SANTA ANA RIVER MAINSTEM PROJECT:
PRADO DAM SPILLWAY MODIFICATION

RIVERSIDE COUNTY, CALIFORNIA

DRAFT
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT/ENVIRONMENTAL IMPACT REPORT ADDENDUM

US Army Corps of Engineers

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

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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) has been prepared by the U.S. Army Corps of Engineers (USACE), Los Angeles District. Prado Dam Spillway Modification includes the Dam Safety Modification Study (DSMS) and the Prado Dam Spillway Raise Project which is a feature of the Santa Ana River Mainstem flood risk management project (SARMP). The SEA/EIR Addendum evaluates the environmental impacts of the Proposed Action, which includes modifying the Prado Dam Spillway to reduce existing dam safety performance concerns and increasing the flood risk management benefits provided by the dam as part of the congressionally authorized SARMP.

The original Prado Dam project features, consisting of an earth-filled embankment, outlet works, and spillway, were designed and constructed by the U.S. Department of the Army in 1941 in response to 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.

Modification of Prado Dam began in the early 2000's as part of the SARMP. Modifications have included raising the height of the main embankment, constructing a new outlet works, constructing a series of interior dikes, constructing the auxiliary embankment and floodwall, and constructing the SR-71 highway dike to accommodate a future expanded footprint of the reservoir pool impoundment.

Raising the spillway crest is planned to take place following the construction and completion of all other structures designated through SARMP. Currently, all other structures designated in SARMP for increasing the downstream channel conveyance capacity are close to commencing construction, in construction or have been completed.

Features of the SARMP Prado Dam Spillway Raise Project, as previously designed and addressed in a 2001 Supplemental Environmental Impact Statement/Environmental Impact Report (SEIS/EIR), included modifying the control structure, constructing new approach walls, and constructing embankment connections. However, the Spillway Raise Project design in the 2001 SEIS/EIR did not originally include replacing the chute (i.e., the spillway channel consisting of large segments of concrete slabs and walls). Replacing the concrete chute, chute walls and the ogee weir with a labyrinth weir are now proposed to address Dam Safety concerns, in addition to the Spillway Raise Project elements.

In 2019, a Dam Safety Evaluation of the existing spillway structure was performed. 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 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 control structure) during large spillway

discharges.

Other risks include fault rupture (earthquake) that damages the outlet works structure resulting in an inability to use the conduits to pass flows and 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 a RMP to reduce the dam safety risk. Several RMPs were formulated, evaluated, and compared to identify a final array of RMPs. A Tentatively Selected Plan (TSP) was selected from the final array. Potential environmental effects of the RMPs in the final array in combination with the SARMP Prado Dam Spillway Raise Project are addressed in this document. The TSP in combination with the SARMP Prado Dam Spillway Raise Project is the Proposed Action.

2001 Supplemental Environmental Impact Statement/Environmental Impact Report

The Prado Dam Spillway Raise Project associated with the SARMP was previously analyzed in the Final SEIS/EIR for Prado Basin and Vicinity, dated November 2001 (hereinafter referred to as the 2001 SEIS/EIR). The 2001 SEIS/EIR addressed several components of SARMP downstream of Prado Dam and assessed impacts to environmental resources related to both implementation and future maintenance of the proposed modification to the spillway structure. Alternatives were described in Chapter 2 of the 2001 SEIS/EIR and are incorporated herein by reference. Table 1-1 summarizes the primary differences between the 2001 Proposed Action and the Proposed Action described in this EA/EIR Addendum, as well as changes to site conditions that have occurred since 2001. This EA includes the previously Proposed Action authorized in the 2001 SEIS/EIR (which is now considered the "No Action" alternative) and the new proposed spillway design modifications. The "No Action" alternative was also evaluated in the 2001 SEIS/EIR.

USACE is the lead agency for compliance with NEPA on all SARMP features, and the Orange County Flood Control District (OCFCD) [under Orange County Public Works (OCPW)] is one of the SARMP local sponsors, and 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).

OCPW 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). CEQA 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.

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 EA in the decision-making or permit process will consider the information in this combined document along with other information that may be presented during the NEPA/CEQA process. Other responsible and trustee agencies were identified in the 2001 Final SEIS/EIR and are listed as follows:

- California Department of Fish and 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 Environmental Assessment/Environmental Impact Report Addendum

This EA/EIR Addendum documents and evaluates the potential impacts of the Prado Dam Spillway Modification which includes the DSMS final array of RMPs in conjunction with a raised spillway control structure associated with the SARMP Spillway Raise Project on environmental resources. This document also provides updated existing conditions as habitat conditions have changed since the previous project was authorized in 2001. Herein throughout this EA document the Prado Spillway Modification Project refers to final array of RMPs associated with the Dam Safety Modification Project in conjunction with a raised spillway control structure associated with the Spillway Raise Project.

1.1 PROJECT LOCATION

The project area is located within Riverside County, California, along the northwestern border of the City of Corona limits. This project area is approximately 40 miles southeast of Los Angeles (**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.

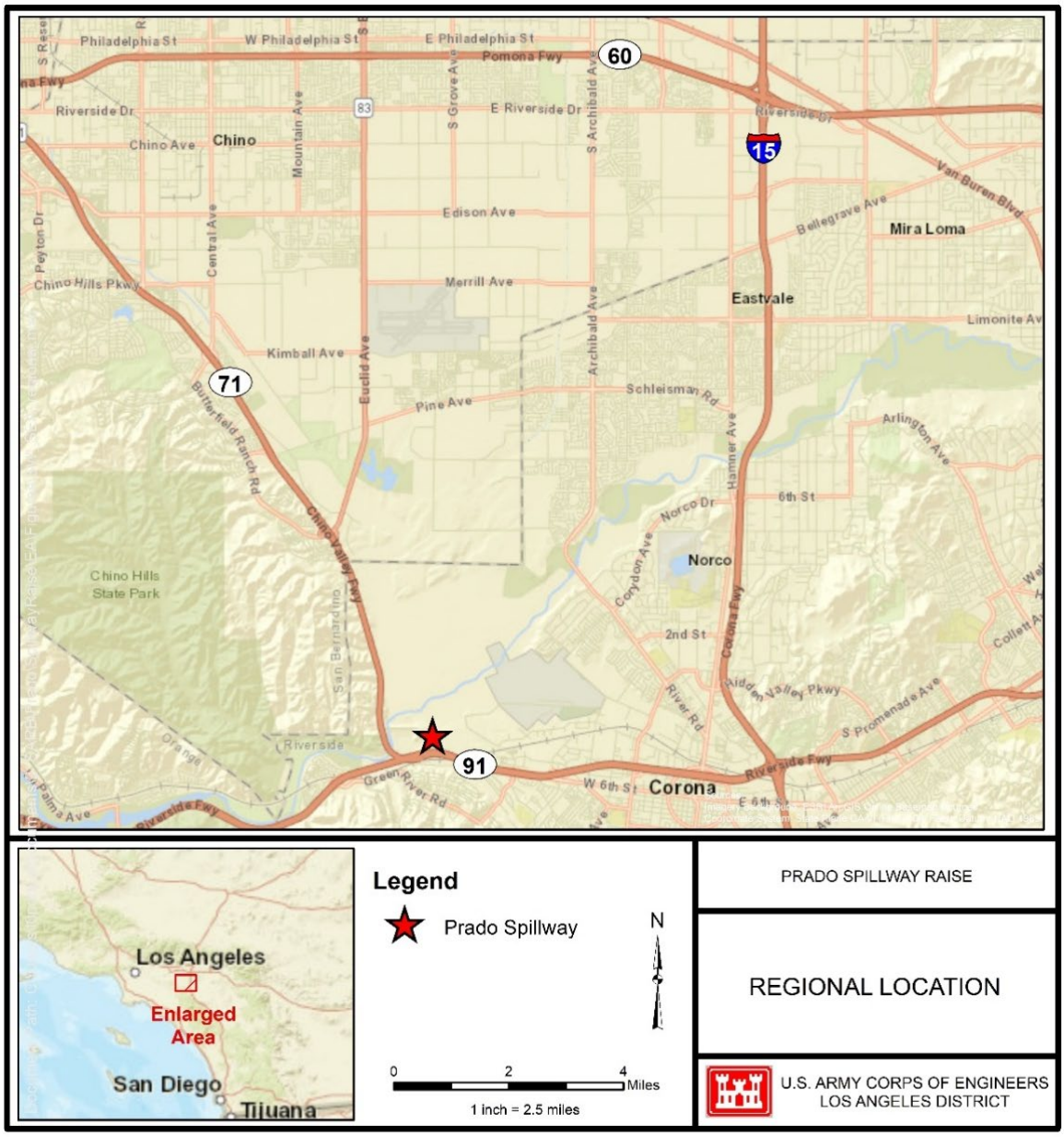
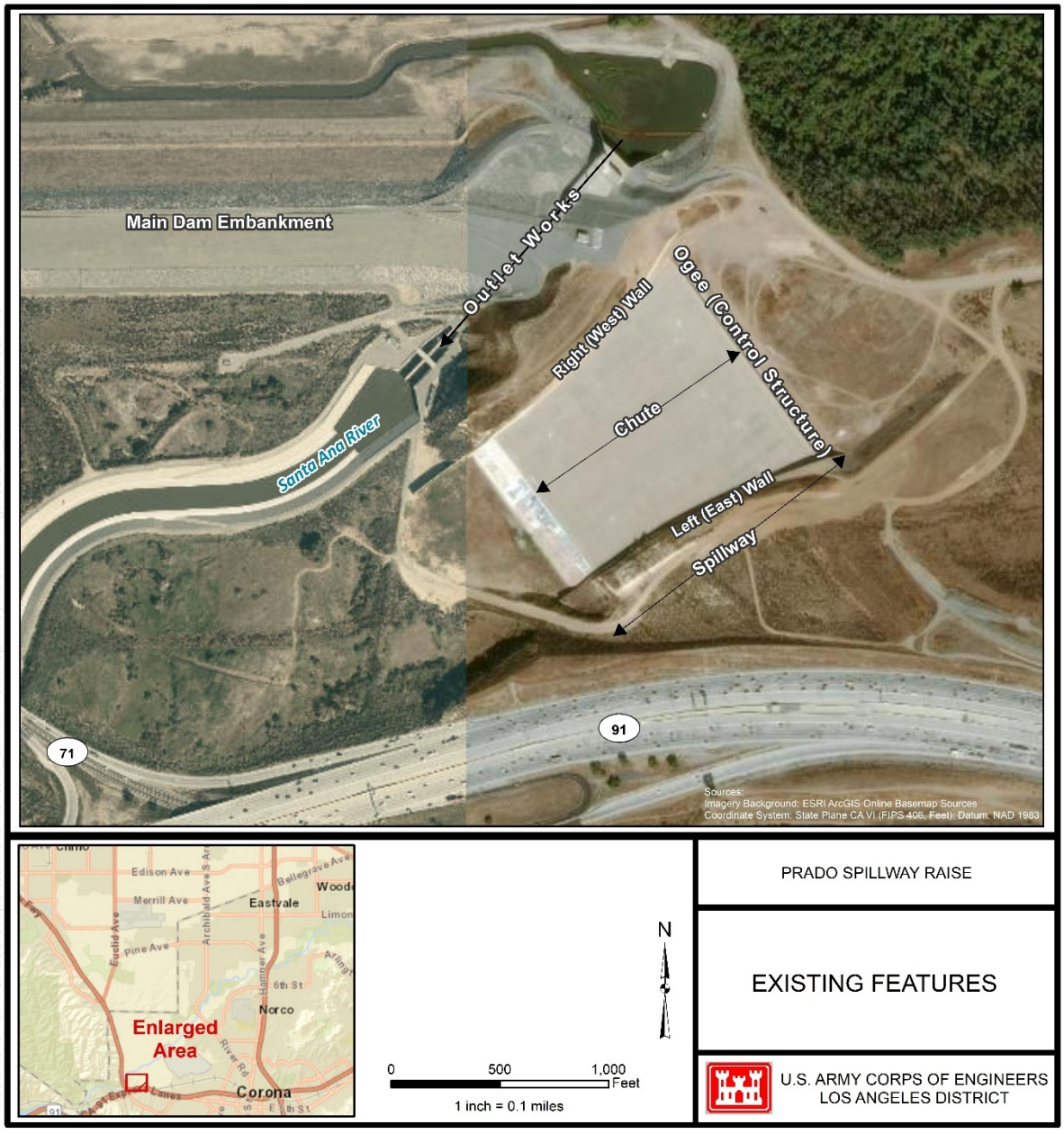


Figure 1-1. Regional Map



July 2021

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 SARM project features have been constructed based on the NGVD 29/NAD27 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 NAD27/NGVD29. As a result,

the contract drawings for the Prado spillway modifications will be completed in NAD27/NGVD 29 datum for consistency.

However, current USACE guidance [21] requires that project drawings reference the North American Vertical Datum of 1988 (NAVD 88) vertically and the North American Datum of 1983 (NAD83) 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 Public No. 738, 74th Congress (H.R. 8455), approved June 22, 1936, and amended by Public Law 75-795, approved on June 28, 1938. Construction of the original Prado Dam features were completed in May 1941. The primary authorized purpose of this project is flood risk management, followed by authorization for water conservation and recreation. The SARMP improvements were authorized for construction by Section 401(a) of the Water Resources Development Act (WRDA) of 1986.

The recommended plan for the SARMP is contained in the Phase I General Design Memorandum (GDM) for the SARMP (USACE 1980) and included eight elements, which were 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 extremely rare but may occur.

In addition to the 2001 SEIS/EIR, USACE 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. 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 as part of the SARMP, allows Prado Dam the capability of releasing up to 30,000 cubic feet per second (cfs) flows into the downstream channels prior to spillway operation. In accordance with the determination in the LRR to construct Prado Dam Spillway Raise Project as a separable element, 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. A separate Local Cooperation Agreement governs the construction of SARM features other than the Prado Dam Separable Element and has three non-federal sponsors including Orange County Flood Control District. 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 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 EA, the following documents may be referenced:

- Survey Report and Environmental Impact Statement, United States Army Corps of Engineers, Los Angeles District, 1975.

- Phase I General Design Memorandum and Supplemental Environmental Impact Statement, United States Army Corps of Engineers, Los Angeles District, 1980.
- Upstream Dam Alternatives Supplemental Environmental Impact Statement, United States Army Corps of Engineers, Los Angeles District, 1985.
- Santa Ana River Mainstem including Santiago Creek. Phase II General Design Memorandum and Supplemental Environmental Impact Statement (GDM/SEIS), United States Army Corps of Engineers, Los Angeles District, 1988.
- 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.

1.4 DIFFERENCES BETWEEN 2001 SEIS/EIR PREVIOUSLY AUTHORIZED PROJECT AND 2021 PROPOSED ACTION

Table 1-1 summarizes the primary differences between the 2001 authorized project and the Proposed Action described in this EA/EIR Addendum, as well as changes to existing site conditions that have occurred since 2001. Potential environmental effects of each modification have been analyzed:

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

2001 Proposed Action	2021 Proposed Action

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 with 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.	Construct embankment connections for the main dam embankment to the spillway and the auxiliary dike embankment to the spillway.
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.	Modified 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.
	Construction 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.	CAGN have colonized Action Area. Quality of coastal sage scrub in Action Area has increased due to previous restoration efforts.
Least Bell's vireo (LBVI) not as abundant in the project area due to low habitat quality.	Several territories of LBVI exist within the proximity for indirect disturbance due to project activities.
Construction duration for the spillway modifications approximately 12 - 18 months.	Construction duration for the spillway modifications approximately 36 - 48 months.
Proposed borrow areas contained sufficient materials to construct the proposed modifications, with minimal import of materials needed.	More import of materials may needed for both construction fill as well as concrete to construct a new chute and chute wall.

1.5 OBJECTIVES, PURPOSE, AND NEED

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

Statement of Purpose

The purpose of the 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 rehabilitate the spillway and dam structure through modifications to reduce life loss risk due to severe flooding.

Statement of Need

Prado Dam was reclassified as high risk in 2019. The USACE considers the high risk associated with the existing Prado Dam to be unacceptable. 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 (also referred to as a control structure) 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 earlier 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 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 1-3** below shows the potential flooding zone in red.

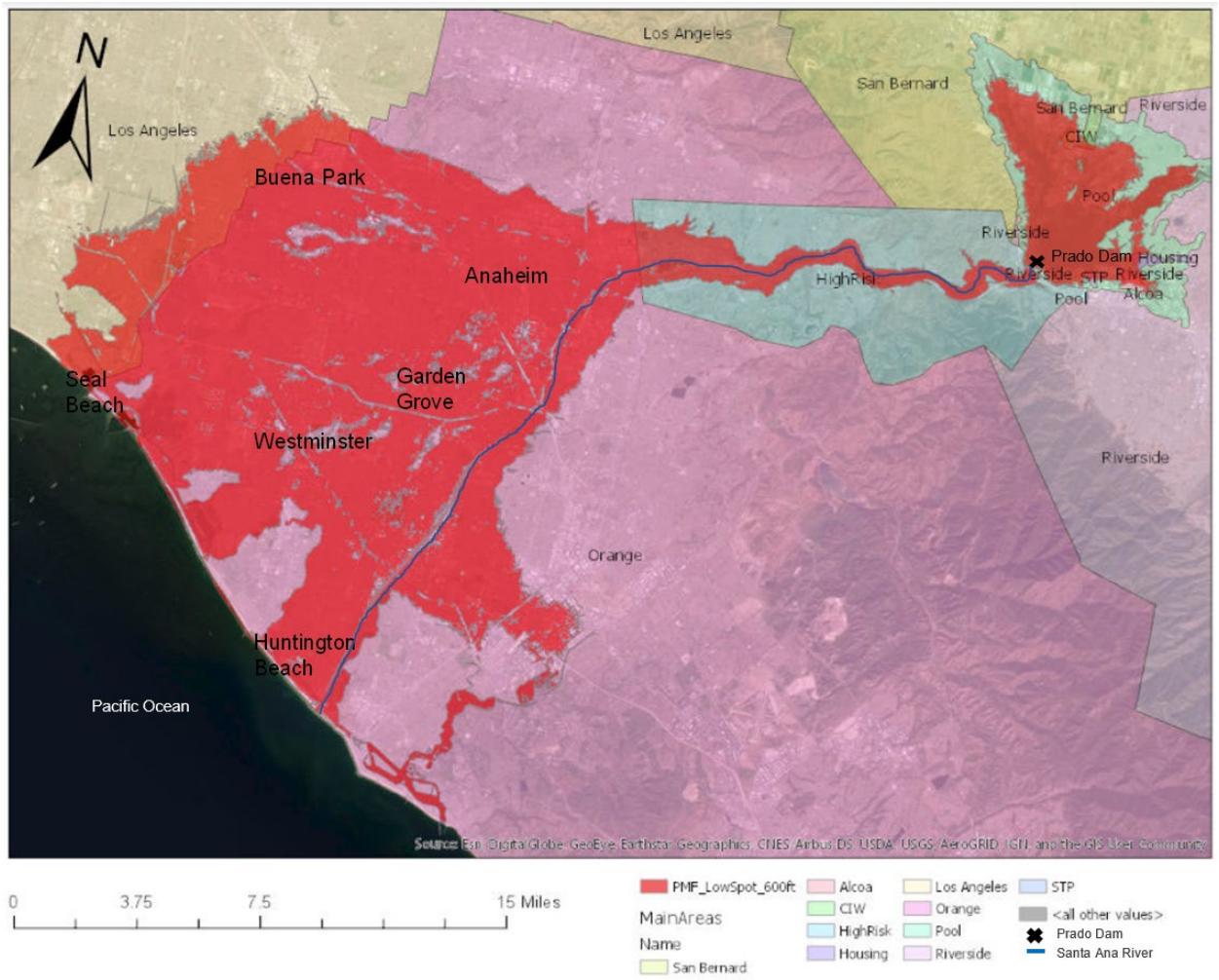


Figure 1-3. Areas at Risk for Inundation During Flooding

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 failure modes that are now known.

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 DSMS, the Future Without Action Condition (FWAC), is based on a spillway height elevation at 543 feet NGVD 29. Due to high risk of life loss to the large 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 EA/EIR.

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 focus on the spillway as originally constructed in order to evaluate and determine the action to adopt. However, it is acknowledged that the intent is to construct the spillway to the authorized height of 563 feet NGVD 29. That cannot occur until after the risks associated with the present spillway are addressed. Once the determination is made, those designs and/or risk reduction measures will be incorporated into a spillway with a crest elevation of 563 feet NGVD 29. Therefore, in below discussion of alternatives in this EA, the focus will be 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 EA/EIR Addendum. The Spillway Modification alternatives include the three dam safety RMPs, in conjunction with the newly proposed design for the SARMP Prado Dam Spillway Raise Project The alternatives carried forward are:

- No Action Alternative (Previously authorized Design Alternative for the Prado Spillway Raise, No Dam Safety Elements)
- Updated Spillway Raise Design and Dam Safety RMP 5A- Replace Spillway with Labyrinth Weir, replace chute slabs, chute walls and Embankment Tie-ins (hereafter referred to as Alternative 1; Proposed Alternative)
- Updated Spillway Raise Design and Dam Safety RMP 3A- Ogee Replacement, Embankment Tie-ins, and Chute Slab Replacement (hereafter referred to as Alternative 2)
- Updated Spillway Raise Design and Dam Safety RMP 6B- Ogee Replacement, Embankment Tie-ins, Chute Slab Replacement and Chute Wall Replacement (hereafter referred to as Alternative 3)

Several utilities will also be relocated prior to construction start due to overlap with the construction footprint. This includes a SoCalGas natural gas pipeline, AT&T fiber optic lines and Southern California Edison electric lines. The additional tasks are small in scale and are addressed in separate NEPA documents. In addition, the mural on the Prado Spillway steep chute will be removed as the Proposed Action includes the removal and replacement of the whole 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 the purpose of NEPA, the No Action Alternative is the previously authorized spillway raise design and not the Future Without Action Condition as described in the DSMS. This alternative does not include modification to address two risk driving PFMs (spillway erosion of the chute slabs and erosion at the end of the chute); and therefore, if implemented without the dam safety measures, Prado Dam would continue to be classified as high risk.

The Previously Authorized project is the Spillway Raise Project according to the plan presented in the 2001 SEIS/EIR and adopted by the USACE. 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 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. 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).

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 2-1**). 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 Final 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

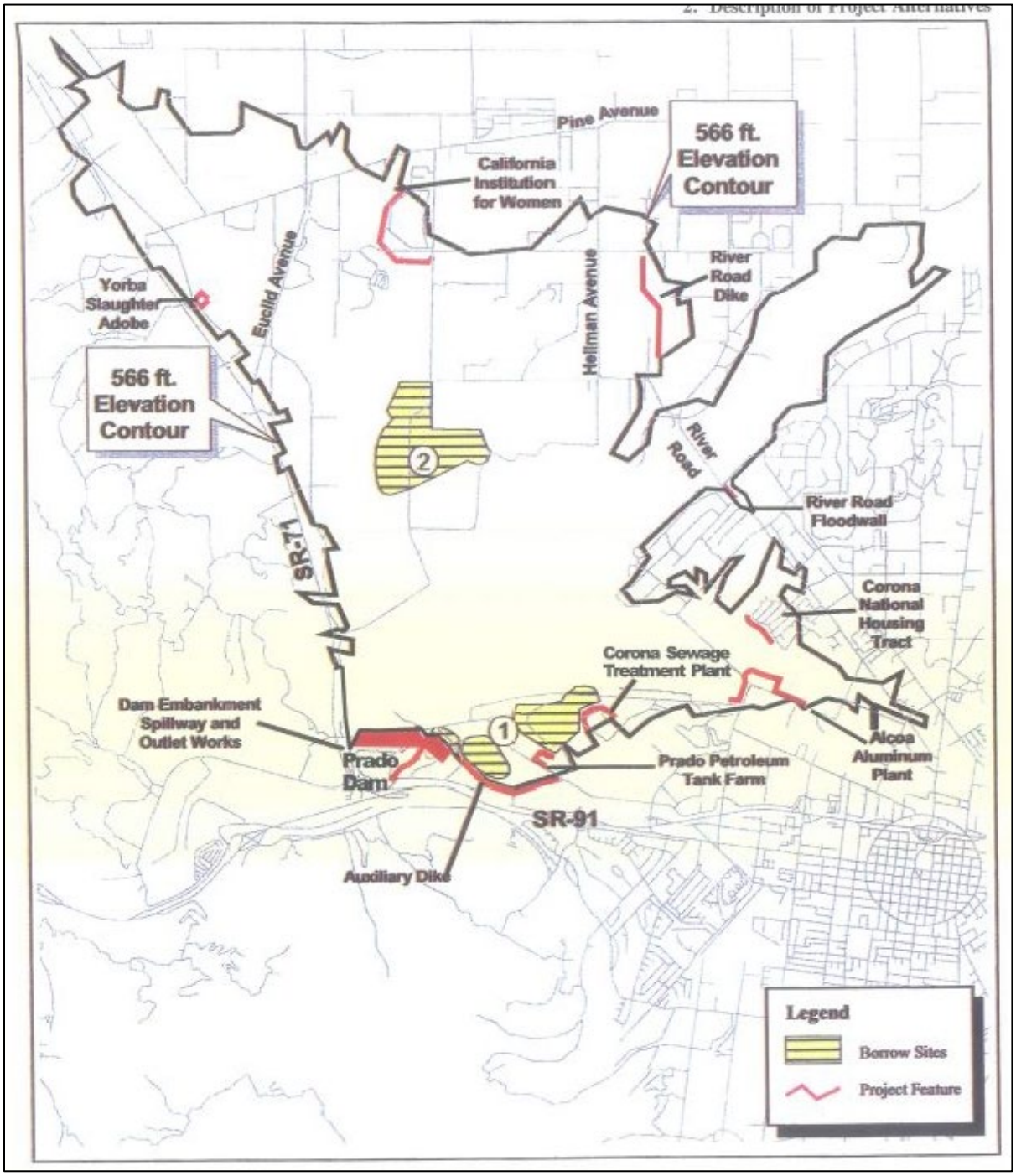


Figure 2-1. Borrow Areas as Proposed in Previously Approved Design

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 roller compacted concrete (RCC) slope with drainage system, anchors, and structural concrete slab.
- Construct new left and right chute walls with a drainage system.
- Modify the flip bucket and construct roller compacted 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

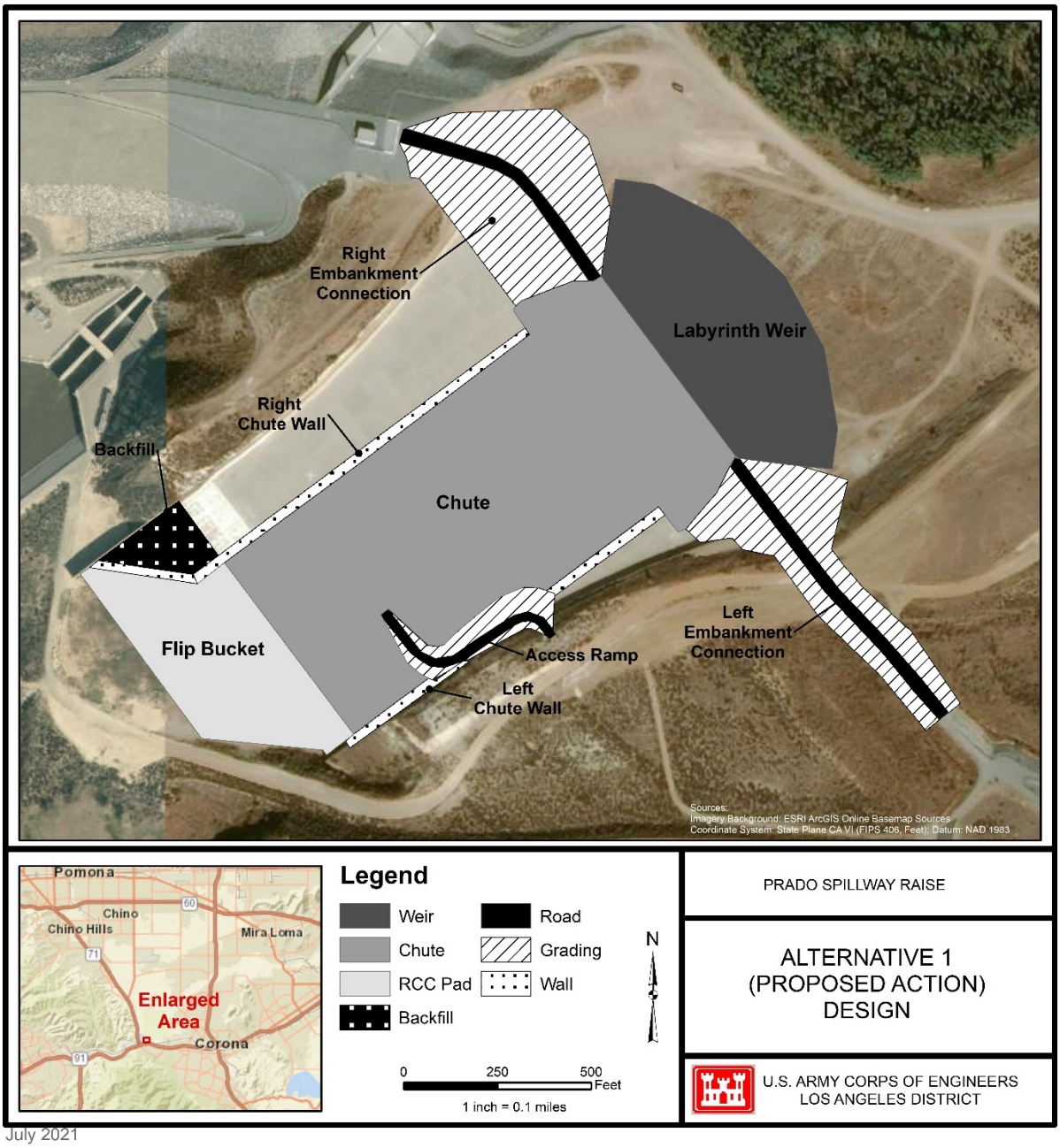


Figure 2-2. Alternative 1 Conceptual Design

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 match the hydraulic performance of the upstream ogee raise alternative. 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 2-2. 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. 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 2-2**).

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 an important 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 2-1, Figure 2-5)**.

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 dirt 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 **(Figure 2-5**).

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.

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, metal, and other types of construction materials. These materials would be taken to recycling facilities when possible and to a commercial landfill when recycling 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 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 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. 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 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. 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 truck, 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, Cat 745 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 for drilling blast holes (or for use with expansive grout, water trucks for dust control, blast mats, and hand operated equipment including demolition hammers, Jack hammers and cutoff saws.

Controlled blasting may prove to be a more a more environmentally beneficial method to demolish the existing concrete weir as opposed to relying solely on mechanical methods of demolition (demolition with hydraulic hammers and diamond wire sawing techniques). This method of construction would prove quicker thus reducing the duration and magnitude of noise and dust generated during demolition activities at the site. Controlled blasting techniques would also minimize vibrations that could damage portions of the spillway that are planned to be left in place or incorporated into the modifications. Each shot would be designed by experienced Blasting Engineers and all work done will be under the supervision of a Blaster in Charge licensed in the State of California.

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 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 2-3)**. 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 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 2-3 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.

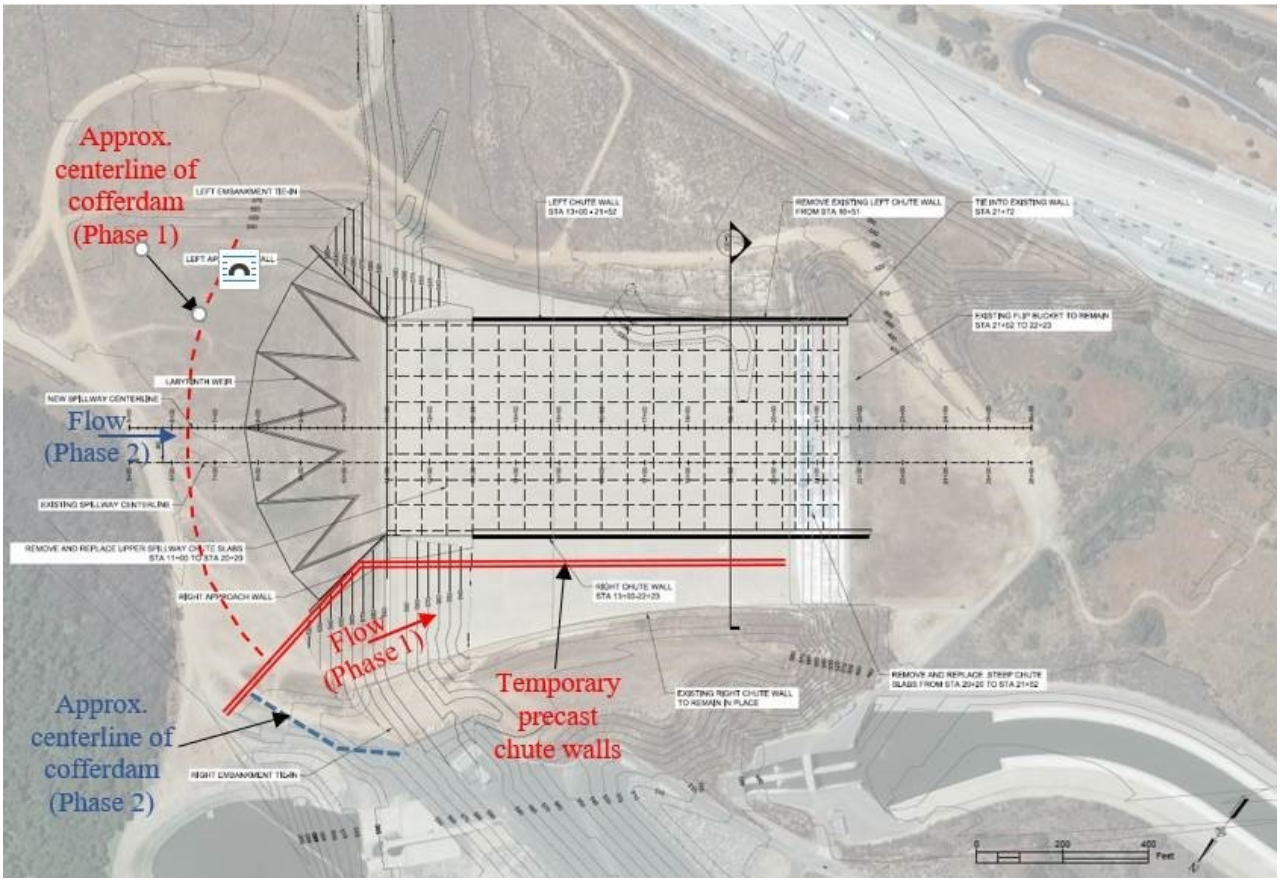


Figure 2-3. Initial Concept for Cofferdam During Construction

Construction Duration and Phasing

Construction is scheduled to commence in 2022 to 2023 and last approximately 48 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, i.e. beyond the approximate duration of 48 months.

Proposed construction hours would be 7:00 a.m. to 6:00 p.m., Monday through Saturday. An exception is during the summer months 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 during the summertime 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 work hours beyond the regular hours may be required to maintain the construction schedule but would remain in compliance with local noise ordinances.

Utilities

The project area is served by utility services located in Riverside County and within the City of Corona. A variety of local purveyors and utility owners in these areas provide and maintain utility and service facilities associated with electricity, water, stormwater and wastewater, solid waste, and natural gas. Data on location of utilities within the project vicinity were collected by USACE in August 2020. Any utilities within the TCE of the proposed action will either need to be relocated or protected in place. There are 3 existing utilities located within the TCE: A Southern California Gas Company gas line, Southern California Edison aerial lines, and AT&T aerial and buried lines (**Figure 2-4**). Impacts to utilities are discussed further in **Section 3.11**.

Figure 2-4. Known Utilities within the Project Vicinity

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 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, except with a larger footprint due to the wider chute. The connector wall would not be constructed.

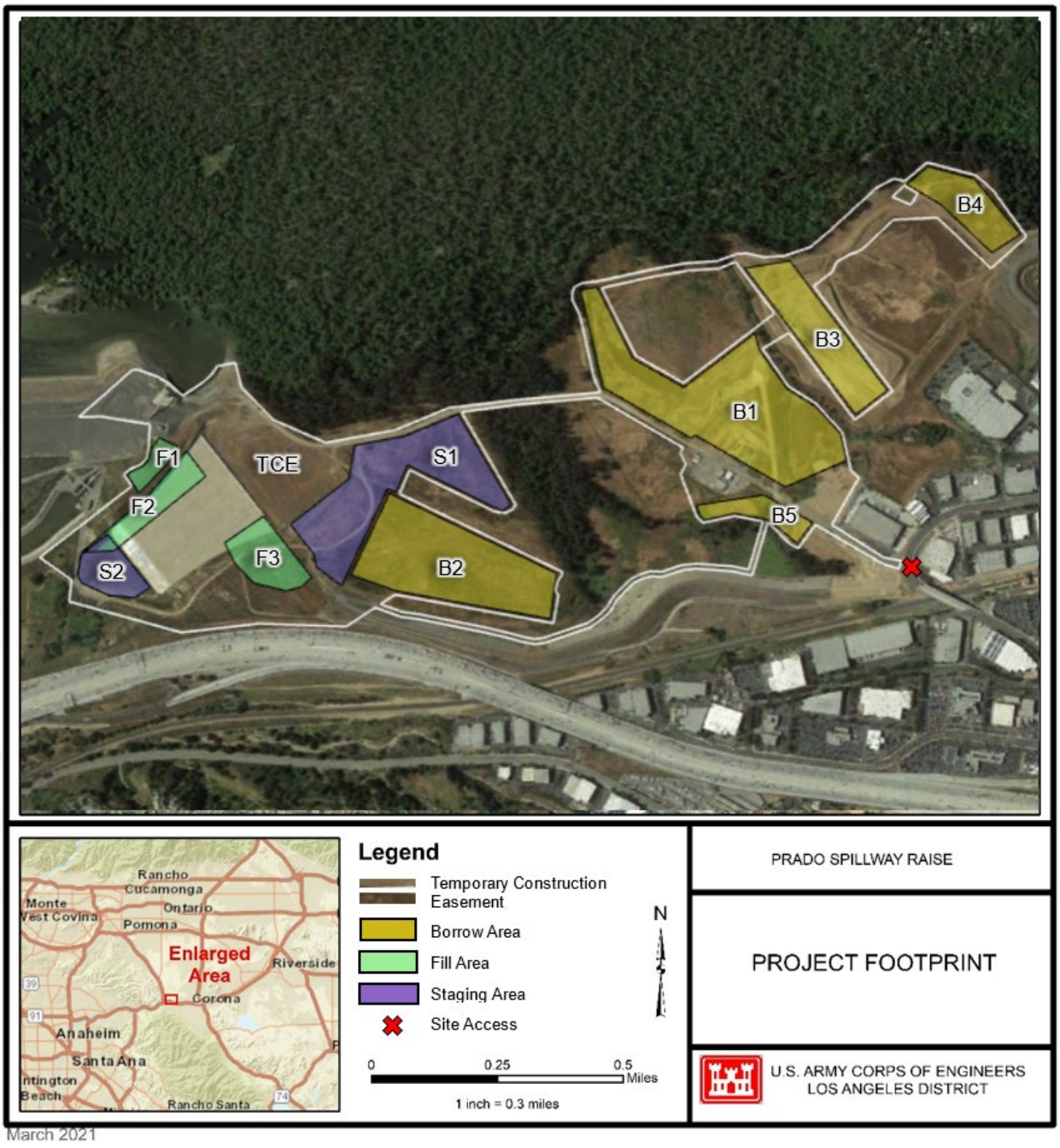


Figure 2-5. Proposed Project Footprint

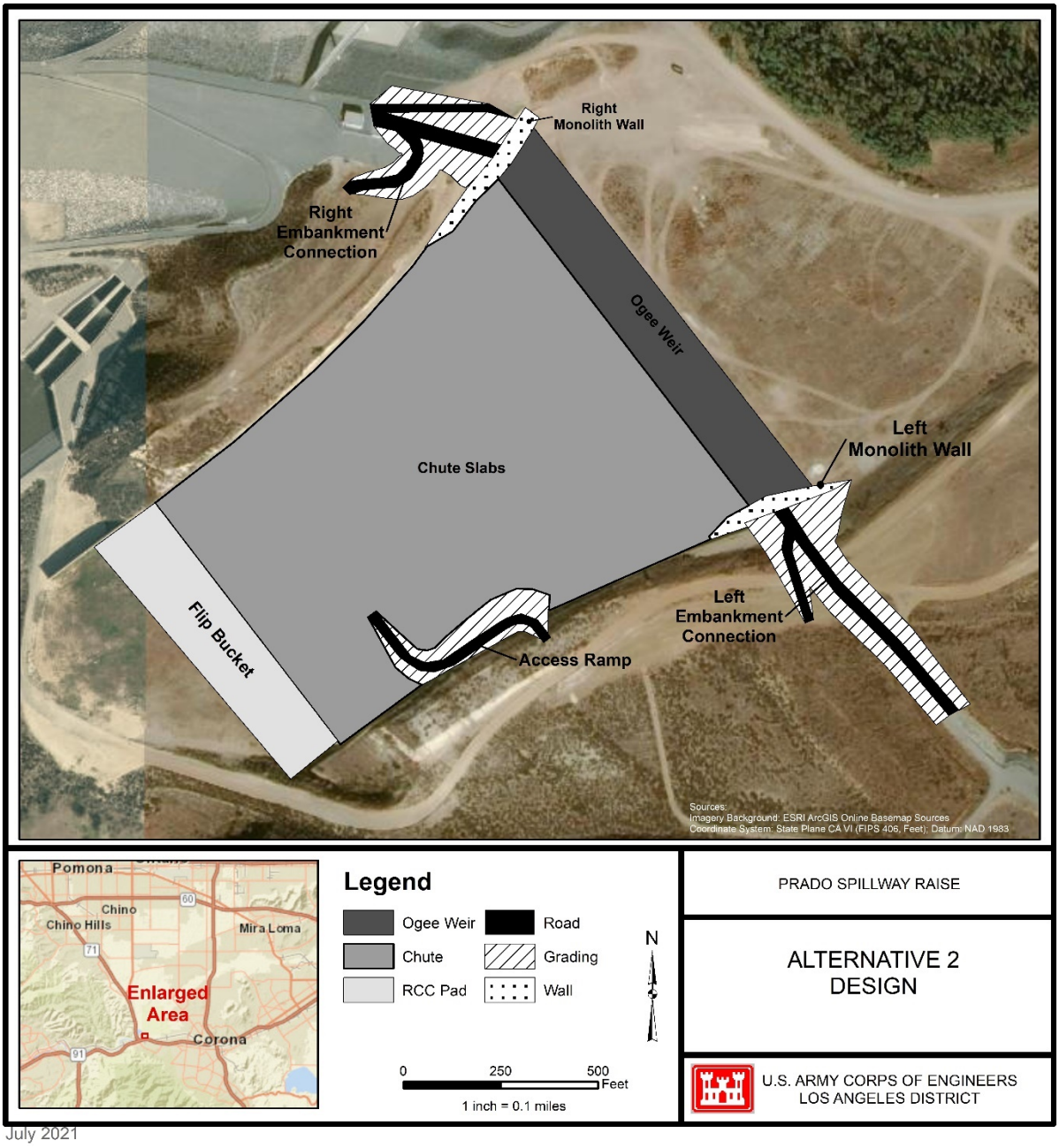


Figure 2-6. Alternative 2 conceptual design

Project Footprint

The project footprint would be the same as the No Action Alternative. Alternative 2 is construction footprint is smaller at the flip bucket and the weir, but maintains the same width of the existing spillway chute. (**Figure 2-5**).

Project Access

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

Haul Routes

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

Disposal Sites

Disposal sites would be the same as described for Alternative 1.

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 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.

Water Source

The water source would be the same as described for Alternative 1.

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.

Construction Duration and Phasing

Construction is scheduled to commence in 2022 to 2023 and last approximately 60 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, i.e. beyond the approximate duration of 60 months.

Proposed construction hours would be 7:00 a.m. to 6:00 p.m., Monday through Saturday. An exception is during the summer months 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 during the summertime 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.

Utilities

Utilities in the project area would be the same as to that described in Alternative 1 **(**).

Future Operation, Maintenance, Repair, Replacement and Rehabilitation

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

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 and approximately 30,000 CY more than Alternative 2.

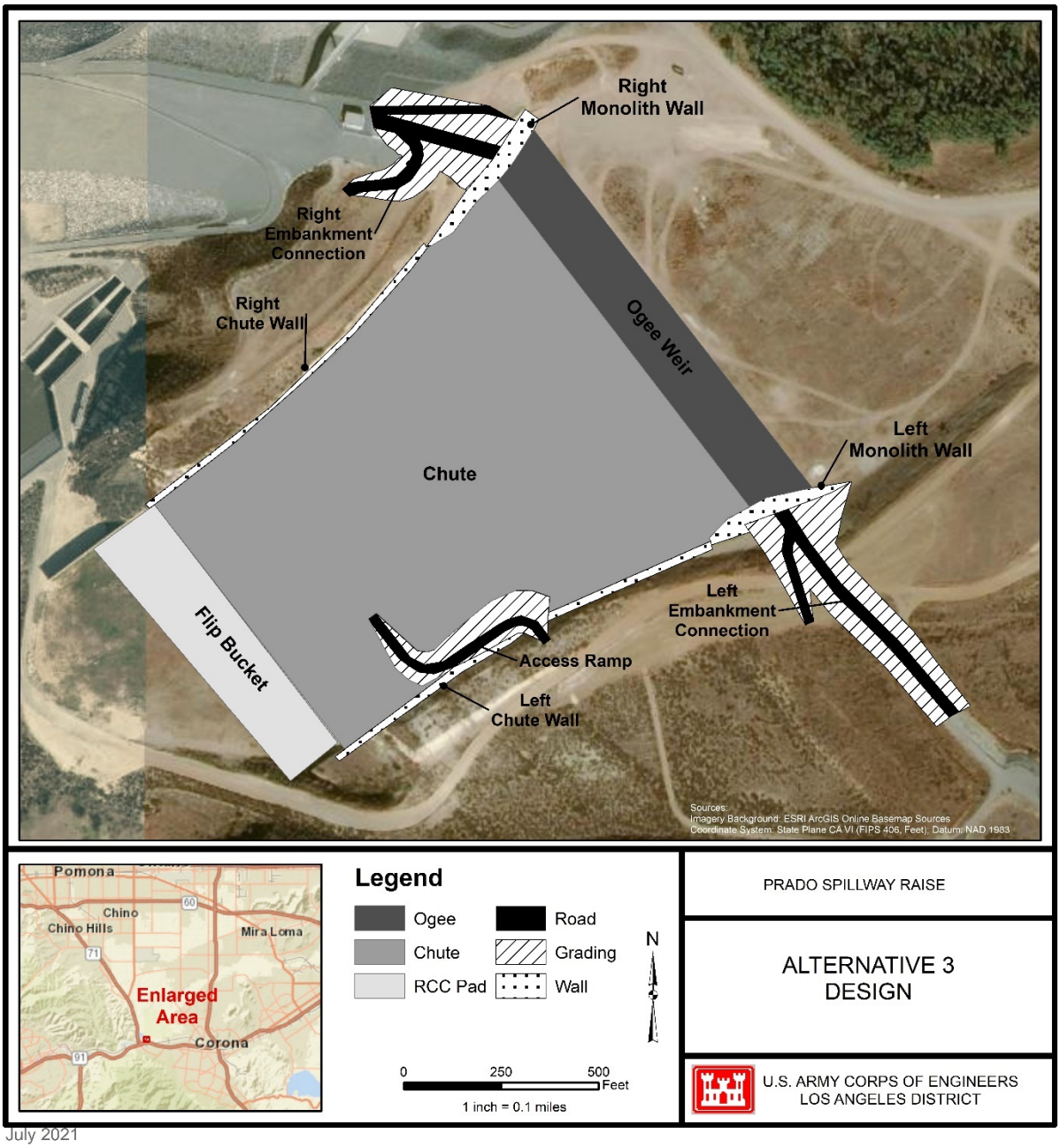


Figure 2-7. Alternative 3 Conceptual Design

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 are 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 the same to 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 to the same as Alternative 2.

Project Footprint

The project footprint would be the same described for Alternatives 2, which is smaller than Alternative 1 but slightly larger than the No Action Alternative (**Figure 2-5**).

Project Access

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

Haul Routes

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

Disposal Sites

Disposal sites would be the same 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 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.

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 2022 to 2023 and last approximately 64 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, i.e. beyond the approximate duration of 64 months.

Proposed construction hours would be 7:00 a.m. to 6:00 p.m., Monday through Saturday. An exception is during the summer months 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 during the summertime 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.

Utilities

Utilities in the project area would be to the same as those described in Alternatives 1 and 2 (**Figure 2-4**).

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. This SEA/EIR Addendum summarizes the relevant information presented in that document and provides updated information obtained from recent surveys, literature reviews, and coordination with regulatory agencies and technical experts.

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

3.1.1 Hydrology

The Santa Ana River Basin is the largest watershed in southern California, with a drainage area of about 2,450 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, and a storage of 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 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. 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 river. 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 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, 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 demolished 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 2006 Clean Water Act Section 303(d) List of Water Quality Limited Segments Requiring Total Maximum Daily Loads for the following pollutants: pathogens (Chino Creek, Reach 1 and Reach 2; Mill Creek, Prado Area; Santa Ana River, Reach 3; Prado Park Lake), high coliform count (Chino Creek, Reach 2; Cucamonga Creek, Valley Reach), and nitrate (Santa Ana River, Reach 3). These pollutants most likely originate from non-point agricultural and urban sources that commonly occur throughout the watershed.

3.1.4 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 were 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 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 temporarily impacts 0.5 acres of “Waters of the State”. 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." "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." Within the borrow areas B1, B3 and B5 approximately 0.5 acres of Waters of the State are contained within the project footprint.

"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."

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.

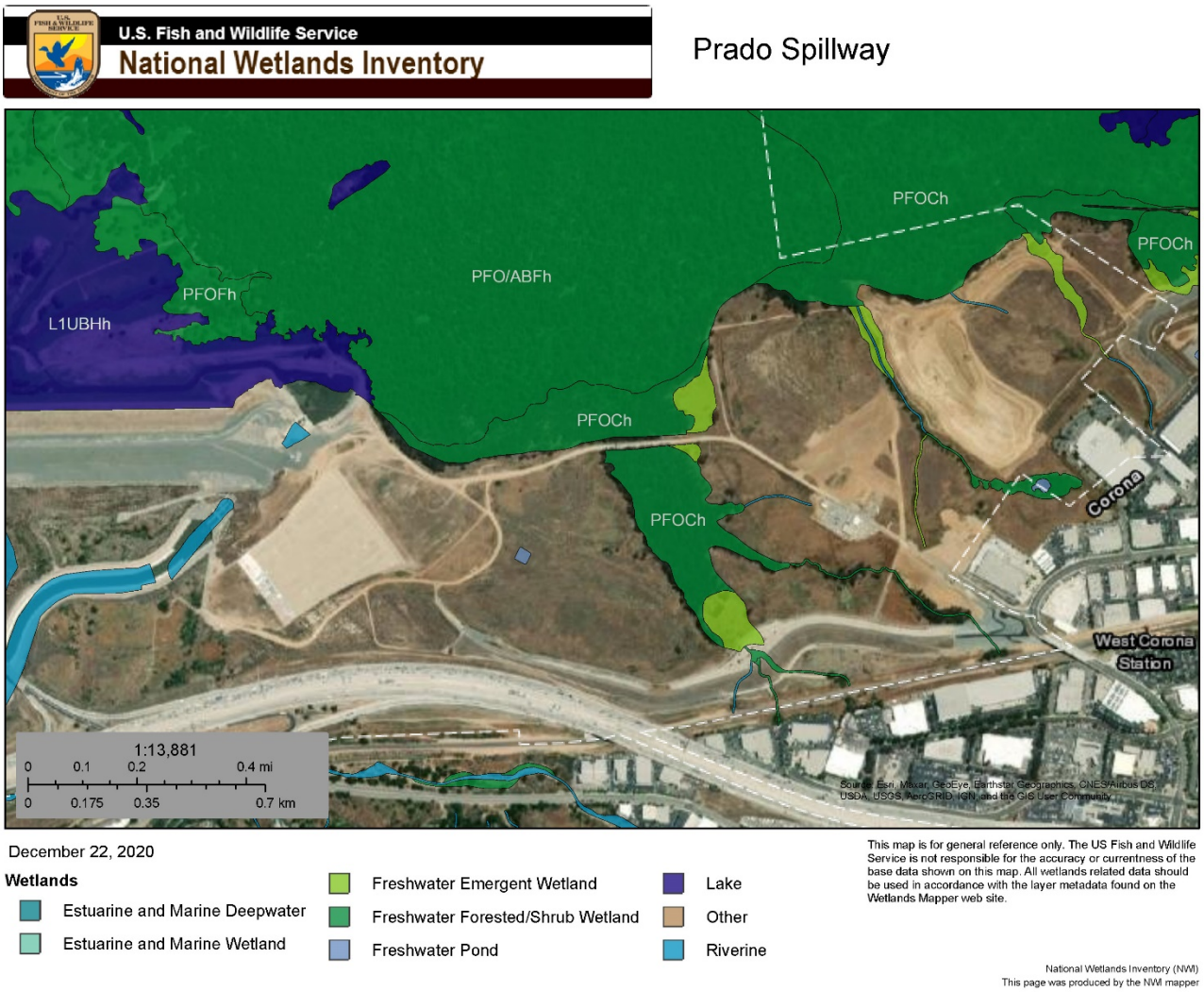


Figure 3-1. USFWS Wetlands Mapper Results

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).

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 3-1**). 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 3-1. 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 2). The daily construction emission thresholds represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable Federal or state ambient air quality standard in the SCAB.

Table 3-2. SCAQMD Daily Emission Construction Thresholds

Pollutant	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.

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 indicate 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 to 8 or 10-inches 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. 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 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.

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 plus an 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), 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 spp*.), 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 3-3. Vegetation Types in the Project Area

Vegetation Type	Total Acres	% of Total Acres
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

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 and 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.

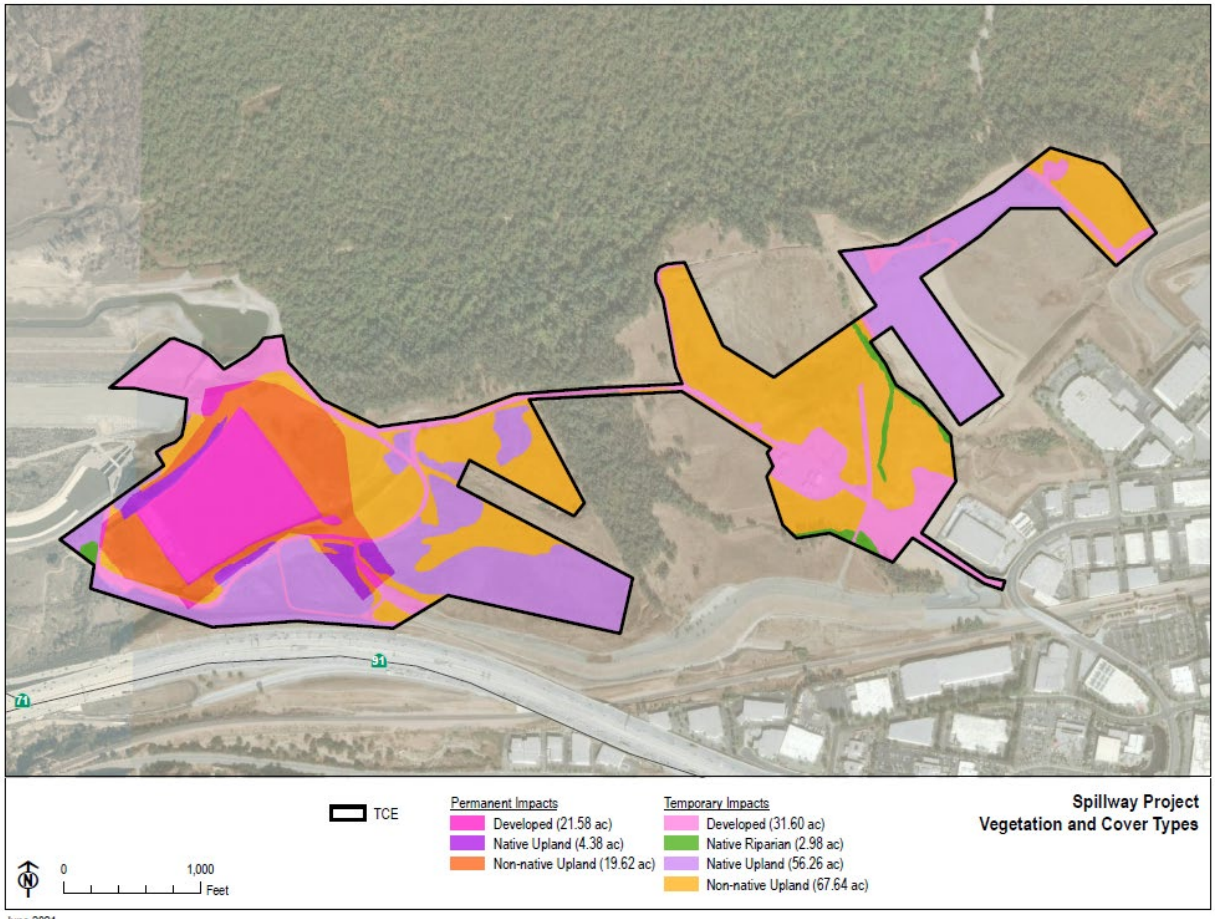


Figure 3-2. Vegetation Types within the Project Area

Potential Special-Status Plant Species

A list of special status plant species known to occur, or with a moderate to high potential to occur, as shown in Table 3-4. For the purposes of this draft SEA/EIR Addendum, 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 3-4. 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 3-4, 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 area. Of these, 20 have the potential to occur within the project area.

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 or likely to occur in the project area are listed in **Table 3-5.**

Table 3-5. 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 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 3-5**, 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 3-6**). 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 3-6. 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		Does not occur within TCE, but is found within 500 feet of TCE boundary

Southwestern Willow Flycatcher Critical Habitat	ESA		Does not occur within TCE, but is found within 500 feet of TCE boundary

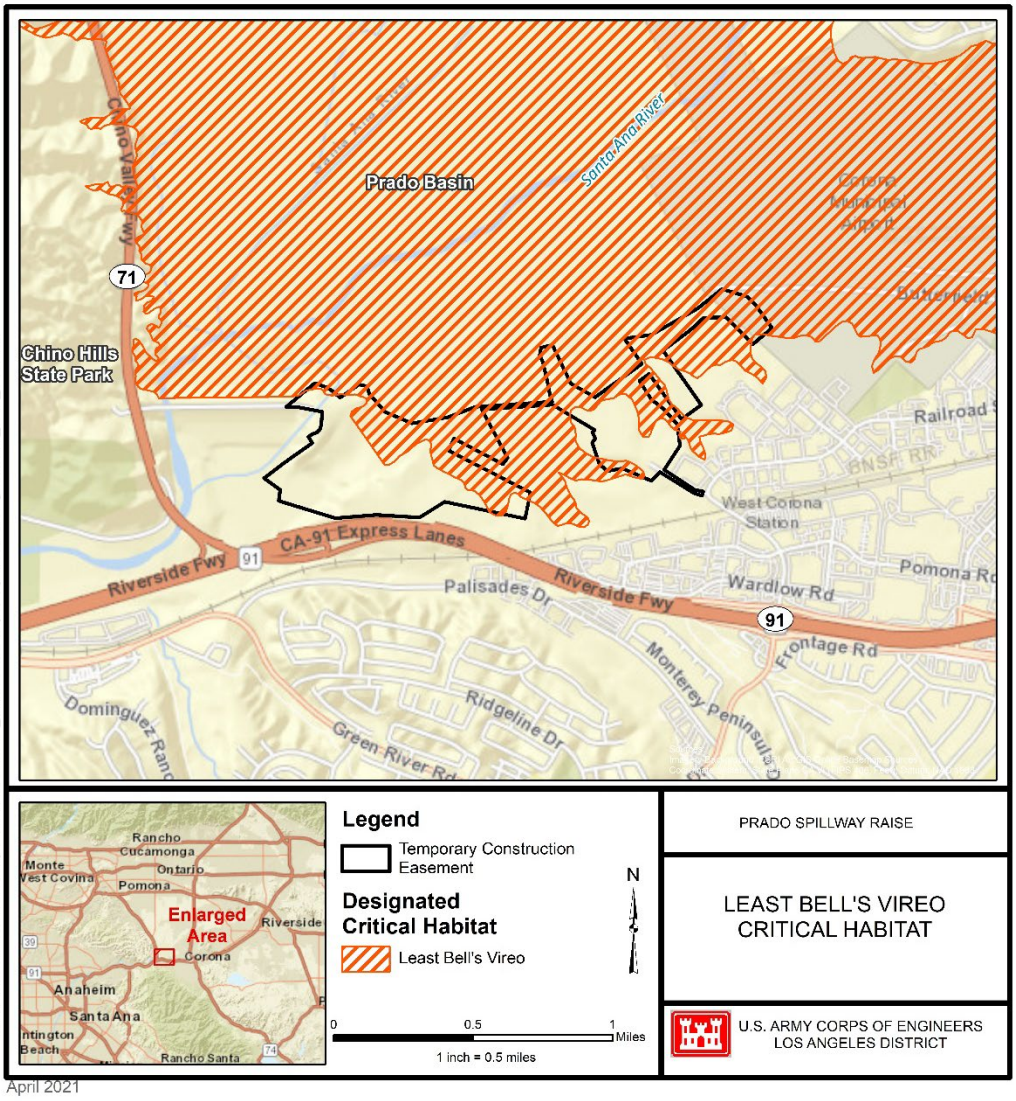


Figure 3-3. Least Bell's vireo critical habitat near the project area

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 SARM features, USACE has assessed wildlife movement in the project area, focusing specifically on the main Prado Dam embankment, the outlet 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.

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

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 while 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 3-5**).

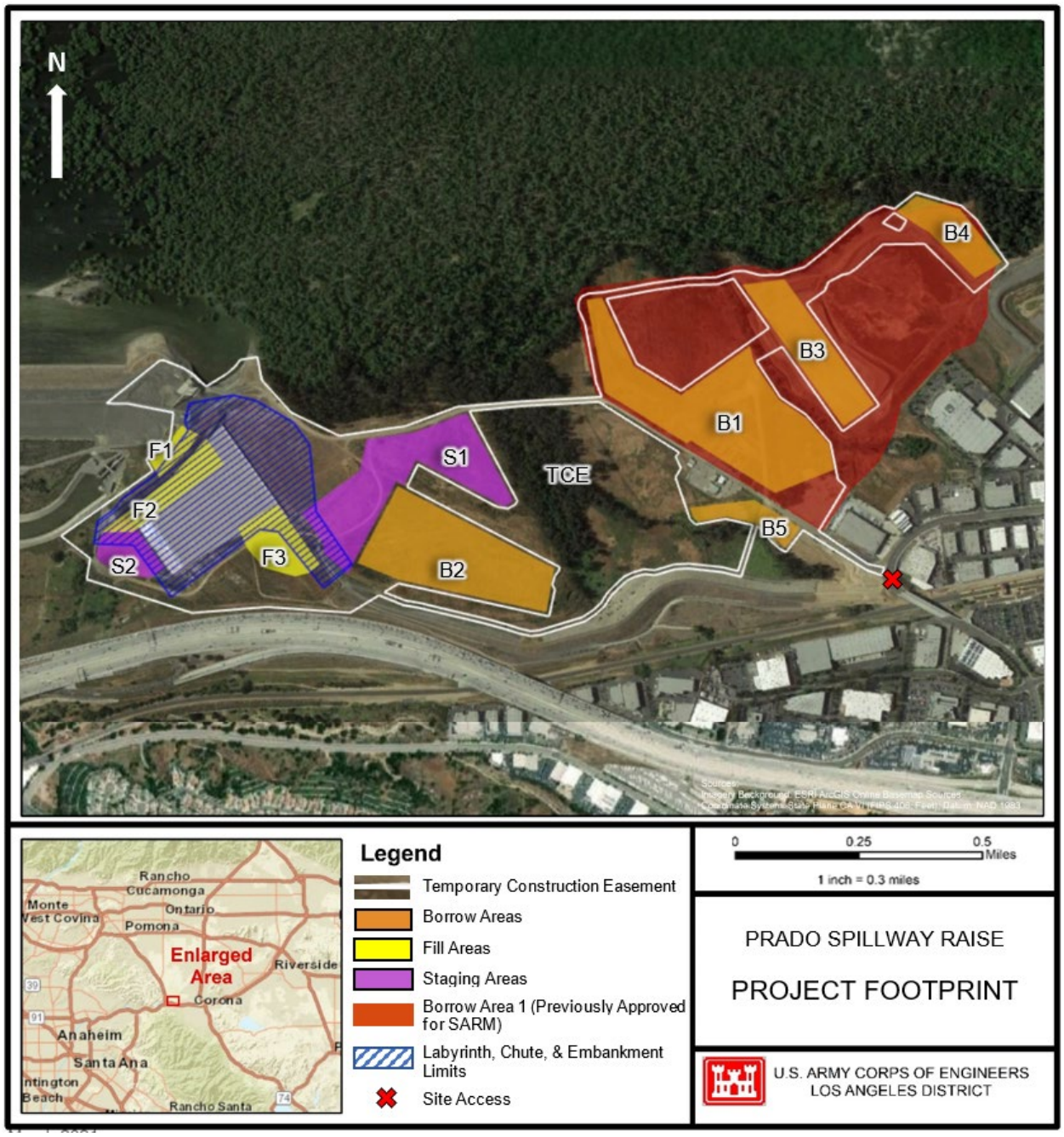


Figure 3-5. Map of Project Area with Borrow Area 1 (Previously Approved) represented.

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 3-5**).

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 3-9). 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 3-7. 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 2,150 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 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 3-6**)**.** 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 3-6**). 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.

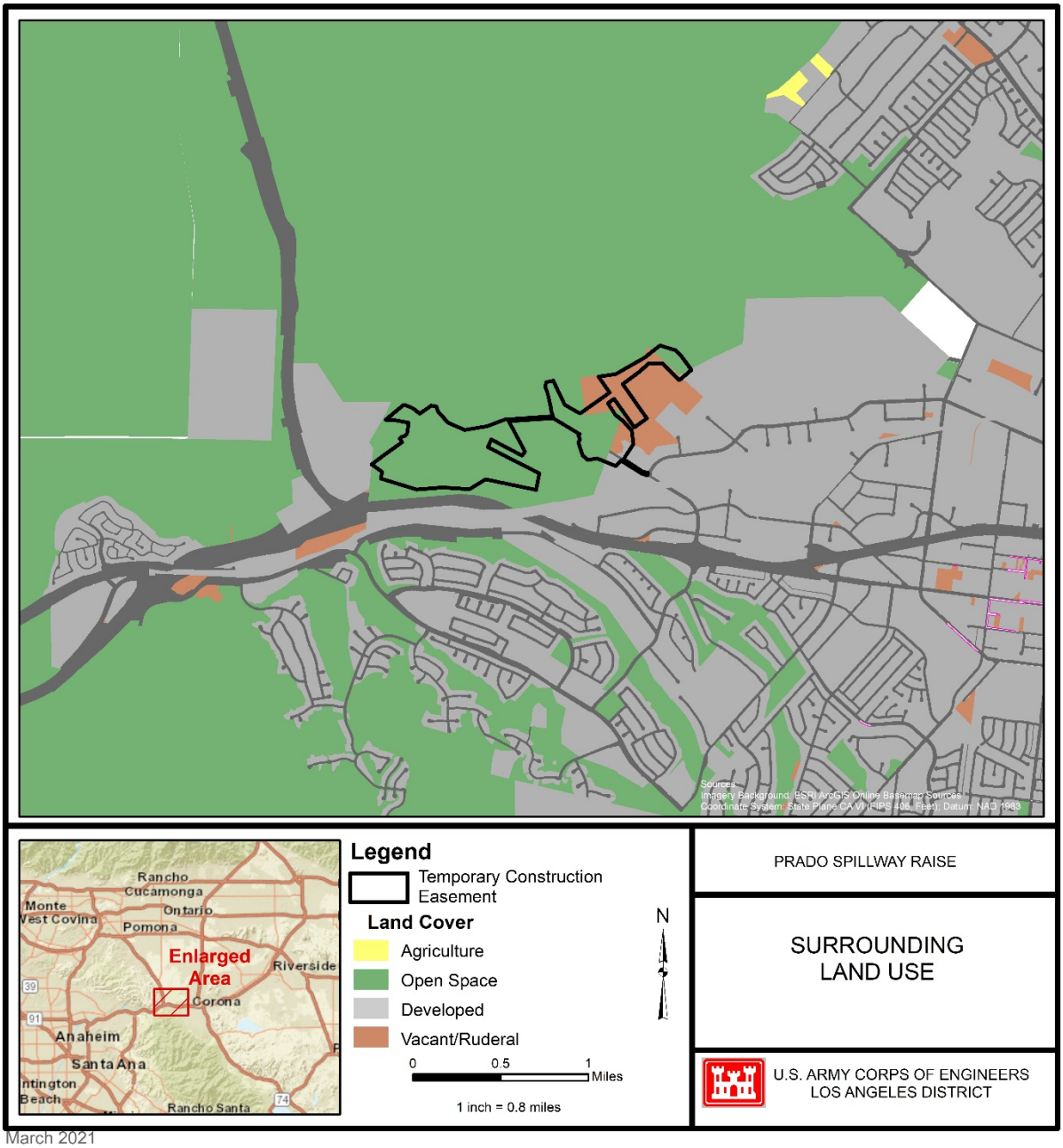


Figure 3-6. Exisitng Land Use Surrounding the Proposed Project Area

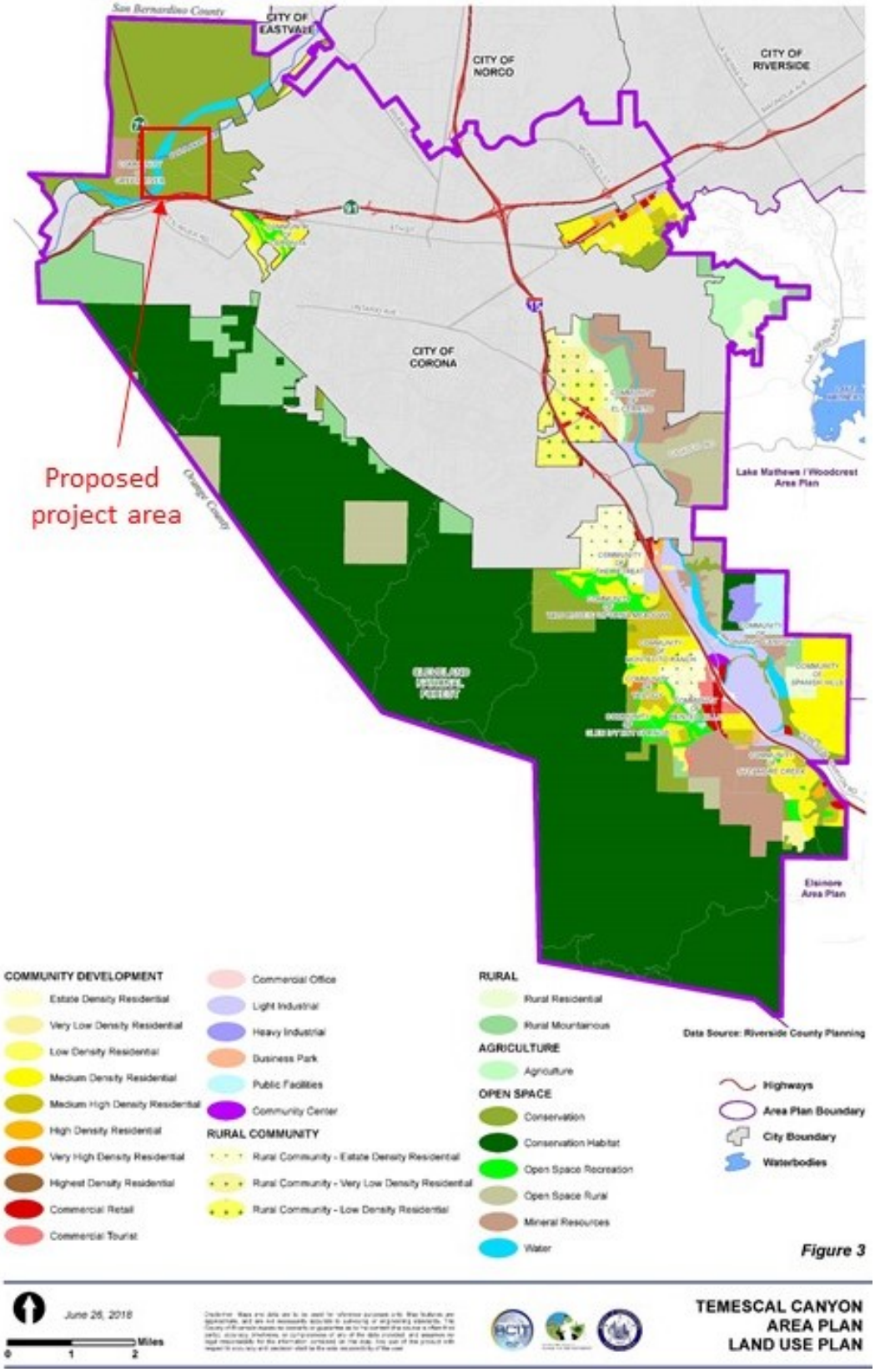


Figure 3-7. Riverside County Land Use Plan

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 3-8**). 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.

Painted onto the lower (steep) chute section of the spillway is the Prado Bicentennial Mural (**Figure 3-8**). 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 3-8. 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 3-8).**

Table 3-8. 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 3-6**).

3.10 SOCIOECONOMICS

Socioeconomics were not explicitly described in the 2001 EIR/EIS, however an environmental justice analysis was conducted (see Appendix O in USACE 2001). 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 3-9.** 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 3-9. 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 coordinated with utility and service entities during design of this project. There are 3 existing utilities located within the proposed project TCE: a Southern California Gas Company gas line, AT&T aerial lines, and AT&T buried lines (**Figure 2-4**). Utilities located within project limits will be relocated prior to construction or protected in place.

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 3-10**.

- **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 3-10. 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 3-11**). 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.

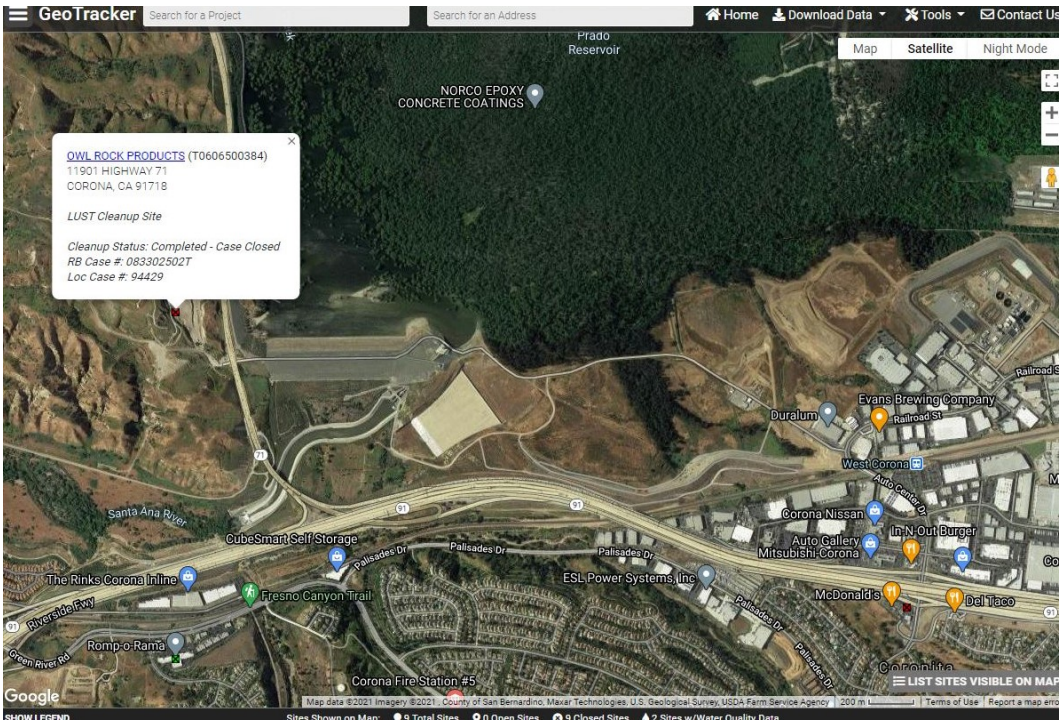


Figure 3-9. Geotracker Database Results in the Project Vicinity

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. 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.

4.1 WATER RESOURCES AND HYDROLOGY

Effects to water resources from the Proposed Action and Alternative Actions are related to 0.5 miles downstream and upstream of the Prado Dam and Spillway as well as small drainages found within the project footprint.

4.1.1 Hydrology

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

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 would not substantially affect flow pattern or velocity as the action to modify the permanent structure would occupy only dry upland habitat. Without the modifications to spillway and connections 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, measures will be included to minimize or avoid potential effects related to drainage and flooding onsite during construction. These measures include construction of a cofferdam and installation of ground wells to pump ground water out of excavations. There will also be requirements to follow measures to manage runoff onsite through mechanisms such as a Storm Water Pollution Prevention Plan (SWPPP). 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 connectors 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 backfilled into 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 the Proposed Action would include routine inspections and minor repairs of the spillway and its associated features after construction is completed. Regular maintenance activities 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 (**Figure 2-2**).

Construction the features of the 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 up stream as part of the operation of Prado Dam. Although water has never flowed over the spillway during a high flow event since the original construction, Alternative 1 would increase the dam capacity to 334,000 ac-ft. Alternative 1 is designed to allow for a larger pool to be held behind the dam before the spillway would convey flows. The increased pool size does not drastically change the existing hydrology as the difference is about 20 feet in height from the existing condition. 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. Effects 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. However, instead of a cofferdam, this alternative includes a constructed earthen berm placed north of the project area to protect the project site from high flows. 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. An earthen berm would be constructed as described in Alternative 2 and ground wells would be installed until the embankment connectors are fully constructed. 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. Op

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 1-3. 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 be at risk of failure, as there would be a great velocity of water traversing an at risk surface. 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.

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 a 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. A cofferdam for water diversion during construction would be in place to collect potential flood waters and minimize surface runoff and erosion. Additionally, planting of vegetation during the site restoration phase would minimize the amount of surface runoff and risk of on- and off-site flooding. There would be no increase for surface water in areas within existing shortages. 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. 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 1 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. 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 1-3. 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.

4.1.3 Groundwater

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

SIGNIFICANCE 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 (Preferred Alternative)

Construction Impacts
Alternative 1 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 excavation 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 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. 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 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 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 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 1-3. 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.

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 filed for 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 will be provided in the Final SEA/EIR Addendum (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 construction does not impact any wetlands or waters of the U.S. as work areas a free from drainages or water sources that would be considered waters of the U.S. or wetlands. Within the borrow areas 0.5 acres of Waters of the State would be temporarily impacted. The drainage would be avoided to the extent feasible and restored post construction to a functioning condition. A previous 404(b)1 and 401 certification for the borrow areas was recently completed for Alcoa Dike Project and required offsite mitigation for impacts to the same drainages within the work area of the 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. 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. 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. The proposed borrow areas in this alternative do not contain jurisdictional wetlands or waters. Therefore, impacts to jurisdictional wetlands and water are less than significant 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 effects to jurisdictional wetlands and waters are less than significant.

4.2 AIR QUALITY

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 (Preferred Alternative)

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 2023 through 2027.

To reduce potentially significant impacts, environmental commitments AQ-1 through AQ-23 would be implemented. Central to the air quality impact analysis is AQ-1. With implementation of AQ-1, 75% 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. Off-road 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 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-23 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	2023	2024	2025	2026	2027

	Daily Thresholds (lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(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-23 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 1-3 and would be considered less than significant.

4.3 EARTH RESOURCES

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

The following are the primary differences between the Previously Approved Design and the Proposed Action and Alternatives, as relevant to earth resources: 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 EA/EIR, 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 would topsoil removed during clearing and grubbing operations would be replenished. The excavation required to expose the foundation rock for the labyrinth weir 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 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 1-3. 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.

4.4 BIOLOGICAL RESOURCES

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.

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 EA and referenced in the analyses below.

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 4-1; 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	3.0	56.3	67.6	126.9	31.6	158.5
Permanent Impacts	0.0	4.4	19.6	24.0	51.6	75.6
Total	3.0	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 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 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.

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. Potential effects to each of the eight species of are described below.

Least Bell's Vireo

Least Bell's vireo (LBV) do not currently occupy any areas within the project area, but they are known to maintain eight territories within 500 feet of the project area (**Figure 4-1**). Since no LBV occupy the project area, impacts would be limited to indirect disturbances during nesting season. Noise and fugitive dust have the potential to effect LBV nesting in adjacent habitat. In order to avoid and reduce potential effects to LBV, a number of BMPs would be implemented. These BMPs include monitoring programs to track, document and avoid potential effects (EC-BR-1, EC-BR-4 and EC-BR-14), confining work to the identified work areas (EC-BR-7), training staff on environmental awareness and sensitive species (EC-BR-11), and performing pre-construction surveys (EC-BR-13). In addition, specific dust control measures will be implemented (EC-BR-12) and vegetation will only be removed during the non-breeding season (EC-BR-3). Noise barriers will be constructed between active construction areas and occupied habitats (EC-BR-9) and noise monitoring will be implemented (EC-BR-10). Noise monitoring commitments also include a commitment to offset any habitats impacted by excessive noise through additional restoration, if necessary (EC-BR-10).

Since no LBV occupy the project area, and with implementation of specific BMPs to avoid and minimize any potential indirect effects to LBV, substantial adverse effects that could diminish the local population would not occur. Thus, effects to LBV would be less than significant.

Coastal California Gnatcatcher

CAGN are known to currently maintain approximately 10 territories within and adjacent to (i.e. within 500 feet of) the project area (**Figure 4-2**). The territories that occur within the project area 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.

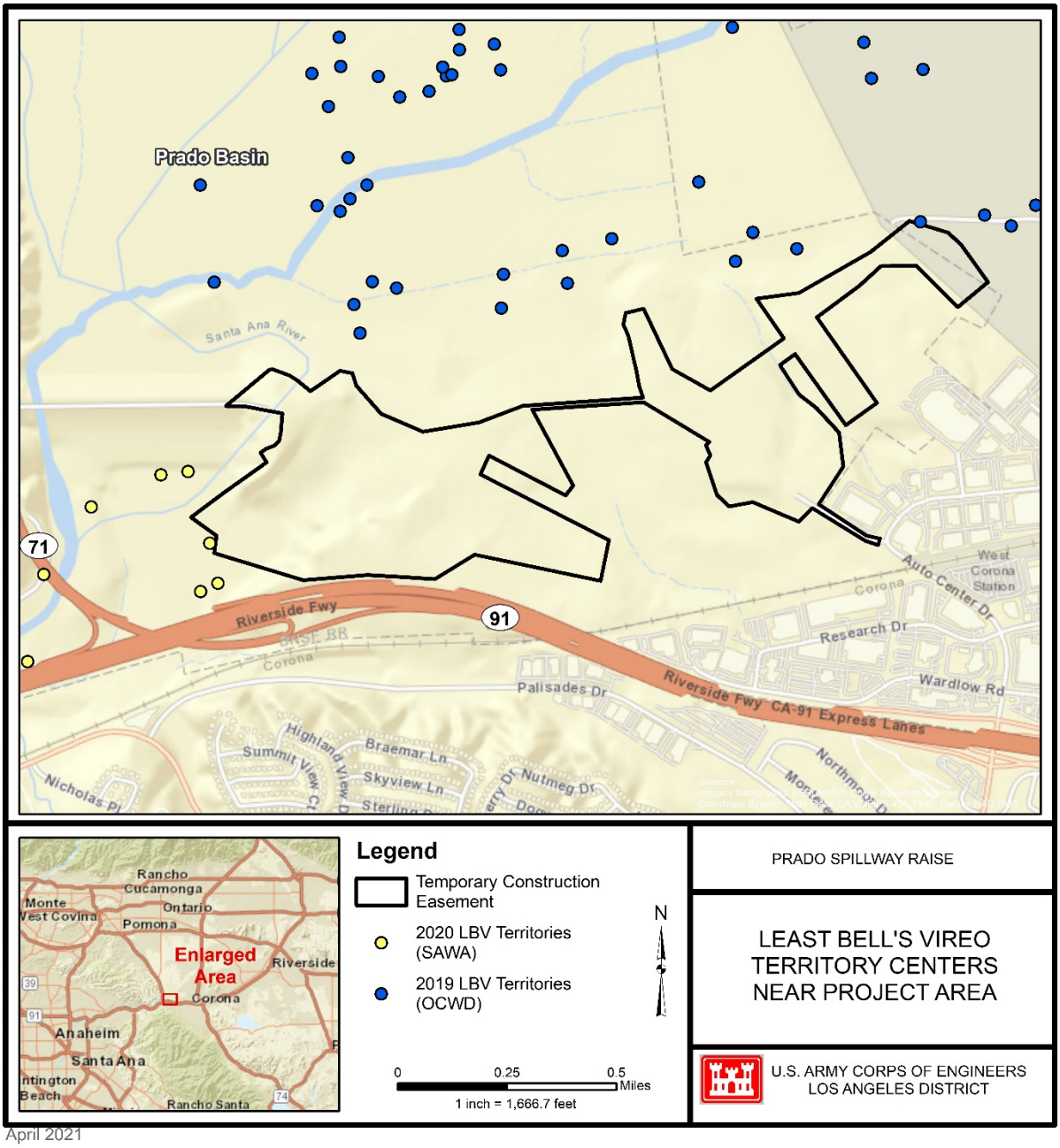


Figure 4-1. Least Bell's Vireo Territory centers near the Proposed Project Area

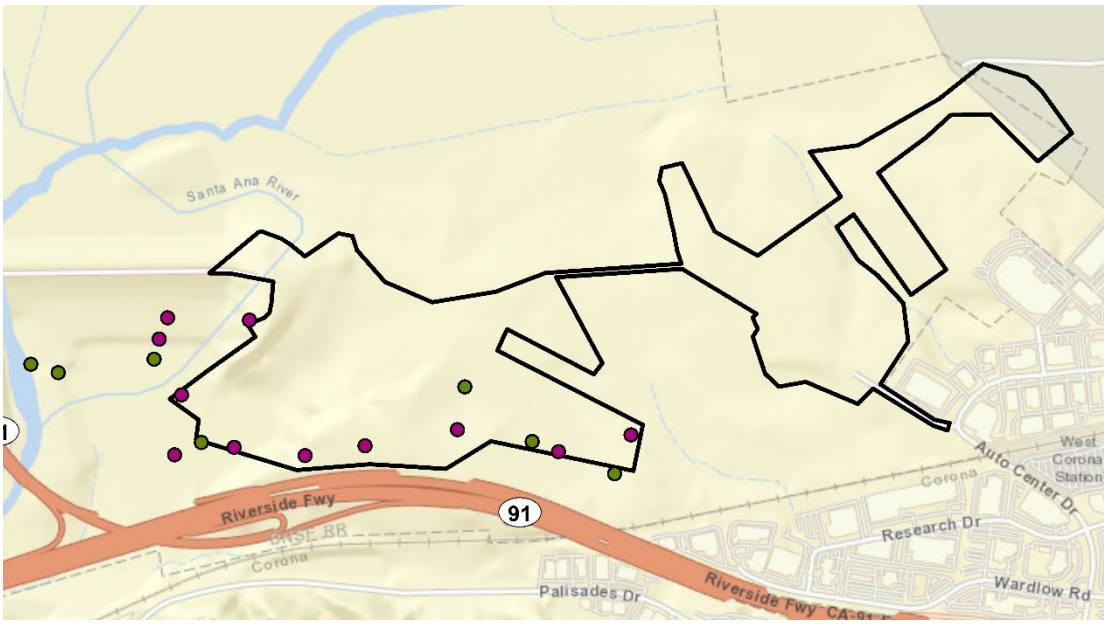


Figure 4-2. Coastal California Gnatcatcher Territory Centers near the Proposed Project Area

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. This, 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 3-6), the width of the construction zone has been limited to ensure a continuous corridor is maintained throughout construction. 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 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 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 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 1-3. 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.

4.5 CULTURAL RESOURCES

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.

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 submitting the cultural resources survey report to the SHPO for their review and acceptance. 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.

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 1-3 and would be considered less than significant.

4.6 LAND USE

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

4.7 AESTHETICS

The affected environment for aesthetics is presented in **Section 3.7**. For the purposes of this EA/EIR, analysis of potential aesthetic impacts associated with project modification under the Proposed Action Alternatives is provided below.

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 during daylight hours 07:00 AM to 6:00 PM. During the summer months, night construction may 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. Those who use the areas surrounding the Spillway may notice these temporary impacts. Given that construction activities are temporary, 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 530.0' (532.3), in elevation. Therefore, there would be 33' of head 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 1-3.

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.

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 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 official and unofficial bike routes through the project area. Construction would temporarily preclude access to 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 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. The Proposed Action would not introduce new recreation impacts to the majority of parks and recreation facilities in the project vicinity. The construction impacts would address potential usage, quality, and/or availability of recreational areas, including the SART. 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 1-3. 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.

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 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 4-13 below.

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 and weather delays. Construction phasing may result in an extension of the overall project duration beyond February 2027.

Construction of Alternative 1 would require approximately 13 maximum daily haul trips for fill material from borrow sites within the TCE (refer to **Figure 2-5**) and 34 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 the start of construction. 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. 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. Similar to construction of Alternative 1, 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 Friday, with the exception of emergency repairs or flood fighting activities that are required to protect life and property. Due to the short-term nature of maintenance and repair activities, and due to construction activities being exempt if conducted within the indicated time periods, potential effects of future maintenance activities on noise are considered less than significant.

4.9.2 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 wil 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.

4.10 SOCIOECONOMICS

The affected environment for socioeconomics is presented in **Section 3.10**. For the purposes of this EA/EIR, analysis of potential socioeconomic impacts associated with project modification under the Proposed Action 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 1-3.

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.

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 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. Topsoil containing organic material would not be disposed of at a commercial site, but would be stockpiled and spread on embankment slopes or borrow areas as a part of site restoration. Disposal of these materials by burning or burying at the proposed project site would not be permitted. Inorganic materials would include, but are not limited to, broken concrete, rubble, asphaltic concrete, metal, and other types of construction materials. Where possible, soil from excavation would be screened and separated for use as backfill materials at the site of origin to the maximum extent possible. Spoils unsuitable for backfill use would be disposed of at appropriate disposal sites. A number of utilities currently exist within the Proposed Action TCE, and some will require protection or relocation due to the proposed project. **Figure 2-4** shows known utilities located in the project TCE. These include:

- SAWPA: SARI Brineline
- So Cal Gas: Transmission Gas Line
- AT&T: Aerial line
- AT&T: 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 Southern California Transmission gas lines would be relocated prior to construction of the proposed action. This relocation will be covered in a separate EA that is currently being drafted. If utility modifications are determined to be required, equitable replacement, protection, or relocation would occur. Impacts to public services and utilities would be temporary. Therefore, construction impacts would be less than significant.

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. 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 1-3.

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.

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 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 1-3.

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 transportation would be considered less than significant, as described in the 2001 SEIS/EIR.

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 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 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. 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 1-3. 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.

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 action.	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.*
Alcoa Dike (part of SARMP)	Approximately 2.25 miles northeast of the proposed action.	This dike is being constructed to reduce flood risk for existing developments and private properties in the area. *Construction is on-going and scheduled to complete in July 2023.*
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 Final SEIS/EIR, which were largely characterized by other flood control projects within and downstream of the Prado Basin. As discussed in previous sections, the Proposed Action would be in full compliance with applicable laws and regulations, as well as environmental commitments identified in the 2001 Final SEIS/EIR and in Section 6 of this document. As such, potential impacts to water resources and hydrology would be site-specific and not significant. Water resources and hydrology impacts of the Proposed Project would not singly, or cumulatively, combine with similar impacts of other projects as significant impacts. Therefore, cumulative impacts on water resources and hydrology from the Proposed Action would be less than significant.

5.2 AIR QUALITY

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

The primary air quality impacts of the Proposed Action would occur during construction, 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.

5.3 EARTH RESOURCES

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

5.4 BIOLOGICAL RESOURCES

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

5.5 CULTURAL RESOURCES

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.

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.

5.7 AESTHETICS

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

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.

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 (**Table 5-1**) 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 Friday (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.

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.

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.

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 serviceidentified 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.

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.

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-".

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 rolling equipment would be parked, fueled and serviced, and where construction materials such as reinforcing bars and structural steel members would be stored. Erosion control during grading of the construction sites and during subsequent construction would be in place and monitored as specified by the SWPPP. A silting basin(s) would be established, as necessary, to capture silt and other materials, which might otherwise be carried from the site by rainwater surface runoff.

EC-WR-2 Hazardous Materials Management Plan and Emergency Response Plan. A project-specific hazardous materials management and hazardous waste management plan would be developed prior to initiation of construction. The plan would identify types of hazardous materials to be used during construction and the types of wastes that would be generated. All project personnel would be provided with project-specific training to ensure that all hazardous materials and wastes are handled in a safe and environmentally sound manner. This plan shall include an emergency response program to ensure quick and safe cleanup of accidental spills.

EC-WR-3 Water quality permits. Prior to engaging in any soil-disturbing activities, the construction contractor shall document compliance with the Clean Water Act (CWA) Section 402 NPDES General Permit for Storm Water Discharges Associated with Construction Activities and shall also receive any necessary permits for dewatering activities, as applicable.

6.2 AIR QUALITY

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

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

AQ-3 The project construction contractor shall use high-pressure injectors on all diesel engines that were manufactured before 1996, and which do not have existing IC engine warranties with the manufacturer. The contractor shall provide documentation of warranty and manufacture date or a certification from a third-party certified mechanic stating that all diesel construction equipment engines are utilizing high-pressure fuel injectors.

AQ-4 The project construction contractor shall use Caterpillar pre-chamber diesel engines or equivalent and perform proper maintenance and operation.

AQ-5 The project construction contractor shall electrify equipment, where feasible.

AQ-6 The project construction contractor shall restrict the idling of construction equipment to 10 minutes.

AQ-7 The project construction contractor shall ensure that equipment will be maintained in proper tune to prevent visible soot from reducing light transmission through the exhaust stack exit by more than 20 percent for more than 3 minutes per hour and use low-sulfur fuel as required by SCAQMD regulation.

AQ-8 The project construction contractor shall use catalytic converters on all gasoline equipment (except for small [2-cylinder] generator engines). If this measure is not implemented, emissions from gasoline equipment shall be offset by other means (e.g., Emission Reduction Credits).

AQ-9 The project construction contractor shall cease construction during periods of high ambient ozone concentrations (i.e., Stage 2 smog alerts) near the construction area (SCAQMD, 1993).

AQ-10 The project construction contractor shall schedule all material deliveries to the construction spread outside of peak traffic hours, and minimize other truck trips during peak traffic hours, or as approved by local jurisdictions.

AQ-11 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-12 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-13 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-14 In areas where dewatering is not required, the project construction contractor shall water active grading/excavation sites at least twice daily.

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

AQ-16 The project construction contractor shall suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph (40 kph).

AQ-17 The project construction contractor shall ensure that trucks hauling dirt on public roads to and from the site are covered and maintain a 50 mm (2 in) differential between the maximum heights of any hauled material and the top of the haul trailer. Haul truck drivers shall water the load prior to leaving the site to prevent soil loss during transport.

AQ-18 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-19 The project construction contractor shall sweep streets in the project vicinity once a day if visible soil material is carried to adjacent streets.

AQ-20 The project construction contractor shall install wheel washers where vehicles enter and exit unpaved roads onto paved roads or wash off trucks and any equipment leaving the site each trip.

AQ-21 The project construction contractor shall apply water three times daily or apply non-toxic soil stabilizers according to manufacturers' specifications to all unpaved parking, staging areas, or unpaved road surfaces.

AQ-22 The project construction contractor shall ensure that traffic speeds on all unpaved roads to be reduced to 15 mph (25 kph) or less.

AQ-23 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

EC-BR-1 The USACE will develop and implement a monitoring program for LBV and CAGN in spring and early summer during construction.

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

EC-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 August 16.

EC-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 riparian areas not to be disturbed are flagged and avoided.

EC-BR-5 The USACE 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).

EC-BR-6 The USACE 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 USACE 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.

EC-BR-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

EC-BR-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 USACE-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 USACE 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 USACE 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.

EC-BR-9 Noise barriers will be constructed where the project borders riparian and coastal sage scrub habitat and along any wildlife habitat corridors prior to construction.

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. 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 for any sensitive wildlife species;

b. In the event of the discovery of a non-listed, special-status ground-dwelling

animal such as a burrowing owl or special-status reptile, attempts will be made to recover and relocate the animal to adjacent suitable habitat within the project site at least 200 feet from the limits of construction activities. Burrowing owl surveys and relocations would follow established protocols.

EC-BR-13 The USACE or contracted biologists will continue to monitor and survey the project area, borrow area, and adjacent habitats throughout construction and restoration activities for the presence of special status species, and shall confirm that conservation measures are sufficient to avoid or minimize impacts to these species, or shall recommend additional measures as warranted.

EC-BR-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 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 would be conducted at the minimum amount necessary. Any vegetation removal necessary would be conducted outside of the nesting season, which is defined as February 15 to September 15.

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 would include coordination with the California State Historic Preservation Officer, the Advisory Council on Historic Preservation, and appropriate Native American groups and/or other interested parties. It may require additional measures such as test and data recovery excavations, archival research, avoidance measures, etc.

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

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

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.

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 Environmental Assessment/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 EIR 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 comprehensive survey, the USACE completed a new cultural resource survey of B2, B5 and the Staging Area S1. No new 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 re-surveyed in 2021 because the area is an active borrow area. 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.

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 vicinity. Mitigation and compensation measures that were outlined in the 2001 SEIS/EIR and CESA permit would be implemented as required for impacts related to the proposed project. For instance, temporarily impacted areas will be reseeded following construction.

The Endangered Species Act, as amended

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

A Formal consultation with USFWS was requested on June 29, 2021 and a formal consultation with USFWS is ongoing in regards to Least Bell's vireo and coastal California gnatcatcher. A final biological opinion will be received prior to the finalization of the Finding of No Significant Impact and the project would be in full compliance with the ESA.

Potential effects of the Proposed Action on federally listed species and on designated and proposed critical habitat have been addressed in a formal consultation with USFWS. A Biological Assessment (BA) was prepared and is included in Appendix D. The BA identified that least Bell's vireo (*Vireo bellii pusillus*)

may be adversely affected, but critical habitat would not likely be adversely affected and California Gnatcatcher (Polioptila californica californica) may be adversely affected, but there would be no effect on critical habitat.

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 Final 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 AQ-1 to AQ-23. 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 SEA/EIR Addendum. 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 Final SEIS/EIR and, subsequently for this Proposed Project, have been formulated to reduce impacts on wetlands.

Executive Order 12898, Environmental Justice

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

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 Final 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.

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-23. 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 DSMS and Spillway Raise Project, if necessary. However, previous coordination with CDFW on other SARMP features indicated that neither CESA nor a Streambed Alteration Agreement would be required, considering that construction will be overseen by the federal government, and routine 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 Environmental Assessment/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 was coordinated formally and informally with numerous agencies, organizations, and individuals, including USFWS, CDFW, State Parks (also known as California Department of Parks and Recreation), SHPO, Santa Ana RWQCB, Caltrans, Orange County agencies, Riverside County agencies, and local cities. This Draft SEA/EIR Addendum will be distributed to several public agencies and interested parties for review as identified in the Distribution List, Appendix A.

9 LIST OF PREPARERS AND REVIEWERS

Name	Role
Hayley Lovan	Reviewer, Chief, Ecosystem Planning Section
Jessica McCaffrey	Dam and Levee Safety Planner
Kristen Bedolla	Dam Safety Engineer
Jenna May	Environmental Coordinator
Tiffany Armenta	Biologist
Marissa McGowan	Biologist
Aelna Sakamoto	Biologist
Gabrielle Dodson	Geologist
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 Draft SEA/EIR Addendum, environmental impacts from the proposed the Prado Dam Spillway Modification project are expected to be less than significant. Therefore, preparation of an Environmental Impact Statement is not required.

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Appendix A: Mail Distribution List

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Appendix B: RWQCB 401 Certification, USACE Regulatory 404(b)(1) Evaluation

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Appendix C: Air Quality Analysis

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Appendix D: USFWS Consultation Request and Biological Assessment

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Appendix E: USFWS Biological Opinion

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Appendix F: Environmental Justice Evaluation

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Appendix G: Cultural Resources Evaluation

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Appendix H: Correspondence, Public Comments and Responses

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Appendix I: DSAD