign documents if:

   a) The authorization is made in writing by a person described in items 1.a through 1.c above.
   b) The authorization specifies either an individual or position having responsibility for the overall operation of the regulated activity.
   c) The written authorization is submitted to the Santa Ana Water Board staff contact prior to submitting any documents listed in item 1 above.

3. Any person signing a document under this section shall make the following certification:

   "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

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Appendix C: Air Quality Analysis

For the embankment tie-ins, approximately *85,000 cy* of fill would come from the borrow areas; approximately 11,000 cy of fill will be imported from a commercial site; 4,500 cy of stone protection and 2,500 cy of bedding material would be imported from a local quarry. For the purposes of this analysis, it is assumed that the nearest quarry would be used (e.g. FST Sand & Gravel, 21780 Temescal Canyon Rd., Corona, CA). Approximately 120,000 cy of imported fill and 300,000 cy of concrete is estimated for the ogee weir and chute slab. Approximately 80,000 cy of concrete is estimated for downstream erosion protection.
EXCLUDED FROM CALCULATIONS BELOW

Material	Component	Amount (CY)
fill	ogee weir & chute slab	120,000
concrete	ogee weir & chute slab	300,000
concrete	downstream erosion protection	80,000
fill	embankment tie-ins	11,000
stone protection	embankment tie-ins	4,500
bedding material	embankment tie-ins	2,500
Total	**All**	**518,000**

Construction Duration = 48 months (assumes a 5 day work week with 10 hour days)

Equations
(total vol import/ (18/1.2)) = # of truck loads,
(total volume of import * bulking factor)/18CY per truck = # of truck loads.

((518,000)/(18/1.2))= **34,534 truck loads**

RMP 5A (alt 1)=48 months
48 months=1,460 days
1,460 days(5 days/7 days)=1,043 working days (Monday-Friday)

34,534 truck loads/1043 working days= 33.1 which is **~34 truck loads a day**

For the embankment tie-ins, approximately *260,000 cy of fill* would come from the borrow areas; approximately 22,000 cy of fill will be imported from a commercial site; 9,000 cy of stone protection and 5,000 cy of bedding material would be imported from a local quarry. For the purposes of this analysis, it is assumed that the nearest quarry would be used. Approximately 120,000 cy of imported fill and 400,000 cy of concrete is estimated for the labyrinth weir, chute slab, and chute walls. Approximately 2,500 cy of import and 50,000 cy of concrete is estimated for downstream erosion protection.
EXCLUDED FROM CALCULATIONS BELOW

Material	Component	Amount (CY)
fill	ogee weir & chute slab & chute walls	120,000
concrete	ogee weir & chute slab & chute walls	400,000
import	downstream erosion protection	2,500
concrete	downstream erosion protection	50,000
fill	embankment tie-ins	22,000
stone protection	embankment tie-ins	9,000
bedding material	embankment tie-ins	5,000
Total	**All**	**608,500**

Construction Duration = 60 months (assumes a 5 day work week with 10 hour days)

Equations
(total vol import/ (18/1.2)) = # of truck loads,
(total volume of import * bulking factor)/18CY per truck = # of truck loads.

((608,500)/(18/1.2))= **40,567 truck loads**

RMP 3A (alt 2)=60 months
60 months=1,825days
1,825 (5 days/7 days)=1,304 working days (Monday-Friday)

40,567 truck loads/1,304 working days= 31.1 which is **~32 truck loads a day**

For the embankment tie-ins, approximately *85,000 cy of fill* would come from the borrow areas delineated in Figure 2 2; approximately 11,000 cy of fill will be imported from a commercial site; 4,500 cy of stone protection and 2,500 cy of bedding material would be imported from a local quarry. For the purposes of this analysis, it is assumed that the nearest quarry would likely be used (e.g. FST Sand & Gravel, 21780 Temescal Canyon Rd., Corona, CA). Approximately 120,000 cy of imported fill and 420,000 cy of concrete is estimated for the ogee weir, chute slab, and chute walls. Approximately 80,000 cy of concrete is estimated for downstream erosion protection.
EXCLUDED FROM CALCULATIONS BELOW

Material	Component	Amount (CY)
fill	ogee weir & chute slab & chute walls	120,000
concrete	ogee weir & chute slab & chute walls	420,000
concrete	downstream erosion protection	80,000
fill	embankment tie-ins	11,000
stone protection	embankment tie-ins	4,500
bedding material	embankment tie-ins	2,500
Total	**All**	**638,000**

Construction Duration = 64 months (assumes a 5 day work week with 10 hour days)

Equations
(total vol import/ (18/1.2)) = # of truck loads,
(total volume of import * bulking factor)/18CY per truck = # of truck loads.

((638,000)/(1.8/1.2))= **42,534 truck loads**

RMP 6B (alt 3)=64 months
64 months=1,947days
1,947 (5 days/7 days)=1,390 working days (Monday-Friday)

42,534 truck loads/1,390 working days= 30.6 which is ~ **31 truck loads a day**

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Appendix D: USFWS Consultation Request and Biological Assessment

Prado Basin

Spillway Raise & Dam Safety Modifications

Biological Assessment of

Construction and Maintenance Effects

Prepared By:
U.S. Army Corps of Engineers
Los Angeles District
P.O. Box 532711
Los Angeles CA 90053

US Army Corps of Engineers®

June 2021

1.0 Introduction

1.1 Purpose of this Biological Assessment

Pursuant to the requirements of Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended, this Biological Assessment (BA) has been prepared to evaluate the potential effects of components of the Santa Ana River Mainstem Project (SARMP) on species and habitats protected under the ESA. This BA is intended to address two specific construction efforts that will be completed concurrently as well as future maintenance of the constructed features:

1. The construction of the raised spillway at Prado Dam,
2. The construction of required dam safety modifications for Prado Dam, as identified in the Prado Dam Safety Modification Study (DSMS), and
3. Future routine maintenance of the modified spillway structure.

A preliminary species list was requested from the Information for Planning and Consultation (IPaC) web portal on April 23, 2021. The IPaC results listed nine species and one critical habitat protected under the ESA as potentially occurring within the construction footprint (Table 1). As shown in Table 1, three of the trust resources identified in the IPaC search may potentially be affected by the proposed action and are covered in this BA.

Table 1. USFWS trust resources within the Action Area, as identified using IPaC. Gray highlighted cells indicate trust resources known or expected to be present in the Action Area and thus covered in this BA.

Species Common Name (Scientific Name)	Status	Likelihood in Action Area
Santa Ana River Woolly-star (*Eriastrum densifolium* subsp. *sanctorum)*	Endangered	Low
San Diego Ambrosia (*Ambrosia pumila*)	Endangered	Low
Thread-Leaved Brodiaea (*Brodiaea filifolia*)	Threatened	Low
Coastal California Gnatcatcher (*Polioptila californica californica*)	Threatened	Present
Least Bell's Vireo (*Vireo bellii pusillus*)	Endangered	Present
Least Bell's Vireo Critical Habitat	Designated	Present
Southwestern Willow Flycatcher (*Empidonax traillii extimus*)	Endangered	Not Present
Stephens' Kangaroo Rat (*Dipodomys stephensi* including *D. cascus*)	Endangered	Low
Santa Ana Sucker (*Catostomus santaanae*)	Threatened	Not Present*
Delhi Sands Flower-loving Fly (*Raphiomidas terminatus abdominalis*)	Endangered	Low

* Santa Ana sucker may be present in the outlet channel, which is adjacent to, but outside of, the construction footprint (see Figure 1).

1.2 Project Background and Consultation History

Project Background

Prado Dam was designed and constructed by the U.S. Department of the Army in 1941 in response to the disastrous 1938 floods in southern California. It is owned, operated, and maintained by the Corps' Los Angeles District. Prado Dam was originally designed as a flood risk management project. Since the 1970's, Prado Dam has also been operated to achieve incidental water conservation storage benefits to the extent that flood control operations are not jeopardized.

Modification of Prado Dam began in the early 2000's as part of the SARMP. The main embankment was raised 28.4 feet to Elevation 594.4 feet, NGVD29 (596.7 feet, NAVD 88) in 2008 which is 124.4 feet above the streambed. The main embankment ties into the 1,200-foot-long SR 71 Dike embankment (completed in 2001) on the west side. In 2008, the original outlet works were abandoned, and construction of a new outlet works was completed on the left side of the main embankment increasing discharge capacity from 10,000 cfs to 30,000 cfs. Phase 1 of the Auxiliary Dike and floodwall were constructed in 2012, and Phase 2 was completed in 2019. Construction of several dikes within the reservoir including the California Institute for Women (CIW) Dike, the Corona National Housing Dike (NHD), the Corona Sewage Treatment Plan Dike, and Yorba Slaughter - Adobe Dike have been completed. The Alcoa Dike is in construction and the River Road Dike is in pre-construction engineering design phase (PED), as is the Lower Norco Bluffs Toe Protection project. Improvements of the downstream channel conveyance capacity are either in construction or have been completed. The spillway, which is the primary focus of this document, is the last Prado Dam-related feature of the SARMP to be designed and constructed. Major features of the spillway modifications include modifying the control structure, constructing new approach walls, and constructing embankment tie-ins.

A risk assessment of Prado Dam, performed in 2019, found that the spillway chute should be replaced. The Dam Safety Action Classification (DSAC) for Prado Dam was changed from moderate risk to high risk. The Corps considers this level of life risk to be unacceptable. Approximately 1.3 million people who live and work between the dam and the ocean will be at risk should the dam breach. As a result, the design for the spillway was modified to address the high risk. The modified spillway design resulting from the dam safety analysis includes construction of a labyrinth weir, modification of the existing chute slabs and chute walls, and a modified flip bucket and associated erosion protection mat. Additional details regarding project features can be found in Section 4 of this BA.

Consultation History & Pertinent Coordination

The Corps has completed numerous formal and informal consultations with the U.S. Fish and Wildlife Service (the Service) on projects related to the SARMP. Formal consultations have resulted in biological opinions (i.e., 1980, 1989, 2001, 2004, 2005, 2012, 2013, 2015, 2017) addressing the effects of constructing, operating, and maintaining the SARMP on federally listed species and their designated critical habitat. The Corps has also consulted on several different occasions regarding water conservation. A brief history of major consultation efforts is summarized below.

In 1989, consultation focused on the effects of six features of the SARMP: 1) raising the existing Prado Dam from elevation 566 feet to 594 feet; 2) construction of a new intake structure and outlet conduits; 3) raising the spillway ogee and sidewalls with containment dikes on each side of the spillway entrance; 4) construction of a dike along the Santa Fe Railway from the existing spillway

to Pomona Rincon Road; 5) raising a portion of the existing Highway 71 to an elevation of 594 feet; and 6) construction of ring dikes around the Corona Sewage Treatment Plant, Alcoa Aluminum Plant, Corona National Housing Tract, and the California Institute for Women (USFWS 1989; 1-6-88-F-6). The Corps and the Service again consulted on December 5, 2001 on the raising of Prado Dam and associated improvements (USFWS 2001; FWS SB-909.6). The 2001 consultation addressed the construction of new dikes, floodwalls, and intermittent levee and bank protection, both above and below the dam. It also addressed anticipated changes in dam operations with the increased capacity provided by the raised dam and new outlet structure, including changes in discharge rates and the inundation area. However, Santa Ana sucker critical habitat had not yet been designated and thus was not included in the 2001 consultation. Subsequent amendments have been issued to address changes to the project (e.g., additional flood protection components) and associated conservation measures and unanticipated effects to listed species (USFWS 2012; FWSSB/WRIV /OR-08B0408-II F0551).

The first biological opinion pertaining to water conservation within the Prado Basin was issued on February 25, 1993 (USFWS 1993b; 1-6-93-F-7). This opinion addressed impacts to vireo from OCWD's phased water retention and conservation project in the Prado Basin. On February 22, 1994, the Service issued an amendment to the 1993 opinion, which allowed the pool to be raised to an elevation of 497 feet. On April 20, 1995, the Service issued a second biological opinion pertaining to water conservation within Prado Basin (USFWS 1995; 1-6-95-F-28). This opinion analyzed the effects of proposed water conservation to 505 feet between March 1 and September 30 on the newly listed flycatcher, as well as newly designated vireo critical habitat. Orange County Water District (OCWD) proposed to accelerate the implementation of the phased water conservation project to 505 feet and the Service and Corps signed a Cooperative Agreement with OCWD formalizing this change in operations. The Service issued another biological opinion on February 10, 2000 (USFWS 2000b; 1-6-99-F-75) to address subsequent proposed alterations to the operation of the dam on vireo, flycatcher, and vireo critical habitat, as well as potential impacts to the newly designated flycatcher critical habitat.

On July 1, 2002, the Service issued a biological opinion (USFWS 2002; FWS-WRIV-2102.3) to address the incremental effects from additional water conservation during the flood season to vireo, flycatcher, and their critical habitat, and to address the full project effects on the newly listed sucker. This opinion allowed for the water conservation level during the flood season (October 1 to the end of February) to be raised from 494 to 498 feet.

With regards to recent changes in Prado Dam operations, the Corps has completed consultation with the Service on three temporary deviations from the Prado Dam water control manual to provide for water conservation (USFWS, 2016a; 2016b; 2018a). The latest of these consultations provided for a 5-year deviation from the water control manual for the purposes of water conservation, the implementation of which is still ongoing. Consultation also occurred in 2018 regarding construction of the Alcoa Dike (USFWS, 2018b).

In 2020, the Corps completed consultation with Service regarding the Prado Basin Ecosystem Restoration and Water Conservation Feasibility Study. This consultation encompassed ecosystem restoration in the immediate vicinity of Prado Dam, as well as a permanent change to Prado Dam operations to allow the reservoir to be operated to 505 ft year-round for the purpose of water conservation (USFWS, 2020; FWS-WRIV-19B0097-20F0606).

1.3 Action Area

Prado Dam is located on the Santa Ana River in the city of Corona, Riverside County, California, approximately 40 miles southeast of Los Angeles. The Action Area encompasses those areas that would be required in order to facilitate construction, as shown in Figure 1.

Figure 1b below also shows the footprint for the upcoming gas line relocation effort overlaid with the Action Area for this BA. The gas line has not yet undergone consultation but will be under consultation with the Service concurrent to the proposed action covered in this BA. The gas line relocation effort has significant spatial overlap with, but will be completed prior to, the action proposed in this BA, and thus is included for context.

Figure 2 shows the existing flood control features and nomenclature in the vicinity of Prado Dam spillway pertinent for construction elements discussed in this BA.

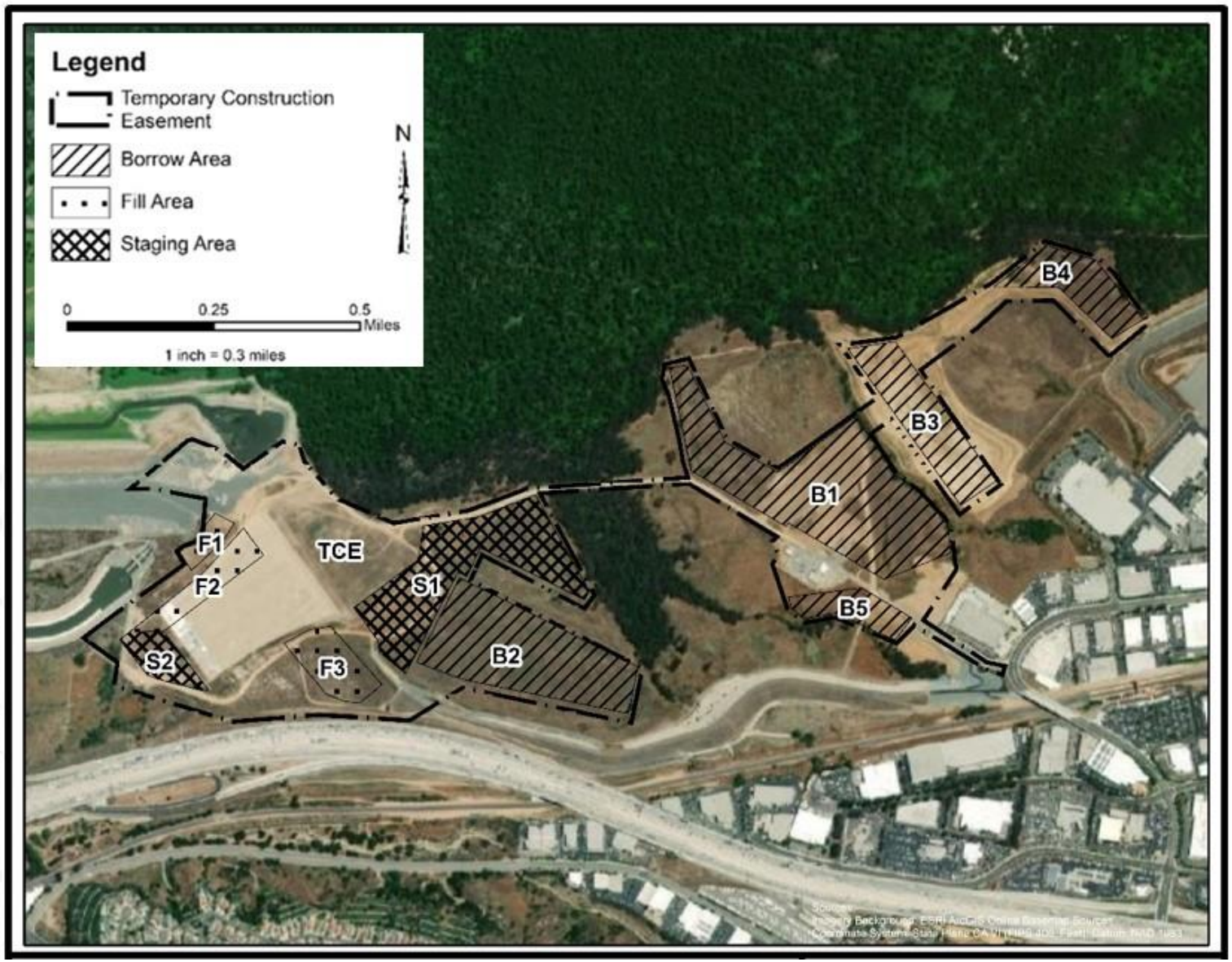

Figure 1a. Overview of the Action Area for the DSMS and dam spillway raise.

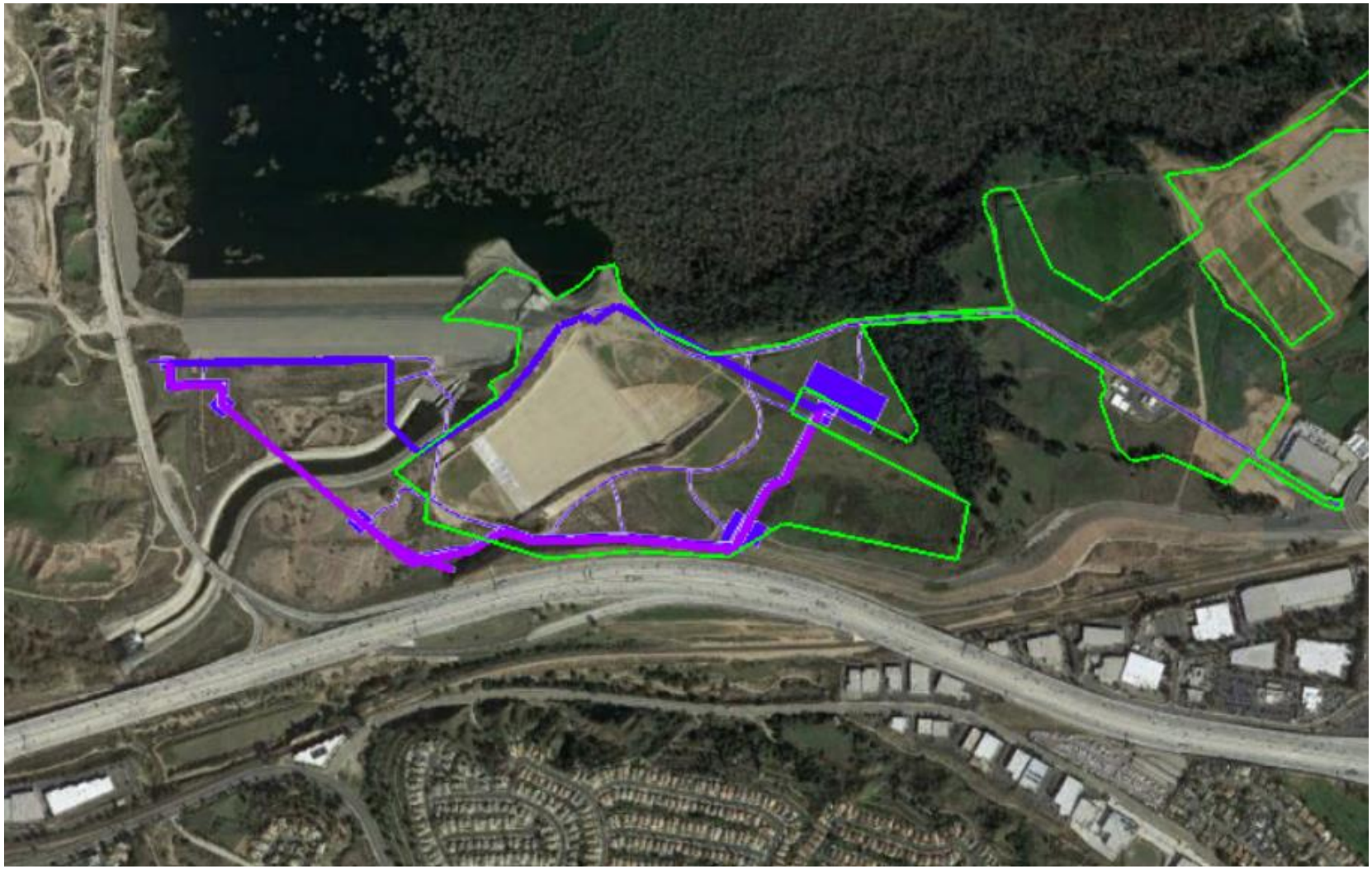

Figure 1b. Overview of the Action Area (green outline) compared to the work area for the gas line relocation effort (blue/purple lines).

Figure 2. Prado Dam spillway and associated features.

2.0 Environmental Baseline

2.1 Prado Basin Overview

Prado Basin is located in the Santa Ana River Watershed. There are four major tributaries that drain into the Prado Basin: Santa Ana River, Chino Creek, Cucamonga Creek (which flows into Mill Creek) and Temescal Wash (Figure 3). All of these water bodies converge upstream of Prado Dam. The biological setting in the Prado Basin is significantly influenced by the presence of Prado Dam. As a result of a combination of high groundwater, storm flow accumulation held in the reservoir, ongoing sewage treatment plant effluent and irrigation runoff, perennial flows occur throughout much of the Prado Basin. During the winter months the river maintains flow throughout Prado Basin. In the summer months the surface flow is substantially reduced but is typically still present.

Prado Basin consists of a wide mixture of biological resources and habitats, including cottonwood/willow riparian forest, riparian scrub, herbaceous riparian, freshwater ponds, freshwater marsh, and riverine. Riparian forest is the most dominant habitat in the Prado Basin. The dominant plant species within the riparian forest are black willow, (*Salix goodingii*), arroyo willow (*Salix lasiolepis*), Freemont cottonwood, (*Populus fremontii*) eucalyptus, sycamore (*Platanus recemosa)*, and mulefat (*Baccharis salicifolia*). The riparian habitat within Prado Basin is a dynamic community that is dependent upon periodic flooding. Winter flows create areas of scour and sedimentation that cycle portions of the community back to earlier successional stages. Periodic floods of large magnitude and migration of the river channel lay down fresh alluvial deposits where seeds can germinate, and plant roots can take hold. At lower elevations in the basin, the riparian forest coverage is nearly complete with an over story of trees reaching as high as 50 ft. and an understory of both native vegetation and non-native vegetation. At the higher elevations in the basin the forest is patchier, and the understory consists of more non-native vegetation.

The riparian forest in the Prado Basin contains an abundance and diversity of bird species. Neotropical migrants depend on deciduous trees and shrubs for foraging during migration. The mature trees provide numerous cavities for cavity dependent wildlife and the taller trees are used by nesting raptors. The emergent vegetation at the water's edge provides escape cover, shade and a source of food for fish. The basin supports a wide variety of mammal, amphibian and reptile species, several of which are biologically significant. Additionally, the Prado Basin functions as a wildlife movement corridor between core habitats in the Chino Hills, the Santa Ana Mountains and Prado Basin and the undeveloped Santa Ana River Floodplain.

2.2 Santa Ana River Upstream of Prado Dam

The segment of the Santa Ana River (SAR) upstream of Prado Dam can be divided into two sub-segments. The lower segment extending from Prado Dam upstream approximately 1.3 miles consists of series of braided and meandering streams. This lower segment has a higher silt and clay content than the segment upstream. Stream slope in this segment can vary dramatically based on annual deposition, ranging from 0.01 to 0.0001.

The upper segment, starting 1.3 miles above Prado Dam and extending to Hamner Road, is typically a well-defined channel composed of primarily sand channel slopes and a sand riverbed. The riverbed gradation ranges from very fine sand to coarse sand with occasional, intermittent gravel deposits. This segment of the Santa Ana River receives high amounts of sediment deposition and can often move laterally during large flow events. The slope of the river in this location typically ranges from 0.003 to 0.0001, depending on sedimentation and river flow conditions.

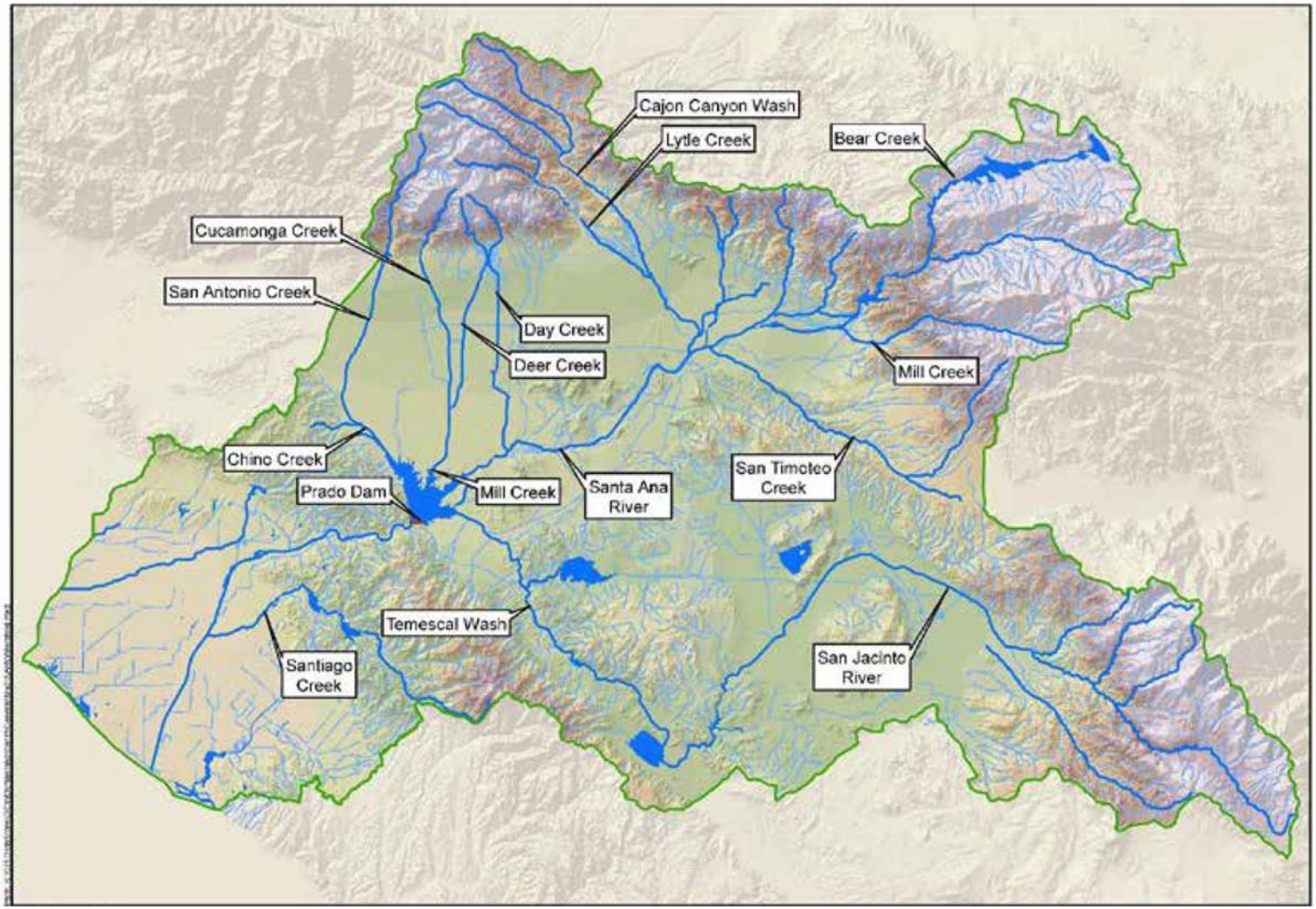

Figure 3. Santa Ana River watershed

2.3 Santa Ana River Below Prado Dam

The stretch of the Santa Ana River occurring downstream of Prado Dam is referred to as Reach 9. This reach runs through Santa Ana Canyon and has several distinctive characteristics. From the Prado Dam outlet structure to the Green River Golf Course the river has a relatively flat slope. Within this reach the river flow is perennial and the floodplain is covered with riparian vegetation. The banks are moderately incised with vegetated islands that dot the main channel. Near the Green River Golf Course, the slope increases, and the river becomes more incised. Between the Green River Golf Course and Imperial Highway, the floodplain becomes much more expansive with several flow splits forming natural islands. Riparian vegetation is mostly concentrated near the riverbank. Except for a drop structure located downstream of Weir Canyon, this reach does not contain any other water control structures.

The bed material in Reach 9 is much coarser than the sandy bed material of the river above Prado Dam. Reach 9 bed material generally consists of gravels and cobbles compared to the predominantly sand substrate characteristic of the river upstream of Prado Dam. The dominant bed form in this reach is pool-riffle, where high gradient high velocity riffles flow into low gradient low velocity pools. Additionally, there are several stretches where the river has a plane bed, where the gradient and velocity are constant, and the river bottom material is dominated by gravel and cobble.

2.4 Vegetation Communities in the Action Area

Field surveys of vegetation within the Action Area were conducted in 2020 and 2021 to include a 500 ft buffer zone around the construction footprint. Results from recent vegetation mapping was generally consistent with previous surveys performed in support of the 2001 consultation. However, since 2001, habitat restoration has occurred in portions of the Action Area, creating new coastal sage scrub habitat. These restored areas are largely comprised of California buckwheat (*Eriogonum fasciculatum*), various sages (*Salvia spp*.) and mulefat (*Baccharis salicifolia).*

Native and non-native vegetation communities are interspersed amongst each other, therefore breaks in community type are determined based on dominant species type and professional judgment of the biologist performing the survey. There are four broad vegetation types present within the Action Area (Figure 4), as referenced in the Manual of California Vegetation (CNPS, 2020) and summarized below. The acreages of various vegetation and cover types in the Action Area are summarized in Table 2 below.

<u>Native Upland (Coastal Sage Scrub)</u>

Upland vegetation in the Action Area is best classified as coastal sage scrub and is dominated by California buckwheat, California sagebrush (*Artemisia californica*), and brittlebush (*Encelia farinosa*). All native upland vegetation within the Action Area was restored as part of previous work at Prado Dam over the last twenty years.

<u>Native Riparian (Mulefat Scrub)</u>

Riparian vegetation in the Action Area is dominated by mulefat and is best classified as mulefat scrub. Other riparian species such as arroyo willow (*Salix lasiolepis*) were also observed in this community. The native riparian vegetation is present in a small swale within Borrow Site 1, in an area otherwise dominated by non-native upland vegetation.

<u>Non-Native Upland</u>

Non-native upland habitats within the Action Area are dominated by non-native grasses and herbs such as ripgut brome (*Bromus diandrus*), foxtail brome (*Bromus madritensis ssp. rubens*), wild

oat (*Avena spp*.), wall barley (*Hordeum murinum*), and Russian thistle (*Salsola tragus*). These species are widespread in and adjacent to the Action Area. Non-native upland species are present in patches surrounding the spillway and throughout much of the borrow areas.

Developed

Developed areas include the existing spillway, portions of Prado Dam, and a network of unpaved access roads throughout the Action Area. These developed areas are either unvegetated or sparsely vegetated with non-native species such as those discussed in the non-native upland section above.

Table 2. Vegetation types and associated acreages in the Action Area

Vegetation Type	Acres	% of Area
Native Riparian (Mulefat Scrub)	3.0	1%
Native Upland (Coastal Sage Scrub)	60.6	30%
Non-native Upland (Non-Native Grassland)	87.3	43%
Developed	53.2	26%
Total	204.1	100%

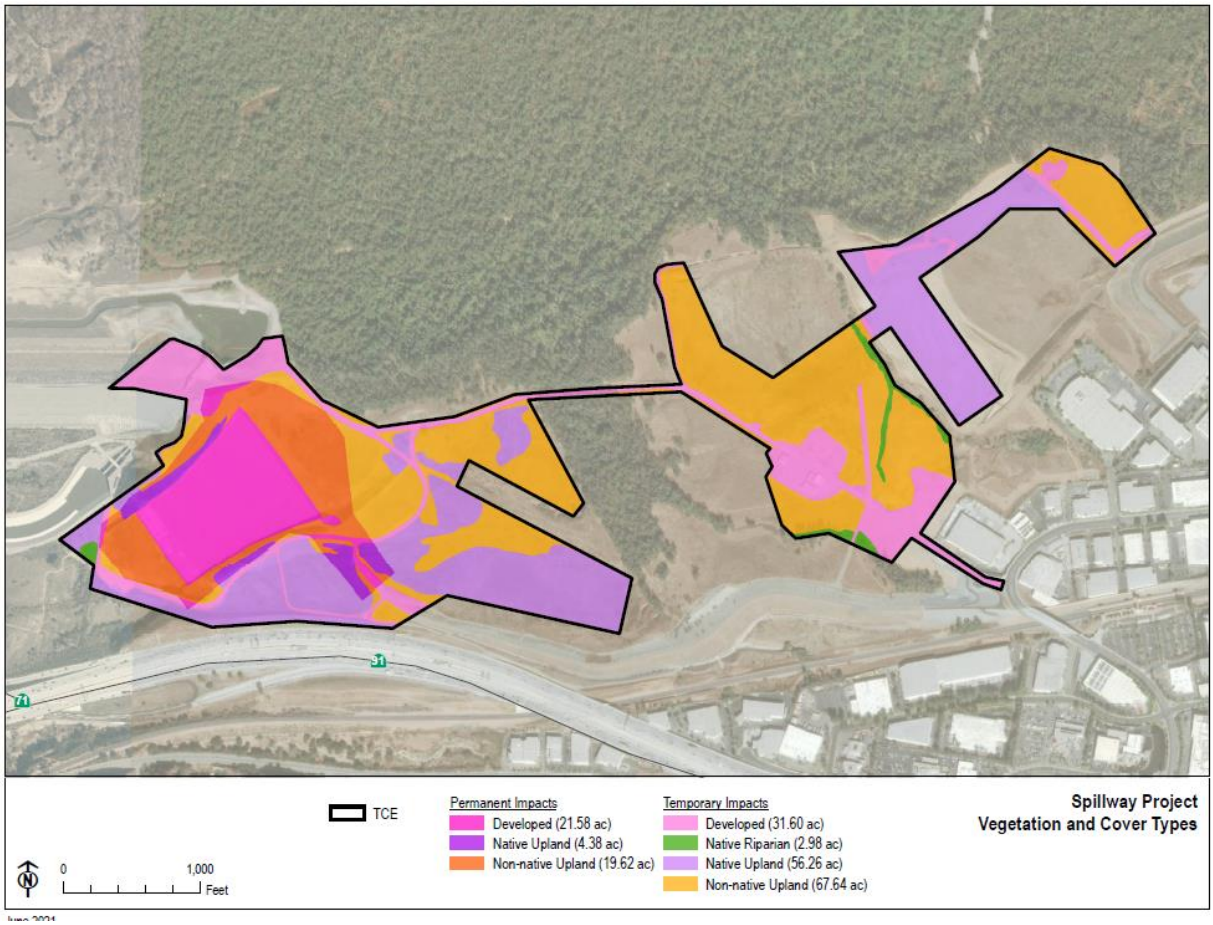

Figure 4. Vegetation Communities in the Vicinity of Prado Dam

2.5 Past and Present Impacts

Past Federal Actions

Since 1941 when Prado Dam was constructed there have been a number of operation changes and improvements to the dam and to Reach 9. These improvements have been analyzed in numerous environmental documents and biological opinions. Potential effects to federally listed species and designated critical habitat have been consulted on and have been adequately mitigated through the implementation of habitat restoration activities and wildlife management programs. These previous habitat restoration efforts and wildlife management activities have generally resulted in the improvement of riparian habitat in and around the basin.

Present and Future Federal Actions

In 2021, the Corps and Orange County Water District (OCWD), completed the Prado Basin Water Conservation and Ecosystem Restoration Feasibility Study (PBFS). This study includes two separate plans for the Prado Basin: 1) a permanent allowance for Prado Dam to operate the buffer pool up to 505 ft. in elevation year-round, and 2) a substantial plan for ecosystem restoration within the basin. The water conservation plan from the PBFS is expected to begin implementation in 2021. Implementation of the ecosystem restoration plan from the PBFS is unclear at current time, as this action requires further congressional approval and funding to proceed to implementation.

Flood risk management improvements are currently occurring and are nearing completion as part of the SARMP. SARMP involves improvements to Corps flood risk management structures and facilities within areas of the Prado Dam Basin and Reach 9, as well as other areas of the watershed. Construction has already been completed on the Prado Embankment and Outlet Works modifications, several perimeter dikes around Prado Basin, and portions of Reach 9 embankment protection. Remaining improvements within the study area include, Alcoa Dike (construction ongoing), Auxiliary Dike (Phase 3, which will include the tie-in to the raised Spillway), minor improvements to existing dikes, Norco Bluffs, Prado Dam Spillway, River Road Dike, and ongoing construction of Reach 9 embankment and bridge protection features (Reach 9 Phase 5B, and BNSF). SARMP also includes mitigation for project effects. This BA covers the construction and future maintenance associated with the spillway portion of SARMP.

A gas line in the vicinity of Prado Dam is going to be relocated starting in late 2021 and ending in early 2022 (see Figure 1b). The Corps is preparing to initiate consultation on this activity and it is expected that the gas line consultation will be ongoing concurrent to the consultation associated with this BA.

2.6 Existing Maximum Pool of Prado Dam

Currently, Prado Dam has a maximum pool elevation of 556 feet if the pool were fully inundated to the spillway crest. Along the mainstem Santa Ana River, 556 feet in elevation occurs approximately halfway between River Road Bridge and Hamner Ave. Since the dam became operational in the early 1940s, the pool has never reached this elevation. The maximum elevation reached behind Prado Dam is 529 feet, and the pool rarely exceeds 520 feet (see Figure 5).

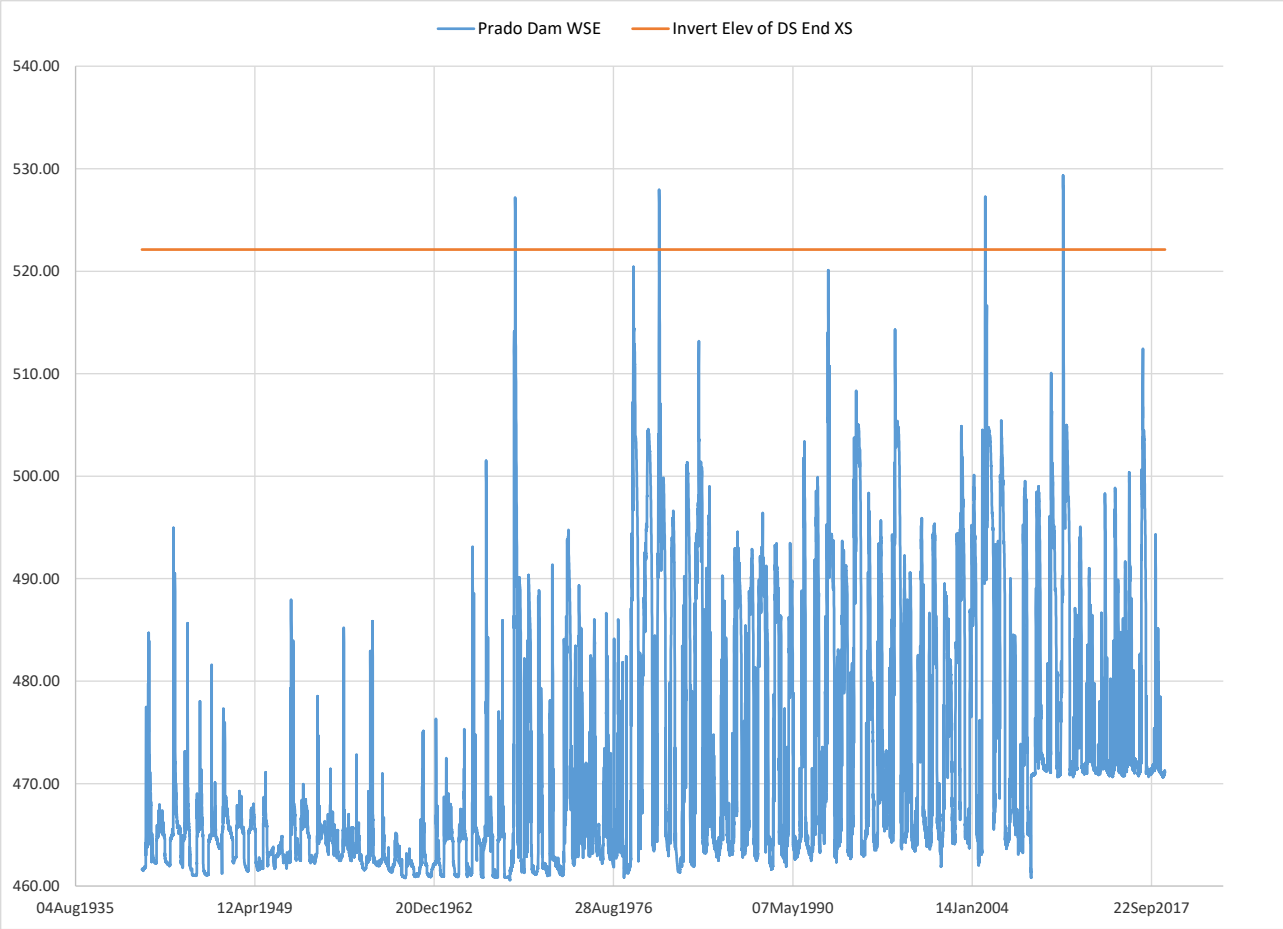

Figure 5. Historic water surface elevations behind Prado Dam (1940 to 2018).

3.0 Special Status Species & Critical Habitat

3.1 Coastal California Gnatcatcher

Federal Status of the Species

CAGN was listed as threatened by the USFWS in 1993 and critical habitat for this subspecies was designated by the USFWS in 2000.

Species Description and Pertinent Life History

The coastal subspecies of the CAGN is a small gray songbird. CAGN are monogamous and stay paired throughout their lifetime, and the pair establishes a territory and stays within the same territory year-round. The breeding season extends from approximately February 1 through August 31, with peak nesting activity occurring from mid-March through mid-May. The incubation period takes 14 days and the young fledge at eight to 13 days. The young are dependent on their parents for up to three or four weeks; however, fledglings may continue to associate with their parents for several months. Once juveniles reach maturity, they are flushed out of the territory and forced to disperse by parents. CAGN offspring may disperse to adjacent suitable habitat to pair and establish new territories.

Foraging by CAGN primarily consists of gleaning sessile prey from foliage while quickly moving through branches of shrubs. Larger prey items are beaten against a branch before being

swallowed whole or fed to juveniles (Atwood and Bontrager 2020).

CAGN are year-round residents of southern California. CAGN generally prefer to forage, breed, and nest in sage scrub habitat, which is a broad category of upland vegetation dominated by California sagebrush, California buckwheat, white sage *(Salvia apiana)*, and black sage (*Salvia mellifera)* (Beyers and Wirtz 1997). Historically, CAGN have been described as restricted to coastal sage scrub habitat. However, it is now known that CAGN may also use disturbed mixed scrub, chaparral, grassland, and riparian habitats in proximity to coastal sage scrub for dispersal and foraging (Atwood and Bontrager 2020). CAGN adults of both sexes, as well as juveniles, have been observed foraging in non-coastal sage scrub for extended periods just subsequent to nesting, and diurnal shifts in CAGN habitat use from coastal sage to non-coastal sage habitats have also been observed (Campbell *et al*. 1998). Patterns of CAGN use of non-coastal sage scrub habitat appears to occur for a variety of reasons, often driven by site-specific dynamics, and may occur year-round. While CAGN are known to make significant use of non-coastal sage scrub habitats, CAGN are still not thought to regularly nest independent of coastal sage scrub (Campbell et al. 1998).

CAGN Status in the Action Area

Based on surveys performed in 2019 and 2020, there are approximately 10 territories within 500 feet of the Action Area (Figure 6), 9 of which overlap the construction footprint. CAGN occupancy of this area is a relatively recent occurrence. Subsequent to raising the Prado Dam main embankment, this habitat was restored. CAGN are thought to have first colonized this area around 2010. Prior to that time, CAGN had not been documented in the Action Area.

There is no CAGN critical habitat in the Action Area. However, CAGN critical habitat has been designated approximately two miles downstream of Prado Dam, in both the Chino Hills to the southwest and Santa Ana Mountains to the south east.

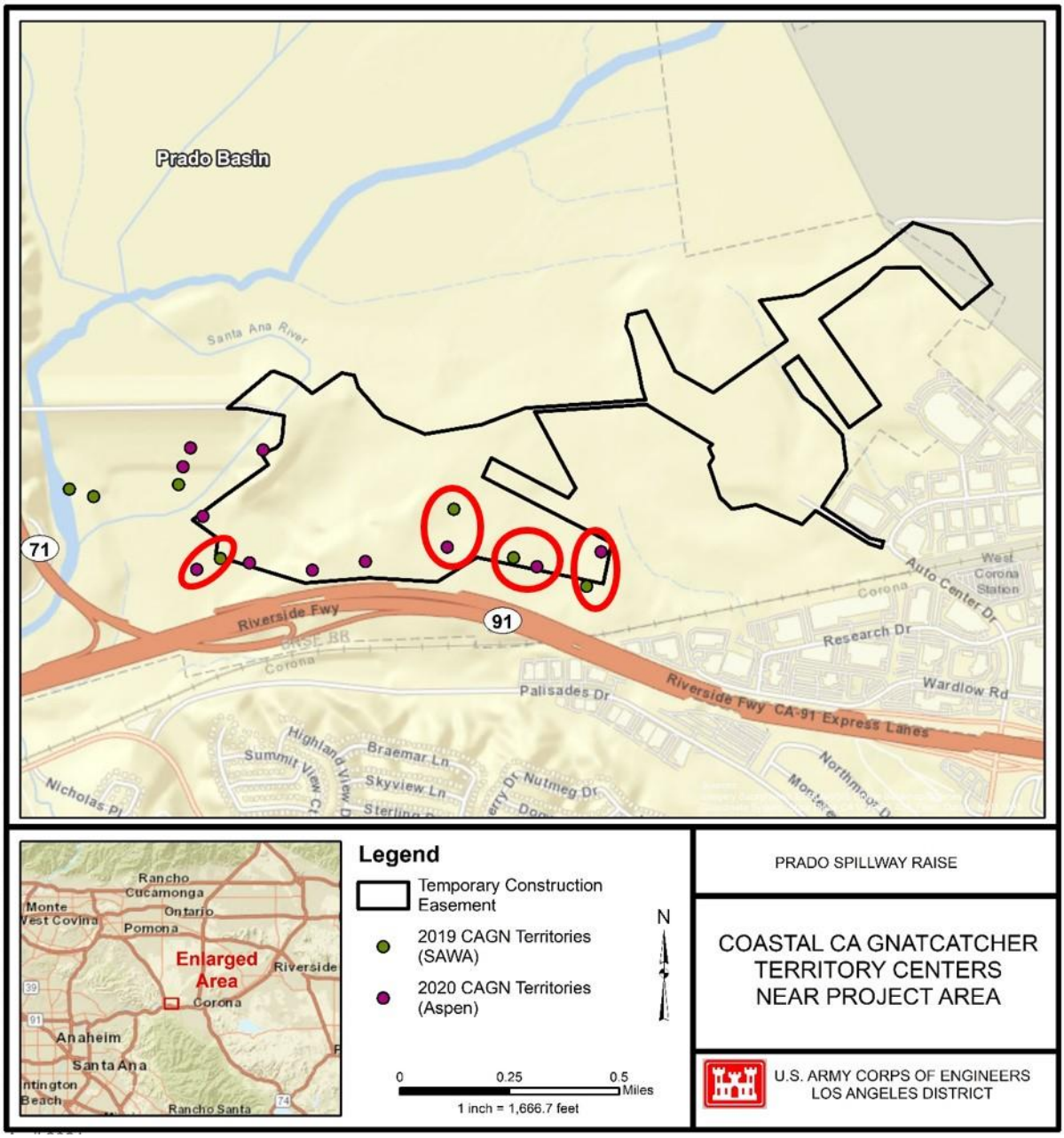

Figure 6. CAGN locations in and adjacent to the Action Area. Red circles are shown to indicate that sightings across years may represent a single territory.

3.2 Least Bell's Vireo

Federal Status of the Species

The least Bell's vireo (LBV) was listed as a Federal Endangered Species in 1986.

Species Description and Pertinent Life History

The LBV is a small migratory songbird that historically was common in lowland riparian habitat, ranging from coastal southern California through Sacramento and San Joaquin Valleys with

scattered populations in Coast Ranges of the Sierra Nevada, Mojave Desert and Death Valley. Presently, the species only occurs in riparian woodlands in southern California. The enactment of protective measures and subsequent management led to steadily increasing LBV numbers and, by 2005, there were nearly 3000 territorial males. In recent years, LBV have continued to increase in abundance, distribution, and density throughout their range.

Several factors have contributed to the long-term degradation of habitat conditions for the LBV in the Santa Ana River watershed. Reductions in surface flows limit the extent of riparian vegetation available for the LBV. Several additional stressors identified in the draft recovery plan for the SAS in this reach likely also affect the LBV, including intermittent wastewater discharge, increased depth to groundwater, loss of high flows, loss of river gradient, off-road vehicle use, and the recent invasion of a non-native filamentous algae. However, there has been an overall positive trend for LBV populations in the Santa Ana River watershed in recent years, including significant population growth in Prado Basin, which has likely contributed to an increase in LBV in the Action Area since the time of the LBV recovery plan. Since the previous consultation on the Prado Spillway in 2001, LBV numbers in the Prado Basin have been consistently high. The number of territorial males has significantly increased since 2001, though the overall number of breeding pairs and reproductive output of the population has remained generally stable (Pike et al. 2019).

LBV Status in the Action Area

LBV do not currently occupy the Action Area, although there is a significant population of LBV in the adjacent riparian habitat of the Prado Basin. Approximately eight LBV territories have been documented within 500 feet of the construction footprint, with another male incidentally observed outside of protocol surveys (Figure 7).

3.3 Least Bell's Vireo Critical Habitat

The physical and biological features of LBV critical habitat that are essential to the conservation of LBV can be described as riparian woodland vegetation the generally contains both canopy and shrub layers and includes some associated upland habitats (USFWS, 1994). Approximately 138 acres of LBV critical habitat overlap with the Action Area (Figure 8). However, this area of critical habitat consists predominantly of non-native upland vegetation and minor amounts of native upland vegetation. This area of critical habitat does not contain the physical and biological features of LBV critical habitat and is not generally suitable for LBV nesting or foraging.

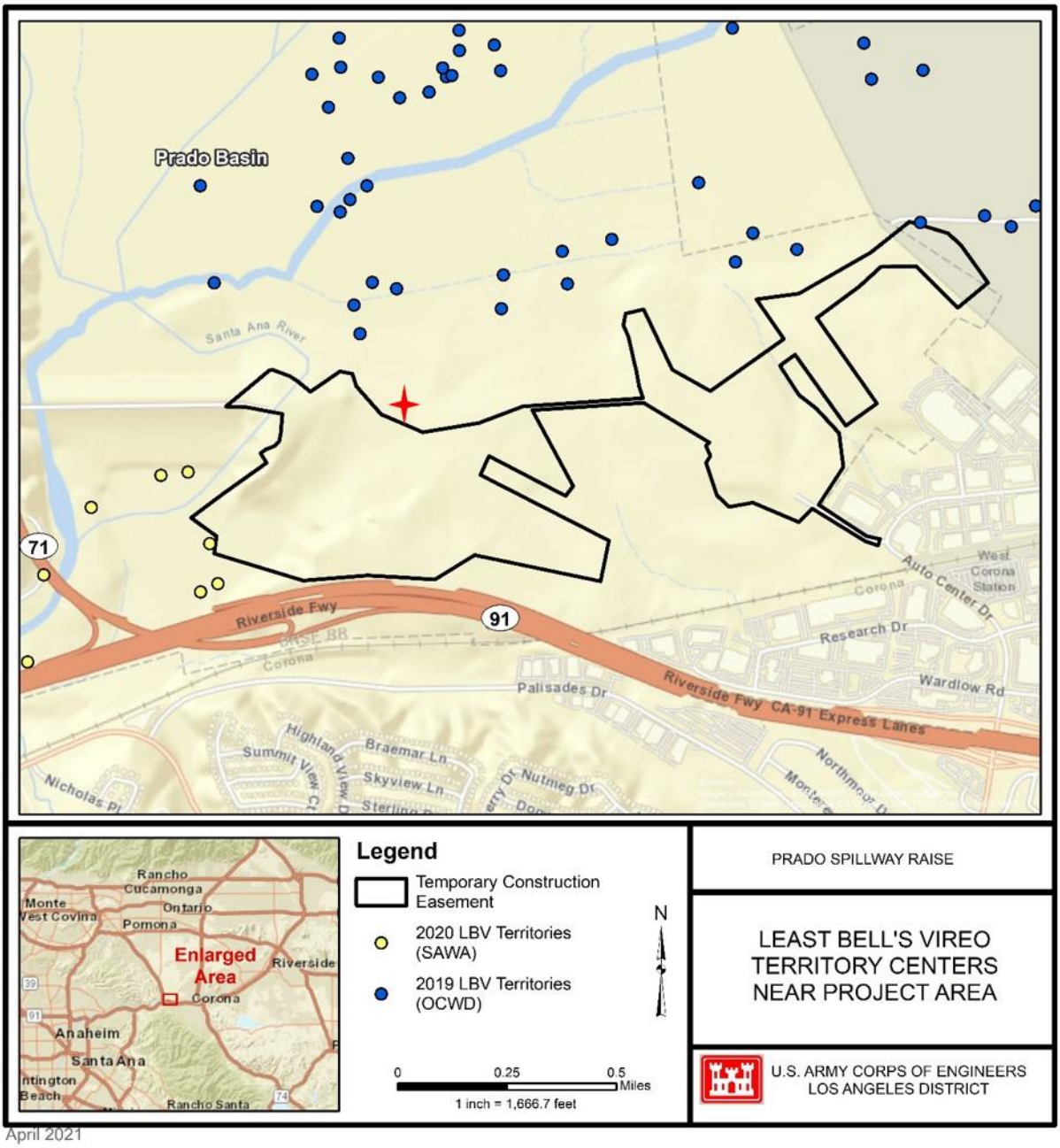

Figure 7. LBV territories in the vicinity of the Action Area. The red star represents a male LBV incidentally observed by Corps staff, but not documented during protocol surveys.

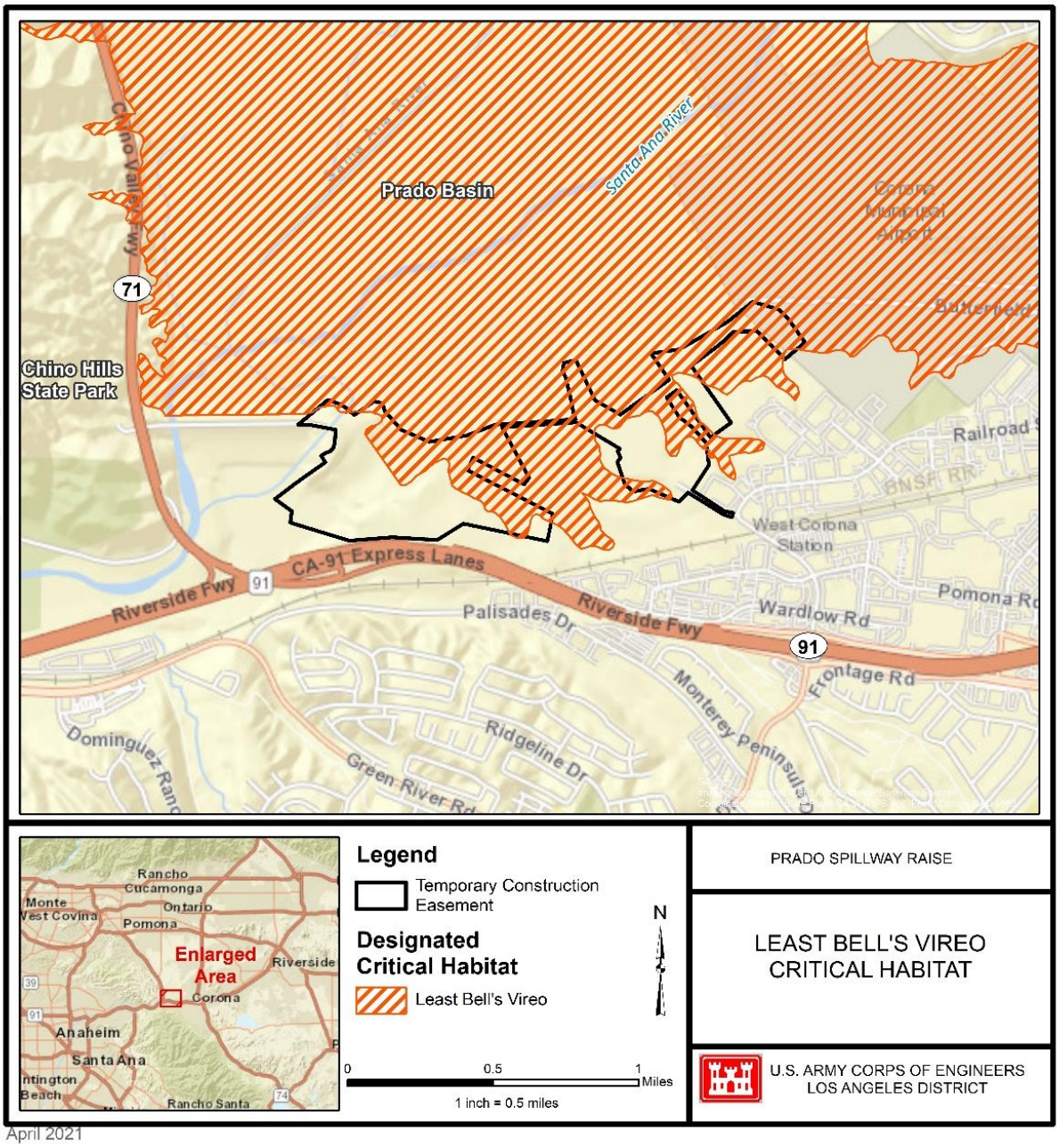

Figure 8. LBV critical habitat in the Action Area.

4.0 Description of the Proposed Actions

4.1 Project Overview

The Proposed Action consists of the following major components (see Figure 9), which incorporates the DSMS requirements into the spillway raise construction:

- Demolish the existing control structure and construct a labyrinth weir and approach walls.
- Construct Main Embankment and Auxiliary Dike earthen embankment tie-ins.
- Demolish the existing upper chute and construct a new chute with an underdrain system, anchors, and a structural concrete slab for a 500-foot-wide chute.

- Demolish the lower chute and construct a roller compacted concrete (RCC) slope with drainage system, anchors, and structural concrete slab.
- Construct new chute walls with a drainage system.
- Construct a flip bucket overlay, connector walls, and erosion protection downstream of the flip bucket.

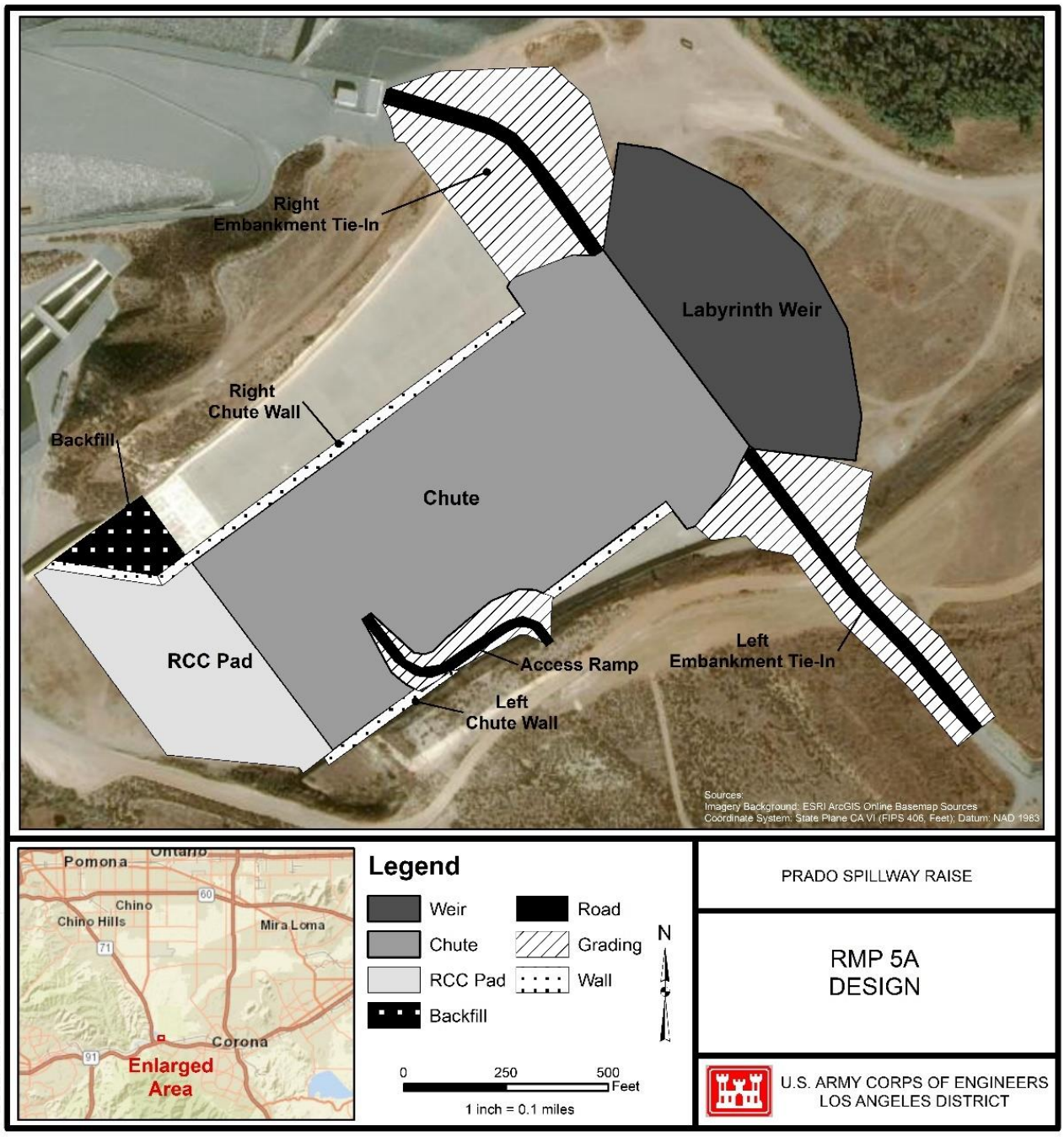

Figure 9. Overview of the features of the Proposed Action

4.2 Detailed Description of the Proposed Action

Ogee Replacement and Approach Walls

The existing ogee (see Figure 2) would be replaced with an arched labyrinth weir structure located upstream of the existing ogee. Conceptual designs indicate that this new reinforced concrete structure would have an upstream-to-downstream length of the weir structure approximately 330 feet and the arc length at the downstream noses of the labyrinth shape would be approximately 550 feet. Portions of the existing structure would be demolished and removed for disposal to accommodate the footprint of the new labyrinth weir structure. Mass gravity concrete approach channel walls would be constructed at each end of the labyrinth crest structure to convey flows into the spillway and protect the upstream slope and toe of the embankment tie-ins from approach velocities.

Main Embankment and Auxiliary Dike Tie-ins

The embankment would be a zoned embankment with a low permeability core, filters, drains, and coarse-grained shell material. The upstream embankment slopes would be subject to erosion and scour and would be covered with stone protection. The crest would include a continuation of the existing maintenance roads.

Upper (Flat) Chute Slab Replacement

The new reinforced concrete chute constructed within the footprint of the existing spillway would be approximately 500 feet wide, conveying spillway discharges from the labyrinth weir to the existing flip bucket. The chute slab replacement would include the full existing chute width, from the control structure to the flip bucket, and between the end of the existing chute wall foundations. The chute walls and the flip bucket would remain in place. This includes excavation; installation (and later removal) of forms to construct an underdrain system, installation of passive anchors, and top with a structural concrete slab.

Lower (Steep) Chute Slab Replacement

The lower (steep) chute would be over excavated, removing the existing slab and keys, and replaced with a drainage system, RCC, anchors, and a structural concrete slab. The slope angle of 2H:1V would be maintained.

Chute Walls

The new chute walls would be reinforced cantilever walls. The majority of the existing chute walls would be left in place.

Flip Bucket Modification and Erosion Protection

The flip bucket will be modified to safely direct flows away from the spillway chute. This includes the construction of a five-foot thick RCC pad downstream of the flip bucket to provide scour protection.

Project Access and Haul Routes

Construction vehicles would access the site using the existing haul route that continues from Auto

Center Drive as well as other dirt maintenance roads that surround the existing Prado Spillway and Dam. Haul roads and vehicular access roads would be needed during construction of the spillway. The haul route would be used to transport equipment, stone, fill material, and other construction materials from the borrow sites, commercial quarries, or the staging areas. The haul route within construction footprint would be located on government property (Figure 1). Two staging areas will be utilized to facilitate construction (S-1 and S-2 on Figure 1). In addition, non-structural fill areas (F-1 and F-3 on Figure 1) may temporarily be used to stage and stockpile material during construction. Non-structural areas will ultimately be backfilled as a component of construction.

Material Source and Disposal

Approximately 8,000 cy of stone would be required for the construction on the upstream face of the embankment tie-in to connect to the spillway. Riprap would be imported from local quarries, with several potential sources in Corona, California.

Approximately 245,000 cy of fill will be required and will come from the five borrow areas delineated in Figure 1. Materials will initially be sources from the closest and largest borrow areas (B-2 and B-1 on Figure 1), with materials sourced from the smaller and more distant borrow areas (B-3, B-4 and B-5) as necessary, if B-2 and B-1 sources are depleted. All borrow sites are expected to be necessary. However, the majority of borrowed materials are expected to come from B-1 and B-2. Borrow areas B-1 and B-3 overlap with those identified for use in the Alcoa Dike project.

Construction of the Proposed Action would produce organic, inorganic, and unsuitable construction materials which need to be disposed of. There are no known sources of hazardous pollution at the project site, and disposed materials are expected to be free of contaminants. Topsoil containing organic material would be spread on borrow areas as a part of site restoration. Disposal of any materials by burning or burying at the project site would not be permitted. All remaining disposal materials (organic materials, trees, abandoned timber, concrete, rubble, asphalt, metal, etc.) will be disposed of by the contractor at a commercial landfill.

Construction Equipment

A combination of dozers, excavators, haul trucks, and scrapers will likely be used to remove material to foundation grade. The foundation will be prepared with air compressors, power brooms attached to skid steers, front end loaders, excavators, and haul trucks. Front end loaders, backhoe loaders, dozers, and skid steers may be used for placement or movement of materials and stockpile maintenance. A motor grader may be used to finish grades/smooth out surfaces. A motor grader will also be used throughout construction with a water truck or water tanker to maintain haul roads. Drill rigs will be used to install foundation anchors. A crane will be used to install formwork and rebar. Batch plants will likely be established onsite to mix RCC and/or conventional concrete; however, delivery of conventional concrete via truck from surrounding area ready-mix plans is also a possibility. A concrete pump truck and conveyor belt system may be used to deliver concrete from concrete delivery trucks or on-site batch plant locations to the point of placement. Hand operated vibratory equipment will be used for mass concrete placements. Scrapers, sheepsfoot and smooth drum compactors, tractor pulling a disc, water trucks, motor grader, and dozers will be used for embankment construction. Walk behind and other small compactors along with miscellaneous hand tools and hand power tools will also be used for embankment construction. Front end loaders, excavators, and haul trucks will be used for stone protection and riprap bedding placement. Haul trucks, motor graders, and smooth drum

compactors will be used for aggregate base and asphalt concrete placement. Water trucks will also be used for frequent dust mitigation. Tractors, discs, harrows, drill seeder, hydromulch truck, and haul trucks will be used for reclamation activities. Miscellaneous 3 ton and less trucks and other vehicles will be used to convey personnel around the site. An aerial drone will be used for surveying and photography.

Construction Schedule and Phasing

Construction is currently scheduled to commence in Fall 2022 (pending project approvals and receipt of funding) and last approximately 40 months. It is possible that the proposed project may be built in stages, with multiple start dates and construction periods for various sections of the proposed project depending on land acquisition and utility relocations schedule, environmental windows and weather delays. Construction phasing may result in an extension of the overall project duration beyond March 2028 (i.e. beyond the approximate duration of 40 months).

Proposed construction hours would be 7:00 a.m. to 6:00 p.m., Monday through Friday for most construction activities. Occasional overtime work may be required to maintain the construction schedule or for isolated activities such as concrete placements that need to continuous until complete. Night construction efforts are likely to be required during construction of roller compacted concrete, which requires continuous, uninterrupted placement of material to ensure bonding beyond layers of concrete.

Coffer Dam

During construction, portions of the spillway will be temporarily inoperable due to the removal and replacement of chute slabs. If a major flood were to occur during this period, there would be significant downstream life safety risks. Due to the high level of consequences downstream of Prado Dam that would occur if a major flood happened during construction, a temporary cofferdam will be necessary.

A preliminary diversion concept has been developed (Figure 10) and consists of an earthen cofferdam constructed to a crest elevation that is a few feet lower than the existing low areas (El. 566.0 [El. 568.3]) adjacent to the spillway. The conceptual coffer dam shown in Figure 12 may be updated as risk management analyses continue. However, modifications to this diversion design are not expected to result in substantially different impacts in the context of this BA.

The cofferdam would tie into the existing grade on the left side of the spillway approach channel and into the extended approach channel gravity wall on the right side of the new labyrinth crest structure. On the back side or right side of the approach channel gravity wall, a pilot channel would be excavated to convey rising reservoir flows to the right side of the proposed new spillway structure to serve as a temporary diversion channel during construction. Flood flows would be contained within the existing spillway chute diversion channel via the existing spillway chute walls on the right and with temporary precast panels of some nominal height on the left. If extreme flooding were to occur during construction the cofferdam would serve as an emergency fuse plug overtopping before the existing low areas with the idea that flows through the potentially partially constructed spillway chute would be less risky than overtopping of the existing low areas adjacent to the spillway until the embankment tie-ins are fully constructed.

Anticipated Routine Maintenance

The following maintenance activities are expected to be required:

(1) Routine inspections

(2) Use of dump trucks to haul stone and use of hydraulic excavators to place stone and other material in eroded areas of the embankment and spillway to protect and reinforce the structure, as necessary.

(3) Periodic vegetation management in accordance with EP 1110-2-18

(4) Repair of maintenance roads and ramps

(5) Periodic clearing of debris in and around drainage structures and weep holes

(6) Repair of damaged concrete and periodic sealing of concrete joints (every 5-10 years)

(7) Periodic rodent control and repair of associated damage

(8) Periodic mending and painting of fences and gates

(9) Periodic drain and underdrain inspections

(10) Reading of piezometers, survey monuments, inclinometers, and other dam instrumentation

(11) Periodic maintenance of the two gated openings at the base of the labyrinth.

Comparison of Changes - 2001 Proposed Action to Current Proposed Action

As discussed in Section 1.2, the Corps previously completed consultation regarding the raising of the Prado Dam Spillway in 2001. Table 3 summarizes the primary differences between the 2001 proposed action and the proposed action described in this BA, as well as changes to site conditions that have occurred since 2001.

Table 3. Summary of primary differences between the 2001 proposed action and current proposed action.

2001 Action	Current Action
Retain the existing concrete spillway chute. Raise spillway crest (ogee) from 543 to 563 with use of concrete cap.	Demolish existing spillway structure and replace with labyrinth weirs and approach walls. Raise spillway crest (ogee) from 543 to 563.
Flip bucket to drain low-flow discharges.	Refined flip-bucket design, to include a RCC erosion pad.
Identification of general borrow and staging areas.	Identification of specific borrow and staging areas.
	Construction of a temporary coffer dam during construction.
CAGN not present in Action Area. Coastal sage scrub habitat in the Action Area is poor.	CAGN have colonized Action Area. Quality of coastal sage scrub in Action Area has increased due to previous restoration efforts.

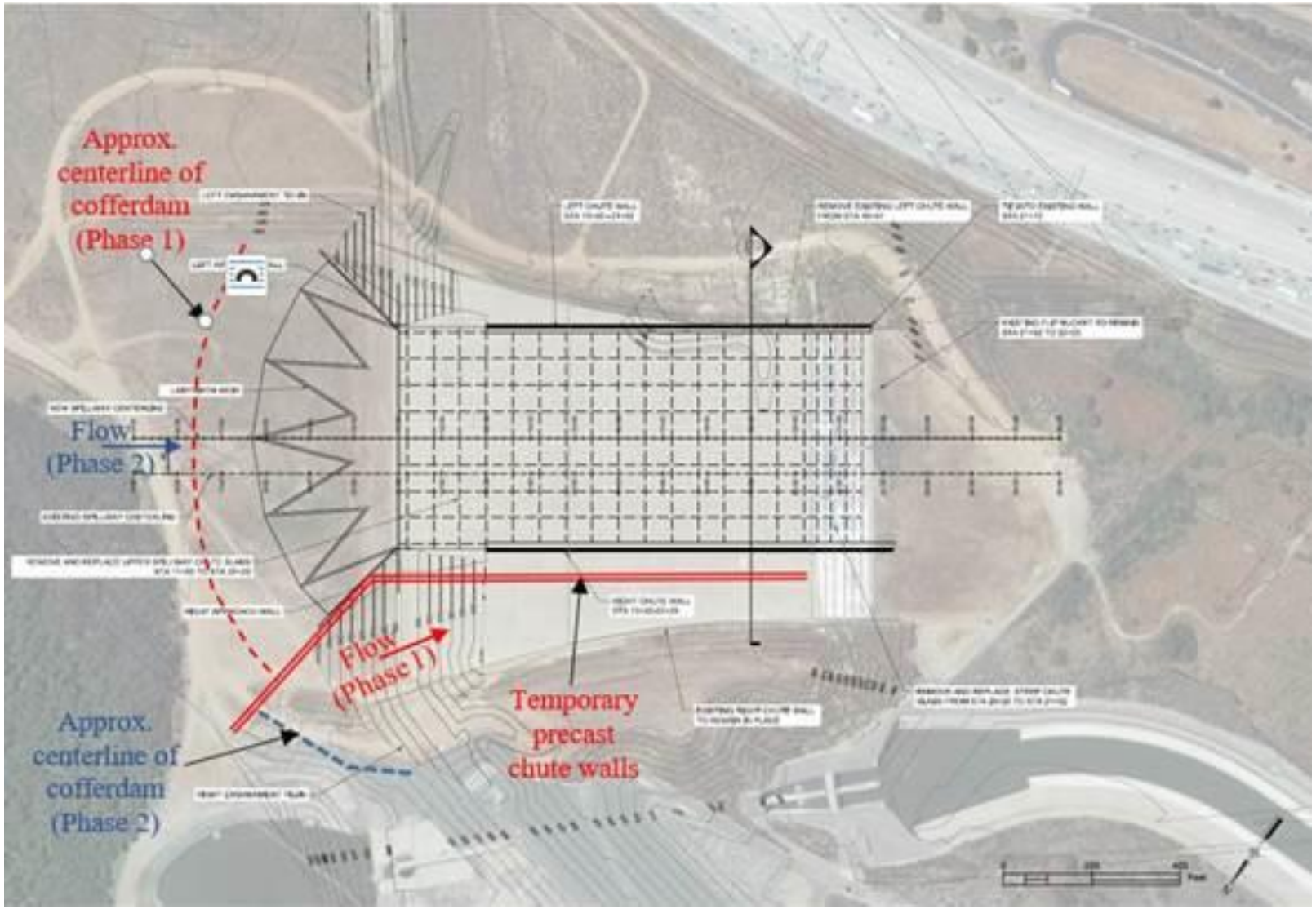

Figure 10. Conceptual diversion design

The modifications to Prado Dam, once completed, will also result in the ability of the dam to maintain a new maximum pool extending up to 566 feet. The maximum pool of the current spillway is 556 feet. Holding water up to spillway crest, however, is not a routine dam operation. Since the dam began initial operations in the 1940s, the pool elevation has reached a maximum of 529 feet, fourteen feet below the existing spillway crest and 34 feet below the future spillway crest (Figure 5). The pool has reached or exceeded 520 feet on six occasions, and 510 feet on ten occasions. While the elevated spillway provides capacity to protect against extreme flood events, a flood event has not occurred in the past 80 years within ten feet of the existing spillway crest, and a flood event of a magnitude requiring the use of the new spillway capacity is not reasonably certain to occur.

Based on past and anticipated future hydrologic conditions, the raising of the spillway from 543 feet to 566 feet will not result in any effect to Santa Ana sucker critical habitat. As a result, the scope of effects analyses contained in this document, and the scope of the Action Area, have been confined to effects associated with construction.

4.3 Conservation Measures

Conservation measures are any action to benefit or promote listed species that are included by the Federal Agency as part of the proposed action. The following list of conservation measures represents the actions the Corps has included in into the proposed action described in this BA.

CM -1: The Corps will develop and implement a monitoring program for LBV and CAGN in spring and early summer during construction.

CM-2: The construction contractor will minimize grading activities and leave root systems intact, to the extent practicable.

CM-3: Any vegetation with the potential to support CAGN and LBV will be cleared outside of the nesting season, defined as February 15 to August 15.

CM-4: A biologist or environmental monitor will monitor construction activities to ensure environmental impacts remain consistent with those described in this document. This includes ensuring vegetation removal occurs only in designated areas and riparian areas not to be disturbed are flagged and avoided.

CM-5: The Corps will successfully restore all vegetated areas that are temporarily disturbed during construction related activities with riparian, coastal sage scrub or other native habitat as appropriate to the area, and will keep all temporarily disturbed areas free of exotic plants for a period of 8 years or until native vegetation is re-established. If the sites have not begun to recover within five years (i.e. 50 percent of the disturbed areas are not vegetated) then the site will be replanted or re-hydroseeded as needed. Acreage of actual disturbance will be documented and compared to acreage restored; any shortfalls will be addressed through additional restoration (if necessary).

CM-6: The Corps will offset temporary losses to coastal sage scrub habitat by restoring the same quantity of habitat within adjacent, currently degraded areas of the TCE, in addition to on-site restoration of existing quality habitat. This acreage will be managed for 8-years post-construction. The Corps will offset permanent impacts

to coastal sage scrub habitat at a 3:1 ratio, also by restoring currently degraded areas within the TCE and managing those areas for 8 years post-construction. All restored habitat will remain protected from future large-scale development or intensive recreation as it is within active operational areas of the Prado Basin. Flood control maintenance activities, utility maintenance and upgrades, and compatible recreation such as establishment of bicycle and equestrian trails may be permitted, but these actions would be designed to avoid or minimize impacts to native habitat. It is anticipated that temporary (56.3 acres) and permanent (4.4 acres) impacts to coastal sage scrub will be more than offset by restoring non-native upland habitats (67.6 acres) within the Action Area to native coastal sage scrub in addition to the restoration of the respective 56.3 acres. This will result in an increase in quality native coastal sage scrub habitat from 60.7 acres to 123.9 acres.

CM-7 Construction personnel will strictly limit their activities, vehicles, equipment, and construction materials to the temporary construction footprint identified in Figure 1, 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 construction footprint to designate limits of construction activities. These barriers will be maintained until the completion of all construction activities.

CM-8 The construction contractor will be required to monitor noise regularly during the nesting season (February 15 – September 15). Ambient noise levels will be recorded by the Corps-approved biological monitor prior to the nesting season, or prior to construction during that period to ensure that 1) noise does not exceed 60 dBA for LBVI and 73dB for CAGN, or another agreed upon limit with the USFWS, within occupied CA Gnatcatcher and least Bell's vireo habitat during nesting season; or, (2) noise does not exceed 5 dBA above ambient conditions if said levels are above 60 dBA LBVI and 73 dBA for CAGN, or another agreed upon limit. If construction noise levels within occupied adjacent habitat cannot be reduced below 60 dBA LBVI and 73 dBA for CAGN or another agreed upon limit, during nesting season of any year, and if those exceedances are documented to occur on two or more consecutive days, the Corps or project proponent will offset impacts at a 1:1 ratio per any period during the breeding season affected by such noise levels. This 1:1 ratio will be based on the acreage of occupied coastal sage scrub or riparian habitat outside the project footprint subject to noise levels above agreed-upon thresholds during the nesting season, per the number of breeding seasons affected (e.g., 1 acre of coastal sage scrub 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. The Corps will identify restoration areas for offsetting noise impacts in coordination with USFWS and will maintain (continue weeding) those areas for a period of 5 years.

CM-9 Prior to construction activities, a Corps biologist (or the environmental monitor approved by the Corps) will conduct pre-construction environmental training for all construction crew members. The training will focus on required avoidance/minimization measures and conditions of regulatory agency permits and approvals (if required). The training will also include a summary of sensitive

species and habitats potentially present within and adjacent to the project site.

CM-10 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.

CM-11 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 will confirm that conservation measures are sufficient to avoid or minimize impacts to these species, or shall recommend additional measures as warranted.

CM-12 Best management practices will be implemented to reduce impacts to native habitats, including the following:

a. All equipment maintenance, staging, and dispending 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.

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.

5.0 Effects of the Proposed Action

Approximately 151 acres of habitat within the Action Area will be disturbed during construction, which includes around 127 acres of temporary impact and around 24 acres of permanent impacts (Table 4). An additional 83 acres of currently developed areas would also be utilized during construction (e.g. structures and roadways), but these areas do not currently support any habitat. As summarized in Table 4, the majority of impacts to habitat are confined to non-native habitats. Roughly 61 acres of overall impact would occur within native upland habitats, the vast majority of which would be temporary impacts. Around 4.4 acres of native upland habitat would be permanently impacted, and around 3 acres of native riparian vegetation would be temporarily impacted, with no existing riparian habitat permanently impacted.

Following construction, per the conservation measures summarized in Section 4.3, temporarily disturbed areas would be revegetated. As shown, in Table 4, this includes 56.3 acres of existing native upland (coastal sage scrub) and 67.6 acres of existing non-native upland. Revegetation will result in an overall increase in the quantity of coastal sage scrub, as all 67.6 acres of non-native upland would be replaced with coastal sage scrub.

Table 4. Temporary and permanent impact acreages within the Action Area

	Native Riparian	Native Upland	Non-Native Upland	Total Habitat	Developed	Total
Temporary	3	56.3	67.6	126.9	31.6	158.5
Permanent	0	4.4	19.6	24.0	51.6	75.6
Total	3	60.7	87.2	150.9	83.2	234.1

5.1 Effects to Coastal California Gnatcatcher

As discussed in Section 3.1 and illustrated in Figure 5, there are nine known territories within the construction footprint, with a tenth territory within a 500-foot buffer of the construction footprint. During construction, CAGN will be precluded from utilizing any of the nine territories within the construction footprint, and the tenth territory would potentially be disturbed as the result of construction activity. Conservation measures have been included in the proposed action to avoid and minimize potential effects to the tenth territory, which is outside of the construction footprint. As a result, the temporary displacement of nine CAGN territories is anticipated as a result of construction.

The Action Area in the vicinity of the spillway where CAGN currently occur is expected to be a high ambient noise environment. Most of the existing CAGN territories in this area are within 500 ft of the heavily trafficked SR-91 freeway. The Corps has previously identified CAGN nesting and foraging along this freeway corridor in ambient noises as high as 78 dBA (USFWS, 2018c). Thus, it is expected that most construction noise that could affect nearby CAGN outside of the construction footprint will be at least partially masked by existing ambient noise. In addition, construction noise is typically intermittent in nature, while the freeway noise is continuous in nature and sustained over long periods of time. As a result, it is not anticipated that construction-related noise effects will have a significant effect on CAGN outside of the construction footprint.

Vegetation would be removed outside of the CAGN nesting season (CM-3) to avoid any potential take of active nests. Following construction completion, any temporarily disturbed areas would be replanted with native vegetation (CM-6), and impacted areas will be offset by restoration of habitat (CM-5). All replanted and restored areas would be monitored to ensure success of restoration and planting efforts. The overall result of the replanting and restoration efforts following construction will be a net increase in quality native coastal sage scrub habitat within the Action Area, from approximately 60.7 acres to 123.9 acres.

Long-term benefits and success of past construction-related habitat restoration in this area is evidenced by the establishment of mature coastal sage scrub habitat in areas that had previously been dominated by invasive, non-native vegetation, and the expanding gnatcatcher population in an area that was previously unoccupied. While a portion of this previously restored habitat will be re-disturbed during Spillway construction, re-establishment and further expansion of native habitat within this area will potentially support continued growth of the gnatcatcher population in this area in the future. Thus, the increase in coastal sage scrub that would result from implementation of CM-5 and CM-6 is expected to be sufficient to off-set both the permanent and temporary impacts summarized in Table 4.

Furthermore, a monitoring plan will be developed and implemented (CM-1) to verify impacts remain consistent with those estimated here, as well as to document CAGN presence and use of habitat in the vicinity of the construction footprint. Implementation of measures to reduce and monitor the effects of noise (CM-8) and fugitive dust (CM-10) will reduce the potential for effects to CAGN outside of the construction footprint to the maximum extent practicable. As described in

the paragraph above, indirect noise impacts to CAGN adjacent to the construction footprint are not expected to be significant. Implementation of noise barriers would further reduce the potential for noise impacts and any noise impacts that do occur would be identified through monitoring and offset, as described in CM-8.

With implementation of the conservation measures as described above, potential effects to CAGN would be reduced to the maximum extent practicable while still facilitating required construction. **The proposed action may affect, and is likely to adversely affect, coastal California gnatcatcher.**

Relationship to Gas Line Relocation Effects

Prior to any construction work on the Prado Dam spillway described in the proposed action of this BA, a gas line in the same area will be relocated (Figure 1b). Of the ten CAGN territories that could be affected by the Prado Dam spillway efforts, eight of these could potentially be impacted by the gas line relocation: two by direct loss of territories necessary to relocate the gas line and six indirectly due to noise or other construction disturbance. The gas line work is expected to precede the proposed action of this BA by a few months, and thus it is possible that many of the effects to the ten CAGN described above may not occur if these individuals are already displaced due to the gas line efforts. However, there is potential that the CAGN may tolerate the gas line construction noise and remain in place or could potentially recolonize the area between construction events. Therefore, impacts to all ten CANG territories are described above as an upper limit to effects, and effects may be lower depending on conditions at the time of implementation.

5.2 Effects to Least Bell's Vireo

As shown in Figure 6, there are no known nesting locations of LBV within the construction footprint, and none are expected to be found prior to construction due to the lack of suitable habitat. However, there are several known nest locations in close proximity to the construction footprint. LBV at these nest locations have the potential to be indirectly affected by construction noise. Based on the most recent survey data, it is expected that up to nine LBV may nest within 500 ft of the construction footprint.

The impact of construction noise on nesting LBV 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 important auditory cues, such as predator alert calls. LBV may also abandon a nest and their territory if they cannot tolerate the loud noises. If this occurs, eggs and/or hatchlings may be abandoned, temporarily inhibiting further recruitment to the population.

In 2019, LBV surveys at the BNSF Bridge Project (downstream of the Proposed Action) revealed adults did not abandon territories due to noise increases during piling driving activities. The number of territories remained consistent between 2018 and 2019 surveys. While, these pile driving activities began later in the nesting season, this does provide evidence that LBV have some tolerance for construction related noise.

Vegetation would be removed outside of the LBV nesting season (CM-3) to reduce the potential of disturbing active nests. Implementation of measures to reduce and monitor the effects of noise (CM-8) and fugitive dust (CM-10) will reduce the potential for effects to LBV nest locations within 500 ft of the construction footprint to the extent practicable. In addition, any noise impacts that do occur would be identified through monitoring and offset, as described in CM-8. Further, the described monitoring efforts (CM-1 and CM-4) will help to evaluate these nest locations for potential impacts and impact avoidance opportunities during construction.

Even with implementation of these conservation measures, there is the potential for indirect effects to vireo, predominantly in the form of disturbance due to construction activities. LBV in close proximity to the construction footprint may relocate to new nest sites to avoid the construction activities. Considering the extensive amount of habitat surrounding the construction footprint, movement of LBV would not be constricted within the adjacent area. Increased competition for nest sites and other resources may occur during construction, though these effects would be temporary in nature.

Based on long-term monitoring data, LBV in Prado Basin are known to redistribute as the result of disturbance (i.e. inundation) without any apparent reduction in the overall reproduction or abundance of the population. Given the small number of LBV expected to be impacted as the result of this project and the large quantity of available habitat in the basin, the temporary displacement of LBV in Prado Basin is not expected to have long-term detrimental effects to the population.

The proposed action may affect, and is likely to adversely affect, least Bell's vireo.

5.3 Effects to Least Bell's Vireo Critical Habitat

As described in Section 3.3, there are approximately 85 acres of designated LBV critical habitat within the Action Area. However, the area where critical habitat overlaps the Action Area does not currently contain the PBFs associated with LBV critical habitat. As shown in Table 4, only 3 acres of riparian habitat would be temporarily impacted, of which 1.7 acres overlaps LBV critical habitat. This habitat is mulefat scrub that does not provide the PBFs associated with LBV critical habitat and is not occupied by LBV. The remainder of the LBV critical habitat in the Action Area includes coastal sage scrub, non-native upland and developed areas, none of which provide appropriate habitat for LBV.

Furthermore, the temporary impact to the 3 acres of riparian habitat would be offset by the restoration efforts described in CM-5, which is expected to result in an increase quality of riparian habitat in the restored acres relative to the existing acres. Prado Basin and the upstream reach of the Santa Ana River supports over 9,000 acres of LBV critical habitat. The critical habitat in the Action Area comprises less than 2% of this area by acreage but does not contribute any PBFs to the unit. Given the lack of PBFs within the Action Area, effects to critical habitat associated with construction are not expected to be meaningfully measurable and would be insignificant. **As a result, the proposed action may affect, but is not likely to adversely affect, designated critical habitat for least Bell's vireo.**

5.4 Cumulative Effects

The ESA defines a cumulative effect as those effects of future State or private activities not involving Federal activities, that are reasonably certain to occur within the Action Area of the Federal action subject to consultation (50 CFR 402.2).

Within the Action Area, any future State or private activities are likely to trigger federal involvement. Much of the land in this vicinity is under federal control as part of the operation of Prado Dam, and thus most activities would trigger permits or agreements from the Corps. In addition, future activities within the Santa Ana River and nearby tributaries in the Action Area would trigger Clean Water Act Section 404 permits. Activities permitted by the Corps would be subject to consultation and are thus not cumulative effects.

6.0 Summary of Effects Determinations and Conclusions

Listed Species or Habitat	Determination	Request
Proposed Action		
Coastal California Gnatcatcher	Likely to Adversely Affect	Formal Consultation
Least Bell's Vireo	Likely to Adversely Affect	Formal Consultation
Least Bell's Vireo Critical Habitat	Not Likely to Adversely Affect	Concurrence

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Appendix E: USFWS Biological Opinion

United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

In Reply Refer to:
FWS-WRIV-08B0408-21F1233

November 26, 2021
Sent Electronically

Eduardo T. De Mesa
U.S. Army Corps of Engineers – Los Angeles District
915 Wilshire Boulevard, Suite 930
Los Angeles, California 90017

Attention: Marissa McGowan, Biologist

Subject: Formal Section 7 Consultation for the Prado Dam Spillway Raise and Dam Safety Modifications, Riverside County, California

Dear Eduardo De Mesa:

This document transmits the U.S Fish and Wildlife Service's (Service) biological opinion on the Prado Dam Spillway Raise and Dam Safety Modifications (Project), Riverside County, California. On June 29, 2021, we received a letter via email from your agency, the U.S. Army Corps of Engineers (Corps) requesting initiation of Section 7 consultation under the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq*.). This request is regarding the potential effects of the Project on the federally threatened coastal California gnatcatcher (*Polioptila californica californica*; gnatcatcher), and the federally endangered least Bell's vireo (*Vireo bellii pusillus*; vireo) and its designated critical habitat. There is no gnatcatcher designated critical habitat in the action area. Orange County Flood Control District is the non-Federal sponsor of the Project.

The raising of the dam's spillway was one component of the larger Santa Ana River Mainstem Flood Control Project (SARP), which was first considered in a biological opinion dated June 22, 1989 (1-6-88-F-6) and further evaluated in a biological opinion dated December 5, 2001 (FWS-SB-909.6). The SARP is located along a 75-mile reach of the Santa Ana River in Orange, Riverside, and San Bernardino Counties, California. The SARP is a comprehensive flood risk management system that was authorized for construction by Section 401(a) of the Water Resources Development Act (WRDA) of 1986, and includes the raising of Prado Dam, the construction of Seven Oaks Dam, and a network of levees and dikes to reinforce against flood waters. The Corps requested consultation on the Project because of changes to the Project since the previous consultations were completed.

The Service has identified to the Corps the need for the Corps to reinitiate consultation on the SARP to re-examine the effects of the operations of Seven Oaks and Prado Dams (i.e.,

interdependent actions) on federally listed species and their designated critical habitats because of new information and modifications to the proposed action.[1]

New analyses would include effects from flood control operations and planned water conservation activities for Seven Oaks Dam and Prado Dam, as well as ongoing management requirements for flood control facilities located within the 100-year floodplain. The operations of these two dams are interdependent, and thus necessitate a holistic assessment of the overall effects to critical habitat and federally listed species considering all water conservation and flood control activities. In 2012, the Service expressed these significant concerns to the Corps regarding potential effects of ongoing operations at Prado Dam and proposed operations of Seven Oaks Dam on the Santa Ana sucker (*Catostomus santaanae*) and its designated critical habitat. As a result of discussions with the Service and stakeholders, the Corps committed to work with the Service to assess how operations of these dams are affecting geomorphology, hydrology, sediment transport, and other factors important to maintaining suitable habitat conditions for the Santa Ana sucker (Corps 2012).

In its request for consultation, the Corps defined the Project as a modification of the spillway of Prado Dam. Further, in the biological assessment of the Project, the Corps determined that the proposed action is not likely to adversely affect least Bell's vireo designated critical habitat. The proposed Project will temporarily remove 79 acres, and permanently remove 9 acres of designated vireo critical habitat. These acres consist of upland habitat which contain the physical and biological features to support foraging vireo. However, we think it unlikely that vireo within the large adjacent riparian forest require this upland area for foraging. Also, during consultation, the Service and the Corps collaborated to ensure that riparian zones containing the physical and biological features of cover, nesting sites, nestling and fledgling protection, and foraging were avoided. We therefore concur with the Corps' determination that the proposed Project is not likely to adversely affect vireo critical habitat and it will not be further discussed within this biological opinion.

The analyses and conclusions provided in this biological opinion are based on information provided in your letter requesting initiation of consultation, the Biological Assessment for the Prado Dam Spillway Raise & Dam Safety Modifications' - Construction and Maintenance Effects, and email correspondence between the Corps and the Service between June 29, 2021 and October 15, 2021, and published and unpublished scientific literature. The complete project file for the SARP is maintained at the Carlsbad Fish and Wildlife Office (CFWO).

CONSULTATION HISTORY

The Service has issued a series of biological opinions (i.e., Service 1980, 1989, 2001, 2004, 2012, 2013, 2015, 2017, 2018, 2020, 2021) addressing the effects of constructing, operating, and maintaining the SARP on federally listed species and their respective designated critical habitats. The raising of the Prado Dam spillway was one aspect of the SARP discussed in the 2001

[1] The Service most recently brought the need for reiniation of consultation on the SARP to the Corps attention in our March 15, 2021, Biological Opinion for the Lower Norco Bluffs Toe Stabilization Project, FWS-WRIV-08B0408-20F1132.

biological opinion titled “Prado Mainstem and Santa Ana River Reach 9 Flood Control Projects and Norco Bluffs Stabilization Project (FWS-SB-909.6).” However, it was not fully analyzed during that consultation because we did not have sufficient specific information at that time. Conservation measures to avoid and minimize effects to listed species and designated critical habitat were included in that biological opinion, as well as within the Final Supplemental Environmental Impact Statement/Environmental Impact Report for Prado Basin and Vicinity, Including Reach 9 and Stabilization of the Bluff Toe at Norco Bluffs (2001 SEIS/EIR; Corps 2001). Those conservation measures were subsequently updated in an amendment to the SARP biological opinion dated March 28, 2012 (FWS-SB/WRIV/OR-08B0408-11F0551).

On June 29, 2021, we received the biological assessment along with the request to initiate formal consultation on the effects of the Project. We submitted a request for more information via email on July 13, 2021 and received responses from the Corps via email on August 20, 2021. On July 16, 2021, the Service and Corps engineering staff held a conference call to discuss technical elements of the Project. On September 1, 2020, the Service and Corps participated in a conference call to discuss opportunities for off-site gnatcatcher mitigation.

The proposed Project will allow for the impoundment of floodwaters to 566 feet water surface elevation behind the dam (i.e., in Prado Basin) if a Standard Project Flood (SPF) event occurs. However, the Corps requested consultation on the construction and maintenance of the spillway and associated dam safety modification components only, and not dam operations associated with the raised spillway. The Corps has indicated that consultation on the Prado Dam operations/water control manual will be initiated at a future date; therefore, the present consultation will not discuss the effects of dam operations on listed species.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The proposed Project entails raising the Prado Dam spillway, which is a SARP component that has been modified from the initial Project proposal discussed within the 2001 biological opinion (FWS-SB-909.6). The proposed Project site extends from the existing Prado Dam spillway approximately 1.25 miles east along the southern edge of the Prado reservoir on Corps-owned lands adjacent to the City of Corona, in unincorporated Riverside County, California (Figure 1). Major features of the spillway modifications include raising the spillway crest (currently an ogee, a double curve formed by the union of a concave and a convex line, like the letter S) from 543 feet to an average of 563 feet NGVD29, modifying the control structure, constructing new approach walls, and constructing embankment tie-ins. In addition, the proposed Project would replace the spillway chute in response to a 2019 risk assessment of Prado Dam, which changed the Dam Safety Action Classification from moderately rated to very high risk, in its existing condition. To minimize this risk, repairs would entail demolishing the existing ogee spillway weir structure and replacing it with a labyrinth spillway weir structure, modifying the existing chute slabs and constructing chute walls, modifying the flip bucket, and constructing an erosion protection mat (detailed below). The Project’s temporary construction easement (TCE) consists

of the dam construction footprint itself, staging areas, fill areas, borrow areas, and access roads (Figure 1).

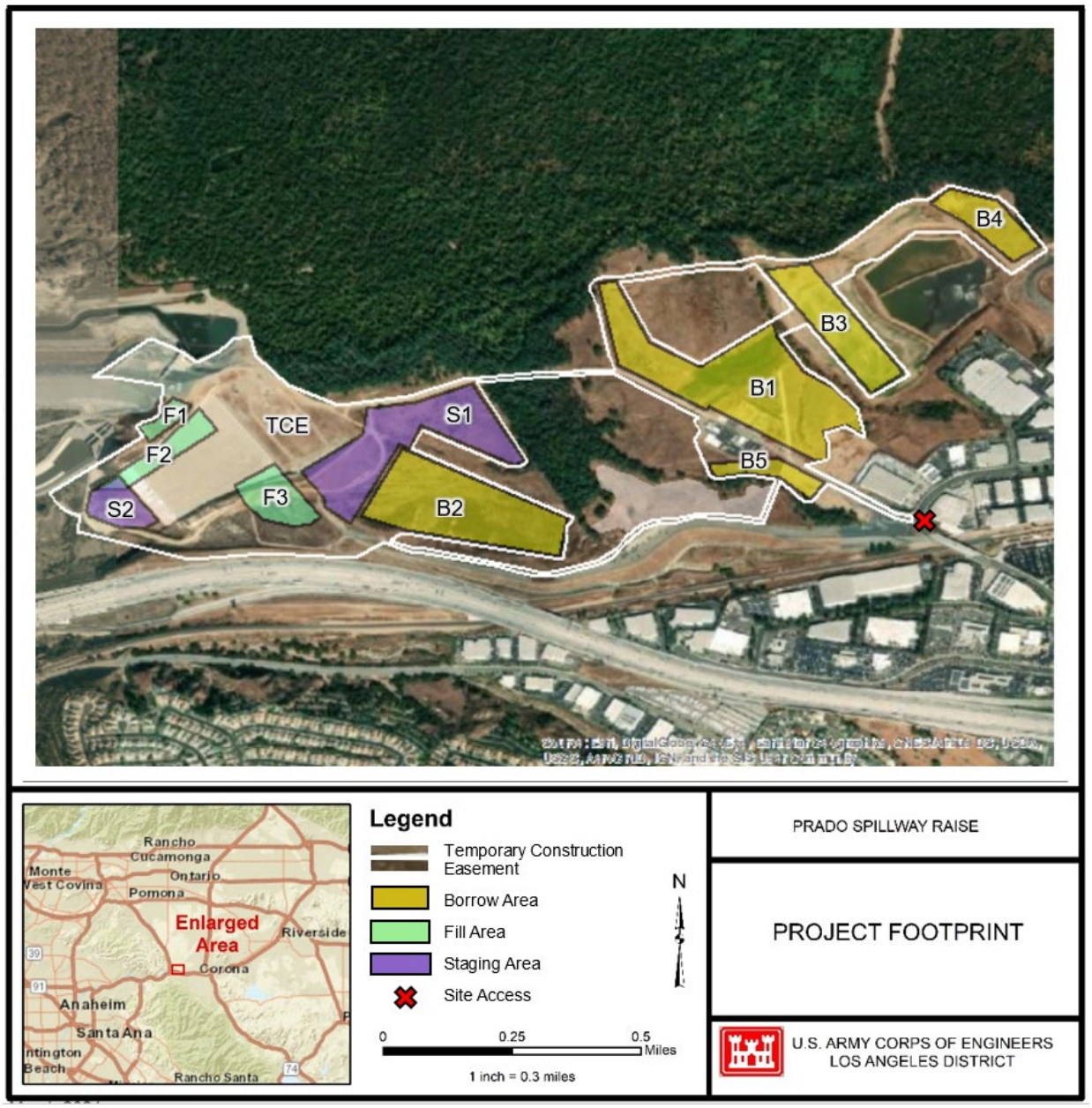


Figure 1. Prado Dam Spillway Raise and Dam Safety Modifications Project Footprint.

LABYRINTH WEIR AND APPROACH WALLS

The existing ogee-shaped control structure (weir) would be demolished and replaced with an arched labyrinth control structure located upstream of the existing ogee (Figure 2). Conceptual designs indicate that this new reinforced concrete control structure would have an upstream-to-

downstream length of approximately 330 feet and the arc length (at the downstream noses of the labyrinth shape) would be approximately 550 feet. The existing ogee control structure would be demolished and removed for disposal to accommodate the footprint of the new labyrinth control structure. Mass gravity concrete approach channel walls would be constructed at each end of the labyrinth control structure to convey flows into the spillway and protect the upstream slope and toe of the embankment connections (tie-ins) from approach velocities. Mass gravity concrete walls would be constructed on each side of the labyrinth weir to connect to the extended dam. The labyrinth spillway, new walls and spillway chute would be entirely within the footprint of the existing spillway area. There would be no new permanent construction outside of the existing spillway footprint other than grading, haul roads, realignment of utilities serving the dam and excavation of soils for use in the spillway construction.

Connection to Main Dam and Auxiliary Dike

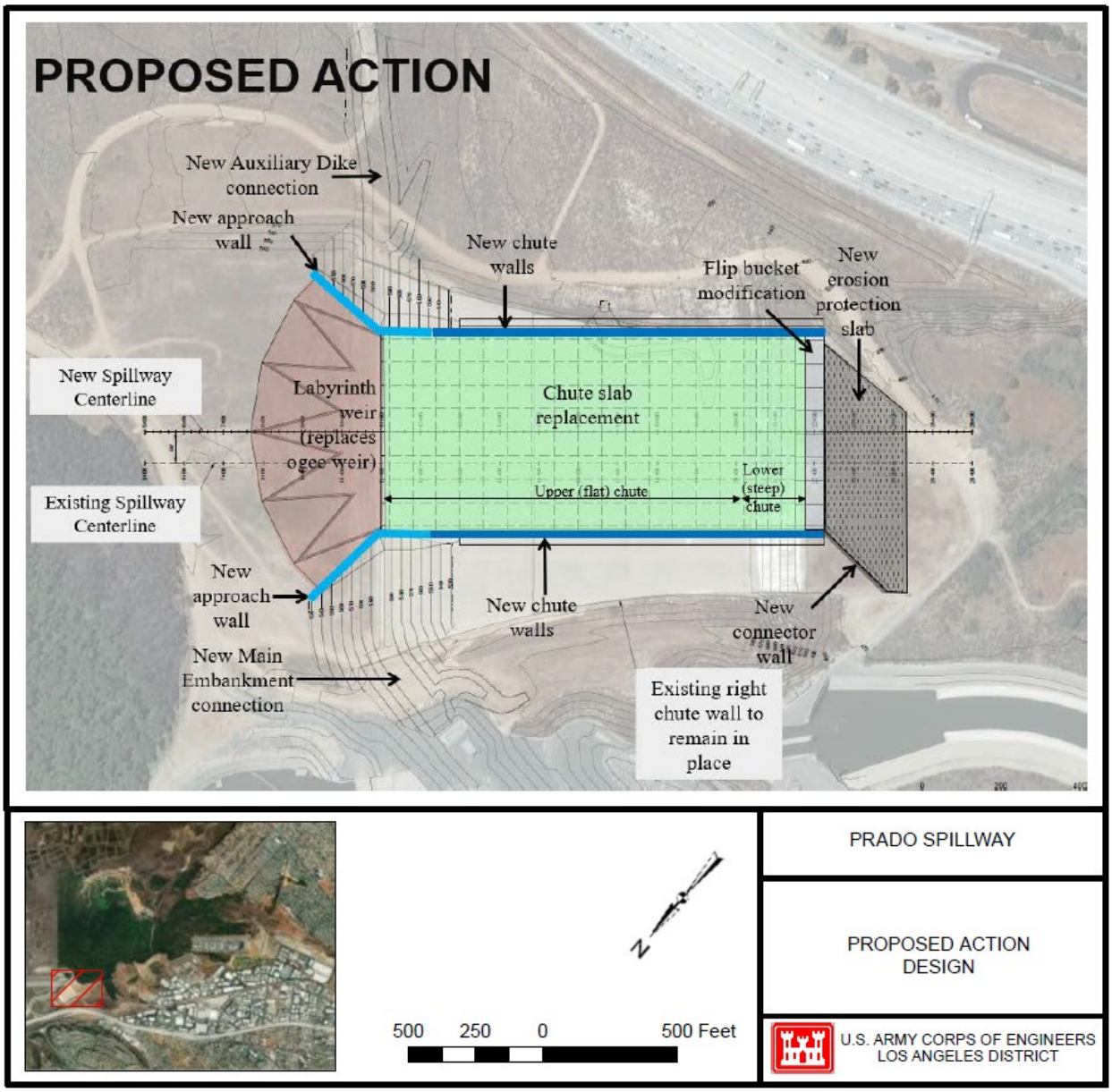
Both sides of the concrete labyrinth spillway would be connected to the existing dam by extending the dam with zoned earth-fill (Figure 2). The dam extensions would be zoned embankments like the existing dam with a clay core, sand filters and drains, and sand and gravel outer shells. The slopes of the dam extensions would be covered with stone to protect them from erosion and scour similar to the existing dam. Existing maintenance roads would be extended across the crest and embankment tie-ins.

Chute Slab Replacement

The new reinforced concrete chute constructed within the footprint of the existing spillway would be approximately 500 feet wide. The spillway chute conveys water that flows over the labyrinth weir to the flip bucket at the bottom of the dam (Figure 2).

The upper (flatter) chute replacement would include demolition of a portion of the existing chute slab and underdrain system, excavation, backfill, construction of a new underdrain system, installation of anchors to hold the concrete to the rock, and placement of a steel reinforced concrete slab.

The lower (steeper) chute replacement would include demolition of a portion of the existing chute slab and underdrain system, excavation, and construction of a new drainage system, roller compacted concrete, rock anchors, and a steel reinforced concrete slab.



Chute Walls

The new chute walls would be reinforced concrete cantilever walls or mass gravity concrete walls (Figure 2). A portion of the existing chute wall would be demolished on the east side and a temporary excavation slope constructed to accommodate construction of the new chute wall. A drainage system would be constructed behind the wall and backfilled with gravel or soil. The existing west chute wall would be left in place.

Flip Bucket Modification, Connector Wall, and Erosion Protection

Modification to the flip bucket at the bottom of the spillway near the base of the dam may be included in the project, if found necessary, to more safely direct flows away from the spillway chute. The preliminary design includes 5-foot-thick steel-reinforced concrete on top of and anchored into the existing flip bucket. The upstream portion of the existing flip bucket would be demolished and replaced with structural concrete to tie into the steep chute slab.

A new area of concrete would be installed to replace some of the rock downstream of the spillway in order to provide erosion (scour) protection downstream of the flip bucket. The preliminary design includes a 10-foot-thick roller compacted concrete pad. The west side spillway wall would also be extended beyond the flip bucket to direct flows in the downstream direction, away from the dam, and reduce the potential for erosion in the area of the existing wall.

Project Access and Haul Routes

Construction vehicles would access the site using the existing haul route that continues from Auto Center Drive, which transitions from a paved road to a dirt road called Pomona Rincon Road. Other unpaved maintenance roads that surround the existing project area would be accessed by construction vehicles as well; some widening may need to occur to safely accommodate large vehicles and equipment (Figure 1). Haul routes would be used to transport equipment, stone, fill material, and other construction materials from the borrow sites, commercial quarries, or the staging areas. Two staging areas would be utilized to facilitate construction (S-1 and S-2 on Figure 1). In addition, non-structural fill areas (F-1 and F-3 on Figure 1) may temporarily be used to stage and stockpile material during construction. Non-structural areas would ultimately be backfilled as a component of construction.

Material Source and Disposal

For the embankment connections, approximately 260,000 cubic yards of fill would come from the five borrow areas delineated in Figure 1; approximately 22,000 cubic yards of fill will be imported from a commercial site; 9,000 cubic yards of stone protection and 5,000 cubic yards of bedding material would be imported from a local quarry. For the purposes of this analysis, it is assumed that the nearest quarry would be used. Approximately 120,000 cubic yards of imported fill and 400,000 cubic yards of concrete is estimated for the labyrinth weir, chute slab, and chute walls. Approximately 2,500 cubic yards of imported backfill material and 50,000 cubic yards of concrete are estimated for downstream erosion protection. Materials would initially be sourced from the closest and largest borrow areas (B-2 and B-1 on Figure 1), with the smaller and more distant borrow areas (B-3, B-4 and B-5) following. All borrow sites are expected to be necessary. However, the majority of borrowed materials are expected to come from B-1 and B-2. Borrow areas B-1 and B-3 overlap with those identified for use in the Alcoa Dike project (another SARP component), currently under construction.

Construction of the Proposed Action would produce organic, inorganic, and unsuitable construction materials which must be disposed of as specified below so that the project site

would be restored after completion of construction. Therefore, if the project results in more excavation than fill placement, such as the borrow areas that have been excavated, the excess earth materials would be placed in fill areas. The contractor may recycle or reuse materials, depending on contract requirements. Other material would be disposed of offsite at approved disposal locations. Site cleanup would include, but not be limited to, the removal of fences, concrete, asphalt pavement, abandoned equipment, and trash. When feasible, concrete will be recycled and used in the roller compacted concrete process or as aggregates for construction of project features as economically possible.

Topsoil containing organic material would be spread on borrow areas as part of site restoration. Organic materials, trees, shrubs, and abandoned timber structures would be disposed of by hauling to a local commercial site. Disposal of any materials by burning or burying at the project site would not be permitted. Inorganic materials would include, but are not limited to, broken concrete, rubble, asphalt, concrete, concrete reinforcement, metal, and other types of construction materials. These materials would be taken to recycling facilities when possible and to a commercial landfill when recycling or reuse of these materials is not possible.

Construction Equipment

Construction equipment would include a combination of dozers, excavators, haul trucks, wheeled backhoes, and scrapers to remove material to foundation grade. The foundation would be prepared with air compressors, vacuum trucks, power brooms attached to skid steers, front end loaders, excavators, and haul trucks. Front end loaders, backhoe loaders, dozers, and skid steers may be used for placement or movement of materials and stockpile maintenance. A motor grader may be used to finish grades and smooth out surfaces. A motor grader would be used throughout construction with a water truck or water tanker to maintain haul roads. Drill rigs would be used to install foundation anchors. A crane would be used to install formwork and rebar. Batch plants would likely be established onsite to mix concrete; however, delivery of conventional concrete via truck from local ready-mix plants is also a possibility. Concrete pump trucks and conveyor belt systems may be used to deliver concrete from concrete delivery trucks or on-site batch plants to the point of placement. Vibratory equipment would be used for mass concrete placements. Roller compacted concrete would be batched with an onsite plant, transported with trucks or conveyors, spread with dozers, and compacted with smooth drum compaction equipment. Hydraulic excavators, haul trucks, scrapers, sheepsfoot and smooth drum compactors, tractors pulling a disc, water trucks, motor graders, and dozers would be used for embankment construction. Walk-behind and other small compactors along with miscellaneous hand tools and hand power tools would also be used for embankment construction. Front end loaders, excavators, and haul trucks would be used for stone protection and riprap bedding placement. Haul trucks, motor graders, and smooth drum compactors would be used for aggregate base and asphalt concrete placement. Water trucks would also be used for frequent dust mitigation. Tractors, discs, harrows, drill seeder, hydro-mulch trucks, and haul trucks would be used for reclamation activities. Miscellaneous 3-ton trucks and smaller vehicles would be used to convey personnel around the site. Aerial drones would be used for surveying and photography.

Equipment that could be used for demolition of concrete include concrete saws, diamond wire saws, hydraulic excavators with boom mounted hydraulic hammers and/or shears, articulated haul trucks, dozers, loaders, a backhoe and skid steer, dump/haul trucks, pneumatic drills, and hand operated equipment including demolition hammers, jack hammers and cutoff saws.

Construction Schedule and Phasing

If funding is available, minor non-construction activities may begin in fall of 2023, such as the installation of sound barriers or expansion of the existing soils and materials lab. Construction of principal features of the Project is expected to commence in 2024 and take approximately four to four-and-a-half years, with a general end date of 2028. It is possible that the proposed Project may be built in stages, with multiple start dates and construction periods for various sections of the proposed Project. This would depend on land acquisition and utility relocations schedule, environmental windows and weather delays. Construction phasing may result in an extension of the overall Project duration beyond 2028. Construction hours would be 7:00 a.m. to 6:00 p.m., Monday through Saturday for most construction activities. Overtime work would periodically be required to maintain the construction schedule, or for isolated activities such as continuous placement of roller compacted concrete, the duration of which could be several consecutive months. Roller compacted concrete placement would likely be accomplished by continuous placement during two eight to ten hour shifts during both day and night. In addition, nighttime placement of conventional concrete would be required to ensure placement temperature requirements can be achieved to limit the potential for significant concrete cracking. Concrete would be produced in the on-site batch plant, but the actual placement of the concrete would be within the existing spillway footprint.

Care and Diversion of Water During Construction

In case of an occurrence of a major flood event, cofferdams would be necessary to divert water away from project features under construction and to protect the work area. Cofferdams protect large open excavations from inundation and prevent the erosion of earth materials (soil or rock) that are typically protected with concrete (e.g. the spillway chute area). More importantly, cofferdams reduce the risk of dam/spillway breach (failure) as a result of a standard project design flood (SPF) event during construction, which could result in significant impacts to lives and property downstream of the dam. Temporary cofferdams would be constructed prior to demolition of the existing spillway structure to reduce this risk.

A preliminary diversion concept has been developed (Figure 3). It consists of earthen cofferdams constructed at the northern end of the project area. The cofferdam would be constructed upstream of the labyrinth weir. A pilot channel would divert rising reservoir pool impoundment flows to the right side of the proposed new spillway structure. This would serve as a temporary emergency spillway during construction. Potential flood flows would be contained within the existing spillway chute diversion channel via the existing spillway chute walls on the right and with temporary panels on the left. After the majority of construction is completed for the labyrinth weir and chute, the cofferdam upstream of the labyrinth weir would be removed and

another cofferdam constructed to the west for construction at the main dam embankment connection.

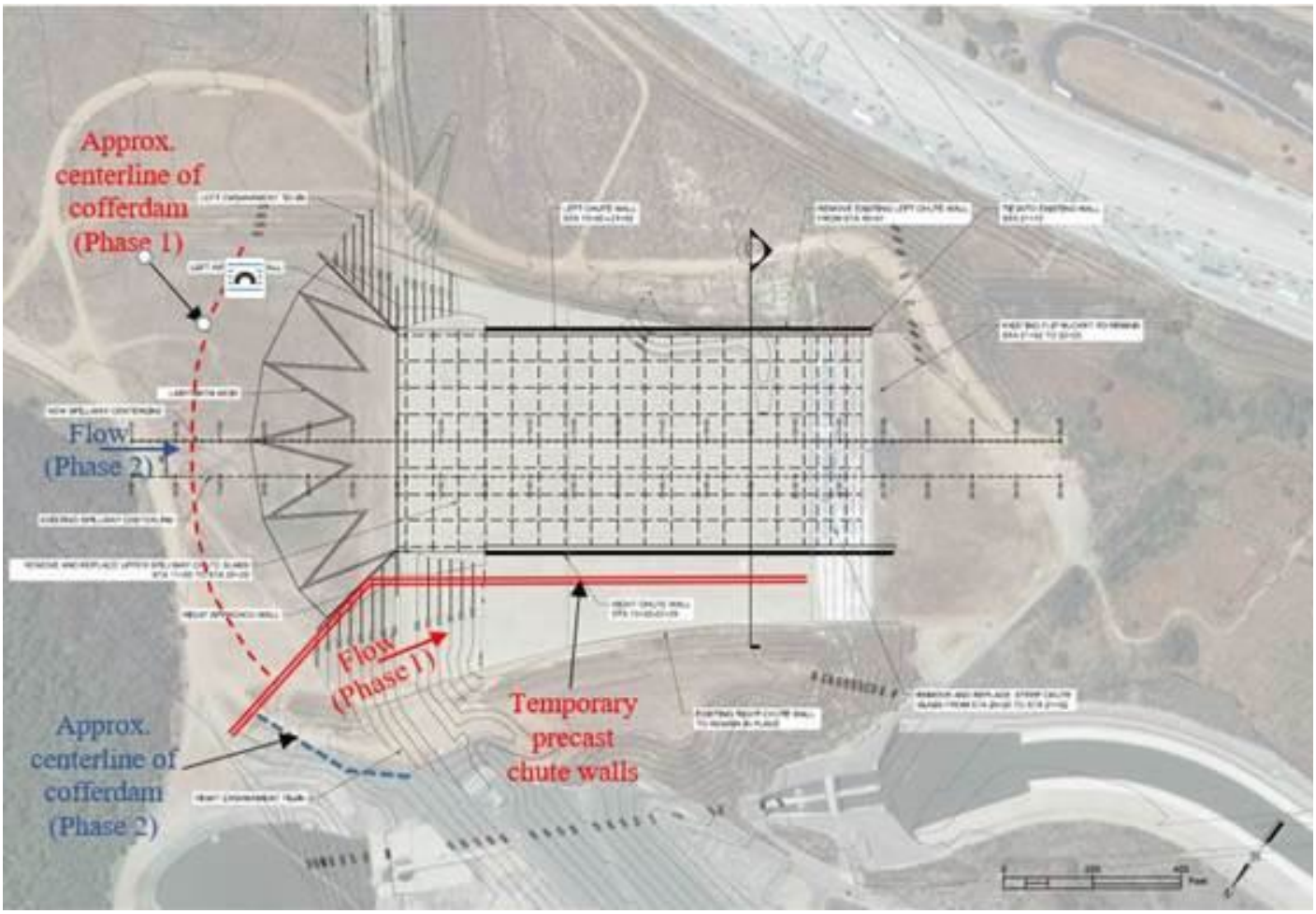


Figure 3. Conceptual cofferdam design.

Comparison of Changes - 2001 Proposed Action to Current Proposed Action

This Project has been updated from that described in the 2001 Final SEIS/EIR and analyzed in our 2001 biological opinion. Changes are summarized in the table below. The function remains

the same as the previously authorized design and the footprint is within the previously analyzed limits of disturbance.

Table 1: Comparison of the 2001 Proposed Action and the Current Proposed Action (Alternative 1)

Feature	Previously Approved Plan 2001 SEIS	Current Proposed Action (Alternative 1)
Weir (control structure)	1,000 ft long (crest length) ogee weir	Labyrinth weir (similar effective crest length and function but within a narrower footprint)
Approach walls	Construct approx. 1,200 ft of training walls/approach walls	Construct approx. 900 ft of approach walls
Auxiliary Dike connection	Construct approx. 600 ft long embankment	Construct approx. 750 ft long embankment
Main Embankment connection	Construct approx. 250 ft long embankment	Construct approx. 550 ft long embankment
Chute slab (upper and lower)	No modification – leave existing in place	Replace approx. 3/4 of chute slab (approx. 500 ft wide area)
Chute walls	Armor above chute walls and repair wall joints	New chute walls
Flip bucket	No modification – leave existing in place	Modify flip bucket
Training wall	Construct training wall extension on west side.	No wall extension
Erosion protection slab	None	Add erosion protection slab and wall
Care and Diversion of Water during Construction	Likely required but not included as part of the design.	Cofferdams at northern end of project

Note: Lengths are approximate and may change during design.

Anticipated Routine Maintenance

Maintenance, including routine inspections and minor repairs, of the Prado Dam and Spillway, its associated features, or adjacent features would be required after construction is complete, including:

- Routine inspections, special inspections, reading of instrumentation, and vehicle patrols, as needed. Inspections and monitoring would be increased to daily or continuous during flood events depending on the severity of the event;
- Vegetation management in accordance with Corp of Engineers Engineering Pamphlet 1110-2-18; at a minimum, the entire dam (or dike) embankment surface and upstream and downstream areas within 50 feet of the embankment toe must be a vegetation free zone (VFZ). For spillways, the VFZ includes the spillway, spillway channel, including spillway slopes and approaches. The VFZ applies to all vegetation except for grasses for

the purpose of erosion control;
- Repair of maintenance roads and ramps is anticipated every few years;
- Clean out of drain and underdrain inspections;
- Clearing of debris and sediment in and around the upstream side of the spillway, embankment connections, flip bucket area, drainage structures and weep holes;
- Repair of damaged concrete would be anticipated every five to eight years (e.g. spalls, cracks, broken or displaced concrete, sealing concrete joints, and repairing offset joints);
- Rodent control and repair of damage;
- Mending and painting of staff gages, signage, guardrails, fences and gates is anticipated every three to five years;
- Reading piezometers, survey monuments, inclinometers, and other dam safety instrumentation; and
- Maintenance and operation of the two gated opening (if implemented) at the base of the labyrinth weir.

The maintenance described above is expected to be yearly, unless otherwise noted above. Work would be done outside of the nesting season as feasible and during the dry season, unless the repair is needed in an emergency situation, in which case the Corps will evaluate the action to determine if impacts to listed species may occur. An example of this would be dump truck mobilization to haul materials and use of hydraulic excavators to place materials along eroded areas of the embankment and spillway to protect and reinforce the structure. This type of action would only be required after rare extreme flow events.

Conservation Measures

General and species-specific conservation measures pertaining to the Project are listed below. These conservation measures (CM) were developed by the Corps and Service over the course of multiple consultations previously mentioned. These CMs are designed to avoid, minimize, and offset impacts to federally listed species and their designated critical habitats. All the conservation measures from the 2001 SEIS/EIR and SEA/EIR Addendums, as listed in our 2001 SARP biological opinion and revised 2012 SARP amendment, remain in effect even if not listed here.

CM 1. A monitoring program will be developed and implemented that entails surveys for vireo and gnatcatcher during the year prior to construction, and each year of construction.

CM 2. The construction contractor will minimize grading activities and leave root systems intact, to the extent practicable.

CM 3. Any vegetation with the potential to support vireo and gnatcatcher will be cleared outside of the nesting season, defined as February 15 to September 15.

CM 4. A Corps biologist (or qualified biological monitor) will monitor construction activities to ensure environmental impacts remain consistent with those described

in this document. This includes ensuring vegetation removal occurs only in designated areas and avoided riparian/coastal sage scrub areas are flagged and not encroached upon.

CM 5. The Corps will restore all temporary disturbance areas, not including existing roads or operations areas, within the TCE with riparian, coastal sage scrub or other native habitat as appropriate to the location. All temporarily disturbed areas will be kept free of exotic plants for a period of 8 years. If the sites have not begun to recover within five years (i.e., 50 percent of the disturbed areas are not vegetated with native plants) then the site will be replanted or re-hydroseeded as needed. Acreage of actual disturbance will be documented and compared to acreage restored; any shortfalls will be addressed through additional restoration as needed.

CM 6. The Corps will offset temporary losses to occupied gnatcatcher habitat (i.e., both native and non-native) by restoring currently degraded areas to coastal sage scrub outside the TCE at a 2:1 ratio if restoration occurs after impact; or at a 1:1 ratio if restoration occurs prior to impact; or any combination thereof (i.e., if some restoration can occur prior to impact). This acreage will be managed and kept free of exotics for 8-years post-construction.

a. Permanent impacts to occupied but non-native habitat will follow the same criteria

CM 7. The Corps will offset permanent impacts to gnatcatcher-occupied native coastal sage scrub habitat at a 3:1 ratio by restoring currently degraded areas outside the TCE and managing those areas for 8 years post-construction. It is anticipated that 4.4 acres of impacts to coastal sage scrub will be offset with a total of 13.2 acres restored (Figure 4).

CM 8. Construction personnel will strictly limit their activities, vehicles, equipment, and construction materials to the TCE identified in Figure 1, 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.

CM 9. The contractor will construct sound walls/blankets prior to the vireo and gnatcatcher nesting season (i.e., prior to February 15) along sensitive vireo and gnatcatcher habitat adjacent to the TCE. The sound wall will be constructed of material typically used to lessen general noise impacts and at a height tall enough to account for construction equipment.

CM 10. Portable sound walls/blankets will be placed around demolition activities occurring on the spillway, regardless of nesting season to minimize potential noise impacts on resident gnatcatchers.

CM 11. The biological monitor will monitor noise regularly (twice weekly) during the nesting season (February 15 – August 15), with a particular focus on times when demolition activities are underway. Ambient noise levels will be recorded by the Corps biologists prior to construction to determine ambient noise levels. During construction, noise monitoring will ensure that 1) noise does not exceed 60 A-weighted decibels (dBA) of equivalent continuous sound level (Leq) hourly where ambient noise is less than 60 dBA Leq hourly or another agreed upon limit with the Service, within occupied gnatcatcher and vireo habitat during the nesting season; or, (2) noise does not exceed 5 dBA Leq hourly above ambient conditions if said levels are above 60 dBA Leq hourly, or another agreed upon limit with the Service, within occupied gnatcatcher and vireo habitat during the nesting season.

a. If construction noise levels within occupied adjacent habitat cannot be reduced below 60 dBA Leq hourly, or 5 dBA Leq hourly above ambient, or another agreed upon limit with the Service, in adjacent occupied vireo or gnatcatcher habitat during nesting season of any year, the Corps or project proponent will offset impacts at a 1:1 ratio per any period during the breeding season affected by such noise levels. This 1:1 ratio will be based on the acreage of occupied coastal sage scrub or riparian habitat outside the project footprint subject to noise levels above agreed-upon thresholds during the nesting season, per the number of breeding seasons affected (e.g., 1 acre of coastal sage scrub 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. The Corps will identify restoration areas for offsetting noise impacts in coordination with the Service and will maintain (continue weeding) those areas for a period of 8 years.

CM 12. Prior to construction activities, a Corps biologist (or the biological monitor approved by the Corps) will conduct pre-construction environmental training for all construction crew members, including those onboarding mid-Project. The training will focus on required avoidance/minimization measures and conditions of regulatory agency permits and approvals (if required). The training will also include a summary of sensitive species and habitats potentially present within and adjacent to the project site.

CM 13. Dust control measures will be implemented during construction to reduce excessive dust emissions. Methods for reducing dust emissions may include wetting work areas, such as dirt access roads and sediment stockpiles, on a regular basis, as well as covering truck beds carrying material and stockpiles.

CM 14. Prior to any ground-disturbing activities (e.g. mechanized clearing or rough grading) for all project related construction activities, a Corps biologist (or biological monitor) will conduct pre-construction surveys of the proposed Project area and borrow area for terrestrial special-status, including Multiple Species Habitat Conservation Plan (MSHCP)-covered wildlife species. During these surveys, the biologist will:

a. Inspect the proposed Project area (and borrow 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 Proposed Project area at least 200 feet from the limits of construction activities. Burrowing owl surveys and relocations would follow established protocols.

CM 15. The Corps biologist or qualified biological monitor 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 will confirm that conservation measures are sufficient to avoid or minimize impacts to these species, or shall recommend additional measures as warranted.

CM 16. Best management practices will 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. BMPs will be implemented in these areas 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.

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.

ANALYTICAL FRAMEWORK FOR THE SECTION 7(A)(2) DETERMINATIONS

Jeopardy Determination

Section 7(a)(2) of the Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR 402.02).

The jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which describes the range-wide conditions of the species, the factors responsible for that condition, and their survival and recovery needs; (2) the Environmental Baseline, which analyses the condition of the species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the Effects of the Action, which are all consequences to listed species caused by the proposed action that are reasonably certain to occur; and (4) the Cumulative Effects, which evaluates the effects of future, non-Federal activities in the action area on the species.

For the section 7(a)(2) determination regarding jeopardizing the continued existence of the species, the Service begins by evaluating the effects of the proposed Federal action and the cumulative effects. The Service then examines those effects against the current status of the species to determine if implementation of the proposed action is likely to reduce appreciably the likelihood of both the survival and recovery of the species in the wild.

STATUS OF THE SPECIES

Least Bell's Vireo

The following section summarizes information about the federally endangered least Bell's vireo pertinent to its legal status and biology as it pertains to the Project. For more detailed information on the vireo's biology, ecology, range wide status, threats, and conservation needs, please refer to the draft recovery plan (Service 1998) and 5-year review (Service 2006). Additional information is also available in the final rule designating critical habitat for vireo (59 FR 4845). These documents are available on the least Bell's vireo species' profile.

Numbers

The vireo was listed as endangered on May 2, 1986 (51 FR 16474), in response to a dramatic decline in population and widespread loss of riparian habitat. Since then, there has been a ten-fold increase in population size and we recommended that the vireo be downlisted from endangered status to threatened status in our 2006 5-year review. Numbers of documented vireo have continued to climb and 3,413 territories were recorded range-wide in 2018 (Kus *et al*.

2019).[2] Within the Santa Ana River watershed, 2,293 in 2020 vireo territories were observed (Zembal *et al*. 2020). It is important to keep in mind that the numbers reported here are for territories observed and reported; they are not exhaustive and observed territorial males do not necessarily represent pairs. The recorded territories are the minimum number of territorial males observed and reported within an area. It is also important to note that the survey effort, both within the Santa Ana River watershed and range-wide, varies widely from year to year and therefore numbers of territories presented may underestimate true abundance. Year-to-year comparisons should be made with caution.

Reproduction

Vireo generally begin to arrive from their wintering range in southern Baja California and establish breeding territories by mid to late March, departing from their breeding grounds by the third week of September (Garrett and Dunn 1981; Salata l983a, 1983b; Hays 1989; Pike and Hays 1992). Data collected for color-banded birds indicate that site fidelity is high among adults, with many birds not only returning to the same territory, but also placing nests in the same shrub used the previous year (Salata 1983b).

The vireo is an obligate riparian nester, occupying a number of riparian habitat types, including cottonwood-willow woodlands/forests, oak woodlands, and mulefat scrub. However, vegetation structure is an important determinant of vireo site use and they prefer a diverse array of early successional riparian vegetation. Occupied breeding habitat generally includes dense shrub cover within 3 to 6 feet from the ground for nesting and a structurally diverse canopy for foraging (Service 1998). Plant species composition does not appear as important a determinant in nesting site selection as habitat structure. As riparian vegetation matures, the tall stands tend to shade out the shrub layer, making the sites less suitable for vireo nesting. In addition, vireo nests tend to occur in openings and along the riparian edge, where exposure to sunlight allows the development of shrubs (Service 1998).

Although the vireo occupies home ranges that typically vary in size from 0.5 to 4.5 acres (RECON 1988), a few may be as large as 7.5 acres (Service 1998). In general, it appears likely that areas that contain relatively high proportions of degraded habitat have lower reproductive success than areas that contain high quality riparian woodland (Jones 1985; RECON 1988; Pike and Hays 1992).

Distribution

The number of locations with breeding vireo has increased throughout southern California since listing, and there has been a slight shift northward in the subspecies overall distribution, but it remains restricted to the southern portion of its historic range (Service 2006). Vireo historically occupied willow riparian habitats from Tehama County in northern California, southward to northwestern Baja California, Mexico, and as far east as Owens Valley, Death Valley, and the Mojave River (Grinnell and Miller 1944; Service 1998). Greater than 99 percent of remaining vireo still nest in southern California, south of the Tehachapi Mountains (Service 2006).

[2] More recent range-wide data is not yet available.

Widespread habitat losses have fragmented most remaining populations into small, disjunct, and widely dispersed subpopulations.

Recovery

The overall positive trend for vireo since its listing is primarily due to efforts to reduce threats such as wholesale loss and degradation of riparian habitat, and brown-headed cowbird (*Molothrus ater*) parasitism. To be considered for downlisting, the Draft Recovery Plan identifies 11 sites that must be protected and managed, with stable or increasing vireo populations/ metapopulations consisting of several hundred or more breeding pairs. The Santa Ana River and Camp Pendleton/Santa Margarita River populations have met this criterion due to the extensive efforts by the Corps and other partners, but most of the other locations have not. As numbers increase locally, the goal is that these "source populations" will yield individuals that will expand into the northern portion of its current and historic range, eventually recolonizing riparian woodlands of the California Central Valley.

Coastal California Gnatcatcher

The following section summarizes information about the federally endangered coastal California gnatcatcher pertinent to its legal status and biology as it pertains to the Project. For more detailed information on the gnatcatcher's biology, ecology, range-wide status, threats, and conservation needs, please refer to the 5-year review (Service 2010). Additional information is also available in the revised final rule designating critical habitat for gnatcatcher (72 FR 72010). These documents are available on the coastal California gnatcatcher's species profile.

Numbers

The Service listed the gnatcatcher as threatened on March 30, 1993 (58 FR 16742). Numbers were reported as declining in the early 1980s, coupled with a continued reduction in the amount of habitat (Atwood 1980; Garrett and Dunn 1981; Unitt 1984). At the time of listing in 1993, we estimated about 2,562 pairs of gnatcatchers remained in the United States, and about 2,800 pairs remained in Baja California (Service 1993). However, these estimates were not statistically robust. Additionally, gnatcatcher population sizes are known to fluctuate from year to year (Atwood and Bontrager 2001), which further complicates any trend assessment. Based on results from a Winchell and Doherty (2008) study that was restricted to Orange and San Diego counties, our conclusion is there are likely more gnatcatchers in the U.S. portion of the range than was suggested by earlier estimates, but we still do not have a clear population number or indication of a range-wide trend.

Reproduction

Gnatcatchers are closely tied to coastal scrub for reproduction (Atwood 1993), but gnatcatchers may also occur in other nearby plant communities, especially during the non-breeding season. Gnatcatcher home range size varies seasonally and geographically, with winter season home ranges being larger than breeding season ranges (Bontrager 1991) and inland populations having larger home ranges than coastal (Atwood and Bontrager 2001). Gnatcatchers defend breeding

territories ranging in size from 2 to 14 acres. Their breeding season generally extends from late February through July, with the peak of nest initiations occurring from mid-March through mid-May. Nests are composed of grasses, bark strips, small leaves, spider webs, down, and other materials and are often located in California sagebrush (*Artemisia californica*) plants about 3 feet above the ground. Nests are constructed over a 4- to 10-day period. Clutch size averages four eggs. The incubation and nestling periods encompass about 14 and 16 days, respectively. Both sexes participate in all phases of the nesting cycle. Although the gnatcatcher may occasionally produce two broods in one nesting season, the frequency of this behavior is not known; however, the species is known to rapidly and repeatedly renest following the loss of eggs or juveniles to predators. Juveniles are dependent upon or remain closely associated with their parents for up to several months following departure from the nest and dispersal from their natal territory (Service 2010).

Dispersal of juveniles generally requires a corridor of native vegetation that provides certain foraging and sheltering requisites and that connects to larger patches of appropriate sage scrub vegetation (Soulé 1991). These dispersal corridors facilitate the exchange of genetic material and provide a path for recolonization of extirpated areas (Soulé 1991; Galvin 1998). Galvin (1998) concluded that, “natal dispersal [through corridors] is therefore an important aspect of the biology of [a] . . . nonmigratory, territorial bird . . . [such as] the California gnatcatcher.” The gnatcatcher generally disperses short distances through contiguous, undisturbed habitat, but juvenile gnatcatchers are capable of dispersing long distances (up to 14 miles) across fragmented and highly disturbed sage scrub habitat, such as that found along highway and utility corridors or remnant mosaics of habitat adjacent to developed lands (Bailey and Mock 1998; Famolaro and Newman 1998; Galvin 1998).

Distribution

Gnatcatchers occur in or near coastal scrub vegetation communities (Woods 1921; Atwood 1980). The coastal California gnatcatcher is the northernmost subspecies of California gnatcatcher (Atwood 1991), occurring along the Pacific coastal regions of southern California, from southern Ventura and San Bernardino Counties into northern Baja California, Mexico (Atwood 1991). The range of gnatcatcher follows that of sage scrub west of the mountains in this region. Within this overall range, the historical and current distribution of the gnatcatcher is naturally patchy. That is, it may be locally common in some areas of apparently suitable habitat and scarce or absent in others (Grinnell 1898; Grinnell and Miller 1944; Atwood 1980; Mellink and Rea 1994). This distribution has been further fragmented by anthropogenic changes to the habitat (Atwood 1993; Atwood and Bontrager 2001). Winchell and Doherty (2008) found the density of gnatcatchers was highest in high-quality habitat and decreased as habitat quality decreased.

Gnatcatchers are generally considered short-distance dispersers; individuals appear able to disperse and recolonize habitat fragments (Lovio 1996; Baily and Mock 1998), even within an urban matrix (Crooks et al. 2001; Surtain and Alberts 2008). This suggests the gnatcatcher is not especially sensitive to distance effects.

Recovery

Neither a recovery plan nor a recovery outline has been prepared for the gnatcatcher. However, the 2010 5-year review identified the gnatcatcher as having a moderate degree of threat, and a high potential for recovery (Service 2010). The subspecies' native habitat faces continuing conflict with urban development projects and other forms of economic activity.

In the 1993 listing rule, we stated that the "habitat and range of the gnatcatcher [had] been significantly reduced," noting that coastal sage scrub was "one of the most depleted habitat types in the United States" (Service 1993). Overall, we reported 58 to 61 percent of coastal sage scrub habitat had been lost in the three counties that supported about 99 percent of the U.S. gnatcatcher population (Service 1993). However, much of the subspecies' current range within the United States is now, or anticipated to be, covered by large, regional Habitat Conservation Plans (HCPs) permitted under section 10(a)(1)(B) of the Act and under the State of California's Natural Community Conservation Planning (NCCP) Act. These regional plans have made substantive contributions to the species' conservation (Service 2010).

An additional substantial threat to gnatcatcher is wildland fire (both natural and accidental), which can result in either a short-term temporary impact or lead to permanent habitat degradation (i.e. type conversion). Frequent fire can exacerbate habitat type conversion, generally producing the conversion of coastal scrub to grassland dominated by nonnative grasses and forbs, which can result in a positive feedback loop as grassland ignites more readily than coastal sage scrub (Service 2010). Areas denuded by fire do not support gnatcatchers (Beyers and Peña 1995). As plants return to areas that have burned, gnatcatchers may return to use these areas as foraging habitat if adjacent unburned areas remain to provide nesting habitat (Wirtz et al. 1997). Burned areas with rapid plant re-growth may be suitable as both nesting and foraging habitat for the gnatcatcher within 3 years, but areas with slower re-growth take longer (e.g., 5 to 10 years) (Wirtz et al. 1997). Fires can ultimately lead to habitat fragmentation if the remaining patch sizes are small and distant enough from one another.

ENVIRONMENTAL BASELINE

The regulations implementing the Act (50 CFR § 402.02) define the environmental baseline as the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline (50 CFR § 402.02).

Action Area

Regulations implementing the Act (50 CFR § 402.02) describe the action area as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. The action area includes the permanent Project footprint and TCE, which includes the staging, fill, borrow areas and haul routes, as well as an 800-foot buffer around the spillway TCE and a 500-foot buffer around the borrow areas' TCE (Figure 1). The action area was determined by accounting for effects of Project actions within the TCE and effects from Project actions such as noise and vibrations that extend beyond the TCE.

Prado Dam was constructed by the U.S. Department of the Army in 1941, and is owned, operated, and maintained by the Corps' Los Angeles District. Prado Dam was originally designed as a flood risk management project. Since the 1970's, Prado Dam has also been operated to achieve incidental water conservation storage benefits to the extent that flood control operations are not jeopardized. In the early 2000s, the dam was modified as part of the SARP; the main embankment was raised, and the dam outlet was moved from the west to the east side. Discharge capacity has been increased from 10,000 cfs to 30,000 cfs, although the Water Control Manual has not yet been updated to allow for this change in operations.

The raising of the Prado spillway is the last of the Prado Basin SARP features to be designed and constructed. Our June 22, 1989, biological opinion (1-6-88-F-6) first mentioned the raising of the spillway to accommodate the raising of the dam itself, but the spillway wasn't further described or analyzed. The Project was discussed in more detail in our December 5, 2001 biological opinion (FWS-SB-909.6), but the design has since been modified, as previously stated.

The Corps and the Service recently concluded formal consultation for a Southern California Gas (SoCalGas) pipeline relocation to accommodate the new spillway construction. The gas line relocation project is expected to start in the fall of 2021 and be completed in 2022, prior to the start of spillway construction.

The action area is bordered by the riparian forest of Prado Basin to the north, commercial development and State Route 91 (SR-91) to the south and east, and the Prado Dam embankment and outlet channel to the west. The majority of the action area has been repeatedly disturbed by Corps construction activities and O&M, with reseeding/restoration upon completion of those components of the SARP. The majority of the action area is within the existing 556-foot elevation line that would be subject to inundation should a major storm event fill the Prado Basin, except for the area immediately southeast of the spillway. Vegetation communities were mapped within the action area in 2020 and 2021 (Figure 4) and were generally consistent with what was found in the area in 2001, except for areas that were restored with coastal sage scrub following previous SARP activities. There are four broad vegetation types present within the action area: native upland (i.e., coastal sage scrub; approximately 60.6 acres), native riparian (consisting of mulefat scrub; approximately 3.0 acres), non-native upland (primarily consisting of brome grasses and Russian thistle; 87.3 acres), and developed land (53.2 acres).

Least Bell's Vireo

Status of the Species in the Action Area

Based on surveys performed in 2020 and 2021, there are 14 vireo territories that fall within an 800-foot buffer of the TCE (Figure 5). There are no vireo territories within the TCE footprint that will require riparian vegetation removal. The Prado Basin, adjacent to the action area, is an important source population for vireo expansion beyond the immediate area.

There are no permanent riparian impacts expected from this Project and only approximately 0.7 acres of temporary impacts to mulefat are expected. The Corps has worked with the Service and refined the TCE to avoid an additional 2.3 acres of riparian vegetation.

The previously mentioned gas line relocation project is expected to impact five of the 14 vireo territories. The riparian habitat was expected to be removed from two territories in 2021, prior to the start of the Prado Dam Spillway Raise and Dam Safety Modifications Project. As such, we analyzed the loss of these birds and included them in the Incidental Take Statement for the gas line biological opinion, but the Corps has since indicated that their habitat will be avoided (Osagie 2021, pers. comm). Therefore, we anticipate that all five territories present within both action areas may be subject to repeated noise and other impacts in the sequential years during construction of the two projects.

Recovery

The Santa Ana River population of vireo meets the downlisting criteria specified in the 1998 Draft Recovery Plan; much of the population is within protected and managed habitat. Although the primary threats to the population are still present and show no signs of abating should the management cease, the number and distribution of vireo have been increasing since the Draft Recovery Plan was written. The number of observed vireo pairs within the Santa Ana River watershed was 1,199 in 2020 (Pike 2020; Zembal *et al*. 2020), satisfying the stated goal of several hundred or more breeding pairs in the Santa Ana River watershed. The vireo present within the action area are likely the offspring of the larger Prado Basin population.

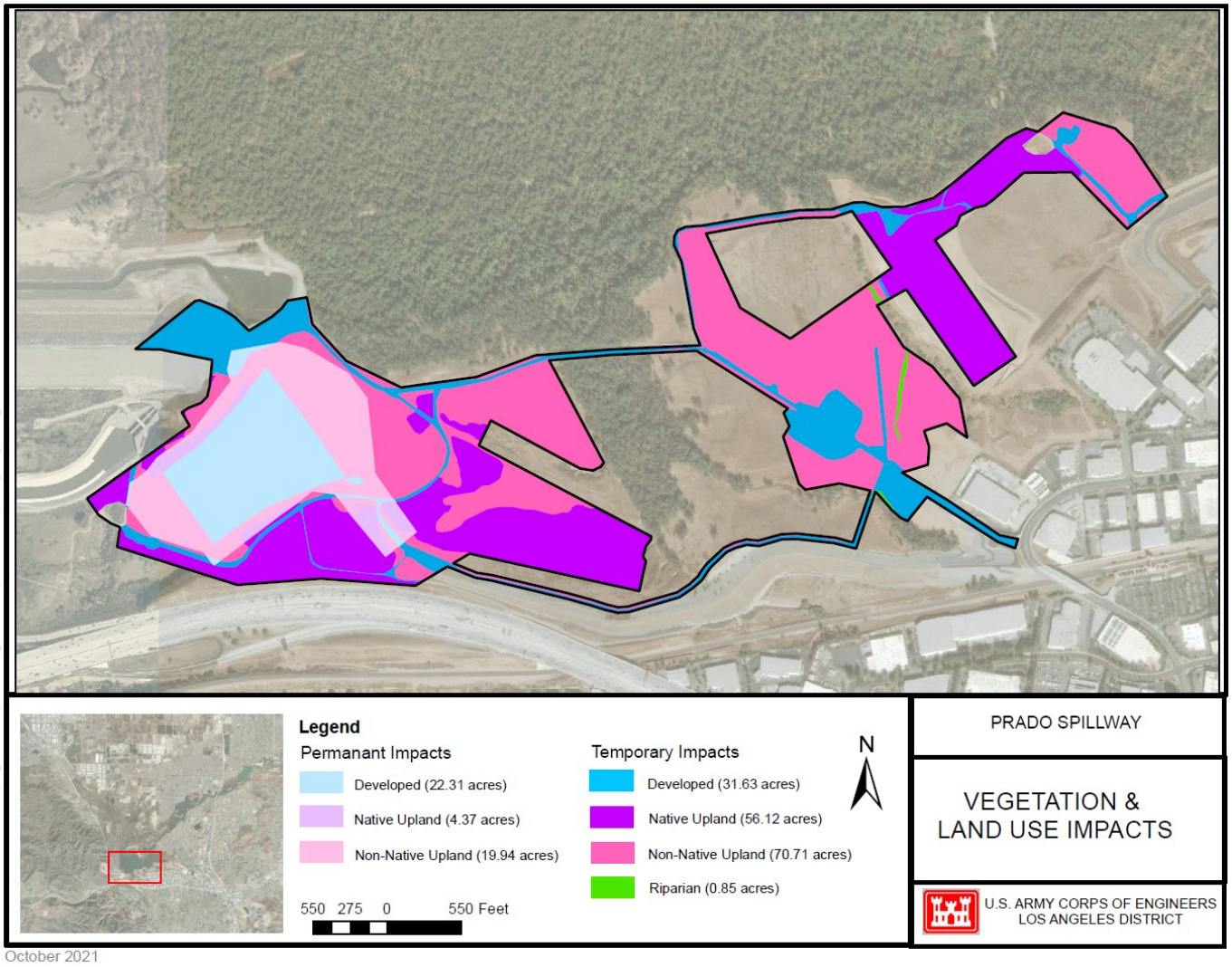


Figure 4. Permanent and temporary impacts to vegetation communities within the action area.

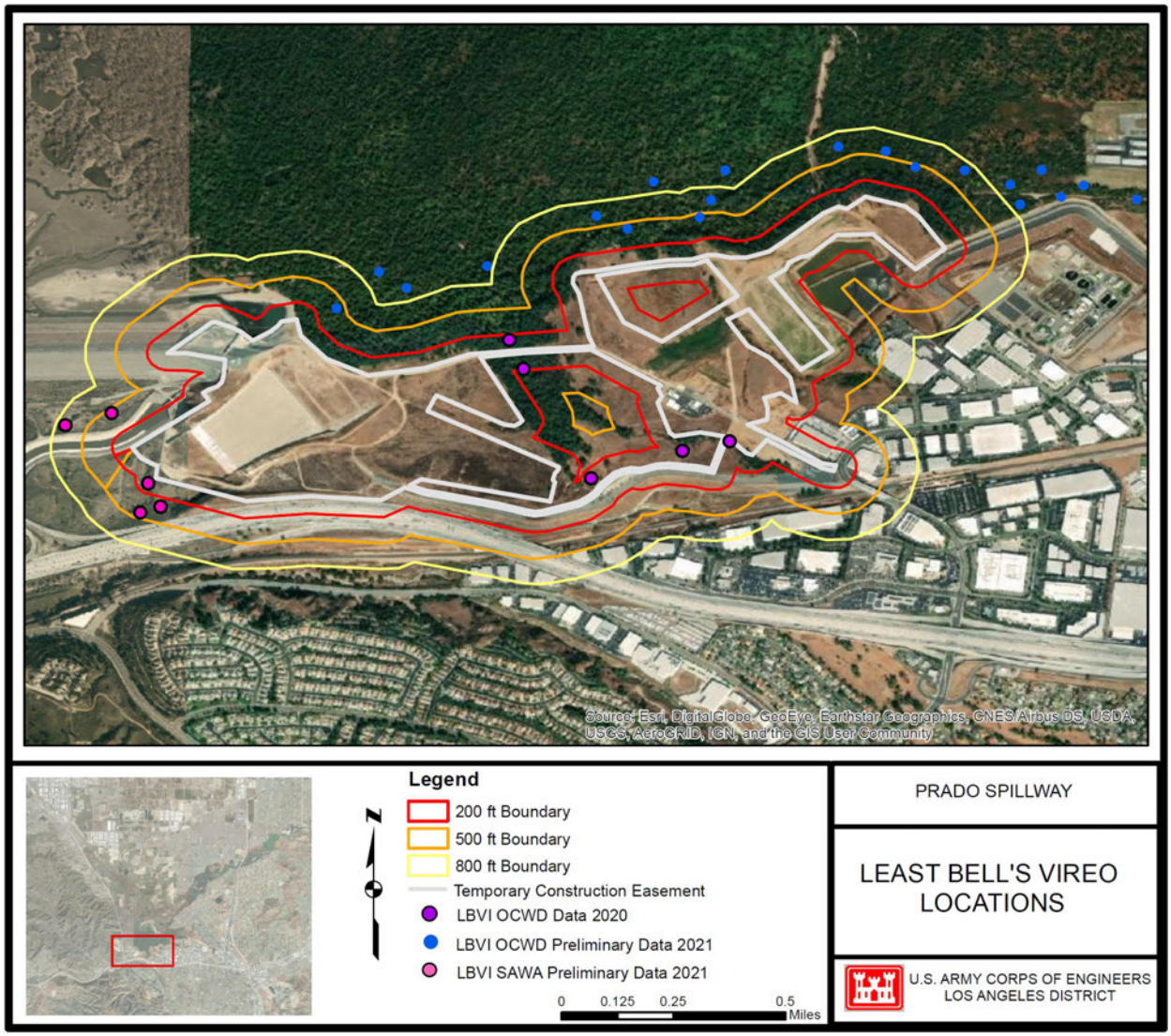


Figure 5. Vireo territories in the vicinity of the TCE.

Coastal California Gnatcatcher

Status of the Species in the Action Area

Based on surveys performed in 2020, there are 11 gnatcatcher territories within the action area in total, and 8 within the TCE (Figure 6) that may be directly impacted through vegetation removal. Gnatcatchers were documented within the action area following the Corps' restoration of degraded habitat here upon the completion of raising the main Prado Dam embankment around 2010.

The Corps anticipates removing 56.3 acres of coastal sage scrub temporarily, and 4.4 acres of coastal sage scrub permanently. Gnatcatchers within the Project footprint appear to be using habitat of varying quality, including that comprised of a majority of non-native species. Therefore, the Corps plans to conduct gnatcatcher surveys during the coming year (non-breeding and breeding seasons) to refine their understanding of gnatcatcher habitat use in the action area. The survey information will be used to estimate occupied gnatcatcher habitat in the action area and identify the area of impact and the size of subsequent habitat replacement. The Corps' preliminary estimate of occupied gnatcatcher habitat to be impacted is 104.4 acres (97.8 temporary and 6.6 permanent); this figure includes the area of coastal sage scrub to be impacted reported above.

The gas line relocation project overlaps with eight of the 11 gnatcatcher territories in the spillway Project action area; three of them are within the noise buffer outside of the TCE for both projects and six are within the Project's TCE and the gas line's 500-foot buffer. Birds with territories in both buffer areas will likely be subject to noise and other impacts by both projects in consecutive years. The gnatcatchers within the Project's TCE may be affected by noise, etc. during the gas line construction, and then be subjected to habitat removal in the following years.

Recovery

Gnatcatchers within the vicinity of the action area face the same threats as the subspecies range wide, specifically, habitat fragmentation due to development and wildfire. The most recent fire adjacent to the action area occurred in the Chino Hills State Park and Reach 9 of the Santa Ana River below Prado Dam in October-November of 2020 (Blue Ridge Fire). This likely displaced gnatcatchers using the area and prevents offspring or other displaced gnatcatchers from colonizing it as well. Other fire events occurred in the vicinity in 2015 (Highway Fire), 2017-2018 (Canyon and Canyon 2 Fires) on the south side of SR-91, 2018 (Euclid Fire) off SR-71, and 2020 (Airport Fire) (https://www.fire.ca.gov/incidents/). Based on the available information, we think it is likely that the gnatcatchers occupying the action area were displaced by the Canyon Fires, which burned for 183 days, as gnatcatchers appeared throughout the area concurrently to this fire.

Gnatcatchers present within the action area and its surrounds have also been displaced and disturbed by ongoing SARP construction and maintenance. Construction-related disturbances are expected to conclude in or around 2028. The reestablishment of coastal sage scrub in temporary

disturbance areas will contribute viability of the local gnatcatcher population, thereby promoting the subspecies' recovery.

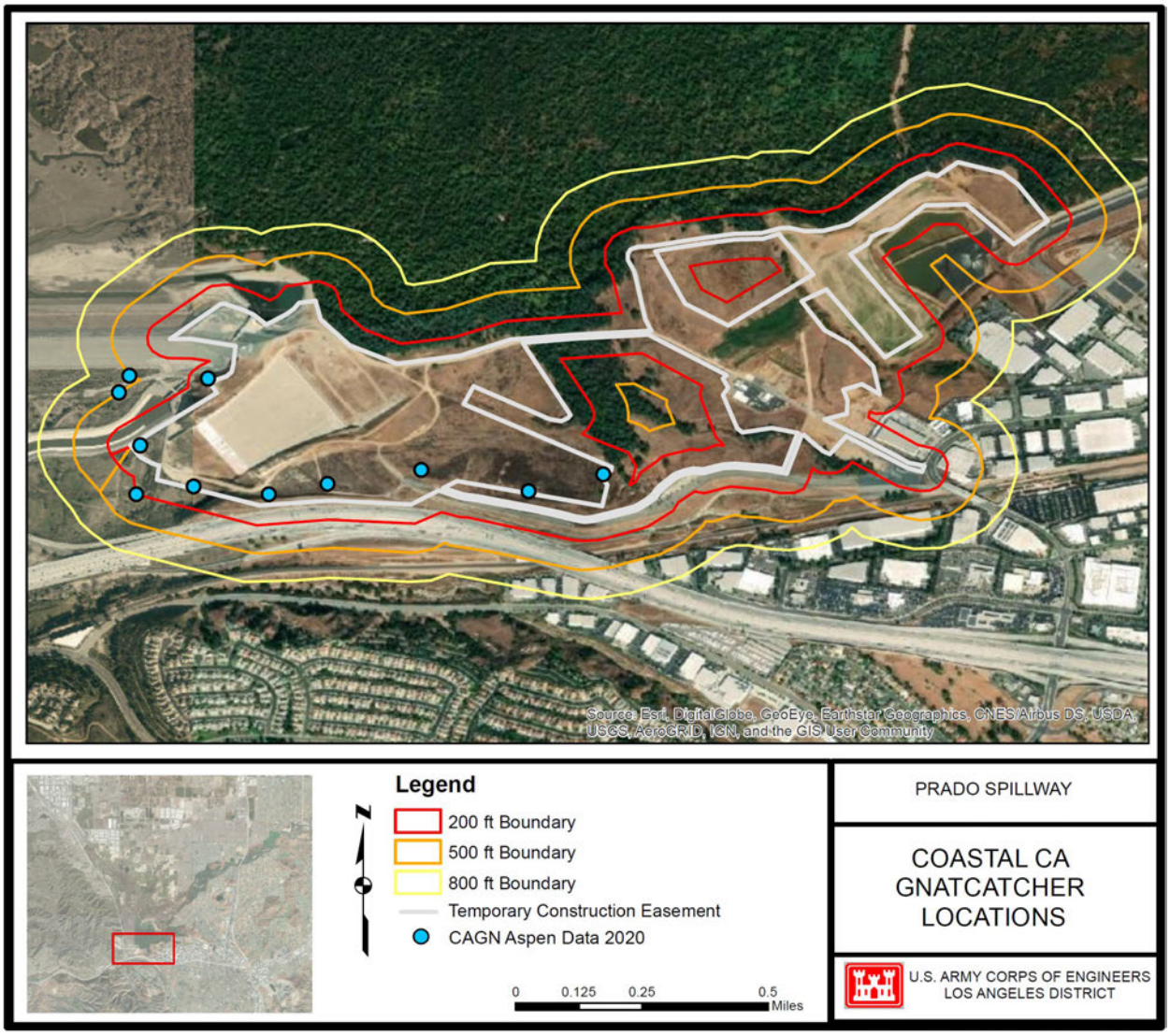


Figure 6. Gnatcatcher territories in the vicinity of the TCE.

EFFECTS OF THE ACTION

Regulations implementing the Act (50 CFR § 402.02) define the effects of the action as all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (50 CFR § 402.17).

The regulations for section 7(a)(2) note that "a conclusion of reasonably certain to occur must be based on clear and substantial information, using the best scientific and commercial data available" [50 CFR § 402.17(a)]. When considering whether activities caused by the proposed action (but not part of the proposed action) or activities reviewed under cumulative effects are reasonably certain to occur, we consider factors such as (1) past experiences with activities that have resulted from actions that are similar in scope, nature, and magnitude to the proposed action; (2) existing plans for the activity; and (3) any remaining economic, administrative, and legal requirements necessary for the activity to go forward.

Least Bell's Vireo

Effects to the Species

No vireo territories were found within the TCE, and the 0.7 acres of unoccupied mulefat riparian vegetation to be cleared will be restored in place upon Project completion. There are two levels of noise impacts to consider. The first is the area immediately surrounding the spillway, where the loudest noise is expected. For this area, we used an 800-foot buffer (see below). Less noise is expected to be generated at the staging and borrow areas. For these locations, we used a 500-foot buffer (see below). Fourteen vireo territories were detected within these noise buffer zones in total. Increased noise could disturb breeding vireo, affecting their ability to establish and defend territories, or locate their young and mates. If disturbed while actively nesting, construction activities could result in nest failure or abandonment. To minimize potential noise impacts, the Corps will construct a sound wall or other noise barrier at the edge of riparian habitat along the edge of the TCE prior to February 15 (CM 9).

The construction equipment expected to be in use during the nesting season would generate a maximum sound level (L_{max}) of 90 dBA at the spillway itself, and 85 dBA at the staging and borrow areas, at 50 feet from the source (Federal Highway Administration 2006, Table 1). L_{max} is the highest instantaneous sound level measured during a specified period. Construction noise is commonly reported in maximum noise levels, which are not typically sustained over long periods of time. Construction equipment generally acts like a point source and will typically reduce at a rate of 6 dB per doubling of distance, without considering additional attenuation that varies with the environment (CalTrans 2016). Additionally, a break in the line of sight between the noise source and the receptor using sound walls can result in a 5 dBA reduction (Federal Highway Administration 1995).

The Corps and Service have previously agreed upon 60 dBA Leq per half hour, or 5 dBA above ambient conditions, as the threshold to assess impacts to vireo due to noise. A study examining the effects of helicopter noise at Camp Pendleton in San Diego County found that vireo vocalization rates were significantly reduced when noise levels exceeded 60 dBA Leq and breeding success was 3 to 11 percent higher outside of the zone exposed to 60 dBA (Mock and Tavares 1997), although we note that this effect is difficult to tease apart from external factors. The authors still found an exponential increase of vireo following cowbird management and habitat restoration at Camp Pendleton, suggesting that the impacts of noise are minor compared to cowbird parasitism and habitat degradation. Additionally, it should be noted that the Service has been unable to track the specific methods and analysis used by Mock and Tavares. However, with the lack of other study data indicating that the 60 dBA threshold is inappropriate to use for this species, we will not deviate from our standard practice.

Our rationale for allowing construction noise up to 5 dBA over ambient is in recognition that vireo habituation to elevated ambient noise has been documented at some locations of the SARP (e.g., adjacent to State Route 91). As such, pre-construction noise monitoring will occur and be reported to the Service prior to construction start to determine the actual threshold to be used. The Corps collected preliminary ambient noise readings in the western portion of the TCE in January 2021 and documented readings of 50.7 to 53.9 dBA (May pers. comm. 2021), thus we anticipate that the 60 dBA ambient threshold will not be exceeded.

We used the following procedure to estimate noise impacts at the spillway: we anticipate the expected maximum noise level (i.e., 90 dBA) will be reduced by 5 dBA due to the sound wall (i.e., a maximum of 85 dBA on the opposite side of the sound wall from construction), then we doubled the distance from the point source of the sound to 100 feet (79 dBA with the 6 dB reduction), further doubled it to 200 feet (73 dBA), further doubled it to 400 feet (67 dBA), and further doubled it to 800 feet (61 dBA at this distance from the spillway). To estimate noise impacts from the staging and borrow areas, we followed the same method (i.e., sound wall reduces 85 dBA to 80 dBA, sound will be 74 dBA at 100 feet, 68 at 200 feet, and 62 at 400 feet), which indicates that vireo occupying nine of the 14 territories within 500 feet of this TCE may be affected by construction noise. After considering the sound wall, the natural noise attenuation of a thick riparian forest, and the lower elevation (relative to construction) of the vireo territories within the Prado Basin, we do not expect noise or other construction-related impacts to the vireo occupying four territories within the riparian forest to the north of the construction area, within the 500-foot buffer. As such, we anticipate that vireo occupying the other ten territories may be subjected to construction noise, potentially resulting a decrease in reproductive success. Three of the ten are the birds include in the gas line consultation analysis. They will only be present and affected by the spillway Project if they are avoided by the pipeline relocation project. We do not anticipate a measurable change in the number or distribution of vireo in the action area due to the proposed Project.

To assess the temporary effect of noise on these birds, regular noise monitoring will occur within the 500- and 800-foot buffers (CM 11) outside the riparian forest in Prado Basin, and the Corps will provide an estimate of occupied vireo habitat that was subjected to noise above 60 dBA Leq

hourly, or 5 dBA above ambient. In the past, the Corps' contractor calculated the distance at which noise levels would be in compliance by using a line distance calculator, collected noise exceedance/distance information, and knowledge of the point source (construction activities). The resulting assessment of the area affected is expected to be smaller than the area inside the Corps' TCE 500- and 800-foot buffers. Decrease in habitat productivity due to noise will be offset through riparian habitat restoration at a1:1 ratio, per year of impact (i.e., if more than one breeding season is affected). With implementation of CM 11, we do not expect a significant effect to the vireo population due to noise impacts from the proposed Project.

Combined Effects with the Southern California Gas Line Relocation

The SoCalGas line relocation is anticipated to be completed by the start date of the proposed Project (roughly fall of 2022). Three vireo territories occupy riparian habitat within the 800-foot buffer south of the spillway Project construction and the Corps reports that their habitat will be avoided during the gas line relocation, contrary to what was analyzed in the gas line biological opinion. Therefore, these three vireo territories will be affected by noise in consecutive years by both projects.

Effects to Vireo Recovery

The number of vireo in the vicinity of the Project's action area has been steadily increasing, although substantial threats requiring ongoing management remain. A Draft Recovery Plan for the species was outlined in 1998 and coordinated actions by several agencies have been taken to promote the recovery of the vireo since it was listed in 1986. The primary goals of the draft vireo recovery plan are stated as: (1) maintain stable or increasing vireo metapopulations, each consisting of several hundred or more breeding pairs; (2) protect and manage riparian and adjacent upland habitats within the historic range of the vireo, (3) control non-native plant species, (4) control cowbird parasitism, and, (5) conduct habitat restoration. Population surveys indicate that the Santa Ana River population has achieved the downlisting criterion from the draft recovery plan, although most of the other populations/ metapopulations of vireo have not. This Project is not anticipated to have a measurable effect on vireo recovery.

Coastal California Gnatcatcher

Effects to the Species

Eight gnatcatcher territories were documented within the TCE, with an additional three territories located within an 800-foot buffer of the spillway, in 2020. The vegetation is expected to be removed from eight gnatcatcher territories. Vegetation clearing will occur outside of the nesting season (CM 3), although gnatcatchers are present year-round and don't abandon their territory. Once the vegetation is cleared, these gnatcatchers will be displaced and forced to colonize new territories. As such, there may be a local temporary effect on gnatcatcher distribution until the Project site is restored, and a corresponding decrease in local numbers and reproduction.

It is unclear where gnatcatchers in the action area will be displaced to; the hillsides surrounding the action area have been subjected to regular fires, which prevent habitation and recolonization in the short term, and lead to habitat type conversion in the long-term if the same area is repeatedly burned. Habitat type conversion results in vegetation that is unsuitable for gnatcatcher occupation without active restoration, which has yet to occur throughout burned areas.

Given the estimated life span of a gnatcatcher, and the 4 to 5 year duration of the Project, it is likely gnatcatchers displaced by the Project will be permanently displaced from their existing territories. We do not expect that all displaced gnatcatchers will successfully relocate due to the degraded condition of the surrounding habitat. Any remaining suitable habitat in the vicinity should already be occupied. Therefore, we anticipate that some number of gnatcatchers from these eight territories will not survive and will be lost to the local population. If an individual survives, it may just displace another individual within the limited habitat that is available. Those that do survive may not be able to remain with their existing mate and may have to expend energy attracting (or finding) a new one within suitable habitat, which may decrease reproductive output.

We expect that the action area will be recolonized following the onsite coastal sage scrub restoration (CM 5-7). However, these birds may be exposed to loud noises from Project maintenance activities, especially the dumping of stone and use of hydraulic excavators needed to reinforce the spillway infrequently (following rare extreme flow events).

An estimated 56.3 acres of native upland habitat (i.e., coastal sage scrub) occupied by gnatcatcher are expected to be temporarily removed during the proposed Project, with an additional 4.4 acres of occupied gnatcatcher habitat to be permanently removed. However, gnatcatchers are pressed for suitable habitat in the area, likely due to the repeated fires, as they are using both native coastal sage scrub and disturbed non-native vegetation. The SoCalGas gas line project will remove 5.3 acres of the gnatcatcher habitat that would otherwise have been removed during Project construction. All temporary impact areas will be restored with coastal sage scrub vegetation upon Project completion (2028 or later).

The temporary loss of occupied gnatcatcher habitat will be offset by the restoration of between 97.8-195.5 acres of coastal sage scrub at an offsite location outside the TCE (CM 6), to be determined in coordination with the Service prior to start of construction and selected based on the results of gnatcatcher occupation surveys and the timing of restoration. The actual area of impact and the size of any restoration that has begun will be reported to the Service in an annual memo. The Corps will revegetate the 5.3 acres of occupied habitat removed the by gas line relocation project. The permanent loss of an estimated 2.2 acres of occupied non-native habitat will be offset by coastal sage scrub restoration of between 2.2 and 4.4 acres (CM 6); the offset will occur at a 1:1 ratio if the restoration occurs before the impacts. The additional permanent loss of an estimated 4.4 acres of occupied native coastal sage scrub habitat will be offset by the restoration of 13.2 acres (i.e., a 3:1 ratio) of coastal sage scrub outside the TCE, to be determined in coordination with the Service prior to the start of construction (CM 7).

The three gnatcatcher territories within the 800-foot spillway buffer may be subject to noise and other effects, such as the presence of many humans over the course of this large-scale, long-term project. Increased noise could disturb these gnatcatchers, affecting their ability to forage, establish and defend their territories, or locate their young and mates. If disturbed while actively nesting, construction activities could result in nest failure or abandonment. If this occurs, we expect the effect to last for five nesting seasons or more. The pair may abandon the territory and be subjected to competition while establishing a new one. To minimize noise, visual, and other impacts, the construction contractor will erect a temporary sound wall or other noise barrier along the edge of the TCE prior to February 15, and surrounding demolition activities regardless of the time of year (CM 9-10).

As previously discussed, the demolition equipment to be used would generate a maximum sound level (Lmax) of 90 dBA at 50 feet from the source (Federal Highway Administration 2006, Table 1), subjecting gnatcatchers within approximately 800 feet of the spillway demolition activities to up to 60 dBA, with sound walls in place. Based on 2019 and 2020 surveys, we anticipate that the three gnatcatcher territories within the 800-foot buffer may be affected by construction noise.

To assess effects to gnatcatchers, pre-construction noise monitoring will occur and be reported to the Service prior to construction start to determine the actual threshold to be used. Preliminary ambient noise readings taken by the Corps in the western portion of the TCE in January 2021 documented readings of 50.7 to 53.9 dBA (May pers. comm. 2021). During construction, regular noise monitoring will occur within the 800-foot buffer, and the area of occupied gnatcatcher habitat subjected to greater than 60 dBA Leq hourly, or 5 dBA above ambient noise, will be provided to the Service, as described above for vireo. The affected area will likely be smaller than the area within the 800-foot buffer. The decrease in habitat productivity due to noise will be offset through coastal sage scrub restoration at 1:1 acre ratio per year of impact (i.e., if more than one breeding season was affected), at a location(s) agreed upon prior to construction.

Additionally, the Corps will report annually on whether the gnatcatchers using the area within the buffer remain during the breeding season. Gnatcatchers defend a use area but do not exhibit nest site fidelity, so a nesting site is selected from within the use area each season. Gnatcatchers occupying the marginal habitat may choose to not remain within the vicinity of a large construction project. With implementation of CM 9-10, we do not expect a significant effect to the gnatcatcher population due to noise impacts from the proposed Project. However, we do anticipate a temporary reduction in gnatcatcher distribution and reproduction, as up to 22[3] gnatcatchers (i.e., 11 pairs in total, although not all recorded birds may be paired, and some of the recorded observation may have been of family groups) may be forced to seek out a new territory and attract a new mate.

[3] This estimate includes the assumption that the bird(s) affecting by construction noise opt to vacate the area.

Combined Effects with the Southern California Gas Line Relocation

Approximately 13.5 acres of the Project's TCE overlaps with that of the SoCalGas pipeline relocation project, although not all of the overlap occurs within mapped native upland habitat. Six gnatcatcher territories that may be exposed to noise from the gas line relocation in early 2022 would be subjected to coastal sage scrub removal in the fall of 2022 during Project construction. This may cause a decrease in reproduction, as displaced gnatcatchers have to expend more energy searching for a new territory and attracting a new mate, and also may result in a shift in distribution, if the displaced gnatcatchers are able to find a new territory. The SoCalGas project will be restoring 11.5 acres of coastal sage scrub habitat at a nearby location, but we do not anticipate it will be able to support gnatcatchers by fall of 2022. However, we do not expect a decrease in numbers due to the two projects occurring consecutively. The gnatcatchers within three territories will likely be exposed to noise and other indirect effects in the consecutive years that the projects occur, which may affect their reproductive output and distribution, should the gnatcatchers choose to vacate their territories due to the repeated disturbance. Overall, we anticipate the two discrete projects occurring consecutively may compound any effects on the gnatcatchers holding ten territories within the areas of overlap, although the ultimate outcome would be difficult to measure. We don't expect gnatcatchers to reoccupy this area until the spillway Project construction is complete, and the Corps has restored the removed coastal sage scrub habitat.

Effects to Recovery

While the proposed Project is underway, and the occupied coastal sage scrub habitat is not yet replaced, we expect a small temporary negative effect on the local distribution of the species. The primary threat to gnatcatcher is a loss of coastal sage scrub habitat. This Project will cause eight (potentially eleven) gnatcatchers individuals or pairs to vacate their existing coastal sage scrub habitat within at least 60.7 acres without having ample habitat nearby to relocate to. The habitat located both on- and off-site is not expected to support gnatcatcher for an estimated five years while the Project is ongoing. The Project will offset these impacts once coastal sage scrub is restored on- and off-site. There will be a temporal effect on the species' status but not a long-term effect to the species' recovery.

CUMULATIVE EFFECTS

Cumulative effects are effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur in the action area of the Federal action subject to consultation (50 CFR § 402.02). Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The Service has no information regarding any future State, local, private, or tribal actions that are reasonably certain to occur in the action area that would have an adverse effect on vireo or gnatcatcher that would result in a loss to reproduction, numbers, and distribution in the action area.

CONCLUSION

After reviewing the current status of the vireo and gnatcatcher, the environmental baseline for the action area, the effects of the proposed activities, and the cumulative effects, we have determined that the activities considered in this biological opinion are not likely to jeopardize the continued existence of the least Bell's vireo or coastal California gnatcatcher. We reached this conclusion by considering the following:

Least Bell's Vireo

1. We expect habitat supporting ten vireo territories may be affected by construction noise, which may reduce the fitness and productivity of these birds. However, any associated impacts will be temporary, lasting a maximum of the estimated five nesting seasons during Project construction.

Coastal California Gnatcatcher

1. We expect gnatcatcher occupying up to eight territories to be displaced by this Project. These displaced birds may suffer from reduced reproductive fitness and some may be killed as a result of having no habitat to relocate to. The current distribution of gnatcatchers in the local area will be reduced in size; however, we expect the population will expand again, once the habitat is restored in place after Project completion.

2. Habitat supporting three gnatcatcher territories may be affected by construction noise, which may reduce the fitness and productivity of nesting birds. However, any associated impacts will be temporary and last an estimated five nesting seasons during Project construction.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened animal species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. The Service further defines "harm" to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the proposed protective measures and the terms and conditions of an incidental take statement and occurs as a result of the action as proposed.

The measures described below are non-discretionary and must be undertaken by the Corps for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps fails to assume and implement the terms and conditions, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR § 402.14(i)(3)].

AMOUNT OR EXTENT OF TAKE

Least Bell's Vireo

We anticipate take in the form of harm of vireo in up to ten vireo territories that may be affected by construction noise within the 500- and 800-foot noise buffers around the Project footprint. These birds may suffer a reduction in fitness and productivity during Project construction, for up to five years. The take exemption will be exceeded if more than ten vireo territories are determined to be impacted by noise above 60 dBA Leq, or noise greater than 5 dBA above ambient conditions if said levels are above 60 dBA Leq, or another agreed upon and documented limit.

Coastal California Gnatcatcher

We anticipate take in the form of harm to gnatcatchers in up to eight gnatcatcher territories due to the loss of their breeding, feeding, and sheltering habitat, some proportion of which may be killed due to the lack of habitat. These gnatcatchers are expected to be displaced, which will subject them to increased competition, greater risk of predation/nest parasitism, and decreased reproductive success. If the habitat of more than eight gnatcatcher territories is removed by this Project, the take limit will have been exceeded and consultation reinitiated. Due to the scarcity of habitat in the Project area, we do not expect all displaced gnatcatchers to successfully establish new territories.

We anticipate take in the form of harm to gnatcatchers in three gnatcatcher territories that may be affected by construction noise within an 800-foot buffer of the Project footprint. These birds may suffer a reduction in fitness and productivity during Project construction, for up to five years. The take exemption will be exceeded if more than three gnatcatcher territories are determined to be impacted by noise above 60 dBA Leq, or noise greater than 5 dBA above ambient conditions if said levels are above 60 dBA Leq, or another agreed upon and documented limit.

EFFECT OF TAKE

Least Bell's Vireo

We anticipate any temporary effect to individual vireo reproduction will be short-lived. In the accompanying biological opinion, the Service determined that this level of anticipated incidental take is not likely to result in jeopardy to the vireo.

Coastal California Gnatcatcher

The displacement of up to eight gnatcatcher pairs is expected to result in a temporary reduction in distribution and fitness of gnatcatchers in the action area. If displaced gnatcatchers do not find suitable alternative territories in the vicinity, some individual gnatcatchers may die. The loss of several individuals will not have a measurable effect on the species, although the local gnatcatcher population may see temporary reduction in numbers. This effect is expected to be temporary, and distribution and reproduction of the local gnatcatcher population is expected to return to baseline condition once the coastal sage scrub habitat is successfully restored after Project completion, and new individuals are successfully fledged and added to the local populations. In the accompanying biological opinion, the Service determined that this level of anticipated incidental take is not likely to result in jeopardy to the gnatcatcher.

REASONABLE AND PRUDENT MEASURES

To minimize the effects of incidental take on the vireo and gnatcatcher, the Corps will continue to fully implement the reasonable and prudent measures (RPM) established in the 2001 biological opinion (FWS-SB-909.6). In addition, we have determined that the following reasonable and prudent measures, specific to the construction of the Prado Dam spillway (of the SARP) and the dam safety modifications, are necessary and appropriate to minimize the impact of the incidental take of vireo and gnatcatcher:

RPM 1. The Corps and Orange County Flood Control District (OCFCD) shall implement the Project as described in the sections entitled “Description of the Proposed Action”, including “Conservation Measures.”

RPM 2. The effect of take of individual gnatcatcher will be minimized through the restoration of up to 208.7 (i.e., 13.2 + 195.5) acres of coastal sage scrub habitat at a location agreed upon by the Service.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, the Corps shall comply with the terms and conditions (TC) established in the 2001 biological opinion. In addition, the following terms and conditions, which implement the reasonable and prudent measures described above, and outline reporting and monitoring requirements, must be followed. These terms and conditions are non-discretionary.

TC 1.1 The Corps and/or OCFCD shall incorporate into the quarterly and annual reports (see FWS-SB-909.6, Service 2001, Terms and Conditions 2.1 and 2.2) reporting on any new or updated conservation measure listed within this opinion when reporting on construction activities occurring within the Prado Dam spillway feature of the SARP.

TC 1.2 The Corps and/or OCFCD shall have protocol-level gnatcatcher surveys performed across the entire Project footprint in the spring prior to construction (i.e., expected to be either 2022 or 2023). The results of these surveys, along with a map, will be reported to the Palm Springs Fish and Wildlife Office (PSFWO) at least one month prior to start of construction. If more gnatcatchers are documented within the Project footprint than are accounted for within this biological opinion, the Corps will reinitiate consultation prior to starting construction.

TC 1.3 The Corps and/or OCFCD shall provide vireo and gnatcatcher survey reports by February 1 of the year following surveys (as per CM1).

TC 1.4 The Corps and/or OCFCD shall provide ambient noise reporting for the 500- and 800-foot buffers surrounding the TCE at least a month prior to Project construction. If no noise reporting is provided to the PSFWO prior to construction start, the 60 dBA Leq hourly threshold will be used to assess both vireo and gnatcatcher noise impacts in the entire action area.

TC 1.5 The Corps and/or OCFCD shall provide accounting of occupied vireo and gnatcatcher habitat that has been subjected to noise exceeding 60 dBA Leq hourly or another agreed upon and documented limit with the Service, or noise greater than 5 dBA above ambient conditions if said levels are above 60 dBA Leq, or another agreed upon and documented limit, due to the Project. This will be provided in a report provided to the PSFWO on a weekly basis during the nesting season, and then summarized in an annual report each year during and following Project completion.

TC 1.6 The Corps and/or OCFCD shall provide an estimate of both vireo and gnatcatcher take that has occurred as a result of the Project. This will be provided in an annual report to the PSFWO and will detail actual impacts to vireo and gnatcatcher habitat, and any vireo or gnatcatchers individuals observed behaving uncharacteristically.

TC 2.1 The Corps and/or OCFCD shall identify and secure an offsite location(s) for coastal sage scrub restoration, agreeable to the Service, prior to the start of Project construction.

TC 2.2 The Corps and/or OCFCD shall provide a coastal sage scrub restoration plan with performance standards for approval by the Service prior to the start of construction.

TC 2.3 The Corps and/or OCFCD shall provide a biannual memo on the progress and success of the coastal sage scrub restoration that will occur both within the TCE and offsite for the full duration (i.e., 8 years).

TC 2.4 The Corps and/or OCFCD shall provide an impacts summary report at the end of each year with a table of construction impacts and restoration for the year, with photos. This report will include the results of protocol surveys results for gnatcatchers within the restoration areas and be provided to the PSFWO by February 1 for the previous construction year.

DISPOSITION OF SICK, INJURED, OR DEAD SPECIMENS

Pursuant to 50 CFR § 402.14(i)(1)(v), the Corps and/or OCFCD must notify the PSFWO at 760-322-2070 within 3 working days if any endangered or threatened species is found dead or injured as a direct or indirect results of this Project's implementation. Notification must include the date, time, location, and photograph of the injured animal or carcass, and any other pertinent information. In addition, mark dead animals appropriately, photograph, and leave the carcass on site; transport injured animals to a qualified veterinarian; and contact the PSFWO regarding the final disposition of any treated animals that survive.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations (CR) are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, help implement recovery plans, or to develop information. We recommend the following actions:

CR 1. The Corps and OCFCD should coordinate with the Western Riverside Multiple Species Habitat Conservation Plan, the Riverside-Corona Resource Conservation District, the Southwest Resource Management Association, and/or other entities in the area to identify locations that have recently burned and displaced gnatcatchers, in order to restore a large patch size which will support gnatcatchers and reduce the risk of burning again following restoration. This land may require purchasing and thus entail a larger group effort to be managed by a conservation organization.

REINITIATION NOTICE

This concludes formal consultation regarding the Prado Dam Spillway Raise and Dam Safety Modifications Project as described in materials submitted to us. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount of extent of incidental take specified in the incidental take statement is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not

considered in this biological opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

For further information about this biological opinion, please contact Rebecca Christensen[4] of the Palm Springs Fish and Wildlife Office at 760-322-2070, extension 416.

Sincerely,

For
Scott A. Sobiech
Field Supervisor

[4] rebecca_christensen@fws.gov

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PERSONAL COMMUNICATIONS

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Appendix F: Environmental Justice Evaluation

Environmental Justice Analysis

Introduction

The 1994 Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Population and Low-Income Populations, requires all federal agencies to conduct "programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under, such programs, policies, and activities, because of their race, color, or national origin." Section 1-101 of the Executive Order 12898 requires federal agencies to identify and address "disproportionately high and adverse human health or environmental effects" of programs on minority and low-income populations.

Methodology

Demographic data from the Environmental Protection Agency's (EPA) EJSCREEN, an online environmental justice screening and mapping tool, served as the source data for evaluation. EJSCREEN analyses were conducted in August 2020. EJSCREEN incorporates demographic data from the U.S. Census Bureau. Following guidance by the Council on Environmental Quality (CEQ), two analyses were conducted to determine whether cities adjacent to the project area had a notable presence of minority or low-income population: 1) Fifty Percent Analysis and 2) Meaningfully Greater Analysis. Notable presence of either population would require either of the following results:

1. Fifty Percent Analysis

There is a notable presence of minority or low-income populations if the ratio of either group equals or exceeds 50% of the total population in the area of analysis.

2. Meaningfully Greater Analysis

There is a notable presence of minority or low-income populations if the percentage of either group in the area of analysis equals to or exceeds the 50th percentile within the reference area.

Definitions

CEQ defines minority groups as Asian, American Indian and Alaskan Native, Native Hawaiian and Pacific Island, Black or African American, and Latino. CEQ further defines minority population as any group of minorities that exceed 50 percent of the existing population within an area where a minority group comprises a meaningful greater percentage of the local population than in the general population.

The area of analysis is defined as a 1-mile radius around the temporary construction easement. The reference area is defined as the cities of Chino, Chino Hills, Corona and Yorba Linda. EJSCREEN analysis was conducted on each city separately.

The percentage of minority and low-income populations for each city was collected and used to quantify the 50^{th} percentile value for the surrounding area. The percentage of each of these groups within the area of analysis was then compared to the 50^{th} percentile across the reference area.

Results

1. Fifty Percent Analysis

The 1-mile radius area of analysis encompassed 6.74 square miles and 7,538 residents. Within the area of analysis, minority groups comprise 54% of the total population. The ratio of low-income population relative to the total population of the area of analysis was 20%. Therefore, the Fifty Percent Analysis detected a notable presence of minority populations, but not low income populations, within the area of analysis.

2. Meaningfully Greater Analysis

Comparison of minority and low-income demographics from the area of analysis to those in the surrounding area (cities of Chino, Chino Hills, Corona, and Yorba Linda) is shown below. The percentages of minority and low-income populations within the area of analysis are 54% and 20%, respectively. The 50th percentiles for minority and low-income populations within the surrounding area are 67% and 21%, respectively. Therefore, the Meaningfully Greater Analysis detected a slightly notable presence of low-income populations, but not minority populations within the area of analysis.

Area	Minority Population	Low Income Population
Area of Analysis (1 Mile Radius)	54%	20%
City of Chino	75%	26%
City of Chino Hills	70%	16%
City of Corona	63%	28%
City of Yorba Linda	40%	12%
50th Percentile Across Cities	67%	21%

Conclusions

Fifty Percent Analysis found the percentage of minority populations in the 1-mile surrounding the Spillway project site (54%) is slightly greater than 50%. However, the Meaningfully Greater Analysis found the percentage of minority populations in the 1-mile surrounding the Spillway project site (54%) is less than the 50th percentile of the reference area (67%). Therefore, although there is a high percentage of minorities in the area of analysis, the percentage is much less than that of surrounding cities.

The Fifty Percent Analysis revealed the percentage of low-income populations in the 1-mile surrounding the Spillway project site (20%) is much less than 50%. The Meaningfully Greater Analysis found the percentage of low-income populations in the 1-mile surrounding the Spillway project site (20%) is slightly lower than the 50th percentile of the reference area (21%). Thus, there is no notable presence of low-income populations in the area of analysis.

In conclusion, there is no notable presence of low-income populations surrounding the project area. There is a notable presence of minority populations within the area of analysis for the Spillway Raise project; however, this percentage is typical of regional demographics.

EJSCREEN Report (Version 2019)

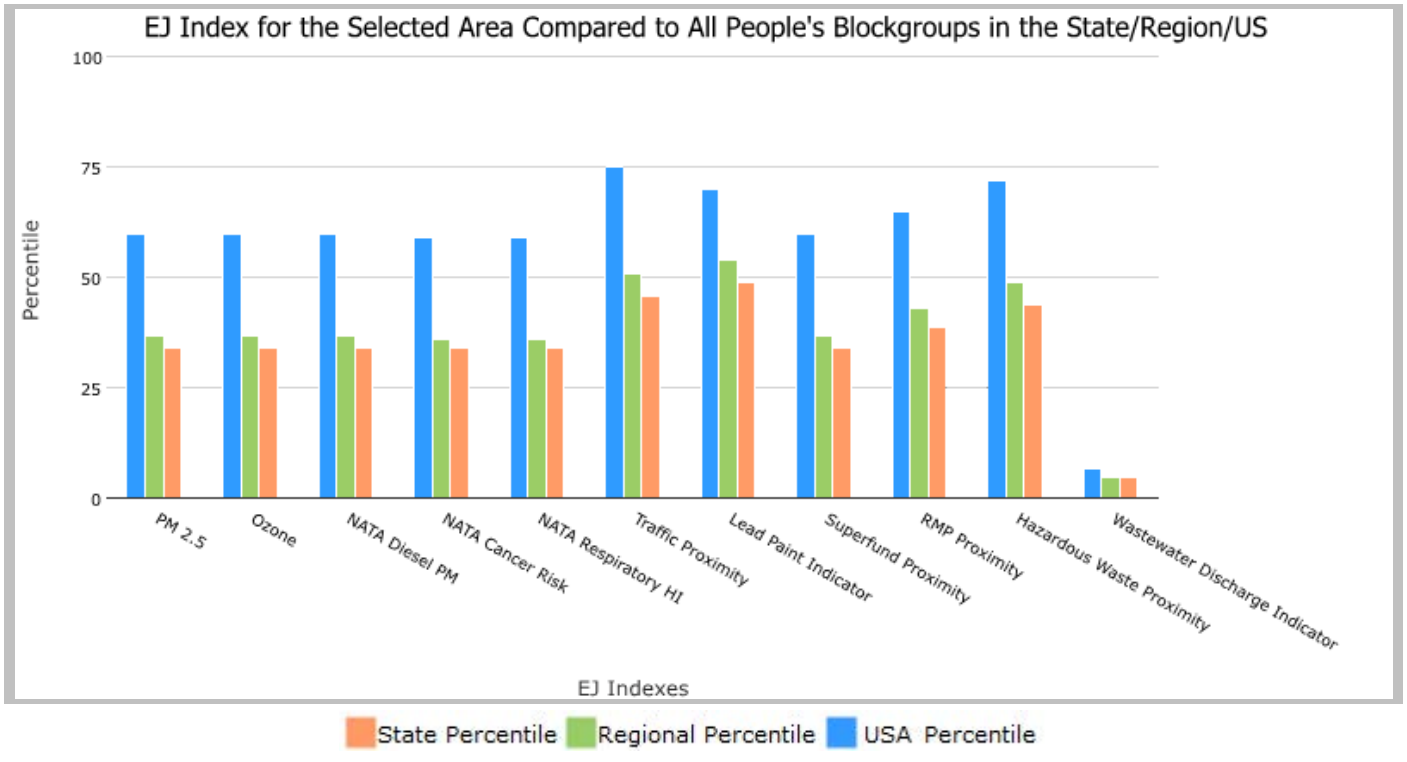
1 miles Ring around the Area, CALIFORNIA, EPA Region 9

Approximate Population: 7,538

Input Area (sq. miles): 6.74

Prado Spillway

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	34	37	60
EJ Index for Ozone	34	37	60
EJ Index for NATA* Diesel PM	34	37	60
EJ Index for NATA* Air Toxics Cancer Risk	34	36	59
EJ Index for NATA* Respiratory Hazard Index	34	36	59
EJ Index for Traffic Proximity and Volume	46	51	75
EJ Index for Lead Paint Indicator	49	54	70
EJ Index for Superfund Proximity	34	37	60
EJ Index for RMP Proximity	39	43	65
EJ Index for Hazardous Waste Proximity	44	49	72
EJ Index for Wastewater Discharge Indicator	5	5	7



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

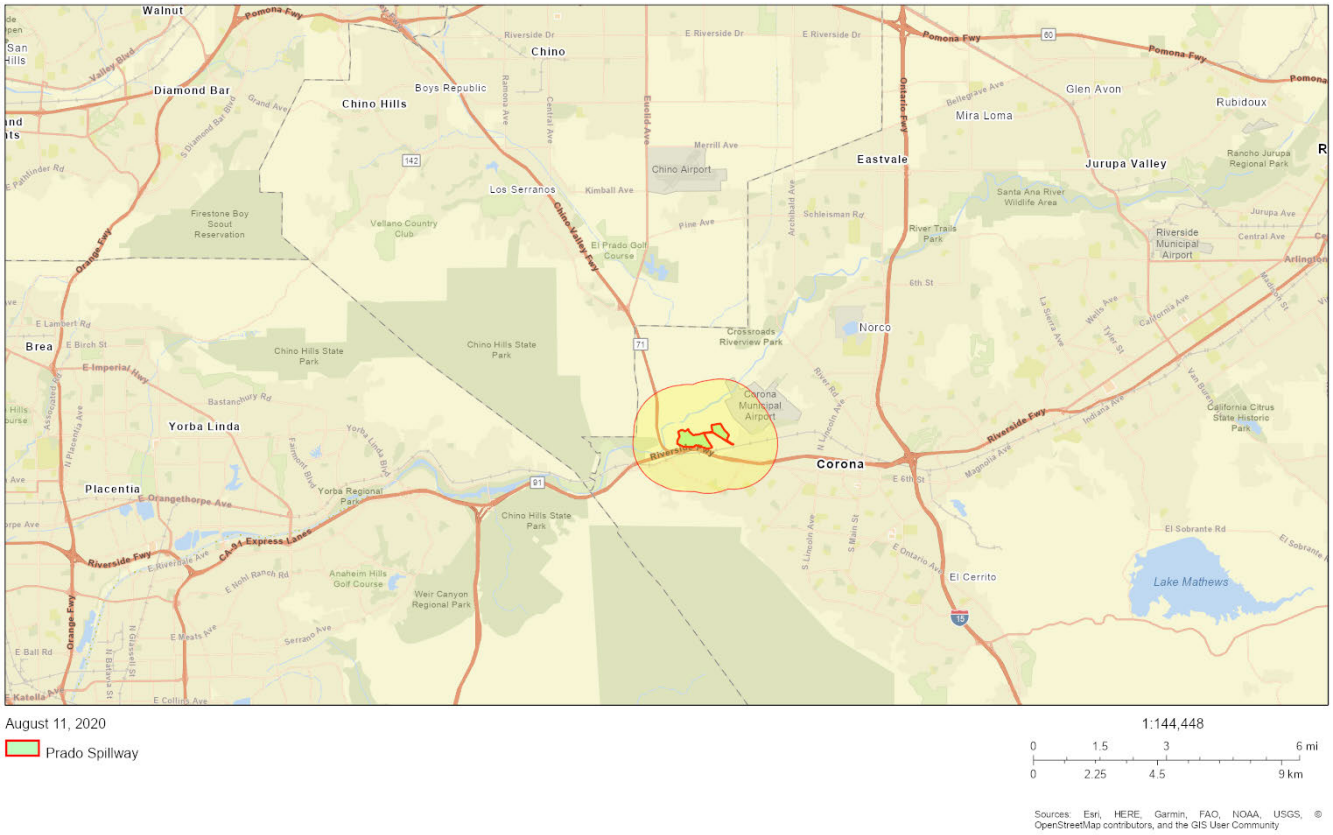
EJSCREEN Report (Version 2019)

1 miles Ring around the Area, CALIFORNIA, EPA Region 9

Approximate Population: 7,538

Input Area (sq. miles): 6.74

Prado Spillway



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	3

EJSCREEN Report (Version 2019)

1 miles Ring around the Area, CALIFORNIA, EPA Region 9

Approximate Population: 7,538

Input Area (sq. miles): 6.74

Prado Spillway

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	12.6	9.78	93	9.21	95	8.3	99
Ozone (ppb)	58.6	48.2	80	48.9	84	43	97
NATA* Diesel PM (µg/m^3)	0.486	0.468	60	0.479	50-60th	0.479	60-70th
NATA* Cancer Risk (lifetime risk per million)	37	36	54	35	50-60th	32	70-80th
NATA* Respiratory Hazard Index	0.52	0.55	44	0.53	<50th	0.44	70-80th
Traffic Proximity and Volume (daily traffic count/distance to road)	1800	2000	66	1700	72	750	89
Lead Paint Indicator (% Pre-1960 Housing)	0.095	0.29	37	0.24	45	0.28	37
Superfund Proximity (site count/km distance)	0.045	0.18	26	0.15	31	0.13	38
RMP Proximity (facility count/km distance)	0.64	1.1	52	0.99	57	0.74	66
Hazardous Waste Proximity (facility count/km distance)	2.2	3.4	52	2.9	60	4	78
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.98	17	89	31	90	14	95
Demographic Indicators							
Demographic Index	37%	48%	34	47%	36	36%	59
Minority Population	54%	62%	38	59%	42	39%	69
Low Income Population	20%	34%	32	34%	31	33%	32
Linguistically Isolated Population	3%	9%	33	8%	38	4%	64
Population With Less Than High School Education	10%	18%	40	17%	42	13%	50
Population Under 5 years of age	5%	6%	42	6%	42	6%	46
Population over 64 years of age	8%	13%	29	14%	29	15%	22

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN Report (Version 2019)

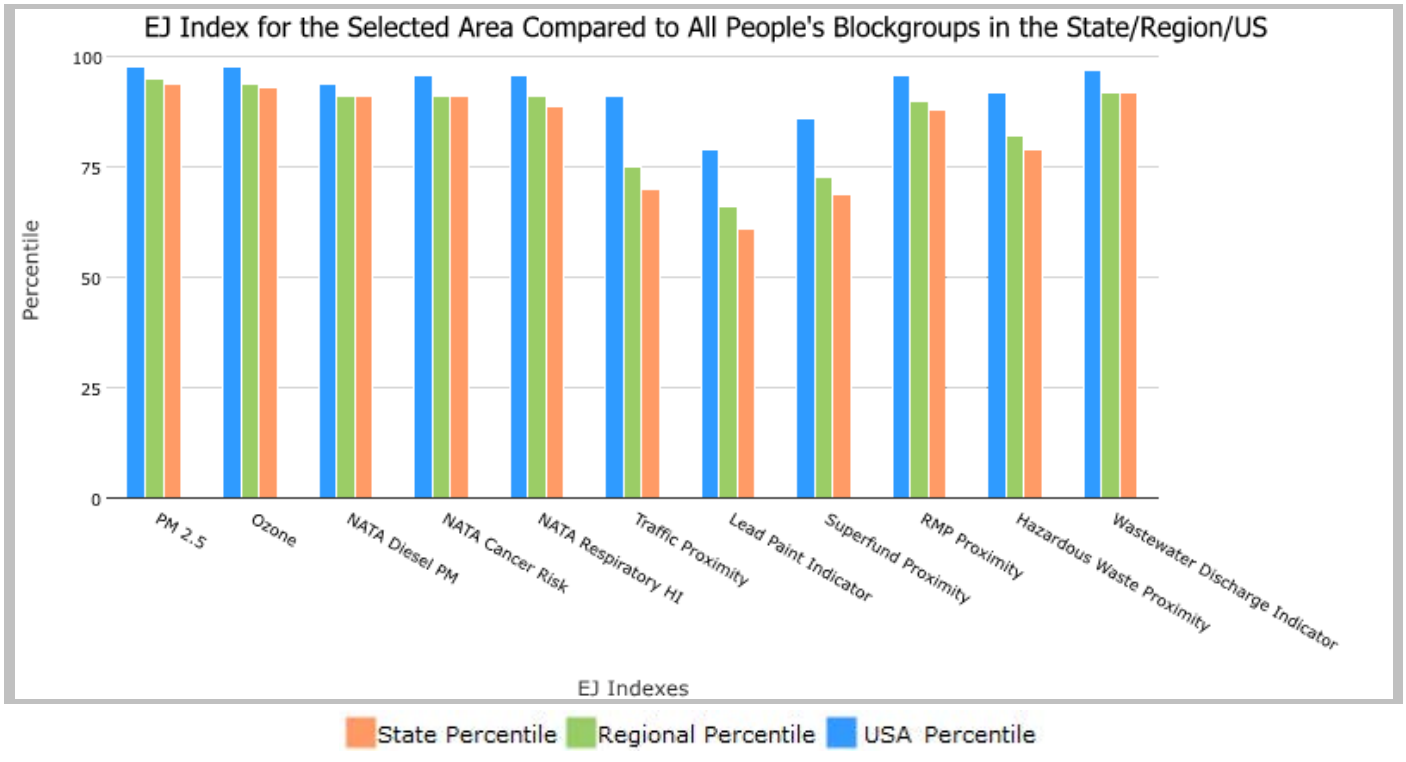
the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 83,200

Input Area (sq. miles): 32.83

City of Chino

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	94	95	98
EJ Index for Ozone	93	94	98
EJ Index for NATA* Diesel PM	91	91	94
EJ Index for NATA* Air Toxics Cancer Risk	91	91	96
EJ Index for NATA* Respiratory Hazard Index	89	91	96
EJ Index for Traffic Proximity and Volume	70	75	91
EJ Index for Lead Paint Indicator	61	66	79
EJ Index for Superfund Proximity	69	73	86
EJ Index for RMP Proximity	88	90	96
EJ Index for Hazardous Waste Proximity	79	82	92
EJ Index for Wastewater Discharge Indicator	92	92	97



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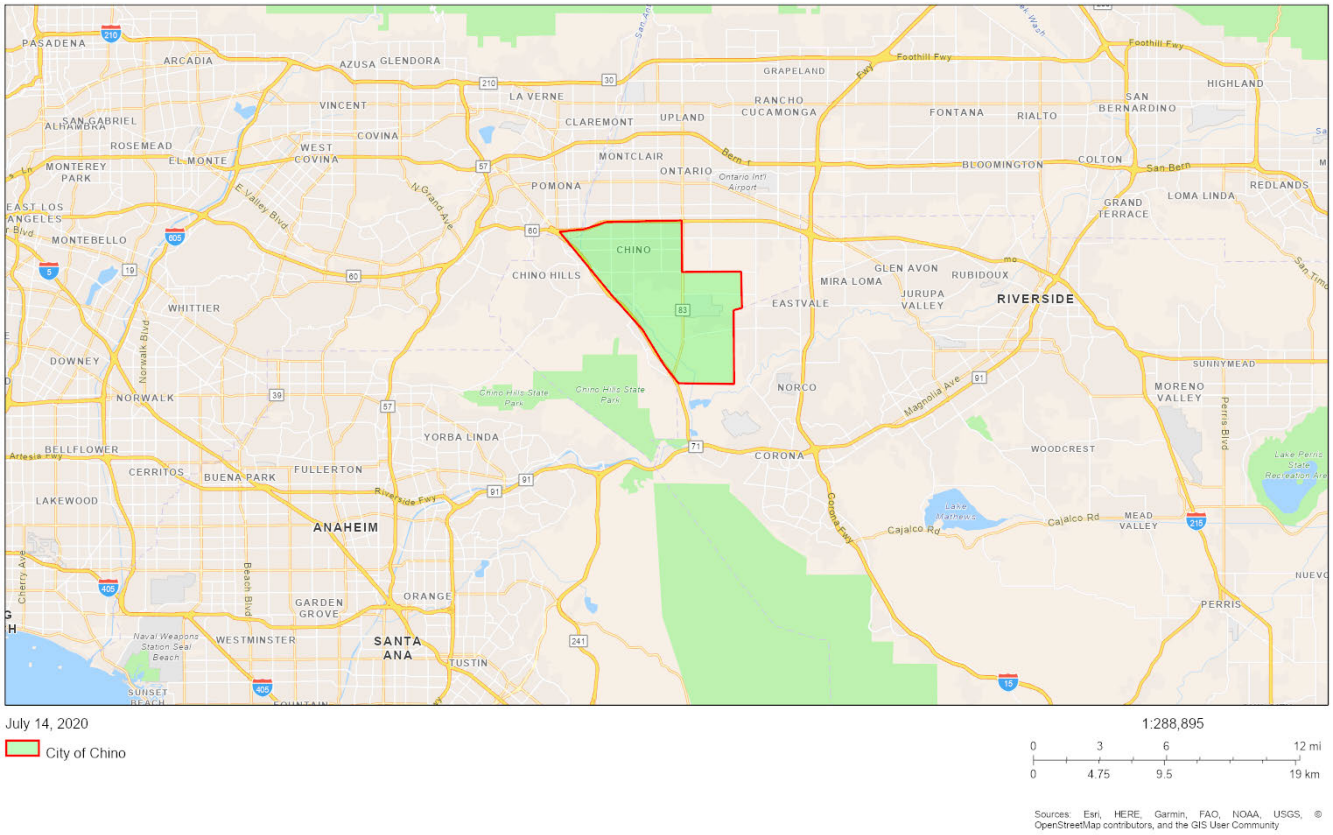
EJSCREEN Report (Version 2019)

the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 83,200

Input Area (sq. miles): 32.83

City of Chino



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	5

EJSCREEN Report (Version 2019)

the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 83,200

Input Area (sq. miles): 32.83

City of Chino

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	13.2	9.78	97	9.21	98	8.3	99
Ozone (ppb)	61.7	48.2	85	48.9	88	43	98
NATA* Diesel PM (µg/m^3)	0.725	0.468	82	0.479	80-90th	0.479	80-90th
NATA* Cancer Risk (lifetime risk per million)	41	36	78	35	70-80th	32	80-90th
NATA* Respiratory Hazard Index	0.62	0.55	70	0.53	70-80th	0.44	80-90th
Traffic Proximity and Volume (daily traffic count/distance to road)	1400	2000	60	1700	67	750	87
Lead Paint Indicator (% Pre-1960 Housing)	0.11	0.29	39	0.24	47	0.28	40
Superfund Proximity (site count/km distance)	0.051	0.18	30	0.15	36	0.13	42
RMP Proximity (facility count/km distance)	1.2	1.1	69	0.99	73	0.74	80
Hazardous Waste Proximity (facility count/km distance)	2.8	3.4	60	2.9	67	4	83
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.24	17	85	31	85	14	92
Demographic Indicators							
Demographic Index	51%	48%	55	47%	57	36%	74
Minority Population	75%	62%	61	59%	64	39%	81
Low Income Population	26%	34%	44	34%	43	33%	44
Linguistically Isolated Population	9%	9%	59	8%	63	4%	82
Population With Less Than High School Education	23%	18%	67	17%	70	13%	82
Population Under 5 years of age	6%	6%	48	6%	48	6%	52
Population over 64 years of age	10%	13%	39	14%	39	15%	30

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN Report (Version 2019)

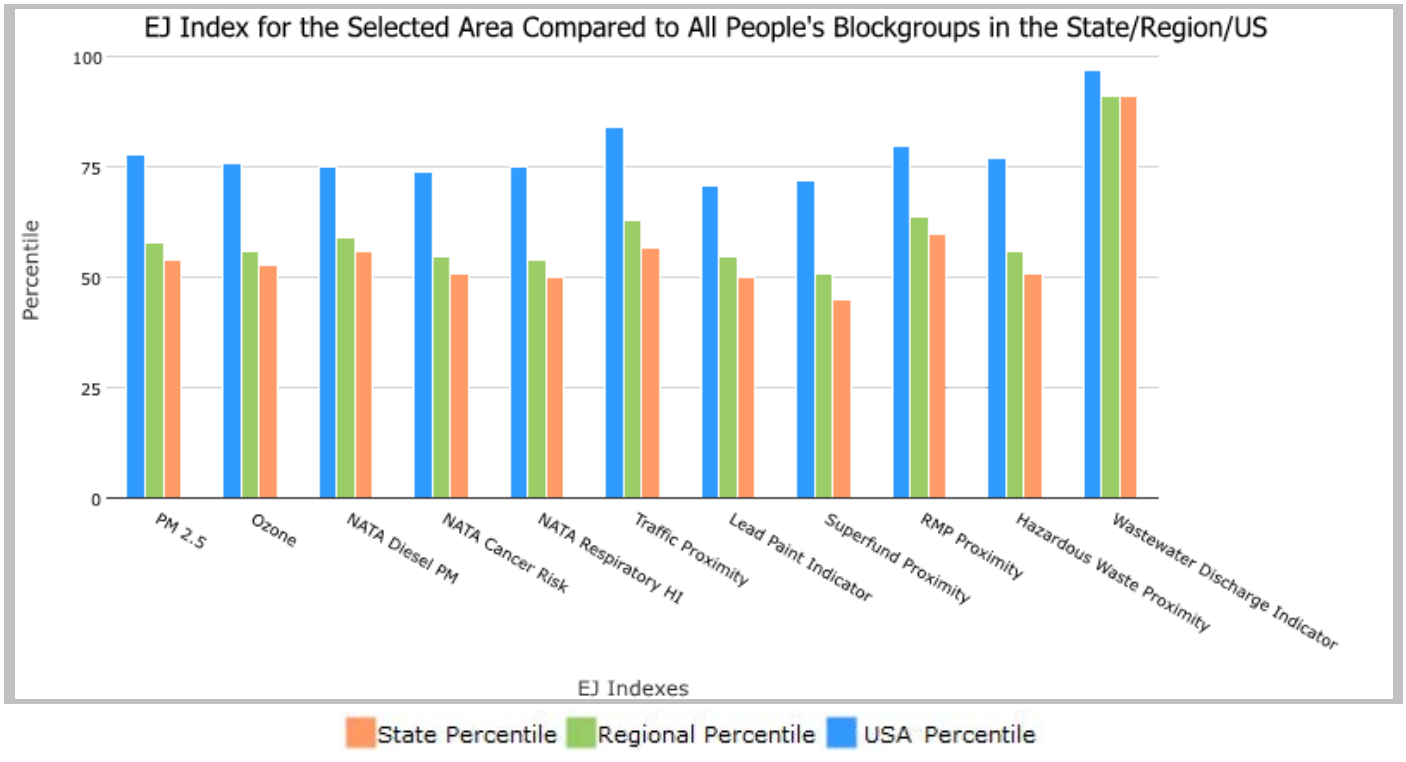
the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 78,583

Input Area (sq. miles): 45.50

Chino Hills, CA

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	54	58	78
EJ Index for Ozone	53	56	76
EJ Index for NATA* Diesel PM	56	59	75
EJ Index for NATA* Air Toxics Cancer Risk	51	55	74
EJ Index for NATA* Respiratory Hazard Index	50	54	75
EJ Index for Traffic Proximity and Volume	57	63	84
EJ Index for Lead Paint Indicator	50	55	71
EJ Index for Superfund Proximity	45	51	72
EJ Index for RMP Proximity	60	64	80
EJ Index for Hazardous Waste Proximity	51	56	77
EJ Index for Wastewater Discharge Indicator	91	91	97



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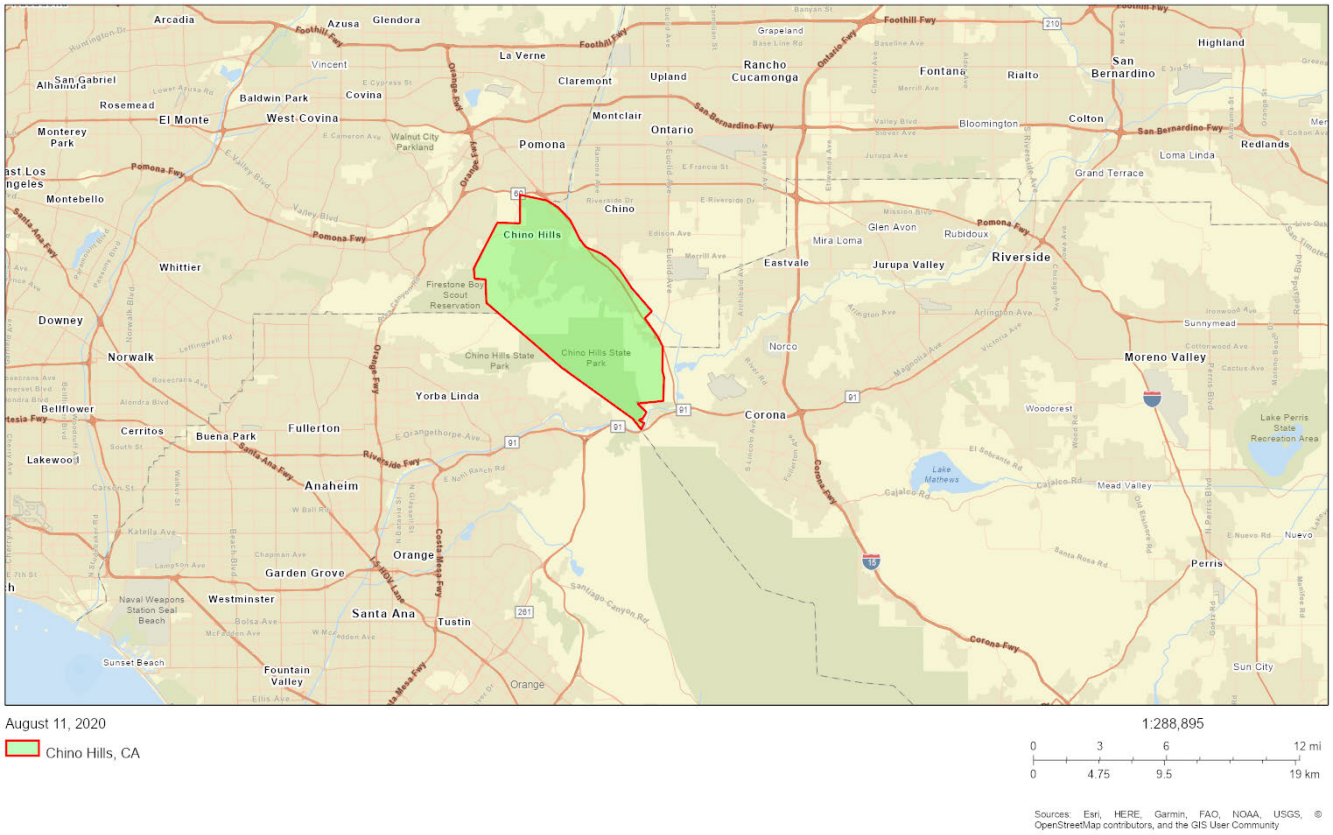
EJSCREEN Report (Version 2019)

the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 78,583

Input Area (sq. miles): 45.50

Chino Hills, CA



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	1

EJSCREEN Report (Version 2019)

the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 78,583

Input Area (sq. miles): 45.50

Chino Hills, CA

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	13	9.78	96	9.21	97	8.3	99
Ozone (ppb)	59.1	48.2	81	48.9	84	43	97
NATA* Diesel PM (µg/m^3)	0.572	0.468	68	0.479	60-70th	0.479	70-80th
NATA* Cancer Risk (lifetime risk per million)	40	36	69	35	60-70th	32	80-90th
NATA* Respiratory Hazard Index	0.58	0.55	59	0.53	60-70th	0.44	80-90th
Traffic Proximity and Volume (daily traffic count/distance to road)	960	2000	49	1700	57	750	81
Lead Paint Indicator (% Pre-1960 Housing)	0.036	0.29	24	0.24	32	0.28	23
Superfund Proximity (site count/km distance)	0.048	0.18	28	0.15	34	0.13	41
RMP Proximity (facility count/km distance)	0.64	1.1	52	0.99	57	0.74	66
Hazardous Waste Proximity (facility count/km distance)	0.86	3.4	34	2.9	42	4	61
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.54	17	87	31	88	14	94
Demographic Indicators							
Demographic Index	43%	48%	44	47%	46	36%	67
Minority Population	70%	62%	54	59%	58	39%	78
Low Income Population	16%	34%	26	34%	25	33%	25
Linguistically Isolated Population	7%	9%	50	8%	55	4%	76
Population With Less Than High School Education	7%	18%	31	17%	32	13%	38
Population Under 5 years of age	6%	6%	44	6%	44	6%	48
Population over 64 years of age	10%	13%	43	14%	42	15%	33

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN Report (Version 2019)

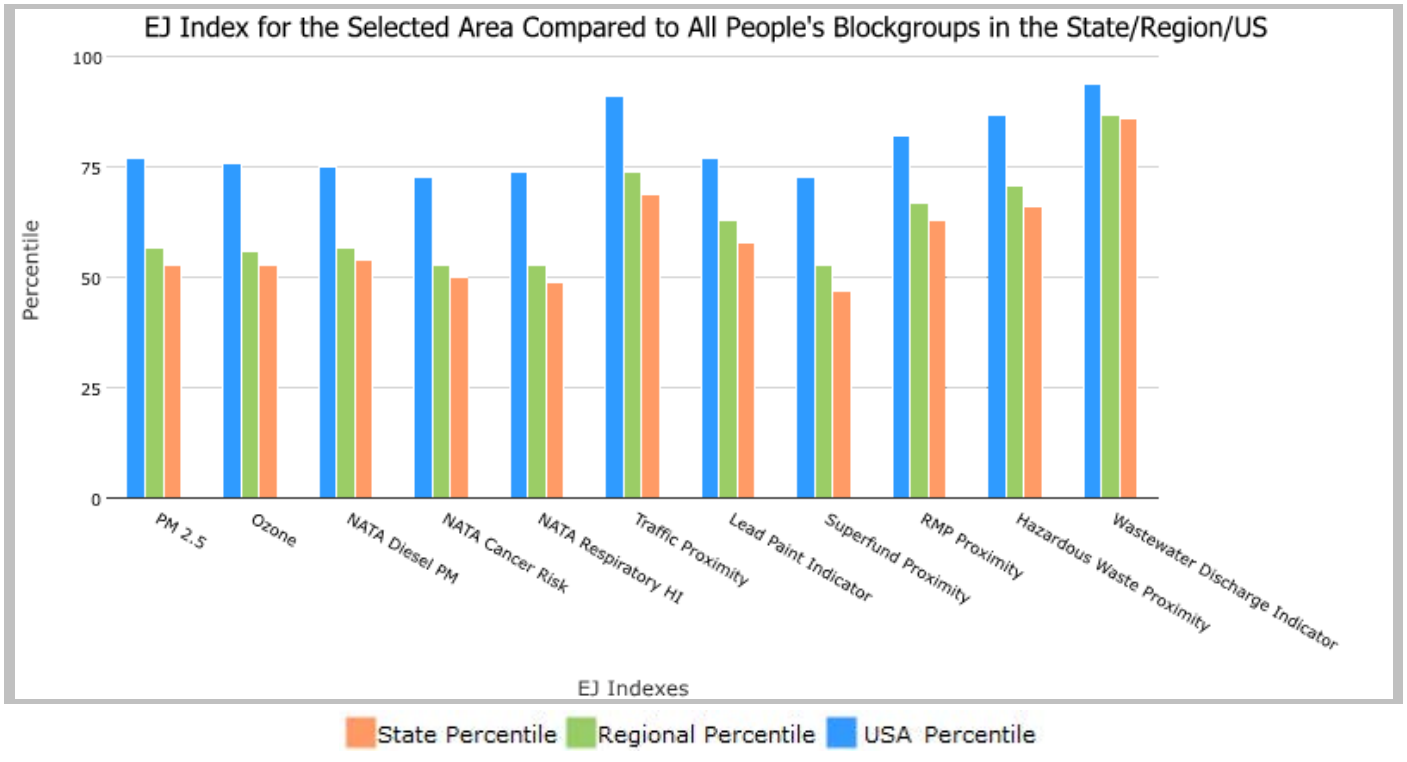
the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 168,876

Input Area (sq. miles): 45.00

City of Corona

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	53	57	77
EJ Index for Ozone	53	56	76
EJ Index for NATA* Diesel PM	54	57	75
EJ Index for NATA* Air Toxics Cancer Risk	50	53	73
EJ Index for NATA* Respiratory Hazard Index	49	53	74
EJ Index for Traffic Proximity and Volume	69	74	91
EJ Index for Lead Paint Indicator	58	63	77
EJ Index for Superfund Proximity	47	53	73
EJ Index for RMP Proximity	63	67	82
EJ Index for Hazardous Waste Proximity	66	71	87
EJ Index for Wastewater Discharge Indicator	86	87	94



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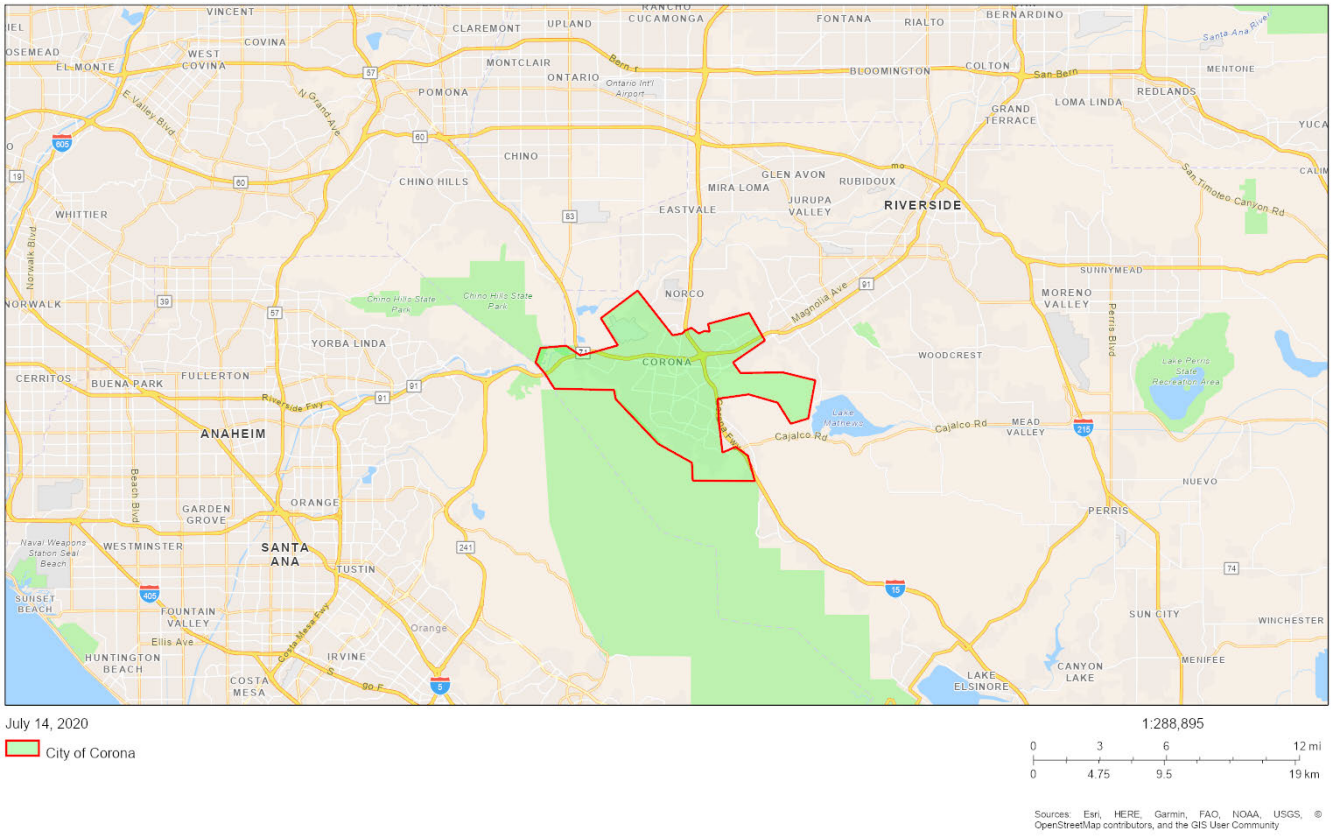
EJSCREEN Report (Version 2019)

the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 168,876

Input Area (sq. miles): 45.00

City of Corona



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	10

EJSCREEN Report (Version 2019)

the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 168,876

Input Area (sq. miles): 45.00

City of Corona

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	12.5	9.78	91	9.21	93	8.3	98
Ozone (ppb)	59.9	48.2	82	48.9	86	43	97
NATA* Diesel PM (µg/m^3)	0.435	0.468	54	0.479	50-60th	0.479	50-60th
NATA* Cancer Risk (lifetime risk per million)	35	36	45	35	<50th	32	60-70th
NATA* Respiratory Hazard Index	0.5	0.55	39	0.53	<50th	0.44	60-70th
Traffic Proximity and Volume (daily traffic count/distance to road)	1300	2000	57	1700	64	750	85
Lead Paint Indicator (% Pre-1960 Housing)	0.081	0.29	34	0.24	43	0.28	34
Superfund Proximity (site count/km distance)	0.051	0.18	30	0.15	36	0.13	42
RMP Proximity (facility count/km distance)	0.69	1.1	54	0.99	59	0.74	67
Hazardous Waste Proximity (facility count/km distance)	2.5	3.4	56	2.9	64	4	81
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.3	17	85	31	86	14	92
Demographic Indicators							
Demographic Index	46%	48%	48	47%	50	36%	70
Minority Population	63%	62%	48	59%	52	39%	75
Low Income Population	28%	34%	47	34%	47	33%	48
Linguistically Isolated Population	6%	9%	47	8%	52	4%	75
Population With Less Than High School Education	16%	18%	54	17%	57	13%	69
Population Under 5 years of age	7%	6%	55	6%	55	6%	58
Population over 64 years of age	9%	13%	38	14%	38	15%	29

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN Report (Version 2019)

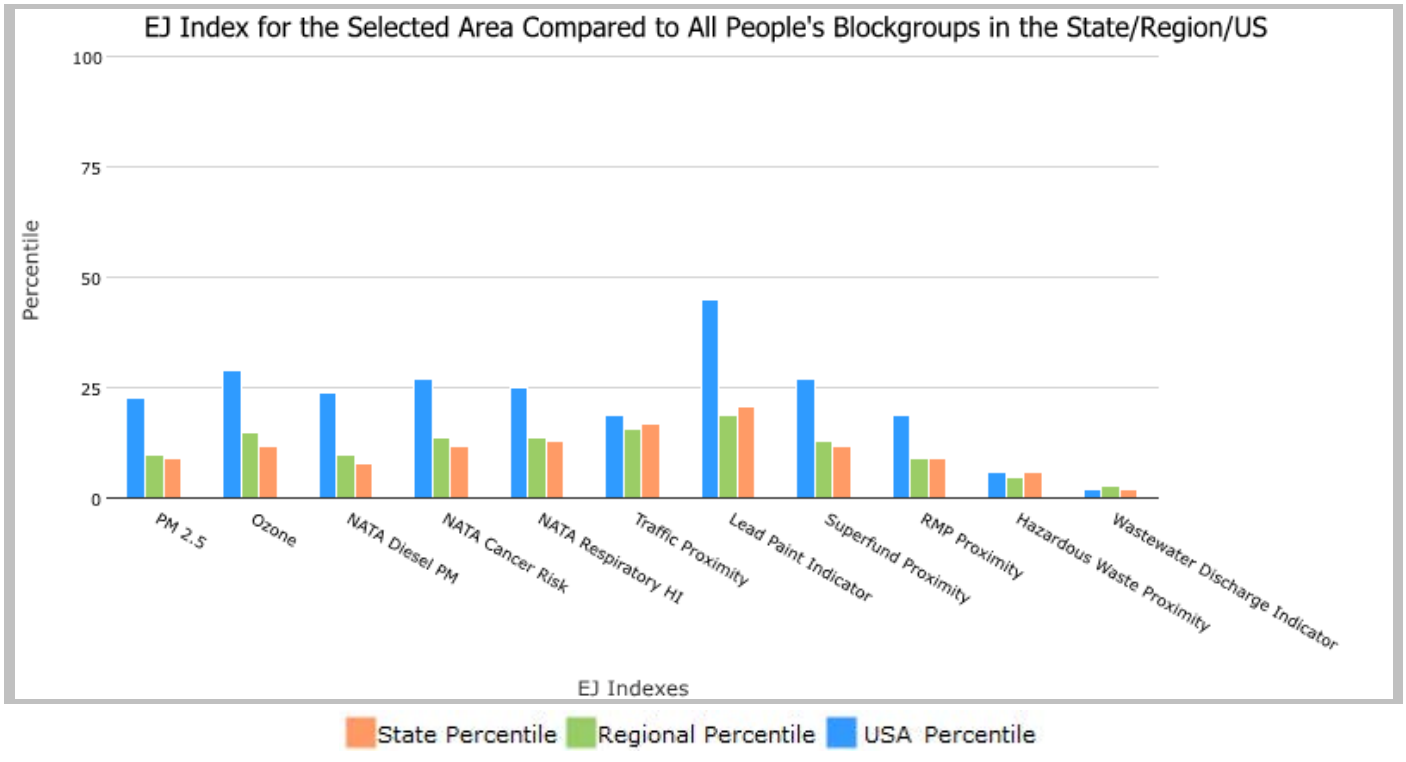
the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 73,761

Input Area (sq. miles): 22.96

Yorba Linda, CA (The study area contains 1 blockgroup(s) with zero population.)

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	9	10	23
EJ Index for Ozone	12	15	29
EJ Index for NATA* Diesel PM	8	10	24
EJ Index for NATA* Air Toxics Cancer Risk	12	14	27
EJ Index for NATA* Respiratory Hazard Index	13	14	25
EJ Index for Traffic Proximity and Volume	17	16	19
EJ Index for Lead Paint Indicator	21	19	45
EJ Index for Superfund Proximity	12	13	27
EJ Index for RMP Proximity	9	9	19
EJ Index for Hazardous Waste Proximity	6	5	6
EJ Index for Wastewater Discharge Indicator	2	3	2



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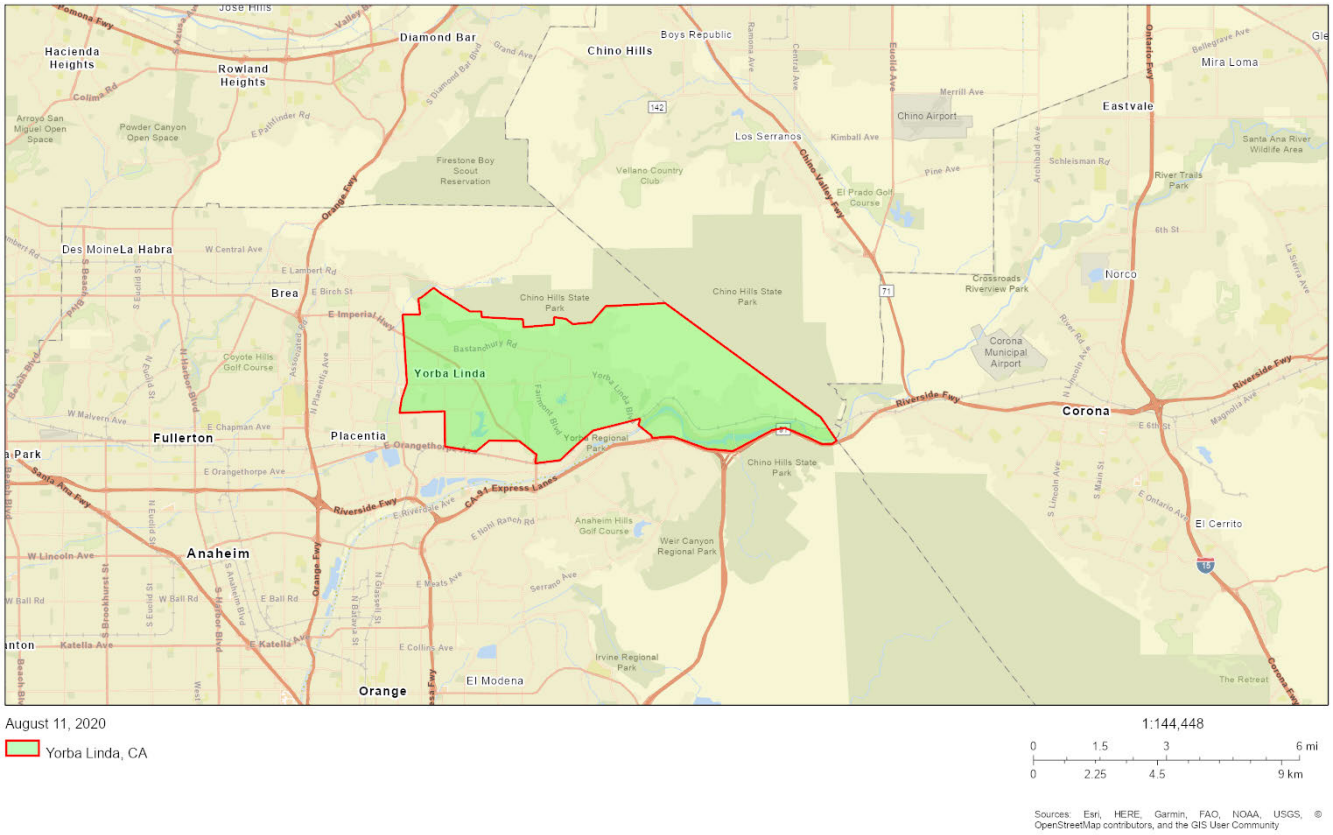
EJSCREEN Report (Version 2019)

the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 73,761

Input Area (sq. miles): 22.96

Yorba Linda, CA (The study area contains 1 blockgroup(s) with zero population.)



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	1

EJSCREEN Report (Version 2019)

the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 73,761

Input Area (sq. miles): 22.96

Yorba Linda, CA (The study area contains 1 blockgroup(s) with zero population.)

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	12.6	9.78	93	9.21	95	8.3	99
Ozone (ppb)	54.5	48.2	70	48.9	71	43	95
NATA* Diesel PM (µg/m^3)	0.529	0.468	65	0.479	60-70th	0.479	60-70th
NATA* Cancer Risk (lifetime risk per million)	39	36	65	35	60-70th	32	80-90th
NATA* Respiratory Hazard Index	0.56	0.55	54	0.53	50-60th	0.44	80-90th
Traffic Proximity and Volume (daily traffic count/distance to road)	440	2000	32	1700	40	750	65
Lead Paint Indicator (% Pre-1960 Housing)	0.045	0.29	26	0.24	35	0.28	26
Superfund Proximity (site count/km distance)	0.076	0.18	46	0.15	52	0.13	57
RMP Proximity (facility count/km distance)	0.6	1.1	50	0.99	55	0.74	64
Hazardous Waste Proximity (facility count/km distance)	3.6	3.4	67	2.9	73	4	86
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.97	17	89	31	90	14	95
Demographic Indicators							
Demographic Index	26%	48%	18	47%	20	36%	43
Minority Population	40%	62%	25	59%	29	39%	59
Low Income Population	12%	34%	17	34%	16	33%	16
Linguistically Isolated Population	4%	9%	35	8%	41	4%	66
Population With Less Than High School Education	5%	18%	22	17%	23	13%	26
Population Under 5 years of age	6%	6%	43	6%	43	6%	47
Population over 64 years of age	16%	13%	71	14%	70	15%	62

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

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Appendix G: Cultural Resources Evaluation

Advisory Council On Historic Preservation

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

Reply to: 730 Simms Street, #401
Golden, Colorado 80401

April 23, 1993

Robert S. Joe
Chief, Planning Division
Department of the Army
Los Angeles District
Corps of Engineers
P.O. Box 2711
Los Angeles, CA 90053-2325

REF: Programmatic Agreement regarding the Santa Ana River Flood Control Project, California.

Dear Mr. Joe:

The enclosed Programmatic Agreement regarding the Santa Ana River Flood Control Project has been executed by the Council. This action constitutes the comments of the Council required by Section 106 of the National Historic Preservation Act and the Council's regulations. Please send copies of the signed Agreement to the California State Historic Preservation Officer and your Federal Preservation Officer.

The Council appreciates your cooperation in reaching a satisfactory resolution of this matter.

Sincerely,

Claudia Nissley
Director, Western Office
of Review

Enclosure

PROGRAMMATIC AGREEMENT
AMONG
THE LOS ANGELES DISTRICT, CORPS OF ENGINEERS,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING IMPLEMENTATION OF THE SANTA ANA RIVER FLOOD CONTROL PROJECT

WHEREAS, the Los Angeles District, Corps of Engineers (COE) proposes to administer the Santa Ana River Flood Control Project, authorized by the Water Resources Development Act of 1986 (Public Law 99-662); and

WHEREAS, the Santa Ana River Project (the Project) will involve flood control improvements as described in *Supplemental Environmental Impact Statement, Santa Ana River Mainstem Including Santiago Creek, Phase II General Design Memorandum* (1988); and

WHEREAS, the COE, has determined that the Project may have an effect on properties included in or eligible for inclusion in the National Register of Historic Places and has consulted with the Advisory Council on Historic Preservation (Council) and the California State Historic Preservation Officer (SHPO) pursuant to Section 800.13 of the regulations (36 CFR Part 800) implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) and Section 110(f) of the same Act (16 U.S.C. 470h-2(f)); and

WHEREAS, the Flood Control Districts of the Counties of Orange, Riverside, and San Bernardino, and the local Native American community participated in the consultation and have been invited to concur in this Programmatic Agreement; and

WHEREAS, the definitions given in 36 CFR 800.2 are applicable throughout this agreement;

NOW, THEREFORE, the COE, the Council, and the SHPO agree that the project shall be administered in accordance with the following provisions in order to satisfy the COE's responsibility under Section 106 for all individual aspects of the project.

STIPULATIONS

The COE will ensure that the following measures are carried out:

1. Archeological Survey.

Almost all of the project's area of potential effects has been surveyed. If there are additional lands that need to be surveyed for reasons such as, for example, project redesign or previously denied access, then the COE shall ensure that an archaeological survey of these lands is conducted. The survey shall be conducted in a manner consistent with the *Secretary of the Interior's Standards and Guidelines for Identification* (48 FR 44720-23) and taking into account NPS publication, *The Archeological Survey: Methods and Uses* (1978:GPO stock #024-016-00091). The survey shall be conducted in consultation with the SHPO, and a report of the survey, meeting the standards of the SHPO, shall be submitted to the SHPO for review and approval.

2. Recording.

Archeological site record forms shall be completed for all locations where cultural materials are identified. The site record forms will be completed in accordance with the California *Archeological Inventory Handbook for Completing An Archeological Site Record* (DPR 422-A-I, Rev. 5/86).

3. Evaluation.

Regional context summaries have been developed Goldberg and Arnold (1988), and Greenwood and Foster (1990) for local prehistoric districts, historic archeological districts, and a number of individual historic archeological properties and historic structures. The COE shall use the Goldberg and Arnold, and Greenwood and Foster summaries to develop an evaluation plan to evaluate properties identified within the Project's Area of Potential Effects (APE) for eligibility for inclusion in the National Register of Historic Places (NRHP). This evaluation plan shall detail site- or area-specific studies for the archival, architectural or subsurface testing which may be necessary to resolve questions of eligibility and to identify the values that qualify a property as eligible. The COE shall submit the evaluation plan to the SHPO for review and comment. Unless the SHPO objects within thirty days after receipt of the plan, the COE shall ensure that it is implemented.

Once an evaluation plan is accepted by the SHPO, the COE shall, in consultation with the SHPO, apply the National Register Criteria (36 CFR 60.4) to determine whether the properties are eligible. Should the COE and the SHPO determine that any of the properties are eligible for listing in the NRHP, the properties shall be considered eligible for purposes of this agreement. Should the COE and SHPO disagree that some or any of the properties are eligible, the COE shall submit documentation to the Keeper of the National Register for a formal determination of eligibility. Should COE and SHPO agree that a property is not eligible, such concurrence shall be, for the purposes of this Agreement, deemed conclusive that the property is not eligible and need not be the subject of further consideration.

4. Treatment Plan.

The COE shall assess the effects of the project on all National Register eligible properties in accordance with 36 CFR 800.5. A Treatment Plan (TP) shall be developed to take into account the effects of the project on historic properties that are determined to be eligible for listing in the NRHP.

The TP shall be consistent with the Secretary of the Interior's *Standards and Guidelines for Archeological Documentation* (48 FR 44734-37) and take into account the Council's publication, *Treatment of Archeological Properties - A Handbook* (Advisory Council on Historic Preservation, draft 1980), subject to any pertinent revisions the Council may take in the publication prior to completion of the TP. It shall also take into account the Secretary of Interior's *Guidelines for Historical and Architectural Engineering Documentation* (48 FR 44729-34).

The TP shall include, but not be limited to:

A. Measures to be taken to ensure avoidance and protection of historic properties, including floodproofing where feasible;

B. Data recovery plans founded on research designs to guide data recovery at historic properties significant for their information potential and which cannot be avoided by the effects of the project, or otherwise preserved in place. The research designs shall be developed in accordance with the standards and guidelines attached as Appendix 1.

C. A plan for historical documentation for historic archeological properties;

D. A plan for the relocation and interpretation of suitable historic structures that cannot be preserved in place;

F. A curation agreement that ensures that all materials and data from archeological sites are curated in accordance with 36 CFR 79. Materials recovered from privately owned lands that are to be returned to their owners will be maintained in accordance with 36 CFR 79 until their analysis is complete;

G. A plan for the treatment and disposition of items of cultural patrimony and human remains developed in consultation with the SHPO and representatives of relevant local Native American groups;

H. A plan for the treatment of historic properties that may be discovered during the implementation of the undertaking;

I. A schedule for the submission and review by the SHPO of progress reports, and the methods by which the consulting parties, and interested persons, including relevant Native American groups will be kept informed of the work and afforded the opportunity to participate;

5. Review of Treatment Plan.

The COE shall submit the TP to the SHPO, Council, and concurring parties to this Agreement for review and comment. The reviewers shall have thirty (30) days from receipt of the Treatment Plan to respond to the COE with comments. Failure to respond by any consulting party within the 30-day comment period shall not prohibit the COE from implementing the Treatment Plan.

6. Historic Properties Management Plan.

Within one year of the implementation of the TP, the COE will develop a Historic Properties Management Plan (HPMP) for Prado Basin in accordance with the standards and guidelines attached as appendix 2. The COE will provide copies of the draft HPMP to the SHPO and the Council for review and acceptance. Upon acceptance of the HPMP by the SHPO and the Council, the COE will finalize and implement it in lieu of compliance with 36 CFR 800.4 through 800.6 and 36 CFR 800.11. The COE will prepare an annual report on its implementation, and provide the report to the SHPO and Council for review, comment and consultation as needed.

7. Archeological Report Dissemination.

The COE shall ensure that all final archeological and historic reports resulting from actions

pursuant to this agreement will be provided to the SHPO and to the National Park Service for possible peer review and submission to the National Technical Information Service (NTIS). The agency official shall ensure that all reports are responsive to contemporary professional standards and to the Department of Interior's *Format Standards for Final Reports of Data Recovery Programs* (42 FR 5377-79). Precise locational data may be provided only in a separate appendix, if it appears that their release could jeopardize archeological sites.

8. Provision of Information to Data Base.

The COE will ensure that information resulting from the archeological data recovery project provided for in Stipulation 4.A is provided to the Orange, San Bernardino, and Riverside Counties Information Centers of the California Archeological Inventory.

9. Disputes.

Should the Council, SHPO, or consulting parties object within 30 days to any plans provided for review pursuant to the Programmatic Agreement, the COE shall consult with the objecting party to resolve the objection. If the COE determines that the objection cannot be resolved, the COE shall forward all documentation relevant to the dispute to the Council. Within 30 days after receipt of all documentation, the Council will either:

A. provide the COE with recommendations, which the COE will take into account in reaching a final decision regarding the dispute; or

B. notify the COE that it will comment pursuant to 36 CFR 800.6(b), and proceed to comment. Any comment provided in response to such a request will be taken into account by the COE in accordance with 36 CFR 800.6(c)(2) with reference to the subject of the dispute.

10. Amendment of this Agreement.

Any party to this agreement may request that it be amended, whereupon the parties will consult in accordance with 36 CFR 800.13 to consider such amendment.

11. Termination of this agreement.

Any party to this agreement may terminate it by providing thirty (30) days notice to the other parties, provided that the other interested parties will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. In the event of termination, the COE will comply with 36 CFR 800.4 through 36 CFR 800.6 with regard to individual activities covered by this agreement.

12. Expiration of Agreement.

This agreement shall expire upon completion of the project. COE shall provide the parties to this agreement within thirty (30) days notice of a final project date.

Execution and implementation of this agreement evidences that the COE has satisfied its Section 106 responsibilities and taken into account the effects of the undertaking on historic properties.

ADVISORY COUNCIL ON HISTORIC PRESERVATION

BY: Robert D. Bush Date 4/16/93

U.S. ARMY CORPS OF ENGINEERS LOS ANGELES DISTRICT

BY: R. L. VanAntwerp Date 8/17/92

R. L. VanAntwerp,
Colonel, Corps of Engineers
District Engineer

CALIFORNIA STATE HISTORIC PRESERVATION OFFICER

BY: Knox Mellon Date August 19, 1992

Concur:

ORANGE COUNTY FLOOD CONTROL DISTRICT

BY: William L. Gunn Date: 2-3-93

APPROVED AS TO FORM
TERRY C. ANDRUS, County Counsel
ORANGE COUNTY, CALIFORNIA
By Daniel P. Jones
Deputy

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

BY:_____ Date:_____

SAN BERNARDINO FLOOD CONTROL DISTRICT

BY:_____ Date:_____

Concur:

ORANGE COUNTY FLOOD CONTROL DISTRICT

BY:_____ Date:_____

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

BY: Kenneth L. Edwards Date: 3-16-93

FORM APPROVED.
COUNTY COUNSEL

FEB 2 3 1993

BY K. Watts-Bazan

SAN BERNARDINO FLOOD CONTROL DISTRICT

BY:_____ Date:_____

Concur:

ORANGE COUNTY FLOOD CONTROL DISTRICT

BY:_____ Date:_____

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

BY:_____ Date:_____

SAN BERNARDINO FLOOD CONTROL DISTRICT

BY: Larry Walker Date: NOV 30 1992

LARRY WALKER
Chairman, Board of Supervisors

92-1155

SIGNED AND CERTIFIED THAT A COPY OF THIS DOCUMENT HAS BEEN DELIVERED TO THE CHAIRMAN OF THE BOARD.

EARLENE SPROAT
Clerk of the Board of Supervisors
of the County of San Bernardino

By Mary Louise Loomis
Deputy

BOARD OF SUPERVISORS SAN BERNARDINO COUNTY, CA

NATIVE AMERICAN REPRESENTATIVE

BY: Vera Rocha Date: 4-7-93
Chief Ya Anna Gabrielino Nation

NATIVE AMERICAN REPRESENTATIVE

BY: Manuel G Rocha Date: 4/7/93
Spiritual Leader

APPENDIX 1
STANDARDS AND GUIDELINES FOR RESEARCH DESIGNS

The research designs shall be consistent with the Secretary of the Interior's *Standards and Guidelines for Archeological Documentation* (48 FR 44734-37) and take into account the Council's publication, *Treatment of Archeological Properties* (Advisory Council on Historic Preservation (draft) 1980), subject to any pertinent revisions the Council may make in the publication prior to completion of the research design, and the SHPO Preservation Planning Bulletin No. 5, *Guidelines for Archaeological Research Designs* (1991). They shall specify, at a minimum:

- the property, properties, or portions of properties where data recovery is to be carried out;
- any property, properties, or portions of properties that will be destroyed without data recovery;
- the research questions to be addressed through the data recovery, with an explanation of their relevance and importance;
- the methods to be used, with an explanation of their relevance to the research questions;
- the methods to be used in analysis, data management, and dissemination of data, including a schedule;
- the proposed disposition of recovered materials and records;
- proposed methods for involving the interested public in the data recovery;
- proposed methods for disseminating results of the work to the interested public;
- proposed methods by which the participants to the Programmatic Agreement, including the Gabrielino Indian representatives, will be kept informed of the work and afforded the opportunity to participate; and
- a proposed schedule for the submission of progress reports to the SHPO.

APPENDIX 2
STANDARDS AND GUIDELINES FOR THE HISTORIC PROPERTIES MANAGEMENT PLAN

The Historic Properties Management Plan (HPMP) for Prado Dam Basin shall be prepared in accordance with the following guidelines.

1. The HPMP will be prepared by or under the supervision of an individual who meets, or individuals who meet, at a minimum, the "professional qualifications standards" for archeologist, historian, and architect in the Secretary of the Interior's Professional Qualifications Standards (48 FR 44738-9).

2. The HPMP will be prepared with reference to: (a) the Secretary of Interior's *Standards and Guidelines for Preservation Planning* (48 FR 44716-20); (b) the *Section 110 Guidelines* (53 FR 4727-46); and (c) U.S. Army Corps of Engineers regulations, *Project Construction and Operation Historic Preservation Program*, ER1130-2-438.

3. The HPMP will be prepared in consultation with the San Bernardino County Museum and Native Americans representing the Gabrielino people.

4. The essential purpose of the HPMP will be to establish processes for integrating the preservation and use of historic properties with the mission and programs of the Los Angeles District, Corps of Engineers (COE) in a manner appropriate to the nature of the historic properties involved, the nature of Prado Dam Basin, and the nature of the COE's mission, programs, and planning processes.

5. In order to facilitate such integration, the HPMP, including all maps and graphics, will be made consistent with the data base management system used by the COE.

6. The HPMP will include the following:

   a. Foreword. The foreword shall explain the basis upon which the HPMP is being prepared.

   b. Introduction. The introduction shall explain the organization and use of the various sections of the HPMP.

   c. Overview. This element of the HPMP will synthesize available data on the history, prehistory, architecture, architectural history, landscape architecture, past and present environment, and ethnography of Prado Dam Basin and its surrounding area, to provide a context in which to evaluate and consider alternative treatment strategies for different classes of historic properties. It will also include a brief description of previous archeological, historic, and ethnographic investigations conducted within the basin.

   d. Inventory. This element of the HPMP will include descriptions of all properties within the basin that are known or thought to meet the National Register criteria (36 CFR 60.4), including but not limited to the following information on each property: (1) the class of historic property; (2) the location and areal extent of the property; (3) the current status and integrity of the property; and (4) the National Register

criteria that the property is known or thought to meet and the documentation supporting this determination.

e. Predictions. Based on the overview, this element of the HPMP will predict the distribution and nature of buried properties that have been identified through old maps and other historic archives, and, if applicable, structures that are not of sufficient age, but should be evaluated for National Register eligibility in the future. This element will also offer an estimate of the accuracy of the predictions, and outline ways and the conditions under which the predictions will be tested, refined, and verified to the extent needed through test excavations, remote sensing, architectural, historic, and other further research.

f. Identification system. Based on the overview and predictions, this element of the HPMP will establish procedures for the identification and evaluation of historic properties that may be affected by operations, maintenance and land use activities within the basin. This element of the HPMP will take into account the *Section 110 Guidelines*, Section 110(a)(2), Discussion (b)(2) through (b)(10) as applicable, and will provide for identification and evaluation to take place in a timely manner during the planning of any actions that might affect historic properties.

g. Management system. This element of the HPMP will establish procedures for the management of historic properties within the basin, including but not limited to:

i. procedures for the use of historic properties for agency purposes or the purposes of others, in a manner that does not cause significant damage to or deterioration of such properties, with reference to the *Section 110 Guidelines*, Section 110(a)(1), Discussion (b), and specifically providing for interpretation;

ii. procedures for affirmatively preserving historic properties, with reference to the *Section 110 Guidelines*, Section 110(a)(1), Discussion (c);

iii. procedures for the maintenance of historic properties, with reference to the *Section 110 Guidelines*, Section 110(a)(2), Discussion (d)(1)(i);

iv. procedures for the avoidance or mitigation of adverse effects on historic properties, with reference to the *Section 110 Guidelines*, Section 110(a)(2), Discussion (d)(1)(iii);

v. procedures for the treatment of properties discovered during any future undertaking; and

vi. procedures for consultation with relevant parties during implementation of the HPMP, with reference to the *Section 110 Guidelines, Part III.*

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2711
LOS ANGELES, CALIFORNIA 90053-2325

March 27, 1991

REPLY TO
ATTENTION OF
Office of the Chief
Environmental Resources Branch

Ms. Kathryn Gualtieri
State Historic Preservation Officer
Office of Historic Preservation
P.O. Box 942896
Sacramento, California 94296-0001

Dear Ms. Gualtieri:

The Los Angeles District Corps of Engineers (Corps) is proposing to revise the Water Control Manual for Prado Dam, in Riverside and San Bernardino Counties. The proposed change in operations would increase the buffer pool from the 490' elevation to 494' (enclosure 1). It should be noted that this project is not a part of the Prado Water Conservation Project (COE900312A) which is currently being reviewed by Nicolas Del Cioppo of your staff.

The area of potential effects was surveyed for the presence of cultural resources in 1985 by ECOS Management Criteria. A copy of this report is on file with the Office of Historic Preservation (OHP). A review of this report indicates that there are two sites which are potentially eligible for the National Register of Historic Places. These are the Rincon Townsite (PB-102), and Prado Dam itself. Based on further evaluations of these sites the Corps has determined that both the Rincon Townsite and Prado Dam are eligible for the National Register of Historic Places. Prado Dam is eligible under criteria A. C. and D. The Rincon Townsite is eligible under criteria B, C, and D. Enclosure 2 contains an index of relevant evaluations of both of these sites. Copies of these reports are also on file at OHP.

Also within the area of potential effects are ten archival locations. These are PB-14, 15, 17, 25, 94, 96, 103, 107, 113, and 131. These locations are covered with several meters of sedimentation and are under the water table. No studies to determine if remains actually exist are feasible. Official trinomials will not be obtained as they are archival locations only, and no surface remains are present. Site PB-95 no longer retains any architectural integrity and is not considered National Register eligible. An official trinomial will be obtained for this site. Site CA-Riv-2797 and 100 are under several meters of silt and below the water table. No further studies of these site are feasible.

The proposed water control manual will have no effect on Prado Dam itself. The Rincon Townsite is located at an elevation between 490' and 525'. Below approximately 500' the site is below the water table. The proposed change in the water control manual would not change this situation, the Corps believes that there would be no effect to this site as subsurface conditions would remain the same. Based on the historical operation of the dam as compared to the new manual, conditions should even improve (enclosure 3). Information on groundwater in the basin is contained in a report prepared by the Corps in 1981 (enclosure 4).

Based on the fact that this portion of the Rincon Townsite is currently under ground water and would continue to be, we have determined that the proposed change in operations would have no effect on National Register or eligible properties.

As there will be a number of projects in the Prado Basin over the next few years, we are requesting that Nick Del Cioppo of your staff visit the area. This will give a member of your staff a chance to become better oriented on future projects in this complex basin.

Please review the enclosed information. We would appreciate a response at your earliest convenience. If you have any questions on this project please call Mr. Stephen Dibble, Senior Archeologist, at (213) 894-3399.

Sincerely,

for Robert S. Joe
Chief, Planning Division

Enclosures

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2711
LOS ANGELES, CALIFORNIA 90053-2325

June 21, 1995

REPLY TO
ATTENTION OF:

Office of the Chief
Environmental Resources Branch

Ms. Claudia Nissley
Director, Western Office of Project Review
Advisory Council on Historic Preservation
730 Simms Street, #401
Golden, Colorado 80401

Dear Ms. Nissley:

This letter is in regard to the Prado Dam feature of the Santa Ana River Project in Riverside and San Bernardino Counties (COE911223A). A Programmatic Agreement was executed for the project on April 16, 1993.

The purpose of this letter is to obtain your approval of our plan to complete a Historic American Engineering Record (HAER) documentation of Prado Dam. We are also concurrently requesting the review and approval of this action from the California State Historic Preservation Officer (SHPO). The purpose of this documentation is to mitigate the effects resulting from modification of the dam structure. Prado Dam was determined to be eligible for the National Register of Historic Places in 1991 under criteria A, C, and D. A report was previously sent to your office describing the dam entitled "The Prado Dam and Reservior, Riverside and San Bernardino Counties, California." This report was prepared by Greenwood and Associates/Infotec Research in 1989.

Prior to initiating HAER documentation the Corps will contact the Western Region of the National Park Service (NPS) to determine what level and kind of recordation is required for the property. Unless otherwise agreed to by the NPS, the Corps will ensure that all documentation is completed and accepted by HAER prior to alteration of the Dam. In addition, copies of this documentation will be made available to the SHPO and local archives designated by the SHPO.

Please review this request. We would appreciate a response at your earliest convenience. It is our intention to complete this portion of our mitigation program in fiscal year 1996. If you have any questions on this matter please call Mr. Stephen Dibble, Senior Archeologist, at (213) 894-3399.

Sincerely,

Ira D Young

Robert S. Joe
Chief, Planning Division

Advisory Council On Historic Preservation

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

Reply to: 730 Simms Street, #401
Golden, Colorado 80401

July 26, 1995

Robert S. Joe
Chief, Planning Division
Department of the Army
Los Angeles District, Corps of Engineers
P.O. Box 2711
Los Angeles, CA 90053-2325

RE: *Santa Ana River Project: HAER Documentation of Prado Dam.*

Dear Mr. Joe:

On July 11, 1995, we received your letter requesting our approval to proceed with Historic American Engineering Record (HAER) documentation of Prado Dam. As you note, the effects to the Dam and other historic properties of proposed modifications are addressed in the Programmatic Agreement (PA) executed on April 16, 1993 among the Los Angeles District Corps of Engineers (COE), the California State Historic Preservation Officer (SHPO) and the Council regarding implementation of the Santa Ana River Flood Control Project. The PA calls for the COE to develop a Treatment Plan for all National Register eligible properties to be affected. Because HAER documentation, following recommendations of the National Park Service, will provide an excellent permanent record of the Dam prior to its modification; and because this documentation is non-destructive, we do not object to your proceeding with it in advance of completing the Treatment Plan. You should be aware, however, that since the parties to the PA have not yet been provided a Treatment Plan for review, it is possible that once we receive the draft Treatment Plan we will request that the COE implement additional measures to mitigate the effects of the project on the Prado Dam and/or other historic structures in the area of potential effects.

Thank you for providing us an opportunity to comment on this planned documentation effort. Because this request is made

outside of the specific procedures agreed upon in the PA, you should be sure to inform the concurring parties of your proposal to complete HAER documentation and provide them an opportunity to comment if they so wish. We would appreciate your letting us know if any objections to your proposal are raised by the SHPO or concurring parties. If you have any questions or require the further assistance of the Council, please contact Carol Gleichman of the Western Office of Review at (303) 231-5320.

Sincerely,

Claudia Nissley
Director, Western Office
of Review

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

May 11, 1998

Office of the Chief
Environmental Resources Branch

Mr. Alan Stanfil
Advisory Council on Historic Preservation
12136 West Bayaud Avenue, #330
Lakewood, Colorado 80226

Dear Mr. Stanfil:

This letter is in regard to the Prado Dam feature of the Santa Ana River Project, Riverside and San Bernardino Counties, California (OHP Project #COE 911223A). A Programmatic Agreement (PA) was executed for the project on April 16, 1993. Initial construction of the dam is scheduled to begin in FY 99. The initial construction phase will consist of raising the dam embankment itself. Also involved in construction is Borrow Area #1, access roads and staging areas (enclosure 1). The next phase of construction, beginning in the year 2003, will involve rebuilding the spillway to new project specifications.

We completed Historic American Engineering Record documentation of the Dam in 1996 (enclosures 2, 3). Prado Dam (CA-RIV-4730-H) had been determined eligible for the National Register of Historic Places as a result of the Prado Water Conservation Project (COE 900312A). The documentation has been accepted by the National Park Service. Since the raising of the dam and spillway are the two main features of the project, it is not feasible to avoid impacts to it.

The main purpose of this letter is to transmit an archeological treatment plan for two historic archeological sites which will be destroyed by the use of Borrow Area #1. These two sites are CA-RIV-1039, and CA-RIV-1044 (enclosure 4). Both of these sites were evaluated and determined to be eligible for the National Register of Historic Places under criterion D. An additional copy of the testing report is enclosed to assist you in your review (enclosure 5). Construction of the embankment of the Dam is scheduled for FY 99. After this plan is approved it will be implemented immediately in order to open up Borrow Area #1 for use in construction.

Construction will include improvement of an existing road which goes through the historic archeological Rincon Townsite (CA-RIV-3694-H). Construction activities associated with improvement of the road will not likely impact any significant archeological deposit. In addition, a data recovery of the site was conducted as a result of the previous Water Conservation project. Construction monitoring will be conducted in this area.

In addition to these three historic archeological sites and the dam, the Rincon Cemetery is located within the basin near Borrow Area #1. Its existence was confirmed by a study completed in 1985 by ECOS Management Criteria, Inc. (enclosure 6). The Rincon Cemetery is not considered National Register eligible. It will be left in place and protected. During construction a protective fence will be placed around it. Construction in the area of the cemetery will be monitored. In addition, all construction will monitored for use of Borrow Area #1, and associated activities. Monitoring will be conducted by qualified archeologists.

Please review the enclosed plan and submit comments at your earliest convenience. If we do not hear from you within thirty days we will assume your concurrence and implement it as written. Any comments you provide will be addressed in the final plan, in accordance with the PA. In accordance with the PA, the above information is also being provided to the California State Historic Preservation Officer. Even though there are no prehistoric resources involved in this stage of construction, the plan is also being sent to a representative of the Gabrielino Native American Group.

If you have any further questions please direct them to Mr. Stephen Dibble, Senior Archeologist, at 9213) 452-3849.

Sincerely,

Robert S. Joe
Chief, Planning Division

Enclosures

COPY

November 24, 1995

Office of the Chief
Environmental Resources Branch

Ms. Cherilyn Widell
State Historic Preservation Officer
Office of Historic Preservation
P.O. Box 942896
Sacramento, California 94296-0001

Dear Ms. Widell:

This letter is in regard to the Prado Dam feature of the Santa Ana River Project. A Programmatic Agreement was executed for the project on April 16, 1993. Your project number is COE911223A.

The purpose of this consultation is to transmit our determination of eligibility for nine historic archeological sites in Prado Basin. Their designations are PB-5, PB-8, PB-9, CA-RIV-5521H, -5522H, -5523H, -5524H, -1044H, and -1039H. These sites would be potentially impacted by Borrow Area #1.

A test excavation and National Register evaluation was conducted in 1995 by Greenwood and Associates (enclosure). Based on this study the Corps has determined that sites PB-5, PB-8, and PB-119 are not eligible for the National Register of Historic Places (NRHP). There was no evidence of physical remains at PB-5 and PB-8 as they have been destroyed by development. At PB-119 only one artifact was found. Also, because of the lack of physical remains, the information center would not assign permanent trinomials to them.

Sites CA-RIV-5521H, -5522H, -5523H, and -5524H were determined to not be eligible for the NRHP. These four sites lacked research potential, and/or their research potential was exhausted by the testing program.

Sites CA-RIV-1039H and -1044H have been determined to be

ENCLOSURE(4)

NRHP eligible. Both of these sites retain sufficient integrity, and contain materials which could address several important research domains.

Site CA-RIV-8091H was not subjected to subsurface excavations as we were not able to obtain a right-of-entry. As it turns out, this site will not be impacted by activities associated with the project. At this time we do not intend to evaluate this property.

Site PB-89 was given a superficial field examination for management purposes. It falls within the boundaries of the Rincon Townsite (CA-RIV-3698H) which has already been determined to be NRHP eligible.

Please review the enclosed information. If you agree with our determinations we would appreciate a response at your earliest convenience. If you have any questions on this project please call Mr. Stephen Dibble, Senior Archeologist, at (213) 894-3399.

Sincerely,

Robert S. Joe
Chief, Planning Division

Enclosure

STATE OF CALIFORNIA — THE RESOURCES AGENCY

PETE WILSON, *Governor*

OFFICE OF HISTORIC PRESERVATION

DEPARTMENT OF PARKS AND RECREATION

P.O. BOX 942896
SACRAMENTO 94296-0001
(916) 653-6624
FAX: (916) 653-9824

25 August 1994

Reply to: COE911223A

Col. R.L. Van Antwerp, District Engineer
US Army Corps of Engineers
Attn: Robert Joe, Planning
Post Office Box 2711
LOS ANGELES CA 90053-2325

Subject: SANTA ANA RIVER PROJECT - DETERMINATIONS OF ELIGIBILITY FOR SIX ARCHAEOLOGICAL SITES: PRADO BASIN, BORROW AREA #2

Dear Col. Van Antwerp:

Thank you for sending me a copy of Archaeological and Historical Investigations of Seven Sites in the Prado Basin along with your determination of eligibility for six of them. The Corps of Engineers has applied the National Register criteria and has determined that five archaeological deposits within the Prado basin Borrow Area #2 A.P.E. lack the integrity and materials to qualify them for inclusion in the National Register of Historic Places. I agree. These five archaeological sites are: CA-RIV-4727H, CA-RIV-4728H, CA-RIV-5253H, CA-SBR-5573H and CA-SBR-7136H.

The Corps has also determined that CA-SBR-7676H, the Ross Ranch site, is eligible for inclusion in the National Register under Criterion D. I disagree. I have reviewed the documentation used in making that determination. The author did a good job of documenting the ranch's history, including the chain of ownership, but the case for significance under Criterion D is tenuous and unconvincing.

The Ross Ranch Site, CA-SBR-7676H consists of a scatter of glass, metal, ceramic, and concrete debris. It's houses, barns, and sheds were demolished sometime between 1931 and 1941.

During two weeks in early October, 1993, archaeologists searching for intact subsurface deposits excavated 21 shovel test pits, 17 backhoe trenches, 9 hand dug exposures, and 3 controlled hand-dug test units into the site. 4,259 artifacts were recovered. These consisted mostly of shards of glass and ceramic, some of which was manufactured between 1900 and 1931. Based on an analysis of this material and some brick and concrete foundations, it was decided that CA-SBR-7676H is of scientific importance and eligible for

ENCLOSURE 6

inclusion in the National Register of Historic Places because it can "address several important research domains" concerning "cultural chronology, technology, and economic, settlement, and subsistence patterns." While these categories are too broad to provide a meaningful and useful research context, pages 156 to 158 of the report are more specific.

The eligibility of CA-SBR-7676H appears to predicated on an analysis domestic kitchen refuse in the form of fragments of glass and ceramic food containers and butchered bone. According to the report, these remains indicate that food was processed, stored, and consumed at the ranch. The report concluded that additional research may reveal that some consumables were produced at the ranch and some were brought in. Further study might also reveal that there were economic changes at the ranch over time. None of these lines of inquiry seems especially compelling or likely to yield new information of scientific or social importance.

The artifact assemblage and the historical study reveal nothing remarkable about the Ross Ranch. The ranch does not seem to be a significant or especially good example of early to mid 20th century California rural industry, nor does it seem to be associated with significant historic events, patterns, or persons. The materials excavated so far are relatively recent and quite mundane. There is no indication that additional excavation would recover anything other than more of the same.

Stipulation 3 of our Programmatic Agreement directs the Corps of Engineers, in the event of a disagreement over eligibility, to submit documentation to the Keeper of the National Register for a formal determination of eligibility.

If you have any questions, please contact Nicholas Del Cioppo of my staff by calling (916) 653-9696.

Sincerely,

Ms. Cherilyn Widell
State Historic Preservation Officer

STATE OF CALIFORNIA — THE RESOURCES AGENCY PETE WILSON, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO 94296-0001
(916) 445-8006
FAX: (916) 322-6377

(916) 653-6624
FAX (916) 653-9824

12 December 1991

Reply to: CoE 900312A

Col. Charles Thomas, District Engineer
U.S. Army Corps of Engineers
P.O. Box 2711
LOS ANGELES CA 90053-2325

Subject: **Prado Dam Water Conservation Project in Riverside County: Determination of Eligibility/Effect for Archaeological Resources**

Dear Col. Thomas:

Thank you for your October 23, 1991 letter concerning the three archaeological sites in the Prado dam Water Conservation Project Area of Potential Effect (APE) and for including a first draft of the Memorandum of Agreement dealing with those sites.

The plan to raise Prado Dam's water level from 494 feet to 505 feet will inundate three recorded archaeological sites; CA-Riv-2804 (an unusually diverse deposit of prehistoric stone tools), CA-Riv-2778 (the site of the Aros-Serrano Adobe), and CA-Riv-2802 (an unidentified adobe site). The Corps of Engineers has evaluated each site and has determined that all are eligible for inclusion in the National Register under Criterion D. This conclusion is supported in several archaeological studies by Greenwood et al. (1987), Goldberg and Arnold (1988), Langenwalter and Brock (1984), and Van Buren et al. (1986). I agree with the Corps of Engineers' determination that CA-Riv-2804, CA-Riv-2778, and CA-Riv-2802 are eligible for inclusion in the National Register under Criterion D and that the sites will be affected by the Corps' proposed undertaking.

Twelve other sites known only from records may be buried beneath silt within the APE. The Corps of Engineers made a reasonable effort to locate the sites, but was unsuccessful. These sites, or as the Corps refers to them, archival locations, should be considered in a general stipulation in the draft MOA which the Advisory Council and I are now reviewing.

If you have any questions, please telephone Nicholas Del Cioppo of my staff at (916) 653-9696.

Sincerely,

Kathryn Gualtieri
State Historic Preservation Officer

STATE OF CALIFORNIA — THE RESOURCES AGENCY

PETE WILSON, *Governor*

OFFICE OF HISTORIC PRESERVATION

DEPARTMENT OF PARKS AND RECREATION

P.O. BOX 942896
SACRAMENTO 94296-0001
(916) 653-6624
FAX: (916) 653-9824

14 September 1992

Reply to: **CoE 900312A**

Col. R. L. VanAntwerp, District Engineer
U.S. Army Corps of Engineers
P.O. Box 2711
LOS ANGELES CA 90053-2325

Subject: PRADO DAM PROJECT - DATA RECOVERY PLAN FOR CA-RIV-3698/H AND CA-RIV-2802/H

Dear Col.VanAntwerp:

Thank you for sending me a copy of your proposal for archaeological data recovery at two archaeological sites within the Prado Dam project's Area of Potential Effect (APE) in accordance with Stipulation 1 of our our joint Memorandum of Agreement. I was pleased to see the early development of the plan well ahead of our agreed-upon spring 1993 schedule. I understand that a copy of the treatment plan has also been sent to the Advisory Council for review.

Raising the winter water level of Prado Dam will result in the periodic inundation of CA-Riv-2802/H, (an adobe structure built in the American Period), CA-Riv-3698/H, (the townsite of Rincon), and CA-Riv-2804 (an unusually diverse deposit of prehistoric stone tools). The Corps of Engineers and my office have agreed that each of these sites is eligible for inclusion in the National Register under Criterion D and should be treated in accordance with our Memorandum of Agreement.

Under Army Corps of Engineers contract, Greenwood and Associates recently prepared a historic properties treatment plan for data recovery at CA-Riv-2802/H and CA-Riv-3698/H. The plan calls for an effective mix of archival and archaeological research which when carried out should elicit important information on (among other things) the American acculturation into what at the time was a predominantly Californio-Mexican culture. The report's author appears to be well-versed in the area's history and prehistory, and in the archaeological research completed in the region. The data recovery proposal incorporates a broad range of archaeological techniques which, when employed, should be sufficient to recover most of the archaeological data potential in each site. In other words, the methodology seems to be appropriate for the task.

The report had a major omission, however. There is no discussion of how much data recovery will take place at each site. What is the budget? How much of it will be allocated to excavation? How much to analysis, or any of the other activities outlined in the data recovery plan? What percentage of each site will be excavated? Considering the materials recovered during significance testing, how are these percentages justified?

Although the Army Corps' budget will undoubtedly limit the extent of excavation, archival research, materials analysis and preservation, it would be helpful to know the actual projected percentages of each task.

I look forward to incorporating this material into my review. If you have any questions, please telephone Nicholas Del Cioppo of my staff at (916) 653-9696.

Sincerely,

Steade R. Craigo, AIA, Acting
State Historic Preservation Officer

CC: Advisory Council on Historic Preservation

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

May 11, 1998

Office of the Chief
Environmental Resources Branch

Ms. Cherilyn Widell
State Historic Preservation Officer
Office of Historic Preservation
P. O. Box 942896
Sacramento, California 94296-0001

Dear Ms. Widell:

This letter is in regard to the Prado Dam feature of the Santa Ana River Project, Riverside and San Bernardino Counties, California (OHP Project #COE 911223A). A Programmatic Agreement (PA) was executed for the project on April 16, 1993. Initial construction of raising the dam is scheduled to begin in FY 99. The initial construction phase will consist of raising the dam embankment itself. Also involved in construction is Borrow Area #1, access roads and staging areas (enclosure 1). The next phase of construction, beginning in the year 2003, will involve rebuilding the spillway to new project specifications.

We completed Historic American Engineering Record documentation of the dam in 1996 (enclosures 2,3). Prado Dam (CA-RIV-4730-H) had been determined eligible for the National Register of Historic Places as a result of the Prado Water Conservation Project (COE 900312A). The documentation has been accepted by the National Park Service. Since the raising of the dam and spillway are the two main features of the project, it is not feasible to avoid impacts to the existing dam.

The main purpose of this letter is to transmit an archeological treatment plan for two historic archeological sites which will be destroyed by the use of Borrow Area #1. These two sites are CA-RIV-1039H and CA-RIV-1044H (enclosure 4). Both of these sites were evaluated and determined to be eligible for the National Register of Historic Places under criterion D. Determinations of eligibility were coordinated with your office in accordance with the PA. An additional copy of the testing report is enclosed to assist you in your review (enclosure 5). Construction of the embankment of the Dam is scheduled for FY 99. After this plan is approved it will be implemented immediately in order to open up Borrow Area #1 for use in construction.

Construction will include improvement of an existing road which goes through the historic archeological Rincon Townsite (CA-RIV-3694-H). Construction activities associated with improvement of the road will not likely impact any significant archeological deposit. In

addition, a data recovery of the site was conducted as a result of the previous Water Conservation Project. Construction monitoring will be conducted in this area.

In addition to these three historic archeological sites and the dam, the Rincon Cemetery is located within the basin near Borrow Area #1. Its existence was confirmed by a study completed in 1985 by ECOS Management Criteria, Inc. (enclosure 6). The Rincon Cemetery is not considered National Register eligible. It will be left in place and protected. During construction a protective fence will be placed around it. Construction in the area of the cemetery will be monitored. In addition, all construction will be monitored for use of Borrow Area #1, and associated activities. Monitoring will be conducted by qualified archeologists.

Please review the enclosed plan and submit comments at your earliest convenience. If we do not hear from you within thirty days, we will assume your concurrence and implement it as written. Any comments you provide will be addressed in the final plan, in accordance with the PA. In accordance with the PA, the above information is also being provided to the Advisory Council on Historic Preservation. Even though there are no prehistoric resources involved in this stage of construction, the plan is also being sent to a representative of the Gabrielino Native American Group.

If you have any further questions please direct them to Mr. Stephen Dibble, Senior Archeologist, at (213) 452-3849.

Sincerely,

Robert S. Joe
Chief, Planning Division

Enclosures

STATE OF CALIFORNIA — THE RESOURCES AGENCY

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO 94296-0001
(916) 653-6624
FAX: (916) 653-9824

Post-it® Fax Note 7671	Date 7-1-98	# of pages ▶ 3
To R. McLean	From S. Grantham	
Co./Dept. Planning	Co. CALOHP	
Phone # 213-452-3865	Phone # 916 653-8920	
Fax # 213-452-4204	Fax #	

..., Governor

June 18, 1998

Reply to: COE911223A

Robert S. Joe, Chief
Planning Division
Los Angeles District, Corps of Engineers
P.O. Box 532711
LOS ANGELES CA 90053-2325

Subject: Prado Dam and Santa Ana River Project, Riverside and San Bernardino Counties

Dear Mr. Joe:

Thank you for continuing consultation and for seeking my comments on the submitted Data Recovery Plan (DRP)

In a general sense the Corps of Engineers (Corps) needs to closely examine the DRP to ensure that it complies with the responsibilities defined in Stipulation 4 of the Programmatic Agreement (PA) among the Los Angeles District Corps, the Advisory Council on Historic Preservation (Council), and the State Historic Preservation Officer.

Stipulation 4 requires development of a Treatment Plan (TP) not a Data Recovery Plan. Citations should be included in the text and should indicate which stipulation of the PA a given statement is intended to comply.

The PA requires that the TP be consistent with the *Secretary of the Interior's Standards and Guidelines for Archeological Documentation* (48 FR 44734-37). Accordingly, the person(s) that drafted the HPTP should meet the same standards. Do they? Copies of the resumes of the author(s) would be helpful.

Was the document prepared in consultation with the San Bernardino County Museum and Native Americans representing the Gabrielino people? This was a requirement of Appendix 2, Stipulation 3 of the PA. The Corps should also verify whether statements in the **Compliance with California State Burial Law** section on page 22 are accurate. Is the section properly captioned?

Appendix 2 of the PA requires a **Forward** explaining the organization and use of each section of the TP. The present submittal lacks this requirement. Appendix 2 also requires

Reply to: COE911223A

Appendix 1

4.H that the Corps articulate the predictability of discovering historic properties during implementation, as well as how historic properties will be identified and managed.

The DRP did not provide clear evidence of compliance with Stipulation 4.A, 4.C, 4.D, 4.F, 4.H, and 4.I of the PA. The Corps should ensure and cite in the final document all pertinent sections of Appendices and evidence how they will be met.

Paragraph 3 of page 1 of the DRP states that "a complete documentary investigation into the history of each parcel will be undertaken by consulting both archival and individual sources having personal knowledge of the families that occupied the properties." This sounds good and thorough, but will this research build upon the results of the preliminary archival research conducted by Foster et al. of Greenwood Associates (May 196:101-107; 120-129) concerning these two sites? If not, why not? *The Secretary of the Interior's Standards for Archeological Documentation* (p.44734) state that "(c)are should be taken to assure that documentation efforts do not duplicate previous efforts."

Page 18 (last paragraph of "Analytical Methods" subsection) mentions that RIV-1039H and RIV-1044H are "destined for complete removal." While the authors go on to state that "whenever this is the case, we must make every effort to (as completely as is possible) document all features prior to the complete removal of the resource,..", although I agree this is a good idea, I question the need to completely remove all of RIV-1044H. All of RIV-1039H as illustrated on the Key Map/Site Map (enclosure 1) is within the boundaries of Borrow Area #1, but the map shows only a portion of RIV1044H within the boundaries of the borrow area. I question the necessity of completely removing the site. Procedure III of Part II of the Council's Handbook (p. 16) encourages due consideration be given to practical methods of preserving such archaeological properties in place. The *Secretary of the Interior's Standards and Guidelines* states that methods chosen should be the least destructive means of obtaining the information needed, while Stipulation 4.A of the PA calls for measures that ensure avoidance and protection of historic properties.

Activities are also proposed in the boundaries of the Rincon Townsite (CA-RIV-3694H). Why the Corps did not evaluate CA-RIV-3694H against National Register of Historic Places (NRHP) criteria needs to be justified before determining that "(c)onstruction activities associated with improvement of the road will not likely impact any significant archeological deposit"?

Reply to: COE911223A

A multitude of items required in Stipulation 4, Appendix 1 and Appendix 2 of the PA are absent and/or not clearly articulated in the DRP. Please refer to the PA and the Appendices during your review of the final draft to ensure the document meets the minimal agreed upon standards. The document should be concordant with the PA before resubmitting for future review. If you have questions, please do not hesitate to call Steven Grantham at (916) 653-8920.

Sincerely,

Original Signed by

Ms. Cherilyn E. Widell
State Historic Preservation Officer

4.F. Curation agreement ??

(7) Cemetery - fenced, NE, avoided monitoring

DAM HAER Completed accepted by NPS, sent to SHPO for comment

1039H, 1044H eligible (no comment from SHPO) draft treatment sent 5/11

STATE OF CALIFORNIA — THE RESOURCES AGENCY

PETE WILSON, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO 94296-0001
(916) 653-6624
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October 22, 1998

REPLY TO: COE911223A

Mr. Robert E. Koplin, P.E.
Chief, Planning Division
U.S. Army Corps of Engineers
Los Angeles District
P. O. Box 532711
Los Angeles, California 90053-2325

Subject: SANTA ANA RIVER FLOOD CONTROL PROJECT, RIVERSIDE AND SAN BERNARDINO COUNTIES, CALIFORNIA

Dear Mr. Koplin:

Thank you for continuing consultation with me concerning the above-cited Undertaking. Pursuant to Stipulation 5 of the "Programmatic Agreement [PA] Among the Los Angeles District, Corps of Engineers, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer Regarding the Implementation of the Santa Ana River Flood Control Project," you have transmitted a copy of a Treatment Plan (TP) for my review and comment. This document is entitled "Treatment Plan for Three Historic Sites (CA-RIV-1039H, CA-RIV-1044H, and CA-RIV-3698H) in the Prado Basin, Riverside County, California."

Staff review of this revised TP indicates that the comments contained within my letter dated June 18, 1998 have been incorporated into this version of the document and that the TP is consistent with Stipulation 4 of the PA. As well, I note your response to my question in that letter concerning the absence of a formal curation agreement. Please notify me once a formal curation agreement has been executed.

With regards to the Rincon Townsite (CA-RIV-3698H), thank you for notifying me of the correct trinomial for this historic property. My technical staff will see that the appropriate correction is made in our historic properties inventory database. If you have any questions, please contact Chuck Whatford at (916) 653-2716.

Sincerely,

Daniel Abeyta
Acting State Historic Preservation Officer

United States Department of the Interior

NATIONAL PARK SERVICE
1849 C Street, N.W.
Washington, D.C. 20240

IN REPLY REFER TO:

FEB 27 2019

DETERMINATION OF ELIGIBILITY NOTIFICATION

National Register of Historic Places
National Park Service

Name of Property: Prado Dam Bicentennial Mural

Location: City of Corona, Riverside County State: CA

Request submitted by: Eduardo T. De Mesa, Chief, Planning Division
USCOE Los Angeles District

Date received: 11/13/2018 Additional information received: 11/13/2018

Opinion of the State Historic Preservation Officer:

__Eligible _Not Eligible _X_No Response

See SHPO Polanco letter, July 13, 2018

Comments:

The Secretary of the Interior has determined that this property is:

_Eligible _X_Not Eligible ___ Need More Information

Comment:

See attached return comments.

Joy Beasley, Keeper of the National Register of Historic Places
Associate Director, Cultural Resources, Partnerships, and Science

2/20/2019
Date

Prado Dam Bicentennial Mural
City of Corona, Riverside County, CA – DOE FP100003286

The National Park Service has determined that the Prado Dam Bicentennial Mural is not eligible for listing in the National Register of Historic Places. This determination was based primarily on the mural's loss of physical integrity. In our view the mural is no longer able to convey its historic character or its potential significance as an exceptional representation of local Bicentennial activity.

Evaluation Background

The Prado Dam Mural was completed in 1976 as a Bicentennial-themed activity undertaken by a local high school group. Painted onto the spillway apron of the Corps of Engineer's federally managed Prado Dam and readily visible from passing highway traffic, the mural was a prominent visual representation of the myriad of commemorative activities associated with the celebration of the American Bicentennial.

The U.S. Army Corps of Engineers (Corps) provided extensive documentation regarding the National Register eligibility of the mural. The Corps' evaluation cited several factors in reaching their conclusion that the property was not eligible for listing in the National Register, including the fact that the mural was a commemorative property, which did not meet National Register Criteria Consideration F, the mural was a property less than 50 years old that did not meet National Register Criteria Consideration G, and that the mural had been altered and had loss integrity sufficient to merit listing. The Corps also noted their opinion that the Bicentennial did not make a significant contribution to the broad patterns of our history and was therefore not a significant event meriting consideration.

The California State Historic Preservation Officer declined to provide a definitive evaluation on the National Register eligibility of the Prado Dam mural and instead recommended that the Corps seek a formal determination of eligibility directly from the Keeper.

Keeper's Evaluation

Our office carefully reviewed the documentation provided by the Corps along with information provided directly to our office by the Friends of the Prado Dam Mural. In reaching our determination, we differed in several key aspects with the evaluation made by the Corps. Specifically, we found the Corps' argument regarding Criteria Consideration F and commemorative properties to be flawed.

Commemorative properties that seek to attain significance from the historic past event being honored are generally not eligible for listing in the National Register. (A Civil War monument built in 1910 cannot be significant for its association with the war, or the soldier being honored.) A commemorative property can be eligible for

listing, however, when its significance rests in the events and efforts undertaken at the time of its completion. That is, when the act of commemoration is in itself a significant undertaking reflecting the views, actions, or perspectives of a contemporary community at a particular time in history. (The same Civil War monument might be eligible for listing as a reflection of the contemporary views and perspectives of the community that built it regarding important aspects of their past.) In the same way, Bicentennial efforts might be significant not for their association with the activities of 1776, but from the actions taken in 1976 to mark the 200th anniversary. A property erected as a monument to an important historical event will qualify if through the passage of time the property itself has come to symbolize the value placed upon the event and is widely recognized as a reminder of enduring principles or contributions valued by the generation that erected the property. In addressing Criteria Consideration F, the Prado Dam Mural could be found to meet the conditions necessary for listings.

We also disagree with the Corps' conclusion that the Bicentennial was not a significant event. While scholarly discussion and evaluation of the 1976 Bicentennial is not voluminous, we feel sufficient documentation is available to mark the event and the activities surrounding the celebration as significantly contributing to the broad patterns of American history. Such properties might perhaps meet National Register Criterion A given sufficient documentation and comparative evaluation. Dr. Lyn Spillman's letter of June 22, 2018, included in the documentation submitted, provides particularly convincing evidence of the significance of the Bicentennial from a scholarly perspective.

What is lacking is a strong comparative context for the physical resources that may still be extant to reflect the Bicentennial activities. Several sources cite the 66,000 "registered" events undertaken by communities to celebrate the Bicentennial, but little is known regarding the nature of these events and to what degree physical artifacts were a significant component of those activities. Establishing the exceptional significance of any one particular artifact or built resource, even within the local context, is therefore made exceedingly difficult. National Register Criteria Consideration G for properties less than fifty years old, requires such an assessment to determine which of those properties associated with the Bicentennial may be considered merely common manifestations of the activities of the period and which constituted exceptionally significant actions. Rarity alone and longevity are not necessarily automatic signifiers of exceptional significance, but they can be suggestive of the relative importance of certain properties. The Prado Dam Bicentennial Mural upon additional contextual analysis could in our view have potentially proven that it meets the Criteria Consideration threshold.

Final Evaluation

The National Register of Historic Places requires that properties not only meet one or more of the National Register Criteria for evaluation, but also retain sufficient historic integrity to adequately convey their significance. In our view the Prado Dam mural, in its current condition, does not retain sufficient integrity. The

unfortunate contemporary graffiti and over painting has obscured significant character defining elements of the overall 1976 design. Integrity of design, craftsmanship, feeling and association have all been dramatically impacted. Murals, as a distinctive property type, generally have a limited number of character-defining components—background/surface strata, paint material, and design/graphics/artwork. As a Bicentennial artifact the design/graphics could perhaps be seen as the most essential component. The message of celebration and historic commemoration was imbued in the original design, wording and content. While integrity of location and setting (background/surface strata) remain intact, the historic design and message is difficult to discern in the mural's current form. The *TOPS* graphic dominates the current design, significantly obscuring not only the physical artwork but also the intended historic message. While such overpainting might be acceptable for a house, where many other physical features may overcome the loss of one aspect, for the mural the message is at the core of the property's commemorative significance. National Register evaluations require that we consider the property in its current condition, not as it could be restored or recreated. The current massive overpainting, the loss of original paint through normal wear, and the addition of other non-historic graffiti have served to severely alter the mural's original design and commemorative intent, particularly as seen from a distance as was the original design intent. As an artifact of the Bicentennial, the cumulative effect of these changes has significantly impaired the property's ability to convey its historic character and significance.

Based on the properties lack of integrity, the mural is not eligible for listing in the National Register of Historic Places.

If you have any questions regarding these comments please contact National Register Historian Paul Lusignan at Paul_Lusignan@nps.gov 202-354-2229

S:\nr\Prado Dam Mural.DOE2019.ltr

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, LOS ANGELES DISTRICT
915 WILSHIRE BOULEVARD, SUITE 930
LOS ANGELES, CALIFORNIA 90017-3489

May 6, 2020

Ms. Julianne Polanco
State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, California 95816-7100

Dear Ms. Polanco:

The U.S. Army Corps of Engineers, Los Angeles District (Corps) is proposing to conduct interim emergency repairs to the Prado Dam spillway, located at the upper end of the Lower Santa Ana River Canyon in Riverside County, California. Since the early 2000s, the Corps has been in the process of conducting major modifications to the Prado Dam as part of the ongoing Santa Ana River Mainstem (SARM) project, one planned aspect of which includes redesigning the spillway. In 2019 during the yearly safety inspection, the Dam's safety classification was downgraded to a Dam Safety Action Classification (DSAC) 2 rating, signifying that the dam is potentially unsafe and immediate action is needed. The existing spillway design does not meet the current state of practice and has several risk factors that indicate potential failure if it were to experience significant flows. Approximately 1.4 million people live downstream of the dam with property values estimated at greater than $61 billion. The Corps is developing a long term solution but as an interim measure the Corps is proposing to repair the damaged invert slabs and to grind down and reseal the invert joints. While the Corps, in consultation with your office, has considered the effects of redesigning and rebuilding portions of the spillway as part of the SARM project, the interim emergency repairs were not part of that undertaking and consequently are not covered under the SARM programmatic agreement. The Corps is, therefore, separately consulting with your office under Section 106 of the National Historic Preservation Act. This letter provides a brief description of the undertaking, documents the area of potential effect (APE), summarizes our efforts to identify historic properties, and requests your concurrence with our finding that there will be no historic properties affected.

Based on the as-built drawings, project documentation and subsequent inspection reports, the spillway has remained unchanged since construction. The spillway invert is comprised of a series of invert slabs, each approximately 12-inches thick with reinforcements at 24-inches on center with a 3-inch clear cover. The reinforcement is not continuous and each slab is connected using a "key". Based on the inspection reports, the joint sealant on the invert slabs have degraded and are no longer effective. Additionally, the invert concrete slabs have differential offsets of approximately 0.5-inches on average; and several slabs have moved approximately 2.5-inches due to expansive soils.

The Corps is proposing to grind down the uplifted seams, reseal the damaged joints and repair the damaged edges. During the proposed repairs, spalled areas may be refilled with concrete or damaged concrete slabs may be replaced in-kind. The contractor would access the spillway via Pomona Rincon road and shall use the spillway invert as the staging area. The Corps has defined the APE as the Prado Dam Spillway and the unpaved portion of the Pomona Rincon Road (Enclosure 1).

Constructed in 1941, the Prado Dam complex, including the spillway, was determined eligible for listing on the National Register of Historic Places in 1991 under Criteria A and C. The aforementioned SARM project included proposed modifications to several key features of the Dam, including raising the height of the main embankment, replacing the inlet and outlet works, increasing the height and width of the spillway and constructing a series of levees. Mitigation for the adverse effects to Prado Dam from implementation of the SARM project was completed in 1996 with the preparation of Historic American Engineering Record (HAER) documentation (Enclosure 2). Subsequent, to this work, the main embankment has been raised and lengthened, the maintenance building has been removed, the inlet tower has been reconstructed, the outlet works have been redesigned including the approach channel, the outlet conduits, the stilling basin, and the outlet channel. The spillway is the last remaining piece of the original 1941 structure. The bicentennial mural painted on the spillway has separately been evaluated as ineligible for the National Register (Enclosure 3).

In accordance with 36 C.F.R. 8004(c)(1), the Corps is re-evaluating the Dam due to the passage of time and changing condition of the property. While an adverse effect does not necessarily preclude a resource from continuing to be listed on or eligible for listing on the NRHP, the type and magnitude of the previous adverse effects were such that the property has lost essential integrity necessary to convey its significance. In consultation with your office, the loss of the property's eligibility has already been mitigated thru the HAER documentation. The Corps has determined that the dam complex is no longer eligible for the National Register of Historic Places. The proposed undertaking would not involve any impacts outside of the spillway invert and the limited equipment would be driven in on the existing maintenance road.

At this time the Corps is requesting your review and agreement with our determination that the Prado Dam, including the spillway, is no longer eligible for the National Register of Historic Places and our finding that the undertaking would result in no historic properties affected. The Corps is concurrently notifying the Pechanga Band of Mission Indians, Soboba Band of Luiseno Indians, Rincon Band of Mission Indians, Gabrieleno Band of Mission Indians-Kizh Nation, Gabrieleno/Tongva San Gabriel Band of Mission Indians, Gabrielino/Tongva Nation and the Gabrielino-Tongva Tribe.

We appreciate your consideration of our request. If you have specific questions or if we can provide any clarification about this request or any other concerns, please contact Ms. Danielle Storey, Archaeologist, at Danielle.L.Storey@usace.army.mil or at (213) 308-0437.

Sincerely,

Eduardo T. De Mesa
Chief, Planning Division

Enclosure(s)

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, LOS ANGELES DISTRICT
915 WILSHIRE BOULEVARD, SUITE 930
LOS ANGELES, CALIFORNIA 90017-3489

June 3, 2020

Ms. Julianne Polanco
State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, California 95816-7100

Dear Ms. Polanco:

The U.S. Army Corps of Engineers, Los Angeles District (Corps) is providing additional clarification on our consultation with your office regarding interim emergency repairs to the Prado Dam, Riverside County, California. The Corps is proposing to make minor repairs to the spillway. The spillway is constructed of a series of concrete blocks which have differentially settled. The Corps is proposing to grind down the uplifted seams, reseal the damaged joints and repair the damaged edges of the Prado Dam spillway. During the proposed repairs, spalled areas may be refilled with concrete or damaged concrete slabs may be replaced in-kind. The contractor would access the spillway via Pomona Rincon road and shall use the spillway invert and/or an existing borrow area as the staging area. The Corps has defined the area of potential effect as the Prado Dam Spillway, the borrow area, and the unpaved portion of the Pomona Rincon Road

Clarification of the National Register Eligibility of Prado Dam

The Prado Dam, P-33-004730/CA-RIV-4730/CA-178, was determined eligible for listing on the National Register of Historic Places (National Register) in 1991 with the spillway being one of the recorded features of the Dam. The report does not use the phrase “contributing element” but describes the features listed in the table below as being part of the eligible Prado Dam. The recordation and evaluation of Prado Dam occurred as part of the Santa Ana River Mainstem Project, a major component of which was to entirely redesign and reconstruct the Dam. In order to mitigate the loss of the eligible property, the Dam was documented in a Historic American Engineering Record (HAER) which was filed with the National Park Service in 1996. All of the features listed below were specifically called out in the HAER document. Following the mitigation, the Corps moved forward with reconstructing the Dam.

Recorded Feature	Current Condition
Dam Embankment	Demolished. The embankment has been raised and lengthened

Outlet Works	Demolished. The outlet works have been redesigned including the approach channel, the outlet conduits, the stilling basin, and the outlet channel
Intake Structure	Demolished. The inlet tower has been reconstructed
Control-Tower/ Control House	Demolished. A larger Control tower replaced the old design.
Service Bridge	Demolished . The service bride ran from the embankment to the control tower. It was replaced when the embankment and control tower were raised.
Outlet	Demolished. The outlet conduits and channel have been redesigned and re-built.
Spillway	Extent. The spillway was supposed to be rebuilt in the 2010s but the redesign has been pushed back to 2022.
Maintenance Building	Demolished
Stream Gauging Station	Extent. No plans to remove

Despite the demolition of the majority of the structure and the impending removal of the spillway, the resource still appears as eligible in record searches. The Corps is consulting with your office to provide a clear consultation record that the Dam is no longer eligible for the National Register of Historic Places. The Corps is also providing a clear determination that the spillway is not individually eligible for the National Register. The bicentennial mural painted on the spillway has separately been evaluated as ineligible for the National Register.

At this time the Corps is requesting your review and agreement with our determination that the Prado Dam, which includes the spillway, is no longer eligible for the National Register and that the spillway is not individually eligible for the National Register. The Corps is also seeking concurrence with our finding that the undertaking would result in no historic properties affected. If you have specific questions or if we can provide any clarification about this request or any other concerns, please contact Ms. Danielle Storey, Archaeologist, at Danielle.L.Storey@usace.army.mil or at (213) 308-0437.

DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION
Lisa Ann L. Mangat, *Director*
Julianne Polanco, State Historic Preservation Officer
1725 23rd Street, Suite 100, Sacramento, CA 95816-7100
Telephone: (916) 445-7000 FAX: (916) 445-7053
calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

June 04, 2020 In reply refer to: COE_2020_0506_004

VIA ELECTRONIC MAIL

Eduardo T. De Mesa
Chief
Planning Division
U.S. Army Corps of Engineers, Los Angeles District
915 Wilshire Blvd., Suite 930
Los Angeles, CA 90017-3489

RE: Section 106 consultation for the Prado Dam Spillway Interim Emergency Repairs, Chino, Riverside County

Dear Mr. De Mesa,

The U.S. Army Corps of Engineers (COE) is initiating consultation with the State Historic Preservation Officer (SHPO) to comply with Section 106 of the National Historic Preservation Act of 1966 (as amended) and its implementing regulation at 36 CFR Part 800. By letter received on May 05, 2020, the COE is seeking comments on their determination of eligibility and finding of effect for the above-referenced undertaking. The COE submitted the following documents to support their finding of effect:

- *Prado Dam Interim Risk Reduction Measures; Figures* (USACE 2020)
- *Historic American Engineering Record CA-178: Prado Dam, Santa Ana River near Junction of State Highways 71 and 91, Corona Vicinity, Riverside County, California* (Hatheway et al. 1996)
- *Determination of Eligibility Notification; Prado Dam Bicentennial Mural* (NPS 2019)
- *Phase II Archaeological Studies of Prado Basin and the Lower Santa Ana River* (ECOS Management Criteria 1985)

The COE is proposing to conduct interim emergency repairs to the Prado Dam spillway. The project is located at the upper end of the Lower Santa Ana River Canyon, south of Chino and northeast of the intersection of State Route 71 and 91 in Riverside County, California. The COE has been conducting major modifications to the Prado Dam since the early 2000's as part of the ongoing Santa Ana River Mainstem (SARM) project, which includes redesigning the spillway. In 2019, a yearly safety inspection found the dam as potentially unsafe. The COE is developing a long-term solution to the safety issue, and proposing interim measures including repair to the invert slabs and grinding down and resealing of the invert joints. These interim emergency repairs are not part of the SARM

undertaking, and hence, are not covered under the existing SARM programmatic agreement between the COE and the SHPO. The Area of Potential Effects (APE) for these interim emergency repairs is the Prado Dam Spillway and the unpaved portion of Pomona Rincon Road. This APE encompasses all areas of planned interim emergency repairs and associated staging and access.

The COE has identified two potential historic properties in the APE through the identification efforts of the SARM project. The first is the Prado Dam, of which the Spillway is a contributing element, determined eligible for the National Register of Historic Places (NRHP) in 1991 with SHPO concurrence. The second is the bicentennial mural painted on the spillway, which was determined not eligible for the NRHP by the Secretary of the Interior in 2019.

The COE contacted the Pechanga Band of Mission Indians, Soboba Band of Luiseno Indians, Rincon Band of Mission, Indians, Gabrieleno Band of Mission Indians, Gabrielino/Tongva Nation, and the Gabrielino-Tongva Tribe. The Pechanga Band of Mission Indians acknowledged receipt of the COE's outreach but no other responses have been received.

The COE has determined the Prado Dam is no longer eligible for the NRHP, as the contributing elements have been removed, and the property is no longer extant. **I concur.** The COE has further determined that the Prado Dam Spillway is not individually eligible for the NRHP. **I concur**.

The COE has concluded that issuing a permit would have no effect on historic properties and has requested my review and comment on their finding of effect for the proposed undertaking. After reviewing your letter and supporting documentation, **I do not object** to a finding of *no historic properties affected* for this undertaking pursuant to 36 CFR 800.4(d)(1).

Be advised that under certain circumstances, such as unanticipated discovery or a change in project description, the COE may have additional future responsibilities for this undertaking under 36 CFR Part 800. If you require further information, please contact Elizabeth Hodges of my staff at (916) 445-7017 or Elizabeth.Hodges@parks.ca.gov.

Sincerely,

Julianne Polanco
State Historic Preservation Officer

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BOULEVARD, SUITE 930
LOS ANGELES, CALIFORNIA 90017-3489

October 4, 2021

Ms. Julianne Polanco
State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, California 95816

Dear Ms. Polanco:

The U.S. Army Corps of Engineers, Los Angeles District (Corps) is continuing to consult with your office as part of the Santa Ana River Mainstem (SARM) Project, a large multiphase flood risk reduction project along the Santa Ana River. The Corps is consulting with your office in accordance with the Santa Ana River Flood Control Project Programmatic Agreement (PA) (Enclosure 1). Reconstructing the Prado Dam in order to increase the reservoir pool is a keystone of the SARM project. In a consensus determination with your office, Prado Dam was determined to be eligible for the National Register of Historic Places (NRHP) in 1991. Also, in consensus with your office, the destruction of the entire dam was mitigated through a Historic American Engineering Record (HAER) which was filed with the National Park Service in 1996. Since 1996, almost the entire dam has been rebuilt. The Corps is commencing on the final stage of the Prado Dam reconstruction which entails raising the height of the spillway. During the detailed engineering for the spillway raise, it was discovered that the previously designated borrow area, referred to in previous consultation letters as Borrow Area No. 1, did not contain enough material to complete the spillway raise project and additional borrow areas would be needed. By this letter, the Corps is transmitting the attached cultural resources report, *Archeological Survey of Proposed Borrow and Staging/Stockpile Areas for Spillway Repairs at Prado Dam, Riverside County, California*, (Enclosure 2) for your review and approval pursuant to Stipulation 1 of the PA. No archaeological sites were located during the survey of the additional borrow and staging areas.

Prior to the PA's execution, the entire SARM project area including the entire construction footprint for the Prado Dam Spillway project (see Figures 2 and 5 in Enclosure 2) was surveyed for the presence of cultural resources in 1985. In anticipation of the reconstruction of the dam including the associated borrow areas, staging areas, and access roads, a series of NRHP evaluations and mitigation efforts have been conducted in consultation with your office. This body of work includes historical and archaeological investigations of the Prado/Rincon town site CA-RIV-3698 (Greenwood et al. 1987); test excavations at CA-RIV-2802 and CA-RIV-3698 (Greenwood and Foster 1987); recordation and evaluation of Prado Dam (Swanson and Hatheway 1989); data recovery at CA-RIV-2802 and 28 features within CA-RIV-3698 (Foster et al. 1995); the testing of 11 historical period sites within the Basin including CA-RIV-1039 and CA-RIV-1044 (Foster et al. 1996); HAER documentation of Prado Dam (Hatheway et al. 1996); and finally large scale data recovery at CA-RIV-1039 and CA-RIV-1044 (Sterner 2004).

As stated previously, the Corps has identified the need for additional borrow material to complete the spillway raise. These borrow areas are identified as 'B2' and 'B5' in the cultural resource report. Due to the age of the last comprehensive survey of the project area (1985), the

Corps completed a pedestrian survey of the two proposed borrow areas (B2 and B5) and one staging/stockpile location (S1). A total of 44.6 acres was surveyed. Borrow areas B1, B3, and B4 fall within the existing Borrow Area No. 1 and were not covered by this survey. Similarly, the other proposed stockpiles (S-2) and non-structural fill areas were either previously used as borrow areas or are within the area excavated when the dam was first constructed and were not resurveyed.

The archeological survey was conducted from June 15-17, 2021 by Corps archeologist Timothy Meade. Mr. Meade serves as the Senior District Archeologist for the Kansas City District of the Corps. The archeological survey of B2, B5, and S1 found no archeological or other cultural resource sites. Each area was covered by pedestrian transects spaced at approximately 15-meter intervals with meandering paths within the transects to assure maximum coverage. During the internal record search for the survey, it was discovered that portions of B2 and S1 were previously used as a borrow area during the late 1990s/early 2000s construction of the main dam embankment and outlet works (Enclosure 3). No cultural resources were located during the survey.

The Corps is concurrently providing the cultural resources report to the following Federally-recognized and non-Federally recognized tribes for their review and comment: Gabrieleno Band of Mission Indians - Kizh Nation, Gabrieleno/Tongva San Gabriel Band of Mission Indians, Gabrielino /Tongva Nation, Gabrielino Tongva Indians of California Tribal Council, Gabrielino-Tongva Tribe, Juaneno Band of Mission Indians Acjachemen Nation –Belardes, and San Fernando Band of Mission Indians. While none of these tribes were a concurring party to the PA, the Corps has invited them to share any issues or concerns they may have and has sought their assistance in identifying any properties which are of religious or cultural significance that may be affected by the use of the additional borrow and staging areas (see 36 C.F.R 800.4(a)(4)).

At this time the Corps is requesting your review and acceptance of the enclosed cultural resources report under Stipulation 1 of the PA. No archaeological sites were encountered during the survey and there are no resources requiring evaluation. We appreciate your consideration of our request. If you have specific questions or if we can provide any clarification about this request or any other concerns, please contact Ms. Danielle Storey, Archaeologist, at (213) 452 3855 or at Danielle.L.Storey@usace.army.mil.

Sincerely,

Eduardo T. De Mesa
Chief, Planning Division

Enclosure(s)

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BOULEVARD, SUITE 930
LOS ANGELES, CALIFORNIA 90017-3489

October 4, 2021

Mr. Charles Alvarez
Chairperson
Gabrielino-Tongva Tribe
23454 Vanowen Street
West Hills, California 91307

Dear Chairperson Alvarez:

The U.S. Army Corps of Engineers, Los Angeles District (Corps) is consulting with you regarding the need for additional borrow areas in support of ongoing construction efforts associated with the Santa Ana River Mainstem (SARM) Project, a large multiphase flood risk reduction project within the Santa Ana River watershed. Reconstructing the Prado Dam Embankment and Spillway in order to increase the reservoir pool is a keystone of the SARM project. Prado Dam was determined to be eligible for the National Register of Historic Places (NRHP) in 1991 and the reconstruction of the entire dam was mitigated through a Historic American Engineering Record (HAER) which was filed with the National Park Service in 1996. Since 1996, almost the entire dam has been rebuilt. The Corps is commencing with the final stage of the Prado Dam reconstruction which entails raising the height of the spillway. During the detailed engineering for the spillway raise, it was discovered that the previously designated borrow area, referred to as Borrow Area No. 1, did not contain enough material to complete the spillway raise project and additional borrow areas would be needed. The Section 106 process for SARM is undertaken in accordance with the Santa Ana River Flood Control Project Programmatic Agreement (PA) (Enclosure 1). While your office was not a concurring party to the agreement, the Corps welcomes you to share any issues or concerns you may have and seeks your assistance in identifying any properties which are of religious or cultural significance that may be affected by the use of the additional borrow and staging areas (see 36 C.F.R 800.4(a)(4)). By this letter, the Corps is transmitting the attached cultural resources report, *Archeological Survey of Proposed Borrow and Staging/Stockpile Areas for Spillway Repairs at Prado Dam, Riverside County, California*, (Enclosure 2) for your review and comment. No archaeological sites were located during the survey of the additional borrow and staging areas.

Prior to the PA's execution, the entire SARM project area including the entire construction footprint for the Prado Dam Spillway project (see Figures 2 and 5 in Enclosure 2) was surveyed for the presence of cultural resources in 1985. In anticipation of the reconstruction of the dam including the associated borrow areas, staging areas, and access roads, a series of NRHP evaluations and mitigation efforts have been conducted. This body of work includes historical and archaeological

investigations of the Prado/Rincon town site CA-RIV-3698 (Greenwood et al. 1987); test excavations at CA-RIV-2802 and CA-RIV-3698 (Greenwood and Foster 1987); recordation and evaluation of Prado Dam (Swanson and Hatheway 1989); data recovery at CA-RIV-2802 and 28 features within CA-RIV-3698 (Foster et al. 1995); the testing of 11 historical period sites within the Basin including CA-RIV-1039 and CA-RIV-1044 (Foster et al. 1996); HAER documentation of Prado Dam (Hatheway et al. 1996); and finally large scale data recovery at CA-RIV-1039 and CA-RIV-1044 (Sterner 2004).

As stated previously, the Corps has identified the need for additional borrow material to complete the spillway raise. These borrow areas are identified as 'B2' and 'B5' in the cultural resource report. Due to the age of the last comprehensive survey of the project area (1985), the Corps completed a pedestrian survey of the two proposed borrow areas (B2 and B5) and one staging/stockpile location (S1). A total of 44.6 acres was surveyed. Borrow areas B1, B3, and B4 fall within the existing Borrow Area No. 1 and were not covered by this survey. Similarly, the other proposed stockpile (S-2) and non-structural fill areas were either previously used as borrow areas or are within the area excavated when the dam was first constructed and were not resurveyed.

The archeological survey was conducted from June 15-17, 2021 by Corps archeologist Timothy Meade. Mr. Meade serves as the Senior District Archeologist for the Kansas City District of the Corps. The archeological survey of B2, B5, and S1 found no archeological or other cultural resource sites. Each area was covered by pedestrian transects spaced at approximately 15-meter intervals with meandering paths within the transects to assure maximum coverage. During the internal record search for the survey, it was discovered that portions of B2 and S1 were previously used as a borrow area during the late 1990s/early 2000s construction of the main dam embankment and outlet works (Enclosure 3). No cultural resources were located during the survey.

By this letter the Corps requests any concerns or comments that you may have on the survey report or this phase of the undertaking. The Corps is concurrently providing the cultural resources report to the State Historic Preservation Office for their review and approval pursuant to Stipulation 1 of the PA. The Corps would appreciate any comments you may have at your earliest convenience or within 30 days. We appreciate your consideration of our request. If you have specific questions or if we can provide any clarification about this request or any other concerns, please contact Ms. Danielle Storey, Archaeologist, at (213) 452 3855 or at Danielle.L.Storey@usace.army.mil.

Sincerely,

Eduardo T. De Mesa
Chief, Planning Division

Enclosure(s)

DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION
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Julianne Polanco, State Historic Preservation Officer
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October 27, 2021 In reply refer to: COE080804B

VIA ELECTRONIC MAIL

Eduardo T. DeMesa
Chief, Planning Division
U.S. Army Corps of Engineers, Los Angeles District
915 Wilshire Blvd., Suite 930
Los Angeles, CA 90017-3489

RE: Section 106 consultation for the Santa Ana River Mainstem Project, Borrow Site Additions, Riverside County

Dear Eduardo DeMesa:

The U.S. Army Corps of Engineers (COE) is consulting with the State Historic Preservation Officer (SHPO) pursuant to the *Programmatic Agreement Among the Los Angeles District, Corps of Engineers, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer Regarding Implementation of the Santa Ana River Flood Control Project* (PA), executed April 16, 1993. By letter received on October 5, 2021, the COE is requesting review and approval of their archaeological survey of two additional borrow areas and a staging area for the Santa Ana River Mainstem Project, pursuant to Stipulation 1 of the PA. The COE submitted the following document for review and approval:

- *Archaeological Survey of Proposed Borrow and Staging/Stockpile Areas for Spillway Repairs at Prado Dam, Riverside County, California* (USACE 2021)

The COE is proposing to add two borrow areas and a staging area, totaling approximately 44.6 acres. Borrow area B2 (B2) encompasses 21 acres and is located 1,900 feet southeast of Prado Dam and 400 feet north of State Route 91. Borrow area B5 (B5) encompasses 4.02 acres and is located south of Auto Center Drive and north of an unnamed intermittent drainage. Staging and stockpile area S1 (S1) encompasses 19.4 acres and is located approximately 200 feet east of the eastern edge of the Prado Dam spillway, 1,700 feet west of the Prado Dam offices and south of Pomona-Rincon Road. The COE states that B2 and S1 have previously been used for borrow and staging activities.

Efforts to identify historic properties include a records search, pedestrian survey, and Native American outreach. The COE contacted Native American entities listed by the NAHC as having cultural ties to the project area. The COE received no responses, though the Gabrieleno Band of Mission Indians –Kizh Nation has expressed in general communications regarding the Prado Basin that the area is within their ancestral territory and considered an important area. The COE received no further responses.

Efforts to identify historic properties resulted in the identification of P-33-012900 (redeposited cement foundation) as previously recorded within S1. No evidence of this site was found during the pedestrian survey and it is presumed the foundations were removed/destroyed.

Pursuant to Stipulation 1 of the PA, I have reviewed and approve the archaeological survey report which provides finding no historic properties in B2, B5, and S1. If you require further information, please contact Elizabeth Hodges of my staff at (916) 445-7017 or Elizabeth.Hodges@parks.ca.gov.

Sincerely,

Julianne Polanco
State Historic Preservation Officer

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Appendix H: Correspondence, Public Comments and Responses

Comment Theme	Response
Theme 1: Scope of SEA/EIR Addendum	Most of the comments received are beyond the scope of the SEA/EIR Addendum. The scope of this SEA/EIR addendum is summarized in Section 1.4 and is focused on proposed design changes to the Spillway structure and potential impacts to the planned construction footprint. The proposed modifications to the spillway would not change the previously defined purpose, function, or resulting flood pool elevations and would not change the anticipated effects of Santa Ana River Mainstem Project (SARMP) overall, as analyzed in numerous previous documents[1]. As such, the following responses are primarily focused on whether the project remains in compliance with NEPA/CEQA and whether the commenter's recommended changes or suggestions for additional study are within the scope of this SEA/EIR Addendum.
Theme 2: The effects of upstream inundation.	The raise of Prado Dam by twenty feet, as part of the All River Plan for the SARMP, has been comprehensively analyzed in numerous documents dating back to 1975. The raise of Prado Dam spillway was a key piece of the dam raise, and has been planned and analyzed over the years, including within several Environmental Impact Statements (1975, 1980, 1985, 1988 and 2001[1]). Subsequent supplemental documents, such as those prepared for each of the Prado perimeter dikes and Norco Bluffs Toe Protection, also addressed the purpose and need for those structures as authorized in conjunction with the spillway raise. Development and evaluation of flood risk management alternatives contemplated in the previous reports considered social, economic, and environmental impacts including effects of upstream inundation. The process of the design modification plan selection weighed those considerations and impacts, as well as the input of the three County sponsors (Orange, Riverside, and San Bernardino Counties). The selected plan, the All-River Plan, best balanced the effects and benefits to upstream and downstream communities, provided a high level of flood risk management with minimum adverse impact, and was publicly acceptable and supported by the three County sponsors. The plan was authorized by Congress in WRDA 1986, the Corps conducted a thorough NEPA analysis of the SARMP Prado dam features including the spillway raise in the 1988 SEIS/EIR and 2001 SEIS/EIR, and the Corps commenced construction of the All River Plan project features in 2002. The purpose of this SEA/EIR addendum is not to re-evaluate authorized components of SARMP whose impacts have been previously evaluated in other documentation. Rather, this SEA/EIR evaluates modification to the design of a previously approved project feature and construction of modifications to ensure the ongoing safety of the existing Prado Dam. The engineering design change from a raised ogee weir to a raised labyrinth weir does not expand or increase the impacts already described and evaluated in the environmental documents. The proposed modification to the spillway feature does not change the Project's purpose, function, or resulting flood pool elevation.

[1]The following list summarizes previous documents prepared by the Corps that cover all or portions of SARMP.

- USACE. (1975). Survey Report and Environmental Impact Statement, United States Army Corps of Engineers, Los Angeles District.
- USACE (1980). Phase I General Design Memorandum and Supplemental Environmental Impact Statement, United States Army Corps of Engineers, Los Angeles District.
- USACE (1985). Upstream Dam Alternatives Supplemental Environmental Impact Statement, United States Army Corps of Engineers, Los Angeles District.
- USACE (1988). Santa Ana River Mainstem including Santiago Creek. Phase II General Design Memorandum and Supplemental Environmental Impact Statement (GDM/SEIS), United States Army Corps of Engineers, Los Angeles District.
- USACE (2001). Prado Basin and Vicinity, Including Reach 9 and Stabilization of the Bluff Toe at Norco Bluffs SEIS/EIR, United States Army Corps of Engineers, Los Angeles District.
- Also See Sec 1.3 for additional documents related to this SEA/EIR Addendum.

Commenter	Comment	Response
Riverside County Flood Control and Water Conservation District (RCFC& WCD)	1. Time extension: In light of the serious potential impacts to the public and the lack of analysis related to those impacts, including the potential for loss of life and property, RCFC&WCD requests that the Corps extend the public comment period in order for the public to provide meaningful public review of the DSEA/EIR Addendum for the proposed Spillway Project in order for the Corps to make informed decision making as required pursuant to NEPA and CEQA. A time extension would also give RCFC& WCD, local agencies, the Corps and the local sponsor additional needed time to fully understand the Project, its direct and indirect impacts, conduct necessary re-regulations studies, and evaluate alternatives and/or mitigation measures. This is most critical to the health and safety of thousands of residents in Riverside County that would be potentially impacted by the Project.	The public comment period was adequate and good cause to extend it beyond 24 September 2021 has not been shown. The primary concerns identified in the comments provided by RCFC&WCD are outside of the scope of this document (see Theme 1 above for details). As summarized in Theme 2 above, numerous detailed analyses have been performed evaluating the effects of the Santa Ana River Mainstem Project (SARMP). The project scope and associated effects have not changed substantively since these previous analyses were completed, and pertinent changes have been addressed periodically through supplemental documentation. Each of the previous NEPA/CEQA documents provided opportunities for local agency / public involvement and comment. Further delay would put the project schedule and budget at risk, jeopardizing available funding and the estimated construction window, which could potentially delay completion of this critical flood risk management

		project, resulting in prolonged risk to human life and safety.
RCFC& WCD	2. The DSEA/EIR Addendum is not the appropriate environmental document for the Project: The DSEA/EIR Addendum is based on a Supplemental EIS/EIR from 2001; the 2001 SEIS/EIR tiered off the 1988 SEIS, which further tiered off a 1980 SEIS, which further tiered off the original 1977 EIS. The Project scope and conditions have changed substantially since 1977 and with those changes, there are new adverse effects that were not analyzed or discussed in the prior environmental documents, which disqualifies this project analysis for using an Addendum as its environmental disclosure document. Given the potential significant impacts to the communities upstream of the Project, RCFC& WCD is concerned that the Corps is not utilizing the appropriate environmental document and that the current environmental analysis is lacking substantial analysis and is outdated, particularly in light of recent studies conducted by the Corps, changes in development and other factors. The flood hazards, and ability of the Corps to avoid flood hazards, to upstream properties has not been adequately analyzed or disclosed in any of the prior CEQA or NEPA documents nor is it presented for review and evaluation in DSEA/EIR Addendum for the current Project. Looking at CEQA alone, an addendum is only appropriate under State CEQA Guidelines section 15164, provided none of the triggers under Section 15162 have occurred. Unfortunately, the proposed Project's substantial change to the height of the dam's spillway and the encroachment of development within the proposed PMF pool would result in significant physical environmental effects to upstream properties and infrastructure that have never been evaluated in	The scope of the SEA/EIR addendum and the associated level of review are appropriate under NEPA and CEQA, respectively. The scope of the SARMP has not changed from the previous authorization, which included the raise of Prado Dam. The height of the raised spillway resulting from the Proposed Action is consistent with the 1975 Survey Report and all environmental evaluations since. As noted in Theme 2 above, potential inundation of upstream properties resulting from construction of the SARM project and raising of the Prado spillway were previously analyzed and disclosed in past documents that addressed the twenty-foot raise of Prado Dam and are outside the scope of this SEA/EIR addendum. As required under NEPA (40 CFR 1501.11), this SEA/EIR Addendum focuses on proposed modifications to the design of the raised Prado spillway and dam safety performance concerns of the existing spillway structure. Under State CEQA Guidelines, none of the triggers for section 15162 have occurred during the design update. No new adverse effects have been identified within the construction project area that have not previously been analyzed or discussed in previous documents evaluating the overall dam raise. Furthermore, as discussed in this SEA/EIR addendum, the updated project design would not lead to significant impacts outside of those previously identified or disclosed. The recently completed Dam Safety Modification Study for Prado Dam identified a new spillway design that would reduce risk associated with extreme events. Other recent studies have assessed potential

		any of the prior CEQA or NEPA documents and are not evaluated as part of the DSEA/EIR Addendum. Therefore, the public cannot provide meaningful comment, and the decision makers are missing critical and current information that should be considered in order to make an informed decision. The analysis and disclosure to the public of all reasonably foreseeable direct, indirect and cumulative impacts is the fundamental purpose underlying both NEPA and CEQA, which the Corps has failed to do under the existing DSEA/EIR Addendum.	inflows to further inform the new design of the raised spillway. However, the recommended height of the raised spillway crest has not changed and remains at 563' NGVD29 as planned since the 1970s (1975 Survey Report, GDM I & II and 2001 SEIS/EIR).
RCFC& WCD	3.	Environmental impacts to upstream properties have not been analyzed: As previously mentioned, none of the referenced documents address the upstream impacts caused by the increase in the PMF pool elevation caused by the currently proposed Spillway Project. Furthermore, since Project inception in the 1970s, the scope, regulatory setting, existing baseline conditions and related impacts have changed substantially, which calls into question the adequacy and applicability of the analysis for use on the current Spillway Project. In fact, the 1988 SEIS is very clear on this issue as illustrated with the following excerpt (page SEIS-I-4): "1-12a Plans for land acquisition at Prado Flood Control Basin (for the flood pool) have not been sufficiently defined so that property owners are aware of the status of their parcels. Floodproofing, flowage easements, relocation, and fee acquisition options will affect many landowners and the area both economically and environmentally. Such effects are to be analyzed and documented, in accordance with NEPA, at a later time after specific plans are available." To date, this important analysis has not been conducted nor disclosed to the public as required by NEPA and CEQA. Therefore, the collective	All reasonably foreseeable upstream effects have been fully analyzed, documented, and disclosed in previous NEPA and CEQA documents. Revisiting such analyses would be outside of the scope of this SEA/EIR addendum (see the Themes 1 and 2 responses above for details). The quote provided from the 1988 SEIS references the need for land acquisition within the Basin, up to the Congressionally authorized flood pool (566 ft). It does not reference the level of inundation that could result from the PMF, which is outside the project area and the scope of this SEA/EIR addendum. Moreover, the implication that the land acquisition analysis has not been conducted or disclosed is inaccurate. Real estate acquisitions of fee and flowage easements within the Basin have been ongoing since the 1988 Phase II GDM document and have been consistently documented. In addition, the 1988 Phase II GDM document specifically states that Non-Federal interests will manage the post-project floodway and floodplain fringe above 566'.

	analyses to date does not reflect current conditions nor does it adequately represent the current Project and related impacts. Given both NEPA and CEQA require a lead agency to evaluate all potential impacts - including direct, indirect and cumulative impacts - the DSEA/EIR Addendum fails by not discussing the upstream impacts likely caused by raising the height of the spillway. This is a fundamental flaw in the Project's environmental analysis, requiring consideration of re-regulation studies, Project alternatives and new mitigation for these undisclosed physical environmental effects. For example, the Probable Maximum Flood Inflow for Prado Dam Report1 indicates that the volume of the PMF event calculated in 2021 is significantly less than was estimated in 1988. Revised calculations were not directly provided for the Standard Project Flood; but it stands to reason that recalculation of the Standard Project Flood based on the updated PMF analysis may result in similar reductions in either peak or volume that could be used to support a re-regulation study of the Dam. Both the Probable Maximum Flood Inflow for Prado Dam Report1 and the analysis supporting Table E-2 of the Prado Dam Flood Hazard Assessment suggest that it may be entirely possible that a modified spillway design could accomplish intended Project Design Flood Protection for downstream communities while also avoiding risk transfer to upstream Riverside County residents from increases in the Probable Maximum Flood maximum pool.	The All River Plan was designed and selected to balance the effects and benefits to upstream and downstream communities. The Probable Maximum Flood Update report (2001) clearly defined the parameters of a PMF event, which are outside the Basin and outside the impacts of the spillway construction footprint. The 1980 Phase I GDM on the SARMP included estimates of potential upstream damages at various storm frequencies in addition to future population growth projections. The damages were projected to increase each decade as the discharge associated with each storm frequency were expected to increase as the result of upstream and downstream development and siltation behind the Prado dam (Appendix J; Table J-14). These projections are still considered accurate.
RCFC& WCD	4. Project Purpose: RCFC& WCD is concerned that the Project would increase flood hazards within portions of Riverside County rather than reducing flood risk as stated in the Project purpose. Please see supporting information below.	SARMP reduces flooding risk upstream and downstream of Prado Dam. The All River Plan balanced the burden on both upstream and downstream communities by constructing flood control features throughout the span of the SAR. Flood risk reduction features to prepare for a SPF event are being or have been constructed within and

		upstream of the authorized take line of the Prado Dam Reservoir. The OCFCD is still in the process of acquiring all lands required up to the authorized acquisition elevation of 566 ft, NGVD29. Examples of flood risk reduction improvements features include: Seven Oaks Dam, perimeter dikes and levees within the Prado Basin Reservoir, Norco Bluffs Toe Protection, and acquisition of fee and flowage easements up to the real estate take line of 566' NGVD.
RCFC& WCD	5. Statement of Need: The Project needs listed in the DSEA/EIR Addendum include dam stability and addressing downstream flood hazards. The resulting increases in upstream flood hazards must be considered. Please see supporting information below.	The scope of this SEA/EIR addendum focused on the modified spillway design for dam safety purposes, and dam failure as a downstream flood hazard. Hence, the statement of need was limited in scope, matching the scope of analysis of this document. See the Theme 1 response regarding the scope of the SEA/EIR addendum and the Theme 2 response above regarding the analysis of upstream impacts
RCFC& WCD	6. Floodplain or other Flood Hazards: It is our understanding that the Project would elevate the spillway from an existing elevation of approximately 543.0 feet NGVD29 to a proposed elevation of 563.0 feet NGVD29. The recently completed Prado Dam Flood Hazard Assessment' from the Corps indicates that this would potentially raise the maximum PMF pool from an estimated elevation of 573 feet NGVD29 in current conditions to an approximate elevation of 589 feet NGVD29 upon Project completion. 589 ft NGVD29 is approximately 23 feet higher than the elevation of the flooding rights and easements acquired by the Corps and 16 feet higher than the estimated current condition Probable Maximum Flood pool depth referenced in the recent Prado Dam Hazard Assessment'. The potential to pond water 26 feet over the proposed spillway would	The spillway raise to 563' NGVD29 including the resulting PMF elevation has been clearly stated and described in the 1975, 1980, 1988 and 2001 environmental documents. The predicted PMF elevation has remained generally consistent with each update. A clear summary of the PMF and resulting inundation up to 589.9 ft. can be found in the 1988 Phase II GDM EIS (Section 4-52, p. IV-17). Whereas, the 1980 Phase I GDM defined a PMF event in relation to the need for the dam raise in general (p. 8 & Appendix A, p. 2). Lastly, in the 2001 SEIS/EIR, the PMF is again listed on page 2-30, where it is described as 589.9 and used to design flood features to direct flows over the spillway in a controlled manner. Both recent studies at Prado Dam (RMC-TR-2021-03 and RMC-TR-2020-04) have assessed potential inflows to inform the

	expose many additional square miles of land to dam inundation hazard during extreme storm events (see Exhibit A), including properties in Eastvale, Corona and Norco. This is of great concern to RCFC&WCD, and RCFC&WCD believes it warrants a re-regulation study of the Project to analyze, mitigate and/or eliminate impacts to Riverside County residents.	design of the modified spillway. They consistently described the PMF (589.9' NGVD) with previous documents, and thus did not raise the maximum PMF pool or expand potential impacts of a PMF event beyond those evaluated in prior NEPA documents. As discussed in response to Theme 2 above, a revisit or reconsideration of the extent and effects of upstream inundation are outside of the scope of this document. The raise of the dam and the spillway were found necessary to prevent overtopping during a PMF event (GDM I, p. 33). The 1980 Phase I GDM also clearly stated on page 159, that the project would provide flood risk reduction for all counties up to an SPF event: "Only for very rare floods would there be damage. Since water rises relatively slowly and there are numerous roads out of the fringe area, there would be little danger to people even from large floods at the end of the project life." This statement remains accurate.
RCFC& WCD	7. Do No Harm: The DSEA/EIR Addendum alternative screening criteria includes "Do No Harm" (i.e., the action does not increase risk or unacceptably transfer risk to different population areas). As currently proposed, the Project clearly transfers flood risk to populated areas upstream. This potential conflict with the Do No Harm principle should be evaluated in an SEIS/EIR.	The All River Plan sought to balance the protection to Orange, Riverside and San Bernardino counties and does so by providing improvements along the entire length of the river so that no single area of the river bears the entire brunt of the project. It does not favor one interest over another. Indeed, the All River Plan best met the project objective "to provide the highest degree of protection possible to the entire river basin without causing major social dislocations." (1975 Survey Report at p. 87 (also noting that, via the use of upstream reservoir storage, the All River Plan provided "the best way to provide upstream protection" as well as "additional protection below Prado and reduce the land requirements at Prado.") Raising the top of the Dam to 596' and the spillway to 563' and acquiring

		flood easement lands up to 566' per the recommended plan requires less land acquisition compared to some of the other alternatives evaluated (GDM I at p. 142).
RCFC& WCD	8. Alternatives: The DSEA/EIR Addendum fails to analyze a reasonable range of alternatives, including the opportunity to reduce the frequency and depth of extreme storm spillway events. RCFC& WCD believes that the Corps should re-evaluate the Project with the express goal of eliminating existing and proposed risk transfer to Riverside County residents and businesses while also evaluating options to provide Project Design Flood protection to Orange County and lower Riverside County residents as originally envisioned by the Corps' Chief's Report. The following alternative analyses are recommended to better identify a Project that can achieve the Project Design Flood purpose while also eliminating, mitigating or minimizing adverse upstream impacts:	As described in response to Theme 1 above, the scope of analysis in this document is limited. A reasonable range of alternatives were analyzed within the scope of the Dam Safety Modification Study (e.g., various spillway configurations at the authorized 563 ft. elevation). However, the spillway height and level of protection associated with SARMP were described and evaluated in prior documents (1975 Survey Report, GDM I & II and 2001 SEIS), and are outside of the scope of this document.
	a) RCFC&WCD requests the Corps to conduct additional spillway design alternatives to look at opportunities to eliminate flood risk transfer during smaller spillway events and to lower the Probable Maximum Flood maximum pool elevation. The proposed project's estimated impact on flood frequency in Riverside County is presented in Table 1* below. RCFC&WCD believes there are opportunities to consider updated Project Design Flood analyses, spillway optimizations and/or a lower spillway elevation to reduce, mitigate or eliminate flood hazard risk transfer;	Impacts associated with the future spillway elevation of 563 feet have been previously analyzed and disclosed (see Theme 2 response above) and are outside of the scope of this document (see Theme 1 response above). The previously completed analyses included a reasonable range of alternatives for raising the spillway.
	b) RCFC&WCD requests that the Corps consider amendments to the Prado Dam Control Manual to allow the Prado Dam gates to remain open at full capacity during spillway events, or at least for a longer period during spillway overtopping events. This could improve the overall efficiency of	The Prado Dam Water Control Manual (WCM) and Interim Water Control Manual, which was approved and implemented in 2003 to cover operation of the dam during the planned period of construction of the raised spillway, are outside of the scope of actions

	the spillway and reduce the future Probable Maximum Flood pool elevation by several feet;	evaluated in this SEA/EIR addendum. Any request for amendment to the WCM would not be the subject of the Proposed Action of a design change from raised ogee weir to raised labyrinth weir.
	c) RCFC& WCD requests that the Corps consider modification to the proposed Project to evaluate opportunities to further increase the effective length of the proposed labyrinth weir and chute to further improve the efficiency of the spillway at low levels and reduce ponding depth of the Probable Maximum Flood pool elevation in existing and future conditions;	Please see the Theme 1 response above.
	d) RCFC& WCD requests that the Corps evaluate other design alternatives (e.g., additional dikes, levees, easements, etc.) as necessary to comply with federal law and to reduce or mitigate the potential impacts of Probable Maximum Flood event on upstream communities;	Please see the response to #8 above, as well as the Theme 1 and Theme 2 responses above.
	e) RCFC& WCD requests that the Corps consider opening the Prado Dam gates to their full capacity in the existing condition as soon as the necessary downstream improvements are completed. This could lower the existing condition PMF pool elevation and decrease the potential impacts on Riverside County. Further, this alternative would also benefit all three Counties in extreme storms by better utilizing available storage volume behind the current spillway.	Changes to the Prado Dam Water Control Manual and the operation of Prado Dam gates are outside of the scope of actions evaluated in this DSEA/EIR addendum. Please also see response to 8b above.
RCFC& WCD	9. Transportation: The Project may increase flood damage and inundation of public roads within the new pool elevation. For example, State Highway 71 would be	Please see the Theme 1 and 2 responses above regarding the scope of this document and the analysis

	partially inundated by the proposed Probable Maximum Flood pool depth. This would impact potential evacuation routes for residents and businesses that may be impacted by the Spillway Project and unduly impact local and interstate commerce for the Los Angeles/Riverside/San Bernardino and Orange County regions. Potential adverse impacts should be evaluated.	of potential upstream impacts associated with the spillway raise.
RCFC& WCD	10. Land Use: The DSEA/EIR Addendum should evaluate potential adverse impacts from the updated existing Probably Maximum Flood pool elevation and proposed increase in Probable Maximum Flood pool elevation in upstream areas. The Corps did not impose land use restrictions or acquire inundation rights for lands above 566 NGVD29. Changed condition from development of these lands may include impacts such as displacement, actual losses or loss in value of existing and future residential and commercial development due to the disclosure of the new, previously non-existent flood risk or due to the acquisition of flood easements would need to be acquired.	Please see Theme 1 response and response to comment #6.
	11. Coordination and Peer Review: As the regional flood management experts, RCFC& WCD recommends that the Corps include RCFC& WCD at a deeper level in the development of the recommended Project alternatives in general, but minimally with the hydraulics and the floodplain impacts therein. RCFC& WCD prefers to review Admin Drafts of any documents prior to being released to the public, as opposed to seeing the documents for the first time when circulated to the general public.	While RCFC&WCD is a valued local stakeholder and participant in meetings pertaining to the SARMP. Prado Dam is a separable element of the SARM and OCFCD is the only Sponsor and CEQA partner on the raise of Prado Dam including the spillway raise. RCFC&WCD is thus considered part of the public on this project and thus not entitled to review, comment, or contribute on predecisional documents.
RCFC& WCD	12. Dam Safety Modification Report: Finally, although RCFC&WCD generally supports the findings and risk assessments of the Dam Safety Action Decision Summary, RCFC& WCD believes it is premature to approve the document and the final	Please see the Theme 1 response above regarding the scope of this SEA/EIR addendum.

	recommendations until the Corps has completed a more thorough analysis of opportunities to reduce the impact of the Probable Maximum Flood pool on Riverside County properties. RCFC& WCD would be willing to support moving forward with a revised Dam Safety Action Decision Summary report that did not include a recommendation to elevate the current spillway and instead would: a) Replace the existing chute, flip-bucket and ogee weir effectively in kind; or b) Incorporate a revised weir and chute proposal that could reduce existing Probable Maximum Flood impacts on Riverside County properties through utilization of the Corps existing dam safety authority to widen the effective length of the spillway to 1,300 feet or other appropriate length based on re-regulation analyses or through other authorities.	
City of Norco	The City and its residents would potentially bear significant risk and loss to public health, safety, and property due to the Corps' intention to implement the Prado Dam spillway safety improvements which would raise the elevation of the spillway from an existing elevation of 543.0 feet NGVD29 to a proposed elevation of 563.0 feet NGVD29. The City is concerned that the Corps is acting prematurely in moving forward with a spillway design and safety recommendations without considering the potential adverse flood hazard impacts of the Project to upstream properties, including the City. Furthermore, the City has reviewed the letter proposed from the Riverside County Flood Control and Water Conservation District (RCFC&WCD), the City agrees with those comments, and formally adopts those comments in their entirety as our own. We request that the Corps (1) extend the public review period in order to allow the City and other jurisdictions and land use authorities that will be impacted by the increase in spillway elevation to provide meaningful public review and comments on the proposed Project; and/or (2) formally withdraw the	Please see the Theme 1 and 2 responses above regarding the scope of this document and the previously completed analyses. Please see the responses above regarding the comments provided by RCFC&WCD. The concerns identified by the City of Norco regarding upstream inundation are outside of the scope of analysis of this document.

	DSEA/EIR Addendum and in its place provide suitable analysis and subsequent environmental documentation that addresses these potentially significant upstream environmental impacts.	
San Bernardino County Flood Control District	The San Bernardino County Flood Control District (District) submits this comment letter to formally join in the comment letter (Comment Letter) submitted by the Riverside County Flood Control and Water Conservation District (RCFC&WCD) to express the District's concerns with the environmental assessments and technical analysis presented in the August 2021 Draft Supplemental Environmental Assessment/Environmental Impact Report (DSEA/EIR Addendum) for the Prado Dam Spillway Modification Project (Project) to implement Prado Dam spillway safety improvements and raise the elevation of the spillway from an existing elevation of 543.0 feet NGVD29 to a proposed elevation of 563.0 feet NGVD29. The potential inundation hazards, during extreme storm events to San Bernardino County residents and businesses, is evidenced in the map attached to this letter. As one of three Local Sponsors of the Santa Ana Mainstem project and as a party to the December 14, 1989, Local Cooperation Agreement, as supplemented and amended, the District joins RCFC&WCD's request that the Army Corps of Engineers (Corps) conduct the necessary analyses to better understand and address the risks to properties upstream of the Project and, based on those risks, conduct Project alternative studies to evaluate opportunities to minimize, mitigate, or eliminate risks prior to making a decision on the final configuration of the Project. The District concurs with and joins in all the "General Comments" set forth in the Comment Letter but particularly emphasizes and reiterates RCFC&WCD's request that the Corps extend the public comment period in order for the public to provide a meaningful public review of the Project DSEA/EIR	Please see the Theme 1 and 2 response above regarding the scope of this document and the previously completed analyses. Please see the responses above regarding the comments provided by RCFC&WCD. The concerns identified by the San Bernardino County Flood Control District regarding upstream inundation are outside of the scope of analysis of this document.

	Addendum. Given the Project's serious, significant potential impacts to the public and the lack of analysis related to those impacts, including the potential for loss of life and property to San Bernardino County residents and businesses, public participation and review are essential for fully informed decision-making, as required by the National Environmental Policy Act and California Environmental Quality Act.	
Southern California Edison (SCE)	SCE provides electric service to the customers within and around the project footprint and the inundation area and maintains electrical transmission and distribution facilities, as well as substations and supporting appurtenances. SCE must comply with General Order (GO) 95, which establishes rules and regulations for the overhead line design, construction, and maintenance. GO 95 also includes vertical clearance requirements from thoroughfares, ground, water, and railroads, as well as specific minimum clearances from tree branches and vegetation around overhead wires. In order to ensure continued service to its customers that are served by SCE's electrical facilities within the inundation area, SCE has prepared a conceptual mitigation plan to modify or relocate its facilities outside of the inundation area in the event of flooding. The construction, modification, and relocation of transmission lines, or electrical facilities that are designed to operate at or above 50 kilovolts (kV) are subject to the California Public Utilities Commission's (CPUC) General Order 131-D1. The construction, modification, or relocation of transmission lines in response to this project should be identified and discussed in the Army Corps EIS. If not, SCE may be required to pursue a separate, mandatory CEQA review through the CPUC, which could delay approval of the SCE transmission line portion of the project for two years or longer.	These actions are outside of the scope of this SEA/EIR addendum. Furthermore, the Corps has not been provided with sufficient details on location or other information needed in order to analyze potential impacts and therefore cannot incorporate SCE utility project into this NEPA/CEQA document.
City of Corona	The City and its residents would potentially bear significant risk and loss to public health, safety, and property due to the Corps'	Please see responses to RCFC& WCD Comments above.

	intention to implement the Prado Dam spillway safety improvements which would raise the elevation of the spillway from an existing elevation of 543.0 feet NGVD29 to a proposed elevation of 563.0 feet NGVD29. The City is concerned that the Corps is acting prematurely in moving forward with a spillway design and safety recommendations without considering the potential adverse flood hazard impacts of the Project to upstream properties, including the City. Furthermore, the City has reviewed the letter proposed from the Riverside County Flood Control and Water Conservation District (RCFC&WCD), the City agrees with those comments, and formally adopts those comments in their entirety as our own. We request that the Corps (1) extend the public review period in order to allow the City and other jurisdictions and land use authorities that will be impacted by the increase in spillway elevation to provide meaningful public review and comments on the proposed Project; and/or (2) formally withdraw the DSEA/EIR Addendum and in its place provide suitable analysis and subsequent environmental documentation that addresses these potentially significant upstream environmental impacts.	

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Appendix I: Dam Safety Action Decision Summary

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US Army Corps of Engineers

Los Angeles District®
South Pacific Division

DAM SAFETY ACTION DECISION SUMMARY

Prado Dam

NIDID CA10022

Santa Ana River Mainstem, Riverside County, California

Los Angeles District, South Pacific Division

March 2022

EXECUTIVE SUMMARY

The U.S. Army Corps of Engineers (USACE) has prepared this Dam Safety Action Decision Summary (DSADS) for Prado Dam to document the completion of a Dam Safety Modification Study (DSMS) and identification of a Risk Management Plan (RMP) to reduce unacceptable dam safety risks. Prado Dam is a high hazard potential dam located in Riverside County, on the Santa Ana River, approximately two miles west of the City of Corona, northeast of the Riverside Freeway (California State Route [SR] 91) and Corona Freeway (SR 71) interchange. The primary authorized purpose of the dam is Flood Risk Management (FRM). Additional project purposes include recreation and water conservation.

The original project was constructed in 1941 and included a zoned earthen main embankment, gated outlet works, and spillway. Prado Dam is currently part of the ongoing Santa Ana River Mainstem (SARM) project. As part of SARM, authorized modifications include providing additional capacity for storage of floodwaters and sediment by enlarging the existing Prado Dam and Reservoir, including raising the dam, raising the spillway, enlarging the reservoir, constructing additional dikes, and increasing the release capacity of the outlet works. The spillway is the last feature of SARM to be constructed. Prado Dam is a dry dam and has never experienced spillway flow.

In 2019, an evaluation of the original spillway chute design found that it did not meet current state of practice and may not be robust enough to handle a significant spillway flow event. The Dam Senior Oversight Group (DSOG) reclassified the dam as having very high incremental risk, and directed that a Semi-Quantitative Risk Assessment (SQRA) be performed for the dam. The SQRA was completed in 2019 and confirmed the very high incremental risk classification.

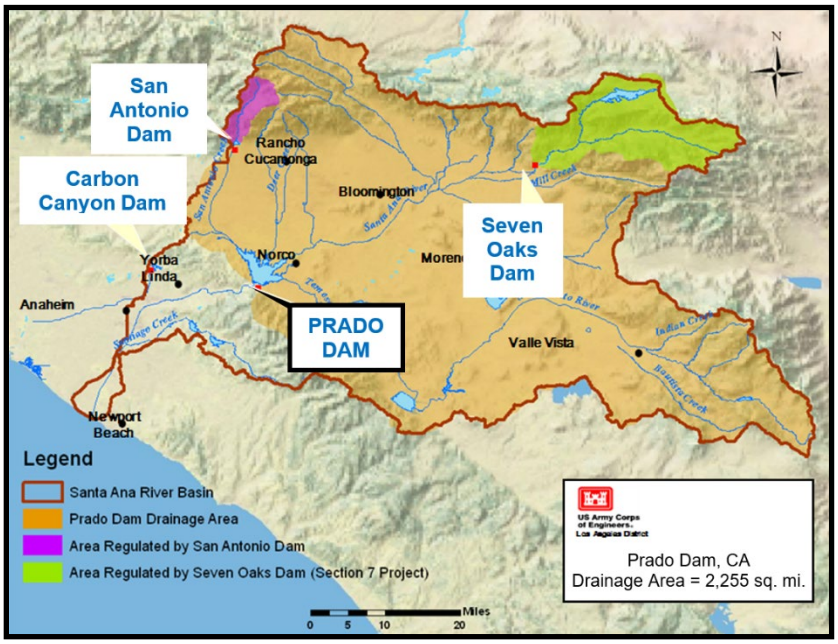
An Existing Condition Risk Assessment (ECRA) was performed as part of the Prado Dam Semi-Quantitative Risk Assessment (SQRA) and updated as part of the DSMS. The following risk-driving potential failure modes (PFM) were identified: PFM MD1: Overtopping of the Main Dam Embankment Low Spot, PFM S1: Loss of a Spillway Slab leads to Spillway Erosion and Loss of the Ogee Weir, PFM S5: Instability of the Ogee Weir, PFM MD35: Loss of the Outlet Works Due to Rupture of the Chino Fault Leads to Incremental Flow through the Spillway, PFM S4: Erosion Downstream of the Flip Bucket leads to Progressive Failure of the Spillway. PFMs MD1, S1 and S5 were determined to exceed the Societal Tolerable Risk Limit (STRL) and DSMS plan formulation focused on these risk driving failure modes. Measures formulated for PFMs MD35 and S4 were evaluated as As-Low-As-Reasonably-Practicable (ALARP) considerations. Based on the risk assessment findings, it was determined that the incremental life safety risk for Prado Dam is unacceptable and must be addressed prior to construction of the SARM Spillway Raise Project.

The Recommended Plan consists of replacement of the ogee weir with a labyrinth weir; construction of main embankment and Auxiliary Dike embankment tie-ins; replacement of the chute slab with an underdrain system, anchors, and structural slab; and chute wall replacement. Approved ALARP measures include armoring downstream of the flip bucket and construction of a connector wall, modification of the flip bucket, and outlet works bulkheads. The Total Project First Cost (Fully Funded) is estimated at $651 million at FY22 price level.

1.0 PROJECT LOCATION AND DESCRIPTION

1.1 Project Location

Prado Dam is a high hazard Flood Risk Management (FRM) project located on the Santa Ana River in the southern portion of the Santa Ana River Basin, approximately 30.5 miles upstream of the Pacific Ocean. It is located in Riverside County, California, approximately two miles west of the City of Corona, northeast of the Riverside Freeway (California State Route [SR] 91) and Corona Freeway (SR 71) interchange. The Prado Dam reservoir covers part of both Riverside and San Bernardino Counties. The approximate site location is shown in Figure 1. Prado Dam serves as the principal regulating structure on the Santa Ana River and is primarily operated for FRM.



1.2 Original Project

The project was constructed in 1941 by the Los Angeles District (District) and included a zoned earthen main embankment, gated outlet works, and a detached spillway. The original dam was constructed as a compacted, multi-zoned, earth-filled embankment with a top of dam Elevation of 568.3 feet, NAVD 88 (566 feet, NGVD29) reaching a maximum height of 106 feet above streambed. The original outlet works were located in the west side of the dam and consisted of an approach channel, an intake structure, a double box conduit, and an outlet channel. The spillway consists of a reinforced concrete ogee section 1,000 feet long, 14.5-feet-high with a crest at elevation (El.) 545.3 feet, NAVD 88 (543 feet, NGVD 29). The spillway chute is reinforced concrete approximately 1,000 feet wide at the upper end, tapering to 660 feet at the lower end and is approximately 900 feet long. At the downstream end of the spillway channel, a steep chute terminates at a flip bucket.

1.3 Santa Ana River Mainstem Project Overview

Prado Dam is a part of the ongoing Santa Ana River Mainstem (SARM) project. Authorized modifications to the dam consist of providing additional capacity for storage of floodwaters and sediment by enlarging the existing Prado Dam and Reservoir, including raising the dam, raising

and lengthening the spillway, enlarging the reservoir, constructing additional dikes, and increasing the release capacity of the outlet works. Other features of the SARM project improve downstream channel capacity. The Spillway Raise Project is the last major component of the SARM Project which will provide the level of flood risk reduction authorized by Congress.

Figure 2: Current Features of the Main Embankment and Attached Dikes

2.0 PROJECT HISTORY

Design and construction of Prado Dam was authorized as a unit of the Santa Ana River Basin, California project by the Flood Control Act of 1936, Public Law (PL) 74-738, 49 Stat. 158, as amended. Construction was completed in May 1941. The primary authorized purpose of Prado Dam is flood risk management; water conservation and recreation are also authorized purposes.

The SARM Project was authorized by Section 401(a) of the Water Resources Development Act (WRDA) of 1986, PL 99-662, 100 Stat. 4113, as modified by Section 104 of the Energy and Water Development Appropriation Act of 1988 (PL 100-202, 101 Stat. 1329-111), Section 309 of WRDA of 1996 (PL 104-303, 110 Stat. 3713), and Section 3033 of WRDA of 2007 (PL 110-114, 121 Stat. 1114). Modification of Prado Dam to increase FRM benefits is a separable element of the SARM Project. Cost sharing is required under the agreements for the SARM including Prado Dam Separable Element, except as specified in recent amendments to those agreements providing for the use of funding from the Bipartisan Budget Act (BBA) of 2018 (PL 115-123). While the Separable Element includes a cost share to raise Prado Dam, there is no cost share requirement for the Dam Safety Modification Project because there was no non-Federal contribution to the original project.

Prado Dam has never experienced spillway flow. Seepage has not been observed. There have been no reports of damage from a seismic event. A summary of the project history is provided in the table below.

Table 1. Project History

Date	Description
1941	Prado Dam constructed
1986	Santa Ana River Mainstem (SARM) Project authorized

2008	SARM main dam embankment and outlet works modifications completed.
2005	The maximum historical discharge through the outlet works of 10,000 cfs resulted in some downstream channel erosion.
2008	As part of the SARM Project, the outlet works was enlarged in 2008 (release capacity 30,000 cfs); modification of the downstream channel for the increased capacity is currently under construction.
2009	Screening Portfolio Risk Assessment of Prado Dam was performed and identified the dam as moderate risk. PFMs identified in the SPRA included embankment seepage and piping and overtopping of the dam in the vicinity of the existing spillway.
2010	Pool of Record with a water surface elevation of 531.7 feet, NAVD 88 (529.4 feet, NGVD 29). The dam performed as designed.
2019	The District began reevaluating the Spillway Raise Project 30 percent design plans and determined the original spillway chute design did not meet current state of practice and was not robust enough to handle a significant spillway flow event. Around the same time, the RMC was performing a USACE concrete chute spillway review. In April 2019, the District presented the preliminary assessment of the Prado Dam spillway to the DSOG. Based on the preliminary evaluation of the spillway chute risks, the DSOG recommended, with District concurrence, that the project be classified as very high incremental risk. SQRA initiated.
2020	Dam Safety Modification Study initiated.
2021	The spillway chute slab joint repair interim risk reduction measure (IRRM) was completed. IRRMs are temporary measures to reduce risk until permanent measures are implemented. The repair consisted of grinding of joints offset against flow, repairing spalls, and sealing all joints within the spillway chute slab.

3.0 PURPOSES WARRANT CONTINUED FEDERAL INVESTMENT

Prado Dam provides FRM benefits to downstream communities of the dam. This area is highly developed and densely populated with a population at risk (PAR) of approximately 1.25 million people. The average annual flood damage reduction for this area is estimated to be $207 million at the existing weir elevation. Continued Federal investment in the Prado Dam project for FRM is demonstrated through the BBA of 2018 (funding to complete the spillway raise to increase flood damage reduction, representing Congressional intent to continue to operate and maintain the project for FRM. No changes to the authorized project purpose are necessary. Continued Federal investment to address dam safety issues is warranted.

4.0 SIGNIFICANT POTENTIAL FAILURE MODES

An Existing Condition Risk Assessment (ECRA) was performed as part of the Prado Dam Semi-Quantitative Risk Assessment (SQRA) and updated as part of the DSMS. The following risk-driving failure modes were identified:

- PFM MD1 - Overtopping of the Main Dam Embankment Low Spot;
- PFM S1 – Loss of a Spillway Slab leads to Spillway Erosion and Loss of the Ogee Weir;
- PFM MD35 - Loss of the Outlet Works Due to Rupture of the Chino Fault Leads to Incremental Flow through the Spillway;
- PFM S4 - Erosion Downstream of the Flip Bucket leads to Progressive Failure of the Spillway; and
- PFM S5 – Instability of the Ogee Weir

The risk for each of these PFMs was estimated by combining the hydrologic loading, system response, and consequences for each. The risk of PFMs MD35 and S4 were found to be below the USACE STRL. Conversely, the risk of PFMs MD1, S1, and S5 were found to be above the STRL. The locations of these PFMs are shown in Figure 3 below.

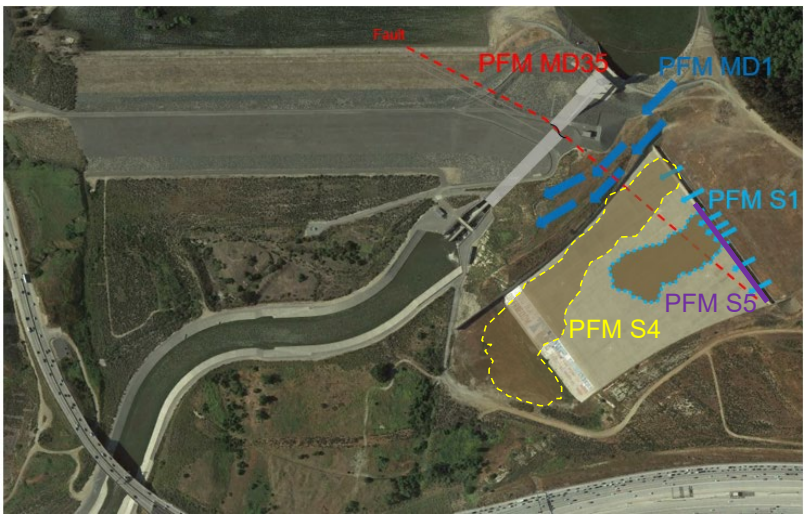


Figure 3: Plan View showing Location of Potential Failure Modes

There is potential for significant life safety risk associated with normal operation of the project during a major flood event. This risk is referred to as non-breach life safety risk. Non-breach risk occurs when the flood capacity of the dam is exceeded. At this point, the dam transitions from managing the flood to passing the flood. For dams, the transition occurs when water starts flowing over the spillway. Prado Dam was constructed with a spillway to pass large flood events without overtopping the dam. If the capacity of the downstream river is exceeded and water flows over its banks, inundation and life loss downstream of the project could occur. In addition to spillway flow, a major flood event could result in higher reservoir pool levels, which could cause flooding of residences and businesses outside of the basin.

Under USACE dam safety policy, modification to the Prado Dam cannot increase risk. However, the existing condition exceeds tolerable limits and, as such, the SARM Spillway Raise Project cannot be completed until the urgent and compelling dam safety issues at the dam are addressed; and the SARM Project cannot attain its Congressionally authorized benefits until the Spillway Raise Project is complete. For these reasons, setting the foundation for the SARM Spillway Raise Project and evaluating the total Federal investment for the combined spillway modification were considered in the selection of the Recommended Plan.

PFM MD1 – Overtopping of the main dam embankment low spot: PFM MD1 involves overtopping failure of a low spot that exists between the right abutment of the spillway and the left abutment of the main dam during the Probable Maximum Flood (PMF) event. The low spot is at the same elevation as the original dam crest and was not raised in 2008 when the main dam was raised to accommodate the future spillway modification. The overtopping depth and duration are sufficient to initiate surface erosion of the materials along the groin. Progressive erosion continues upstream and breach occurs.

PFM S1 – Spillway erosion resulting in slab removal: PFM S1 involves the likely removal of numerous chute slabs due the presence of offset joints that allow for excessive stagnation pressures to develop below the slabs. Once a slab is removed the highly erodible foundation will be exposed allowing for erosion to initiate. Erosion will continue to progress and headcut

upstream towards the ogee structure. The duration of spillway flow is sufficient such that erosion continues under the ogee structure and breach occurs.

PFM MD35 – Fault rupture leading to incremental spillway flow: PFM MD35 involves the possibility that a large seismic event in the area of the project results in permanent ground deformation along a splay of the Chino Fault that is expected to be present under the conduit. The permanent ground deformation is such that it causes significant damage to the conduit structure that renders the conduit inoperable. Without the use of the conduit, the spillway will flow at an increased frequency resulting in the potential for incremental spillway flow and subsequent incremental life loss.

PFM S4 - Erosion Downstream of the Flip Bucket leads to Progressive Failure of the Spillway: PFM S4 involves the possibility of a large spillway flow leading to excessive erosion downstream of the flip bucket. A scour hole develops that extends below the crib wall foundation of the flip bucket leading to instability. Once the crib wall structure fails, progressive erosion of the spillway ensues, head cutting to the toe of the ogee weir. Erosion progresses under the ogee weir resulting in breach.

PFM S5 - Instability of Existing Ogee Weir: PFM S5 involves the possibility of an extreme hydrologic event that causes the reservoir to rise to critical elevation such that the driving forces cause the foundation below the ogee weir to lose compression at the heel. Uplift increases under the portions of the base without compression further destabilizing the monolith until the entire base loses compression. The strength of the foundation is insufficient once the foundation has completely cracked through. Reduction in sliding resistance leads to instability causing a breach.

5.0 FORMULATION OF RISK MANAGEMENT PLANS

A comprehensive formulation of potential risk management measures was conducted, considering how life safety risk could be reduced by addressing both the probability and consequences of dam failure. An array of risk management measures was developed to address the risk of PFM S1, PFM S5, and PFM MD1. Risk management measures are methods of addressing risk that can either stand alone or be combined to form Risk Management Plans (RMPs). Measures were divided into two general categories – structural measures and nonstructural/operational measures. Structural measures are ways to address risk by structurally modifying the dam, and nonstructural/operational measures are ways to address risk without structurally modifying the dam. The initial array of risk management measures was screened against the primary DSMS objective of reducing total project risk to meet tolerable risk guidelines (TRG) by addressing the risk associated with PFM S1, PFM S5, and PFM MD1. The retained measures were combined into an initial array of RMPs.

The initial array of RMPs were screened against the study objective, in consideration of the dam safety issues, opportunities, and constraints. Specific screening criteria included effectiveness, efficiency, and acceptability, as described in ER 1105-2-100, as well as robustness, redundancy, resiliency, impacts to the affected environment, doing no harm, and the ability to implement the measure. The definitions of these screening criteria are as follows:

- Effectiveness: The degree to which measures meet study objectives. It is measured against the TRGs.

- Efficiency: The extent to which measures are the most cost-effective means of reducing risk.
- Acceptability: The extent to which measures are acceptable in terms of laws, regulations, and policies.
- Robustness: The ability of a system to continue to operate correctly across a wide range of operational conditions (the wider the range of conditions, the more robust the system), with minimal damage, alteration or loss of functionality.
- Redundancy: Duplication of critical components of a system with the intention of increasing the reliability of the system, usually in the case of a backup or failsafe.
- Resiliency: The ability to avoid, minimize, withstand, and recover from the effects of adversity, whether natural or manmade, under all circumstances of use.
- Impacts to Affected Environment/Cultural Resources: The extent to which each RMP has the potential to impact or affect significant statutorily protected or regulated resources.
- Do No Harm: The principle of "Do No Harm" must underpin all actions intended to reduce dam safety risk (i.e. the action does not increase risk or unacceptably transfer risk).
- Ability to Implement: Feasibility of design and construction of the risk reduction measure.

Table 1: Initial Array of RMPs Screening [1]

RMP	Description	Measures
1	Chute Slab Replacement - mass concrete	Replace existing ogee full width, Embankment tie-ins, Flat chute slab replacement – mass concrete, Steep chute slab replacement, Replace existing ogee full width
2	Flat chute slab overlay	Replace existing ogee full width, Embankment tie-ins, Flat chute slab overlay, Steep chute slab replacement,
3A	Chute slab replacement - anchors/ underdrains	Replace existing ogee full width, Embankment tie-ins, Flat chute slab replacement - anchors/underdrains, Steep chute slab replacement
3B	Chute slab replacement - anchors/ underdrains and flip bucket modification	Replace existing ogee full width, Embankment tie-ins, Flat chute slab replacement - anchors/underdrains, Steep chute slab replacement, Flip bucket modification or replacement
4	Partial depth cutoff wall and flat chute slab replacement	Replace existing ogee full width, Partial depth cutoff wall, Embankment tie-ins, Flat chute slab replacement - anchors/ underdrains (upstream of cutoff wall)
5A	Spillway Reconfiguration/ Realignment	Replace existing ogee weir with reduced width control structure, embankment tie-ins, Chute wall replacement, flat chute slab replacement - anchors/underdrains, steep chute slab replacement
5B	Spillway Relocation	Spillway relocation, Embankment tie-ins
6A	Chute walls/ stilling basin and slab replacement	Replace existing ogee full width, Embankment tie-ins, Flat chute slab replacement - anchors/underdrains, Steep chute slab replacement, Chute wall replacement, Flip bucket modification or replacement
6B	Chute walls and slab replacement	Replace existing ogee full width, Embankment tie-ins, Flat chute slab replacement - anchors/underdrains, Steep chute slab replacement, Chute wall replacement
Mandatory RMPs		
	No Action	FWAC
	Remove Dam	Eliminated in formulation of RMPs.
	Replace Dam	Eliminated in formulation of RMPs.

Dam removal and dam replacement were eliminated from further consideration during formulation of RMPs. Dam removal was not retained because it would eliminate existing FRM benefits provided by the dam. Complete dam replacement was not retained because the dam embankment and outlet works were modified in 2008 and are in good condition.

[1] RMPs in green font were carried forward; RMPs in red font were screened.

The PDT identified a number of project specific considerations to evaluate the degree to which each measure and RMP meets the above screening criteria. Embankment tie-ins to address PFM MD1 are common to all RMPs; and the labyrinth weir and new ogee weir to address PFM S5 are both considered acceptable design solutions. Various alternatives to retrofit the existing ogee weir was considered. Results of preliminary constructability and risk evaluations indicated that none of these proposed methods provided a reasonable path forward for the design either from a constructability and cost perspective or from a dam safety perspective and were screened during formulation of RMPs. The justifications for screening focus on the spillway chute design features and other considerations. Several RMPs were screened for the following reasons:

- RMP 2 leaves the existing underdrain and erodible foundation in place and would result in a slightly higher invert elevation. The overlay could also be damaged during a spillway flow event and required additional investment/rebuilding costs.
- RMP 3B is similar to RMP 3A but also includes modification of the flip bucket. Preliminary hydraulic modeling and risk evaluation indicates modification of the flip bucket is not necessary. Therefore, RMP 3B was screened.
- RMP 4 – Site accessibility issues, as well as the limited effectiveness and high cost of building a relatively short length of cutoff wall make this RMP inefficient compared to others. The area downstream of the cutoff wall will not be modified and can be significantly damaged during a spillway flow event requiring additional investment/ rebuilding costs, and due to the limited depth of the cutoff wall, the spillway would still be vulnerable to erosion.
- RMP 1 would solely rely on the weight of the concrete to counteract uplift pressures. The joints would not be watertight and there would be no underdrain system. This would allow water to move through the foundation, potentially eroding any foundation material.
- RMP 5B was screened because of significant permanent impacts to the only wildlife corridor between the Prado Basin and regional parks and open space to the south, space limitations between the existing spillway and the freeway (SR-91), and it would result in a longer construction duration, larger borrow areas, more demolition/ removal of material, noise impacts, and movement of construction vehicles than RMP 5A.
- RMP 6A was screened because of impacts to the wildlife corridor, and it would result in a longer construction duration, larger excavations, more demolition and removal of material, noise impacts, and movement of construction vehicles than RMP 3. RMP 6A cost significantly more than RMP 6B and RMP 3 and provides no additional risk reduction with the addition of the stilling basin.

5.1 Final Array of Risk Management Plans

The final array of RMPs is described below. Per the National Environmental Policy Act (NEPA) (42 U.S.C. § 4321 *et seq*.), ER 1110-2-1156, and ER 1105-2-100, the No Action Plan[2] (FWAC) must be included in the final array. In the DSMS, the alternatives discussed, including the FWAC, are based on a spillway elevation of 543 feet NGVD. The DSMS focuses on risks associated with the spillway as currently constructed. Therefore, analysis of solutions to the associated risks focuses on the existing spillway when evaluating a Proposed Action to adopt. While the Spillway Raise intends to raise the Prado Dam spillway to a height of 563 feet NGVD, as authorized by WRDA 1986 and evaluated in the 2001 SEIS/ EIR, the spillway raise cannot occur until after the risks associated with the present spillway are addressed. Once dam safety

[2] Note: For this study, the DSMS FWAC and NEPA No Construction alternatives are synonymous.

modifications are approved, designs and/or risk reduction measures will be incorporated into a spillway with a crest elevation of 563 feet NGVD. The DSMS denotes the No Construction Alternative as the FWAC, defined as neither the SARM Spillway Raise Project nor the dam safety modification measures to address dam safety risks occurring.

To ensure dam safety considerations were addressed prior to the spillway raise, the FWAC assumes that the SARM Spillway Raise Project is not completed and no modifications are completed for dam safety. However, the existing condition and FWAC risks are above the STRL and, thus, failed to meet study objectives and was not selected. The EA, in discussion of alternatives, focuses on the project as previously authorized along with the updated spillway design with the addition of RMPs presented in the DSMS.

RMP 3A – Full Width Ogee Replacement, Embankment tie-ins, and Chute Slab Replacement: RMP 3A (Figure 4) consists of the following major components:

- New Ogee Control Structure and Approach Walls (addresses PFM S5): Construct mass concrete gravity approach walls and training dike to guide flows to the spillway and construct new upstream ogee control structure (weir).
- Main Embankment and Auxiliary Dike Tie-ins (addresses PFM MD1): Construct earthen embankment tie-ins from the existing Main Embankment and the Auxiliary Dike, including filters, drains, and upstream slope protection.
- Chute Slab Replacement (addresses PFM S1): Construct a new chute slab with underdrain system, anchors, and structural slab.
- Slope protection above existing Chute Walls

RMP 5A – Replace Spillway – Reconfigure in Existing Location: RMP 5A (Figure 5) consists of the following major components:

- Labyrinth Weir and Approach Walls (addresses PFM S5): Replace the existing ogee with a labyrinth weir and construct abutment walls to support the embankment tie-ins and approach walls to guide flows to the spillway.
- Main Embankment and Auxiliary Dike Tie-ins (addresses PFM MD1): Construct earthen embankment tie-ins from the existing Main Embankment and the Auxiliary Dike, including filters, drains, and upstream slope protection.
- Chute Slab Replacement (addresses PFM S1): Construct a new, narrower chute (approximate 500-foot-wide) with underdrain system, anchors, and structural slab.
- Chute Wall Replacement: Construct new mass concrete gravity walls with a drainage system.

RMP 6B – Full Width Ogee Replacement, Embankment Tie-Ins, Chute Wall Replacement, and Chute Slab Replacement: RMP 6B (Figure 6) is the same as RMP 3A but includes replacement of the chute walls. The major components include:

- New Ogee Control Structure and Approach Walls (addresses PFM S5): Construct mass concrete gravity approach walls and training dike to guide flows to the spillway and construct new upstream ogee control structure (weir).
- Main Embankment and Auxiliary Dike Tie-ins (addresses PFM MD1): Construct earthen embankment tie-ins from the existing Main Embankment and the Auxiliary Dike, including filters, drains, and upstream slope protection.

- Chute Slab Replacement (addresses PFM S1): Construct a new chute slab with underdrain system, anchors, and structural slab.
- Chute Wall Replacement: Construct new reinforced concrete cantilever walls with drainage system.

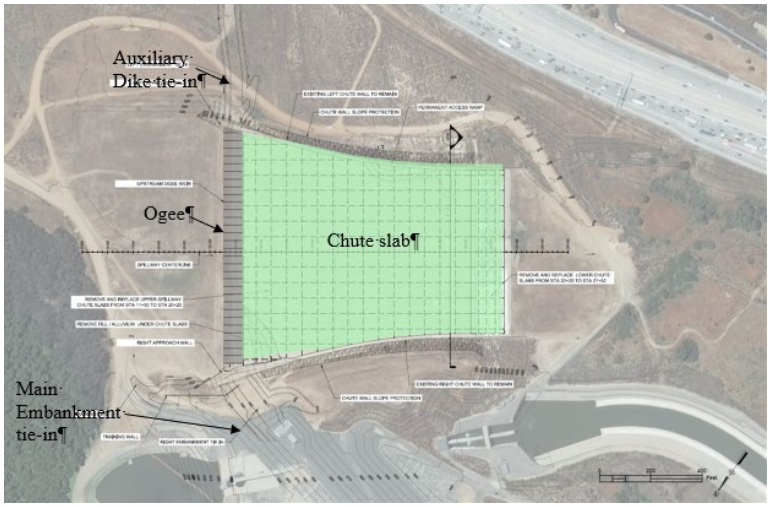


Figure 4: RMP 3A Plan View

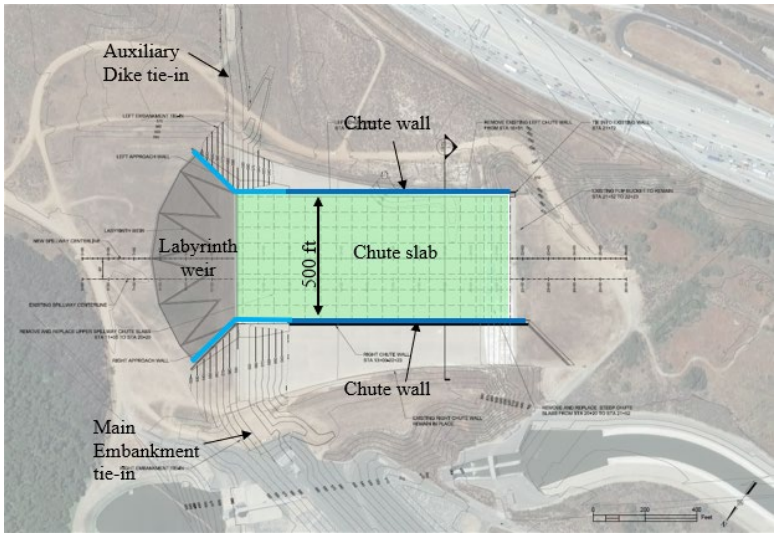


Figure 5: RMP 5A Plan View

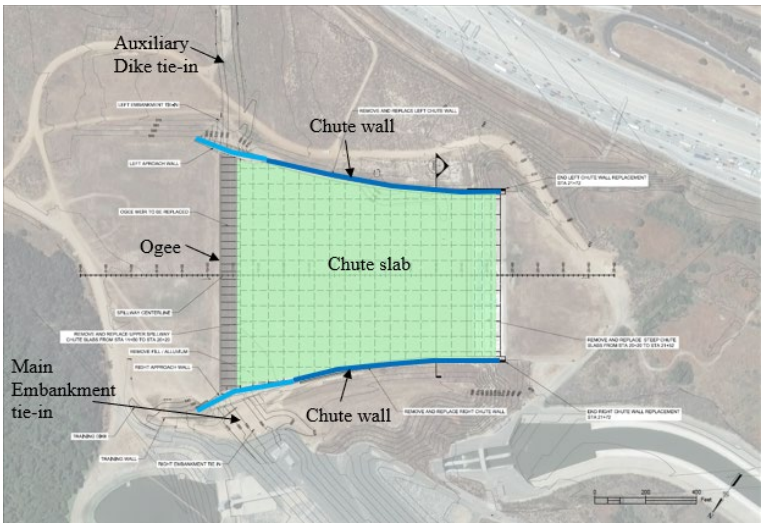


Figure 6: RMP 6B Plan View

6.0 EVALUATION AND COMPARISON OF RISK MANAGEMENT PLANS

Each of the final array of RMPs were evaluated using similar criteria to that used to screen the initial array of risk management measures, including effectiveness, efficiency, acceptability, impacts to affected environment/cultural resources, do no harm, robustness, redundancy, and resiliency. Additional screening criteria included the following:

- Completeness: The extent to which the RMP provides and accounts for all necessary investments/actions to realize the planned effect.
- Implementation Duration: Time it takes to design and construct the RMP and realize risk reduction.
- Meets Applicable Essential USACE Guidelines: Evaluates whether, with the implementation of the RMP, the dam meets essential USACE guidelines outlined in ER 1110-2-1156.

Effectiveness: To evaluate the effectiveness of the final array of RMPs at reducing the incremental risk, a risk assessment was performed on each plan. The risk assessment indicated that RMPs 3A, 5A, and 6B will provide the same order-of-magnitude risk reduction relative to the FWAC. Because the FWAC would not provide the necessary level of risk reduction, it was eliminated from further consideration, and was retained for comparison purposes only.

Completeness: All of the RMPs were rated high for completeness because, as formulated, they would each provide and account for all investments/actions required to achieve the desired risk reduction.

Efficiency: Because the expected risk reduction for each of RMPs 3A, 5A, and 6B is the same, the measure of efficiency was simplified from the ratio of cost to risk reduction to simply cost, with less expensive RMPs being more efficient. Conceptual level cost estimates were developed for each RMP, which are shown in the table below.

Table 2: Risk Management Plan Construction Cost Estimates

RMP 3A	RMP 5A	RMP 6B
$239.5M	$251.9M	$255.9M

Acceptability: All RMPs would be equally acceptable in terms of laws, regulations, and policies, so they were all rated high on acceptability.

Do No Harm: All RMPs are anticipated to "Do No Harm".

Implementation Duration: Preliminary construction schedules were developed for each RMP. RMP 5A has the shortest construction duration and RMP 6B has the longest construction duration.

Table 3: Approximate Risk Management Plan Construction Duration

RMP 3A	RMP 5A	RMP 6B
4.25 years	3.25 years	4.5 years

Impacts to Affected Environment/Cultural Resources: All RMPs were deemed to have similar potential environmental and cultural resource impacts because they would impact the same general area. To evaluate the magnitude of impacts for each RMP, total construction duration and permanent impacted area were used to estimate relative impacts. Overall, RMP 5A is expected to have a shorter duration than RMPs 3A and 6B.

Robustness: Replacement of the chute walls in RMPs 5A and 6B is considered more robust than tying into existing walls, as required in RMP 3A.

Redundancy: All RMPs include anchoring and placement of drains under the replacement chute slabs. Redundancy in the anchoring system and drainage system will help ensure the structural reliability of the anchors and proper drainage. The placement of the walls on the narrower chute in RMP 5A and replacement of walls in 6B provides drainage behind the walls. As such, RMP 3A is considered to have medium redundancy and RMP 5A and 6B are considered high.

Resiliency: Resilience was evaluated by considering performance during operation of the spillway. Replacement of the spillway chute and drainage system significantly improve performance during operation and should dramatically reduce potential for slab loss and the likelihood of failure. RMPs 3A resilience is considered moderately high, while 5A and 6B is considered high because it ensures water tightness throughout the spillway.

Meets Applicable Essential USACE Guidelines: All RMPs meet essential guidelines for risk driving failure modes.

7.0 RISK MANAGEMENT PLAN COMPARISON

RMPs were compared against each other, emphasizing factors that clearly distinguish each RMP to rank plans in terms of ability to meet the study objectives: to identify and recommend an RMP which supports the expeditious and cost-effective reduction of risk within the USACE portfolio of dams, and to reduce total project risk to meet TRG 1 for Societal and Individual risk. The Individual Tolerable Risk Limit (TRL) is measured by the APF guideline since this essentially depicts the annual chance of individual life loss. In general, the primary evaluation factors used for selecting an RMP are the annual probability of failure (APF), average annual life loss (AALL), and cost-efficiency. Consideration is also given to other pertinent and differentiating factors. For this study, the SARM Spillway Raise Project was given special consideration to ensure the selected RMP is compatible with the authorized project and allows the most cost-

efficient implementation of both projects. The principle of ALARP will also be used to weigh the justification to invest more money to further reduce risk below the guidelines.

Evaluation factors discussed in the previous section show that each RMP, except the FWAC, is rated high in completeness and is acceptable regarding applicable laws, regulations, and policies. Each RMP, except the FWAC, meets the objective of reducing risk to tolerable levels. Since the FWAC has unacceptable risk and does not meet study objectives, it was not selected as the Recommended Plan.

RMP 6B increases the overall robustness and redundancy of RMP 3A by replacing the chute walls but will not increase risk reduction for PFM S1 or overall total risk. As such, due to the additional $30 million (project first cost at FY21 Constant Dollar Basis) investment required, RMP 6B was screened.

While Total Project Cost for RMP 5A is slightly higher than for RMP 3A, it should be noted RMP 3A has significantly higher potential for cost increases due to care and diversion of water and construction sequencing requirements. RMP 5A has more flexibility in construction sequencing and care and diversion of water due to the smaller spillway chute footprint. The labyrinth weir design is adaptable to the Spillway Raise Project with little to no modification of the foundation and wall design. For RMP 3A, the ogee weir foundation would need to be enlarged considerably (approximately double in width) to accommodate a higher ogee crest, increasing the required excavation, concrete, and backfill; and therefore, increasing the overall cost to implement both projects. RMP 5A represents the lowest total Federal investment when combined with the Spillway Raise Project (costs and durations presented do not include those for the Spillway Raise Project). RMP 5A is also considered to increase overall robustness and redundancy above that provided by RMP 3A. RMP 5A requires a narrower footprint to replace the chute off-setting the cost to construct chute walls. Similar to RMP 6B, RMP 5A requires replacement of the chute walls, reducing uncertainty related to drainage behind the chute walls; and allows the walls to be sized based on revised hydraulic modeling for spillway flow.

8.0 RECOMMENDED PLAN

RMP 5A was identified as the Recommended Plan based on the factors discussed above. This plan meets the study objective by reducing the risk to tolerable levels with a robust and reliable plan with appropriate consideration for reducing risks, ALARP and meeting Essential USACE Guidelines for risk driving failure modes. RMP 5A was considered more advantageous than RMP 3A for the following reasons:

- Replacement of the ogee weir structure with a labyrinth design allows for a more cost efficient total Federal investment when the Spillway Raise project is completed;
- A labyrinth design allows more flexibility for care and diversion of water during construction and allows for shorter overall construction duration, reducing potential for cost increases; and
- Construction of chute walls for the narrowed chute reduces uncertainty related to performance by providing drainage behind the walls.

ALARP Measures: Several ALARP measures, including armoring downstream of the flip bucket, outlet works bulkheads, and modification of the flip bucket were included with the Recommended Plan to reduce the risk of PFMs MD35 and S4 (Figure 7). Gated openings in the labyrinth weir for emergency releases if the outlet works becomes inoperable (PFM MD 35)

were evaluated for risk reduction but were considered to not be cost-efficient and thus do not warrant additional Federal investment. The following ALARP measures were added to RMP 5A as part of the Recommended Plan:

Armoring downstream of the flip bucket and Connector Wall for PFM S4: The concrete erosion protection slab would provide scour protection downstream of the flip bucket. The pad would slow the progression of erosion downstream of the flip bucket and reduce the amount of damage done during smaller events. The connector wall would tie into the existing training wall along the right side of the flip bucket to keep flows moving in the downstream direction and reduce the potential for scour near the existing wall. This is for RMP 5A only due to the narrower chute.

- Modification of the flip bucket for PFM S4: Modification to the flip bucket is being considered to safely direct flows away from the spillway chute. Modelling indicates that under certain conditions flows submerge rather than get directed away (or "flipped") from the structure as designed resulting in additional scour downstream of the flip bucket.
- Outlet Works Bulkheads for PFM MD35: The project currently has 3 bulkheads available to close the outlet works during an emergency and thus can only close one side of the conduit. A total of 6 bulkheads would be needed to completely shut off flow through the conduits. If a large seismic event where to occur, prompt inspection and repairs of the conduit would need to be performed and flow through the conduit would be stopped until completed.

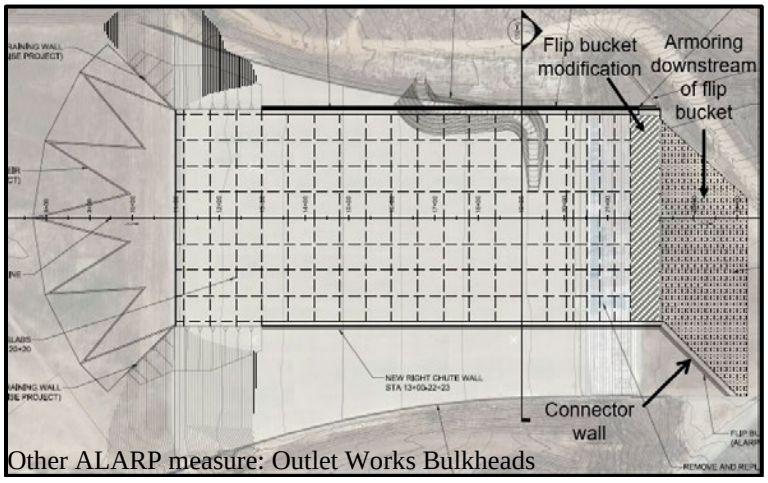


Figure 7: ALARP Measures

Cost for the Recommended Plan: A detailed cost estimate for the refined Recommended Plan was developed using the MCACES Second Generation (MII) cost estimating software. The estimate includes all sunk and remaining costs, including Pre-Construction Engineering and Design (PED), contract advertisement/award, construction, and supervision and administration of construction. The estimate was prepared to a Class 4 budgetary level of accuracy per AACE International Recommended Practices (No. 18R-97 and ASTM E 2516-06, Standard Classification for Cost Estimate Classification System).

The Total Project First Cost (Fully Funded) is estimated at $604 million without ALARP and $651 million with ALARP at FY22 price level. A CSRA/ Constructability Evaluation (CE) has been performed for the refined Recommended Plan to identify and evaluate cost and schedule risks. The CSRA/CE results were used to inform the cost estimate and to develop associated

contingencies. The results were also used to identify the highest risk aspects of the design for additional focus during Preconstruction Engineering and Design (PED).

Recommended Plan Implementation Schedule: The estimated implementation schedule for the Recommended Plan with ALARP has a 5.5-year duration. This duration includes 1.5 years for PED, receipt of FY24 funding, and procurement. Construction is expected to be completed within 4 years of award.

Recommended Plan Design Uncertainty: There is a high degree of confidence that the Recommended Plan is an effective RMP as the SQRA did not identify significant uncertainties in its risk reduction effectiveness. Table 4 shows remaining design uncertainties and recommended tasks to mitigate the uncertainty.

Table 4: Refined Recommended Plan Remaining Design Uncertainties

Remaining Uncertainty	Recommended PED Task
Care and diversion of water	Care and diversion of water requires further development. Downstream PAR is approximately 1.25 million. Project cost can be significantly impacted by required construction means and methods. A risk evaluation should be performed to determine level of protection of the cofferdam. Construction sequencing and seasonal work limitations will need to be refined.
Analysis of embankment tie-ins	More detailed static and seismic analyses of the embankment tie-ins with the ogee foundation left in place would be required during PED.
Analysis of weir	More detailed analyses including static and seismic structural stability of the weir would be required during PED.
Utility line relocation	The Southern California Gas (SoCalGas) and other utilities needs to be relocated and/or abandoned prior to construction.
Sheared bedrock and unknown fault splays	Sheared bedrock and unknown fault splays found during construction would require deeper excavation and should be accounted for in construction cost and schedule.
Variable anchor capacity due to variable foundation conditions	The anchor capacity may vary across the site due to variable foundation conditions. An anchor testing program and evaluation of data will better define anchor capacities.
Variable groundwater	Groundwater is variable across the site and will be a challenge due to the foundation conditions. Various methods will need to be considered depending on the situation.
Threatened and Endangered Species	There are many threatened and endangered species in the project area. The access road to the left of the spillway is also a wildlife access corridor and cannot be blocked at night. Minimization measures will need to be implemented.
HTRW remediation of mural	The mural painted on the steep chute includes lead-based paint. HTRW remediation of the concrete and downstream soils may be required.
Mural litigation	The mural does not retain sufficient integrity to be eligible for listing on the NRHP. However, an injunction is in place and the court case has not been dismissed or settled yet. This will need to be resolved prior to contract award or could result in delays.
Climate change considerations	The features that contain the reservoir pool include resiliency design features for more frequent spillway events. Uncertainty will be carried through in the H&H analysis but includes a sensitivity analysis to quantify the variability of peak inflow, outflow, and pool elevation. The design will utilize the best estimate PMF but will also compare analysis to the upper bound PMF.

Recommended Plan and Applicable Essential USACE Guidelines: Currently, Prado Dam is deficient with respect to a number of applicable essential USACE guidelines. The Recommended Plan is expected to remediate the risk-driving failure modes to the extent that applicable Essential USACE Guidelines are met.

Residual Risk for the Recommended Plan: The sum of non-breach and incremental risk is referred to as residual risk, which is the total risk in the reservoir area and affected downstream floodplains at any given point in time. Implementation of future risk reduction actions, including the Recommended Plan, will never fully eliminate the potential for flooding. Non-breach risks are driven by spillway flow under normal operations and would not change following Recommended Plan implementation.

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Appendix J: Mitigation, Monitoring and Adaptive Management Plan

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Prado Dam Spillway Raise and Dam Safety Modification Study Mitigation Plan

1.0 Introduction

This document outlines the mitigation plan for the Prado Dam Spillway Modification Project which includes the previously authorized raise aspect of the spillway and dam safety modifications and is intended to satisfy the requirements described in the implementation guidance for Section 2036 of the Water Resources Development Act (WRDA) of 2007. Specifically, this plan contains the following components specified in Section 5.b. of the Section 2036 implementation guidance:

1. A description of the physical action to be undertaken to achieve mitigation objectives.
2. The type, amount, and characteristics of the habitat being restored.
3. Ecological success criteria for mitigation based on the replacement of lost functions and values.
4. A plan for monitoring to determine success of the mitigation, including cost and duration or any monitoring and entities responsible for any monitoring.
5. A contingency plan (i.e., adaptive management) for taking correction actions.
6. A description of the lands or interests in lands to be acquired for mitigation

1.1 Santa Ana River Mainstem Project Mitigation History

Mitigation planning for the Santa Ana River Mainstem Project (SARMP), of which the Prado Dam spillway raise is a component, dates back at least to the 1988 Supplemental Environmental Impact Statement and Phase II General Design Memorandum. Mitigation specific to species and habitats protected under the Endangered Species Act (ESA) was further defined in the 1989, 2001, 2002, 2012 and other Biological Opinions (BO) that were developed for various SARMP phases and features. The mitigation described in the 2001 and 2012 BOs, which are the most directly applicable precursors to the current (recently completed) Spillway consultation, built upon the multi-agency agreements between California Department of Fish and Wildlife, the County of Orange, Orange County Flood Control District, U.S. Fish and Wildlife Service (USFWS) and the U.S. Army Corps of.

The 2021 BO for the Prado Dam Spillway Modification Project utilizes the previously developed mitigation framework dating back to the 2001 agency agreements and BO, while also providing additional mitigation details where necessary and refining the plan to address impacts to coastal sage scrub (CSS) rather than riparian habitats that were the primary focus of prior consultations

2.0 Mitigation Plan

The following sections lay out the impacts to be mitigated, habitat types impacted, mitigation requirements, success criteria, monitoring, and adaptive management plan specific to the Prado Dam spillway raise and DSM.

2.1 Spillway Raise & DSM Mitigation Summary

The following specific impacts for the spillway raise and DSM project have been identified as requiring mitigation. While there are two elements, both require the same disturbance footprint and will begin within the same time frame. The amount and type of restoration to offset impacts to habitat is based on construction footprint and to a lesser degree the duration of the construction impacts. Both elements would disturb the same habitat, but the dam safety modifications features would take longer to construct. All impact acreages and ranges will be confirmed with pre-construction surveys to determine the final required mitigation acreages. The acreages below assume all impacted habitats are occupied. However, the occupancy of habitats will be refined based on pre-construction surveys to determine the appropriate quantity of mitigation in each category.

- Up to 56.3 acres of temporary impacts to CSS habitat occupied by California gnatcatcher (*Polioptila californica californica*; a Federally listed bird species)
- Up to 41.5 acres of temporary impacts to occupied non-CSS habitat
- Up to 4.4 acres of permanent impacts to occupied CSS habitat
- Up to 2.2 acres of permanent impacts to occupied non-CSS habitat
- Temporary direct impacts to unoccupied habitat will be restored post-construction and would not require any additional off-site mitigation. riparian and CSS habitats due to noise (acreages to be determined during construction based on noise monitoring and number of seasons affected)

The following specific mitigation targets have been identified to offset the impacts described above:

- Up to 97.8 or 195.6 (rounded) acres of coastal sage scrub will be restored and monitored/managed for a period of 8 years or until success criteria are met to compensate for the temporary direct impacts to that habitat
    - 97.8, or a 1:1 ratio, would be sufficient if restoration occurs in advance of construction and is based on the currently estimated impact acreage of occupied habitats. Advance restoration minimizes the effects to the local population during construction by expanding suitable habitat in the immediate vicinity, providing additional nesting and foraging opportunities outside of the construction footprint.

    - 195.6, or a is 2:1 ratio, would be required if restoration occurs after construction and is based on the currently estimated impact acreage of occupied habitats.
- 13.2 acres of coastal sage scrub will be restored and monitored/managed for 8 years or until success criteria are met to compensate for the 4.4 acres of permanent impacts to occupied CSS habitat
- 2.2 to 4.4 acres of coastal sage scrub will be restored offsite and monitored/managed for 8 years or until success criteria are met to compensate for the 2.2 acres of permanent impacts to occupied non-CSS habitat (2.2 acres if restoration occurs in advance, 4.4 if it occurs post-construction).
- Any indirect noise impacts to occupied habitats identified during construction will be offset with a 1:1 acreage ratio through additional restoration of coastal sage scrub for each nesting season when noise thresholds were exceeded. The noise threshold was determined in coordination with USFWS and noise impacts on birds proposed in Mock 1997. The agreed upon thresholds for maximum noise is 60 dBa or 5 dBa above ambient noise per hour. These restoration sites will also be monitored/managed for 8 years or until success criteria are met.

2.2. Ecological Success Criteria

The 2001 BO identified a variety of success criteria for mitigation based on the type of habitat being restored. The following metrics and success criteria were either specified in the 2001 BO, or were derived from similar success criteria in the 2001 BO but modified for applicability to CSS habitats:

- **Metric:** % native vegetation cover
    - Success criteria: at least 30% native cover by year 8 within restored areas
- **Metric**: % invasive cover
    - Success criteria: less than 10% invasive plant cover in restored areas
- **Metric**: Co-dominant species
    - Success criteria: at least 3 co-dominant native plant species in restored areas
- **Metric**: Natural recruitment
    - Success criteria: qualitative evidence of natural recruitment documented
- **Alternative Metric**: Listed species occupying habitat –
    - Success criteria: If a breeding pair of listed species is documented occupying the restored habitat and that habitat has not needed supplemental water for 2 years the site is considered successful.

2.3 Monitoring and Adaptive Management

The monitoring and adaptive management process will be overseen by an adaptive management team, which includes the Corps and USFWS. The Corps will be responsible for implementing all required monitoring and adaptive management actions. However, determinations of success, as well as responses to adaptive management triggers, will be developed in collaboration with USFWS. This section defines the monitoring and adaptive management framework that will be used to evaluate the success of mitigation efforts through time, as well as the contingency measures that will be taken if ecological success is not achieved in the time frame specified.

Monitoring

Qualitative monitoring will occur quarterly throughout the year, with quantitative monitoring occurring annually.

Qualitative monitoring reports will contain at a minimum, visual assessments of weed cover and native vegetation health, detailed description of maintenance activities taken place since the last report, issues that arose since the last report and representative photographs. As natural recruitment is challenging to quantify, a visual assessment of estimated natural recruitment will be detailed in these monitoring report and summarized in the annual report. In addition, information from bird surveys including nest type and location will be documented.

Quantitative monitoring shall include the following metrics:

- Absolute percentage of native plant cover
- Absolute percentage of invasive plant cover
- Number of co-dominant species

Quantitative monitoring will be presented in an annual report. This report will include a summary of the whole year with reference to the qualitative monitoring reports. It will also include the methodology and raw data and permanent photo stations that will remain for the 8 years of annual reporting.

Adaptive Management

The USACE will take additional action to account for unforeseen problems in the implementation, short-term development, and overall success of the mitigation program. To ensure these actions are warranted the Lead Biologist will be present for imperative activities to make decisions about how to best manage the mitigation design and overall goals of the project.

Weed removal, seeding and plant installation methodology can be adjusted at the recommendation of the Lead Biologist. Minor adaptive measures, such as replanting,

reseeding, increased weeding frequency, or minor modifications to the protocol will be implemented upon of finalizing the annual report in Year 2. If determined by the Year 2 annual report that a site is not on track to meet final success criteria, interim performance standards will be implemented to ensure mitigation performance follows a course to attain final mitigation success. Although not anticipated, if these interim performance standards are not achieved during annual quantitative monitoring, the Lead Biologist will work with the mitigation team to readjust efforts.

2.4 Mitigation Lands

All areas of temporary impacts within the temporary construction footprint (TCF) will be restored as part of the required mitigation. Any additional balance of mitigation necessary will be restored outside of the TCF, but on federal lands managed by the Corps. Several locations within Prado Basin have been identified as potential targets for restoration outside of the TCF. The final locations will be chosen based on the balance of mitigation required, as determined by pre-construction monitoring, as well as noise monitoring during construction.

Table 1. Prado Dam Spillway Raise and Dam Safety Modification Mitigation Matrix

Impact Type	Habitat Type	Mitigation Ratio	Maximum Extent of Impact	Mitigation Requirement
Permanent Direct	Occupied CSS	3:1	4.4 acres	13.2 acres
Permanent Direct	Occupied non-CSS	2:1	2.2 acres	4.4 acres
Temporary Direct	Occupied CSS	1:1 or 2:1*	56.3 acres	56.3 to 112.6 acres
Temporary Direct	Occupied non-CSS	1:1 or 2:1*	41.5 acres	41.5 to 83 acres
Temporary Direct	Unoccupied	1:1	TBD	TBD
Temporary Indirect	Occupied	1:1	TBD	TBD

*1:1 if the mitigation is prior to the impact, 2:1 if mitigation is after the fact

2.5 Cost Estimate

The cost estimation of conducting the habitat restoration, monitoring and adaptive management is presented below in Table 2. As currently planned, the spillway raise and dam safety modifications will occur concurrently, utilizing the same construction and access footprints and impacting the same resources. As a result, mitigation is not

separable across the two components. Mitigation associated with the dam safety modification and spillway raise are not separable, and thus the costs below reflect the cumulative estimated costs for both projects. The total estimated cost for the overall habitat restoration as described in the plan is $12.2 million.

Table 2. Mitigation, Monitoring and Adaptive Management Costs Per Acre

Mitigation Implementation	Monitoring	Adaptive Management	Total
$50,000	$15,000	$5,000	$70,000

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