DRAFT ENVIRONMENTAL ASSESSMENT

PRADO DAM GASLINE REMOVAL

Riverside County, California

US Army Corps
of Engineers

Prepared by:
U.S. ARMY CORPS OF ENGINEERS
SOUTH PACIFIC DIVISION
LOS ANGELES DISTRICT

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SECTION 1 – INTRODUCTION

This draft Environmental Assessment (EA) has been prepared by the U.S. Army Corps of Engineers (Corps) to evaluate the potential impacts associated with the Corps permitting Southern California Gas Company (SCG) to relocate an existing natural gasline. The gasline is located in an easement on the federal Prado Flood Control Basin property in Riverside County, California (**Figure 1**). The Corps is preparing to construct improvements at Prado Dam (see Section 1.2) and the gasline's current location conflicts with these construction efforts.

This EA has been prepared to meet the National Environmental Policy Act (NEPA) requirements. This EA is intended to serve as the primary environmental document for all actions associated with the project, including all discretionary approvals, requested, or required to implement the project. It is intended to serve as an informational document for the decision makers and the public regarding the objectives, the project components, and any potentially significant environmental impacts that may be associated with the planning, construction, operation, and maintenance of the project components. This document also identifies appropriate feasible mitigation measures that have been adopted to reduce or eliminate these impacts. This document, therefore, provides sufficient analysis to determine the potential for significant impacts among the various project components, as well as suitable mitigation measures to reduce these impacts, when appropriate.

SECTION 1.2 – PURPOSE AND NEED

The Santa Ana River Mainstem Project (SARMP) is a comprehensive flood risk management system authorized for construction by Section 401(a) of the Water Resources Development Act of 1986. The Prado Dam Spillway Modification is the last major component of the Prado Dam element of SARMP. The existing gasline location conflicts with the Prado Dam Spillway Modification and needs to be relocated away from the spillway and dam in order to facilitate construction.

SECTION 2.0 – PROJECT DESCRIPTION

SECTION- 2.1 PROJECT LOCATION

The project area is located in the City of Corona, Riverside County, California adjacent to the Santa Ana River (Prado Dam Outlet Channel). The project area is bordered by State Route 71 (SR-71) to the west, State Route 91 (SR-91) to the south, and the Prado Dam Embankment to the north **(Figure 2**). The current gasline runs north of the spillway and along the south side of the Dam Embankment **(Figure 3).** The spillway is directly adjacent to Prado Dam Embankment and the Prado Dam Outlet Channel.

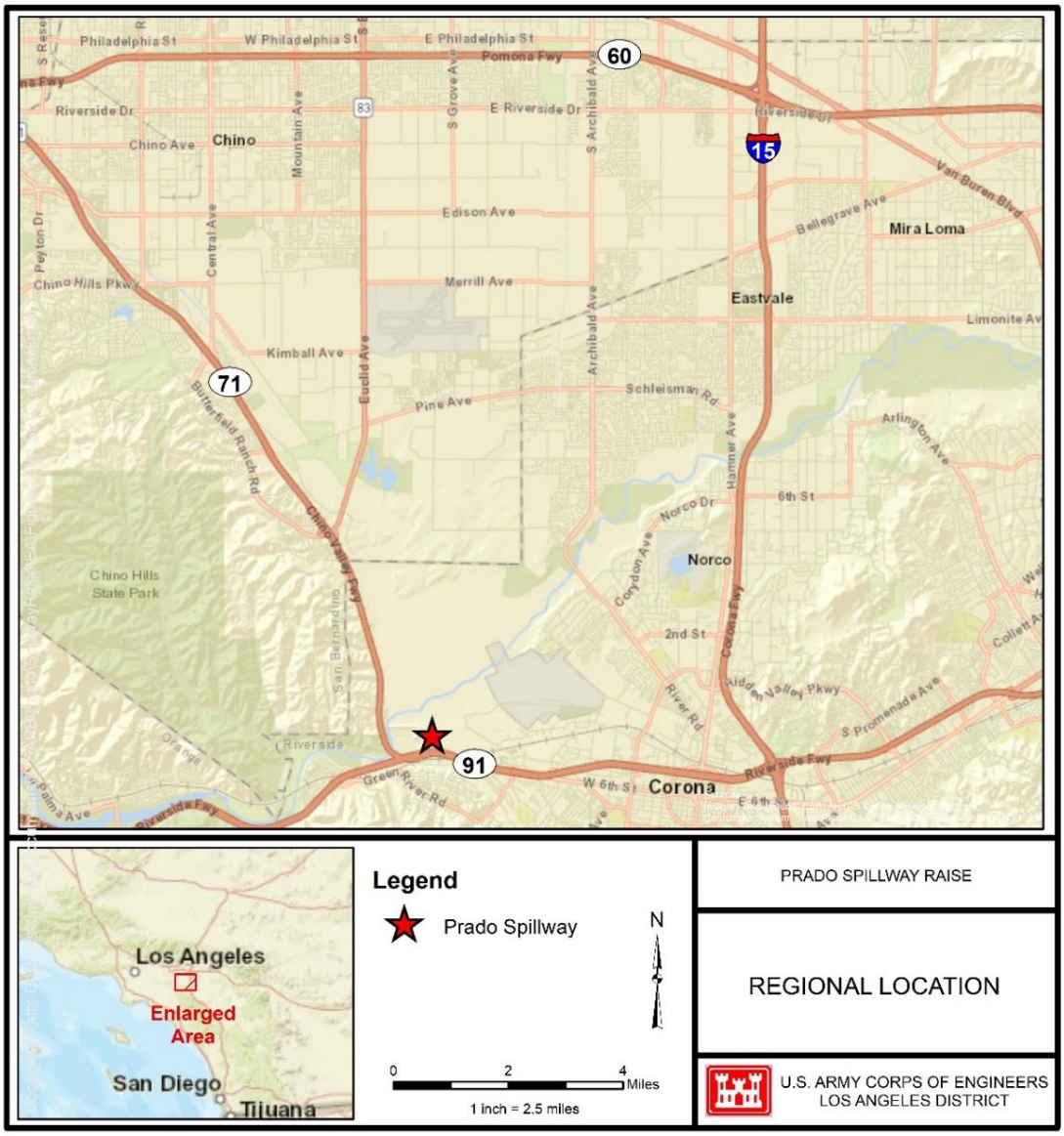

Figure 0. Regional Map

SECTON- 2.2 ALTERNATIVE REJECTED FROM CONSIDERATION

Three different alignments were evaluated based on feasibility and the amount of environmental impact (**Figure 2**). Each alignment would require a different construction methodology and would use a combination of open trenching and horizontal directional drilling (HDD). HDD is a trenchless method of installing pipe or cable by tunneling underground. The difference in effects between the three possible alignments are primarily related to differences in the amount or length of open-cut trenching required, as well as the type of habitat within each footprint. The Slick Bore option was eliminated first, as it would cause the most environmental impact and was the least feasible. It would require the most trenching and the least amount of HDD (which reduces ground disturbance). Furthermore, the slick bore option would require a deep tunnel which would hit a substantial amount of ground water. HDD option- 2 was eliminated because it was considered too close to the spillway and could be damaged

by scour during a large flow event. Two options were eliminated leaving the preferred alignment which is further discussed in this document.

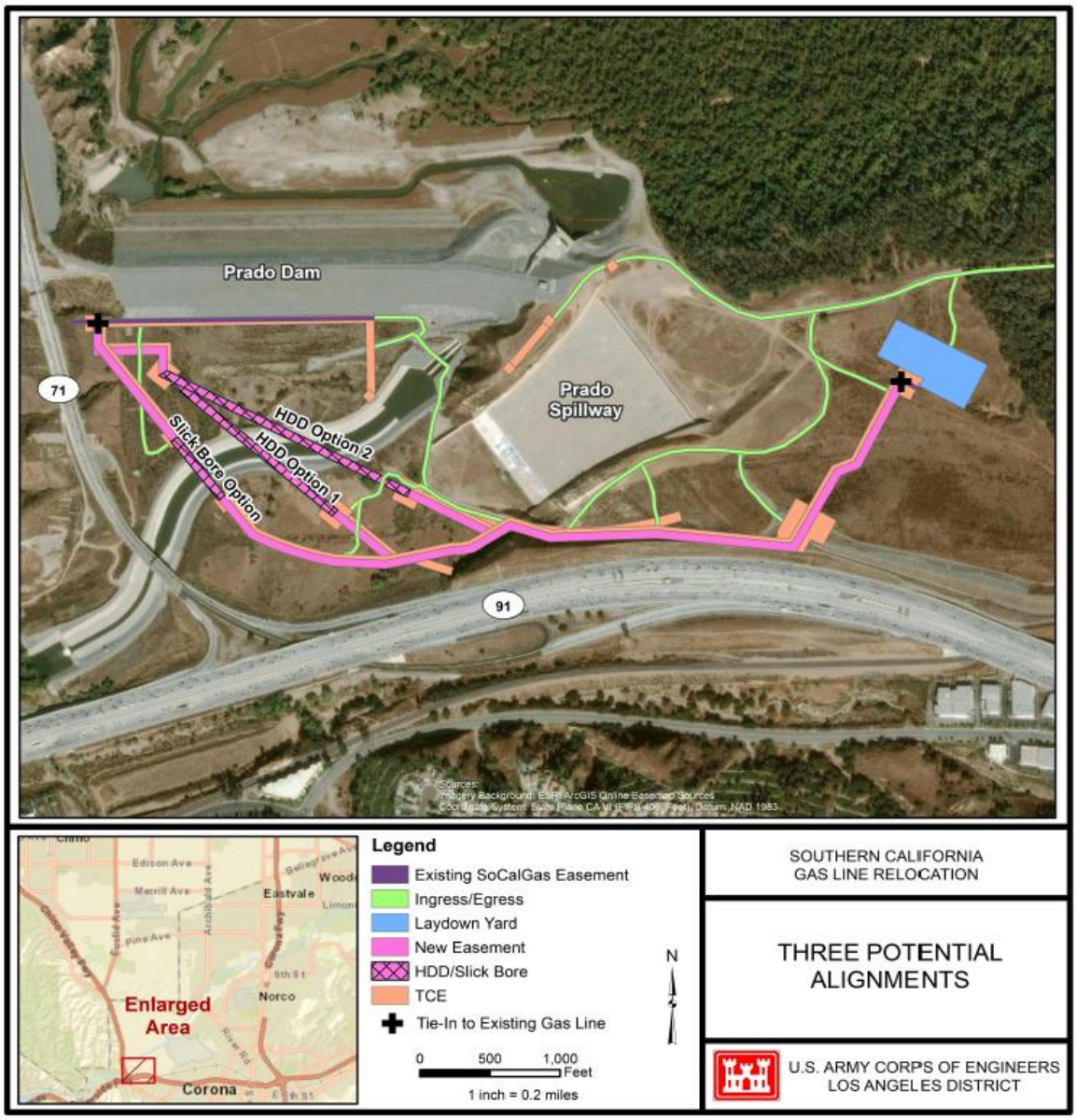

Figure 2. Three Proposed Alignments

SECTION – 2.3 PROPOSED ACTION

Under the Proposed Action, the Corps would issue a permit to SCG for the removal their high-pressure gasline and will issue a permit for a new easement of the new gasline alignment within Corps property. The preferred alignment selected is HDD Option 1 (**Figure 4**). SCG will be responsible for the cost to remove and relocate the gasline away from the Prado Dam spillway and dam. The Proposed Action would meet the need and purpose.

SECTION – 2.4 NO ACTION ALTERNATIVE

In the no action alternative, the Corps would not issue a permit to SCG to remove the gasline and no

associated earthwork to relocate the gasline would occur. Because the gasline is not removed from the close vicinity of the spillway, the spillway raise project cannot occur and the risk for the spillway to erode or the chute slab to lift during a large flooding even would remain high. Therefore, the no action alternative would not meet the purpose and need.

SECTION – 2.5 PROJECT DESCRIPTION

The proposed action consists of two main phases: 1) removing or grouting in place the old gasline (**Figure 3**) and 2) relocating the new gasline (**Figure 4**). "Relocation" refers to the installation of a new gasline in a different alignment; the existing gasline would not be moved to a new location.

Removing or Grouting In-Place

Removal is planned for the portions of the existing gasline at the toe of the dam and sections near but outside of the Prado Dam Outlet Channel (**Figure 3**). Sections of gasline to be removed would be tested for asbestos before removal. No asbestos is anticipated to be found based on the type of pipe that was installed, but in the rare possibility that a segment of the gasline tests positive for asbestos, remediation would occur (Section 4.2, environmental commitment 19). The soil removed would be backfilled.

Partial abandonment of the gasline is proposed in order to reduce excavations in the vicinity of the Prado Dam Outlet Channel and prevent damage to the outlet channel lining. Portions of the gasline that will be abandoned in place would be inspected, cleaned, and filled with grout according to federal guidance (FEMA 2005). If the gasline is deteriorated or damaged and cannot be safely grouted, a new abandonment approach would be developed. Based on geotechnical analyses performed by SCG, the gasline that would be left in place would not create a hazard or leach any contaminants into the soil.

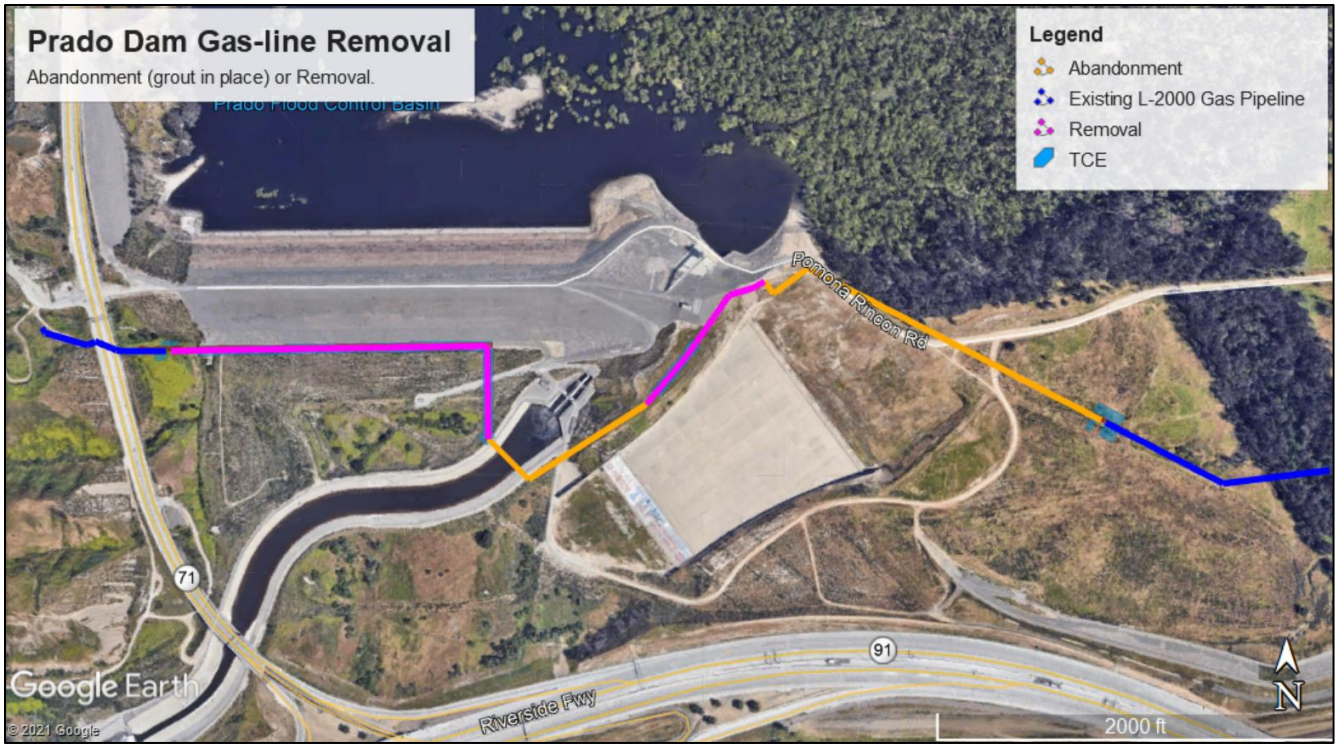

Figure 3. Existing Gasline and Proposed Grout in Place and Gasline Removal

Relocation of New Gasline

The new gasline installation would connect from an existing (unaffected) gasline segment located on the east side of the spillway, extending south of the spillway along the 91 freeway, crossing under the Prado Dam Outlet Channel and connecting back to the existing gasline near the SR-71. The majority of the new gasline installation (0.91 miles) would occur via surface excavation utilizing a 6' wide and 7' deep trench.

A shorter portion of the new gasline (0.25 miles) would be installed using HDD. HDD would involve drilling a tunnel underneath the Prado Dam Outlet Channel at a 15-degree angle to install the new gasline. The alignment of the relocated gasline may be minimally refined to avoid impacts to existing riparian habitat (see Section 4.3 for details), but this minimal refinement would not result in any additional impacts.

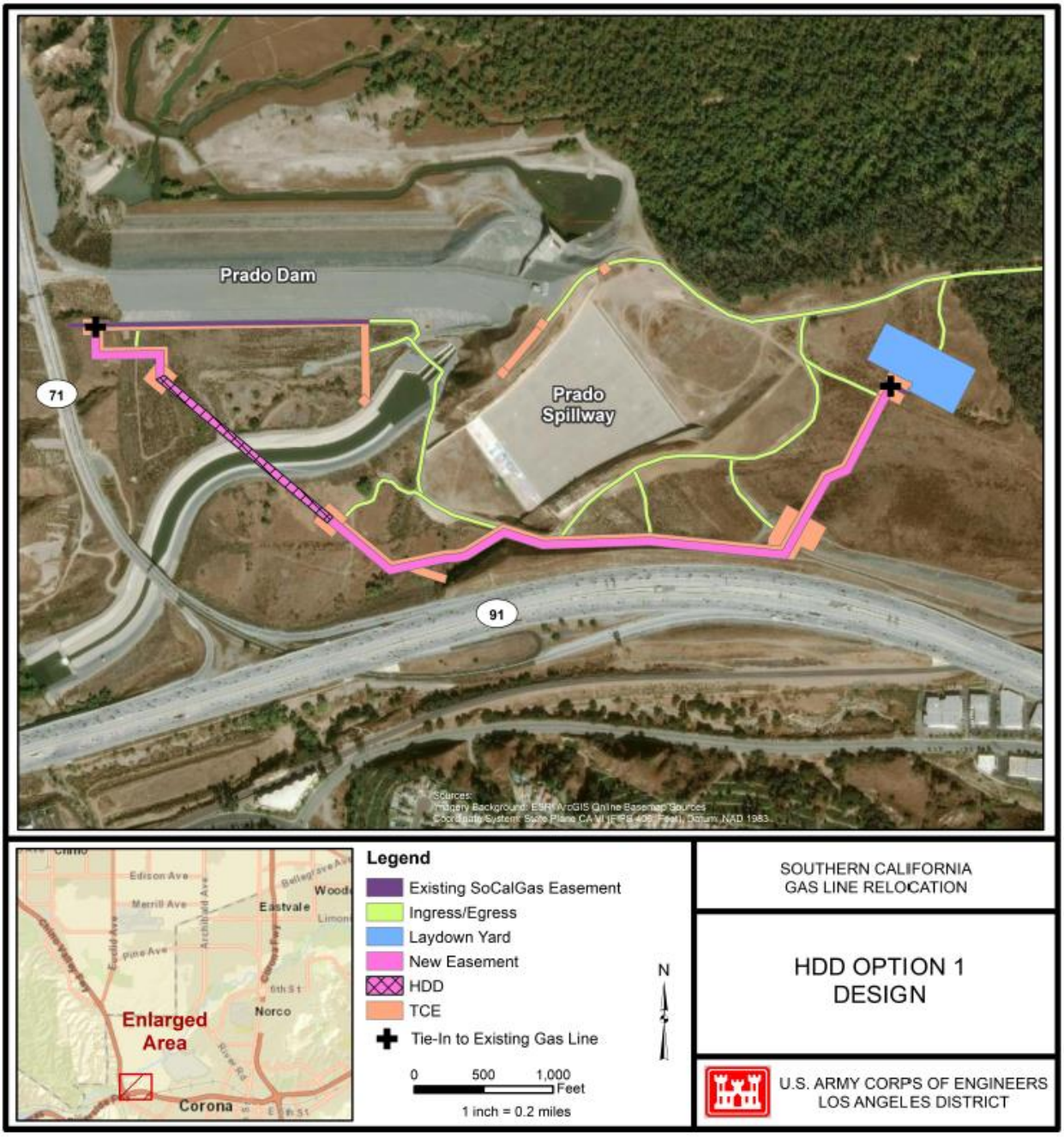

Figure 4. Proposed Alignment

2.5.1 Staging, Temporary Construction Easement (TCE) and Access Routes

A 3.77-acre laydown yard utilized for the staging of construction materials and equipment is planned on an open area northeast of the spillway (**Figure 4**). Already-established roads will be used to drive equipment to staging area. This project does not require a borrow site. A Temporary Construction Easement (TCE) is a temporary right to perform construction on the property of another party. A 75' wide TCE around the trench would be necessary to facilitate access to heavy machinery and stockpile excavated soils temporarily. Temporarily stockpiled soil would be reused to cover the new gasline, fill in areas where gasline is removed permanently, or graded within the TCE. The TCE also includes

several other minor areas required to facilitate construction-related tasks (e.g., vehicle access, gasline fabrication, etc.) outside of the 75' wide corridor, as illustrated in **Figure 4**. No new roads will be created, and crew members will use existing maintenance roads for access.

2.5.2 Schedule & Timing

Construction is scheduled to begin in mid-October 2021 and is planned to end in mid-April 2022. Vegetation removal within the TCE would occur between September 15th and February 15th.

Most of the work will be done from 7 am to 5 pm except under two conditions. The first condition would be during HDD pullback, which is when the gasline would be pulled through the HDD tunnel. This must be completed as quickly as possible, so the tunnel does not collapse. This work would take 24 to 48 hours to complete. The second condition is during the gasline tie-in, which is when the new gasline is being reconnected with the existing gasline. The gas must be shut off during this time, therefore the work will be done as quickly as possible but could take 24 to 48 hours to complete. For both HDD pullback and tie-in, multiple mobile light towers will be required to maintain a safe work environment for nighttime work. Lights will be directed inward toward the TCE to the extent possible and not directed into adjacent habitat areas to reduce impacts to wildlife movement (4.2, environmental commitment 13).

2.5.3 Maintenance and Operations

Typical operations and maintenance of the gasline are minor and infrequent. SCG performs typical leak detection inspections either via drone or truck, depending on access. Inspections occur on an infrequent basis, about every 5-7 years. An Inspection typically does not cause any disturbance above ground as the gasline is inspected via an internal tool. Per California Fire Marshal regulation, SCG is required to have quick access to their gasline in case of emergency. For these kinds of emergencies, existing access is sufficient.

2.5.4 Construction Equipment. A variety of heavy equipment will be necessary to facilitate construction, including forklifts, excavators, dozers, backhoe, graders, generators, cranes, dump trucks, and various trucks for hauling and site access.

SECTION 3.0 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section provides a discussion of the affected environment and assessment of potential impacts associated with the Proposed Action and no action alternatives. Only the resources relevant to this EA are analyzed. These resources include Water Resources and Hydrology, Air Quality, Biological Resources, Cultural Resources, and Hazardous Materials.

SECTION – 3.1 Hydrology, Groundwater, Water Quality, and Wetlands

SECTION – 3.1.1 Affected Environment.

Hydrology: The Santa Ana River conveys flows southwest throughout the project area in a channelized outlet. The Santa Ana River Basin is the largest watershed in southern California, with a drainage area of about 2,670 square miles. The watershed is separated into an upper and a lower basin divided by Prado Dam and Reservoir. The Santa Ana River originates in the San Bernardino Mountains and travels southwest approximately 60 miles where it reaches the Pacific Ocean near Huntington Beach. Urban runoff and effluent from wastewater treatment plants, as well as naturally occurring high groundwater levels, contribute substantially to the perennial flow that occurs in the Prado Basin and the project area.

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. Depth to groundwater ranges from several hundred feet below the ground surface near the mountains to near land surface along rivers, wetlands, and in the coastal plain. Groundwater varies throughout the year but geotechnical investigations performed in February 2021 found groundwater at around 28.5 feet deep near the proposed alignment.

Water Quality: Section 303(d) of the Clean Water Act (CWA) authorizes the Environmental Protection Agency (EPA)_to assist states in identifying impaired waters and identifying maximum pollutant discharges (i.e., Total Maximum Daily Loads or TMDLs) in an effort to restore water quality. Several waterways in the vicinity of Prado Dam are listed as impaired on the state's 303d list and have associated TMDLs. Portions of Chino and Mill Creek (tributaries just upstream of Prado Dam) are listed as impaired for pollutants such as pathogens. Portions of the Santa Ana River mainstem upstream of Prado are listed for high coliform, while portions downstream of Prado Dam are listed for high nitrates. These pollutants most likely originate from non-point agricultural and urban sources that commonly occur throughout the watershed.

Jurisdictional Waters and Wetlands: Section 404 of the CWA regulates the discharge of dredge or fill material in waters of the U.S., while Section 401 regulates water quality within waters of the U.S. To determine whether jurisdictional waters or wetlands (i.e. waters of the U.S.) occur within the project area, we first consulted the USFWS Wetlands Mapper

(https://www.fws.gov/wetlands/data/mapper.html). While the wetland mapper indicates the presence of a riverine feature **(Figure 5)**, this mapping is not accurate. No wetland feature exists here based on field visits, aerial imagery, the lack of riparian vegetation, and no ordinary high-water mark. Water may run along the base of the hill from the culvert on the upper left-hand side, but not enough water is present to support wetland plant species or other aquatic resources. The vegetation present in the incorrectly mapped riverine area, is coastal sage scrub. Furthermore, NWI most likely maps a river there because that was the previous location of the Prado Embankment Outlet Channel. Originally the outlet was at the base of that hill on the left-hand side of the dam which was later moved to its current location. Within the project footprint, the Santa Ana River is considered waters of the U.S. However, because the gasline will go underneath the channelized outlet, no discharge into jurisdictional waters would occur.

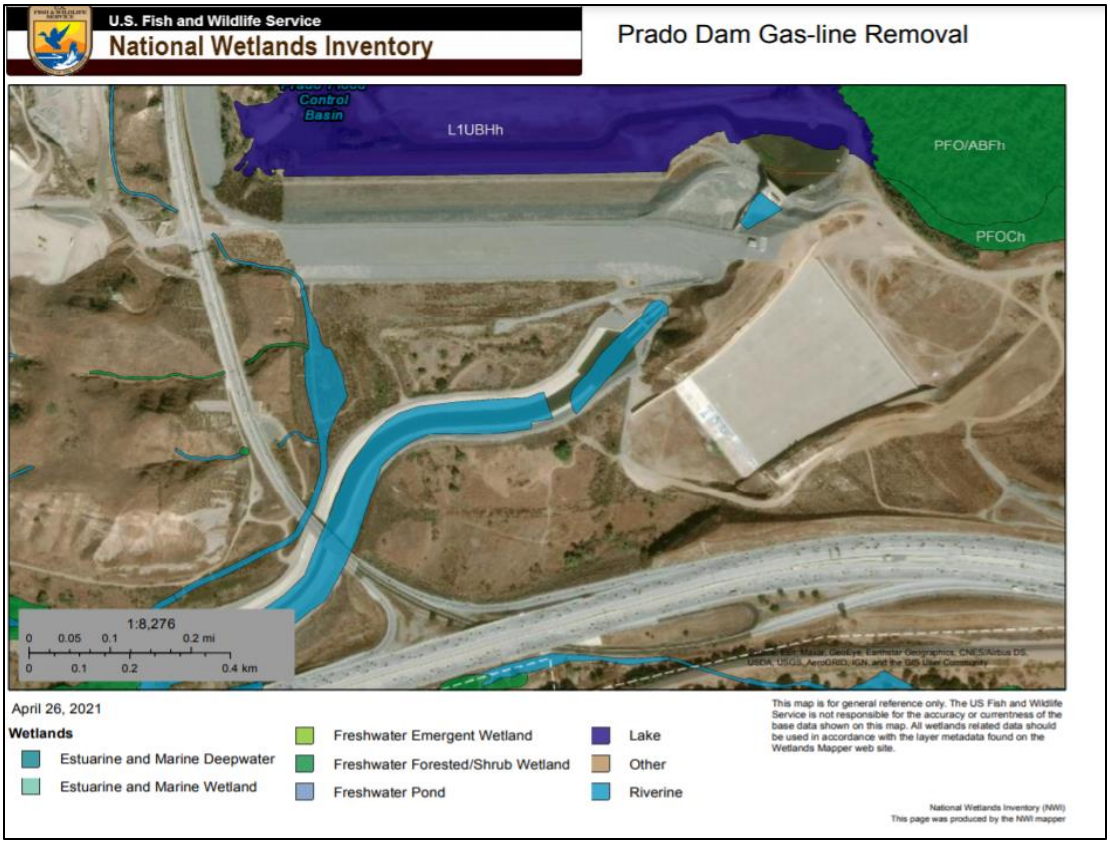

Figure 5. National Wetland Inventory Map

SECTION – 3.1.2 Environmental Consequences

Significance Criteria. Impacts would be considered significant if the alternative caused:

- Substantial changes to the capacity or characteristics of the main flow path(s) of the river or capacity of the overall floodplain or changes in the velocity that would lead to greater erosion or deposition, runoff, flooding; or
- An increase in the demand for surface water in areas with existing shortages; and/or
- A violation of any applicable water quality or effluent standards or an impairment of

designated beneficial uses

- A substantial reduction in the ability to recharge the underlying aquifer or substantial groundwater contamination or groundwater depletion;

Proposed Action. Under the Proposed Action, no construction-related impacts would occur to any jurisdictional waters or wetlands. Gasline would be installed about 45 feet underneath the Santa Ana River (for a total depth of 65') using HDD, avoiding all impacts to surface water resources. HDD would not change the flow of the Santa Ana River, change the capacity or overall floodplain, and would not affect velocity. Therefore, no impacts to hydrology are anticipated. The geotechnical investigations conducted in February 2021 found groundwater at around 28.5 feet deep and the HDD would most likely tunnel through groundwater. However, the tunnel would not require any sort of slurry mixture that could potentially contaminate groundwater. Therefore, substantial groundwater contamination is not expected to occur. The proposed action would not substantially reduce the ability to recharge the underlying aquifer since the newly installed gasline will be covered with soil, and the gasline would not significantly reduce the permeability of the ground. Therefore, potential effects on groundwater would be less than significant.

HDD drilling under the Santa Ana River will avoid any potential direct impacts to water quality, effluent standards, or beneficial uses. Implementation of BMPs and preparation of a Stormwater Pollution Prevention Plan (SWPPP) would avoid and minimize potential indirect effects to surface water quality, effluent standards, and beneficial uses (Section 4.2, environmental commitment #7). Therefore, potential effects on surface water and water quality would be less than significant

No Action Alternative. Under the No Action Alternative, there would be no tunneling underneath the Santa Ana River. There would be no impacts to hydrology, groundwater, water quality or jurisdictional waters and wetlands. However, the purpose and need will not be met.

SECTION – 3.2 Air Quality

SECTION – 3.2.1 Affected Environment

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).

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 176I 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 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 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		

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. The CEQ issued guidance on the consideration of GHG emissions, entitled Final Guidance for Federal Departments and Agencies on the Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews, dated August 1, 2016, which established a recommended reference point of 25,000 metric tons of annual CO2 emissions as warranting further review. Pursuant to Executive Order 13783, Promoting Energy Independence and Economic Growth, signed on March 28, 2017, the CEQ withdrew its guidance on April 5, 2017.

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 with in the context of GHGs.

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 A**).

SECTI–N - 3.2.2 Environmental Consequences.

Significance Criteria. An impact to Air Quality will be considered significant if the Proposed Action would:

- Exceeds General Conformity Rule de minimis thresholds.

Proposed Action: The proposed action 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-wheel trucks with low bed trailers for delivery of construction equipment. Construction would occur over an approximately 122-day period from 2021 through 2022. Estimated emissions are less than the General Conformity applicability rates (**Table 2**). Thus, impacts would be less than significant.

Table 2 Estimated Emissions: Proposed Action

Pollutant	General Conformity Applicability Rates (tpy)	2021 (tpy)	2022 (tpy)
Ozone (VOC as precursor)	10	0.03	0.07
Ozone (NO_x as precursor)	10	0.32	0.69
Carbon Monoxide (CO)	100	0.26	0.63
Nitrogen Dioxide (NO_2)	100	0.32	0.69
Particulate Matter (PM_{10})	100	0.01	0.03
Particulate Matter ($PM_{2.5}$)	100	0.01	0.03
Lead (Pb)	25	n/a	n/a
GHG*	n/a	51	127
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.

No Action Alternative: Under the No Action Alternative, the existing gasline would not be relocated and no air emissions from equipment would be produced. The gasline would not be removed

and relocated, therefore, the No Action Alternative would not meet the purpose and need.

SECTI–N - 3.3 Biological Resources

SECTI–N - 3.3.1 Affected Environment

The project area and adjacent habitat have been surveyed by biologists from the Santa Ana Watershed Association (SAWA), Orange County Water District (OCWD), and Aspen Environmental Group to document the presence and locations of protected and sensitive biological resources.

Vegetation: Most of the project area's vegetation was surveyed by Aspen in 2020 and the remainder of the project area was mapped by an expert biologist familiar with the area and its vegetation. These surveys identified four primary cover types in the project area (**Figure 6**), as described in detail below. The native and disturbed vegetation communities are interspersed; therefore, breaks in community type were determined based on dominant species type and professional judgment of the biologist surveying.

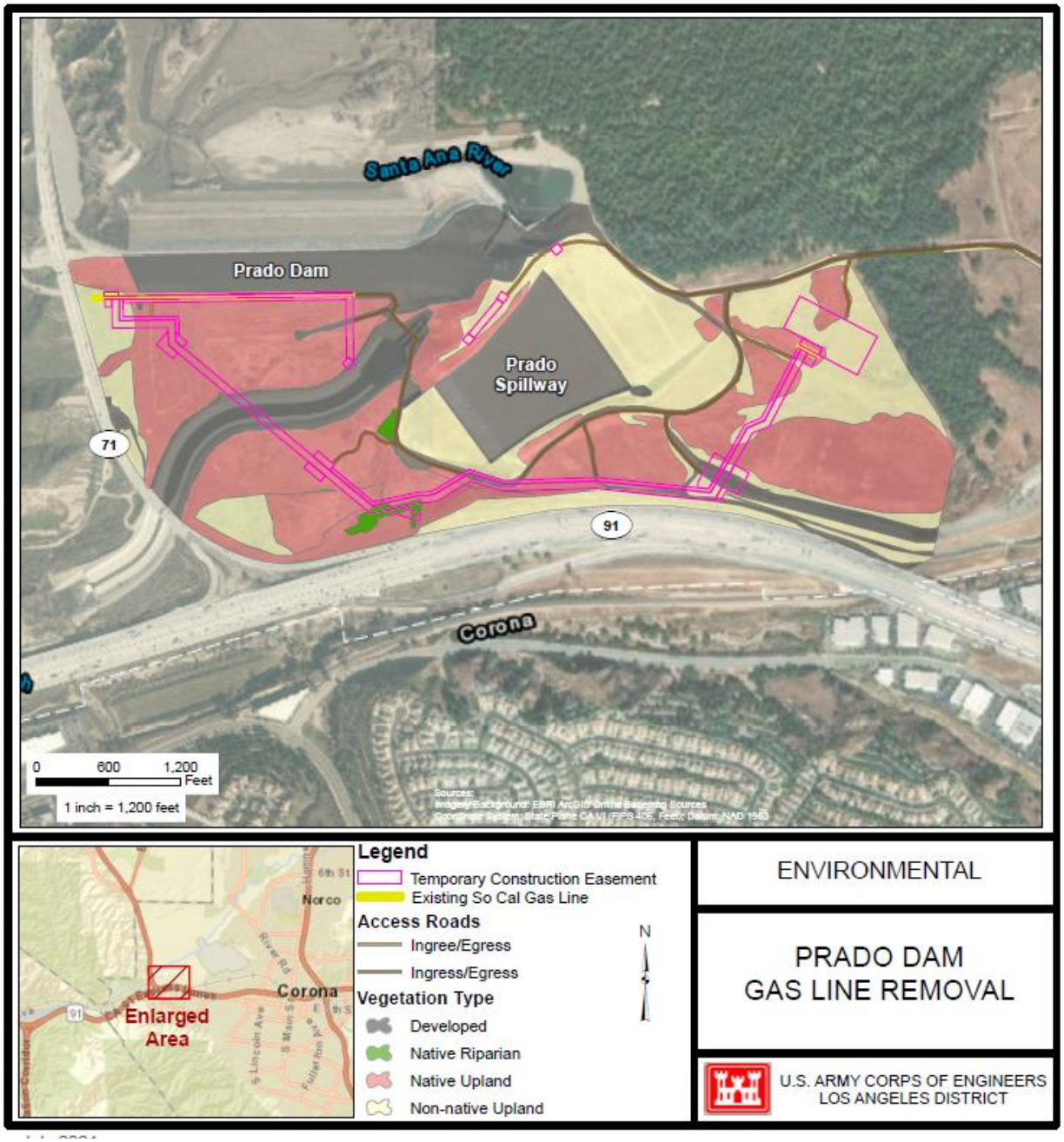

Figure 6. Vegetation Map

Coasal Sage Scrub (Native Upland): Upland vegetation in the project area is best classified as coastal sage scrub (CSS) and is dominated by California buckwheat *(Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), and brittlebush (*Encelia farinose*). All native upland vegetation within the project area was restored as part of previous work at Prado Dam over the last

twenty years.

Native/Riparian: Riparian vegetation in the project area is dominated by cottonwood (*Populus* spp.) and willow (*Salix* spp.) species.

Non-native Upland (ruderal species): Non-native uplands within the project area are dominated by non-native grasses and herbs such as ripgut brome (*Bromus diandrus*), foxtail brome (*Bromus madritensis spp. rubens*), wild oat (*Avena* spp.), wall barley (*Hordeum maurinum*), and Russian thistle (*Salsola tragus*). These species are widespread in and adjacent to the project area. Non-native uplands are present in patches surrounding the spillway and throughout much of the borrow area. Non-native uplands provide very little wildlife habitat.

Developed / Disturbed: 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 above under non-native uplands. Developed areas provided very little habitat for wildlife species.

Special Status Species and Habitats: The U.S. Fish and Wildlife Service's Information for Planning and Consultation (IPAC) web portal identified eight special status species and habitats protected under the Endangered Species Act (ESA) as potentially occurring in the project area (see **Table 3** for impact determination**).** Based on existing survey data, only the least Bell's vireo (*Vireo bellii pusillus*) and Coastal California Gnatcatcher (*Polioptila californica californica*) occur within the project area and would potentially be affected by the proposed action (see **Appendix E** for details).

Coastal California Gnatcatcher (CAGN)

The CAGN is listed as threatened under the ESA. They live in coastal sage scrub, desert scrub, and coastal dune scrub year-round. In California, they occur along the coast in areas dominated by California sage scrub. They generally occur in areas less than 1,600 feet in elevation, but sometimes occur at higher elevation at inland scrub sites. In Baja California and Mexico, they occur in sparse desert woodlands, coastal dune scrub, and desert scrub. During the non-breeding season, they may forage in chaparral areas especially if it borders sage scrub. The project area contains suitable coastal sage scrub habitat. The CAGN's diet includes leafhoppers, beetles, bugs, and spiders. Male CAGN select a nest site in sagebrush, buckwheat, or other shrub species and create the nest at about 2.5 feet high, typically on the outer edges.

Survey Results

Annual surveys are conducted by SAWA in addition to the environmental consulting company, Aspen. The project area has supported between 11 and 12 CAGN territories in recent years. They both breed within the Prado Basin and live there during the non-breeding season. Preliminary 2021 data, provided by SAWA identified 4 territories within the project area. For impact analyses later in this section, potential impacts to CAGN are based on the maximum number of potentially impacted territories (i.e.

12).

Least Bell's Vireo (LBVI): The LBVI is listed as endangered under the ESA. The LBVI is a summer resident of Southern California where it inhabits low riparian growth in the vicinity of water or dry river bottoms below 2,000 feet. The LBVI breeds in dense, shrubby riparian vegetation, often dominated by willows (Franzreb 1989). Nests are typically found in dense vegetation located low in the riparian zones, most frequently in 5- to 10-year-old stands. When LBVI nest in mature riparian woodlands, they nest in areas with a substantial, robust understory of willows as well as other plant species. LBVI generally prefer semi-complex riparian habitats that have understory scrub and ample vertical complexity; riparian areas with no understory are less likely to be used. In California, a dense shrub layer associated with riparian habitat was found to be the most critical structural component of occupied LBVI habitat (Kus et al. 2010). In more xeric areas, this species will readily utilize unconventional habitats, including mesquites and tamarisk. In riverine habitat, in Southern California, this species typically utilizes territory sizes of about 2 acres on average (Kus et al., 2010).

Survey Results

Annual surveys for LBVI are conducted by SAWA. In 2020, SAWA reported a total of 719 territories in Prado Basin and a total of 2,293 territories in Santa Ana Watershed (SAWA 2020). Of the territories documented in 2020, approximately 3 were identified within the project area. Preliminary 2021 data, provided by SAWA identified 5 territories within the project area. For impact analyses later in this section, the higher number of potentially impacted territories from the 2021 survey has been utilized.

Critical Habitat: A portion of the project area is designated LBVI critical habitat **(Figure 7**). The physical and biological features (PBFs) of LBVI critical habitat that are essential to the conservation of the species can be described as riparian woodland vegetation the generally contains both canopy and shrub layers and includes some associated upland habitats (USFWS, 1994). Portions of the project area overlapping with LBVI critical habitat does not support these physical and biological features.

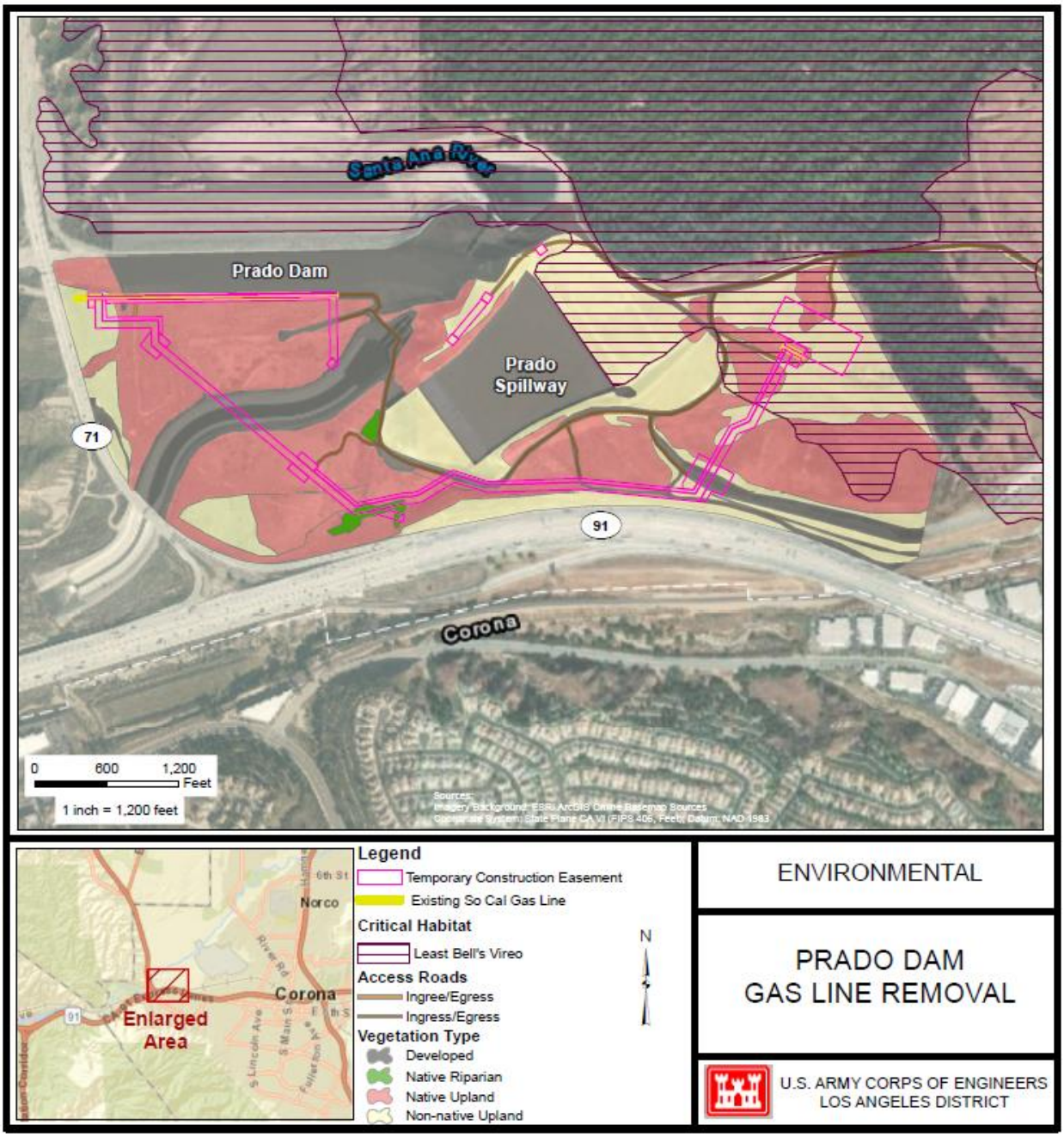

Figure 7. Designated Critical Habitat for Least Bell's Vireo.

Wildlife Movement

Impacts to wildlife movement have been analyzed in areas west of the project area (primarily downstream of Prado Basin and in areas closer to the Prado Dam Embankment). The analysis primarily considered movement to/from the Cleveland National Forest and Chino Hills State Park. Key areas such as the east portion of the Prado Dam and vegetated ramps (specifically created for wildlife movement) are used as wildlife corridors.

SECTI–N - 3.3.2 Environmental Consequences

Significance Criteria. Impacts would be significant if the Proposed Action would cause:

- A direct, adverse effect on a population of a threatened, endangered, or candidate species or the unmitigated loss of designated critical habitat for a listed or candidate species, to the extent that the regional population is diminished;

- An unmitigated, net loss in the habitat value of a sensitive biological habitat or area of special biological significance;

- Substantial impedance to the movement or migration of fish or wildlife.

Table 3. Federally Endangered or Threatened Species and Critical Habitat

Common Name	Habitat Requirements	Status	Corps' Determination
San Diego Ambrosia (*Ambrosia pumila)*	Found in a variety of habitats along the coastal strip, inland valleys, and foothills at elevations below 2,000 ft, near vernal pools and in disturbed areas. Does not tolerate shade.	E	No Effect. No suitable habitat present within the action area, and not detected during 2021 surveys.
Thread-leaved brodiaea (Brodiae filifolia)	Typically grows in herbaceous plant communities such as grassland communities, alkali playa, and in vernal pools. In some locations, thread-leaved brodiaea grows in open areas associated with coastal sage scrub.	T	No Effect. No suitable habitat is present within the action area, and not detected during 2021 surveys.
Delhi sands flower-loving fly (*Rhaphiomid erminatestus abdominalis)*	Found only in areas of the Delhi sands formation in southwestern San Bernardino and northwestern Riverside Counties. Requires fine, sandy soils, often with wholly or partly consolidated dunes and sparse vegetation. Oviposition requires shade.	E	No Effect. No suitable habitat is present within the action area. Not detected during 2021 surveys.
Least Bell's vireo (*Vireo bellii pusillus)*	Nesting summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2,000 feet. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, baccharis, or mesquite.	E	May Adversely Affect
Least Bell's vireo Critical Habitat		D	May Affect, Not Likely to Adversely Affect
Southwestern willow flycatcher (*Empidonax traillii extimus)*	Nesting habitat of riparian woodlands in southern California.	E	No Effect. No suitable habitat is present within the action area.

Coastal California gnatcatcher (*Polioptila californica californica)*	Obligate, permanent resident of coastal sage scrub in southern California. Low, CSS in arid washes, on mesas and slopes. Not all areas classified as CSS are occupied.	T	May Adversely Affect
Santa Ana Sucker (*Catostomus santaanae)*	Endemic to Los Angeles basin and south coastal streams. Habitat generalists, but prefer sand-rubble-boulder bottoms, cool, clear water, and algae.	T	No Effect. All impacts to waters will be avoided by using horizontal directional drilling (HDD).
E = endangered, T = threatened, D = designated			

Source: USFWS IPAC Resources List

Vegetation Impacts

The proposed action would impact 23.42 acres of vegetation, which includes 11.54 acres of coastal sage scrub (CSS) communities and 1.1 acres of riparian habitat (**Table 4**). The direct impact to listed species from the removal of CSS and riparian within the TCE would result in the temporary displacement of 2 CAGN and 2 LBVI territories. Indirect and other effects to the species are discussed below. To reduce direct impacts to listed species, all vegetation removal will occur outside of nesting season between September 15 - February 15 (Section 4.2, Environmental Commitment #1). To offset temporal impacts caused by vegetation removal, offsite restoration for every acre of impact to CSS and riparian habitat would be required (Section 4.2, Environmental Commitment #6). In addition, all currently vegetated portions of the TCE will be restored with native habitat following construction (Section 4.2, Environmental Commitment #9). Because all disturbed areas will be restored in kind, there will be no unmitigated net loss in sensitive habitats, therefore, the impact is considered less than significant.

Table 4. Summary of Vegetation Impacts

Developed (Acres)	CSS Native Upland (Acres)	Non-native Upland (Acres)	Native Riparian (Acres)
12.65	11.54	10.78	1.1

** Temporary impacts do not include areas where work would occur underground only (HDD).*

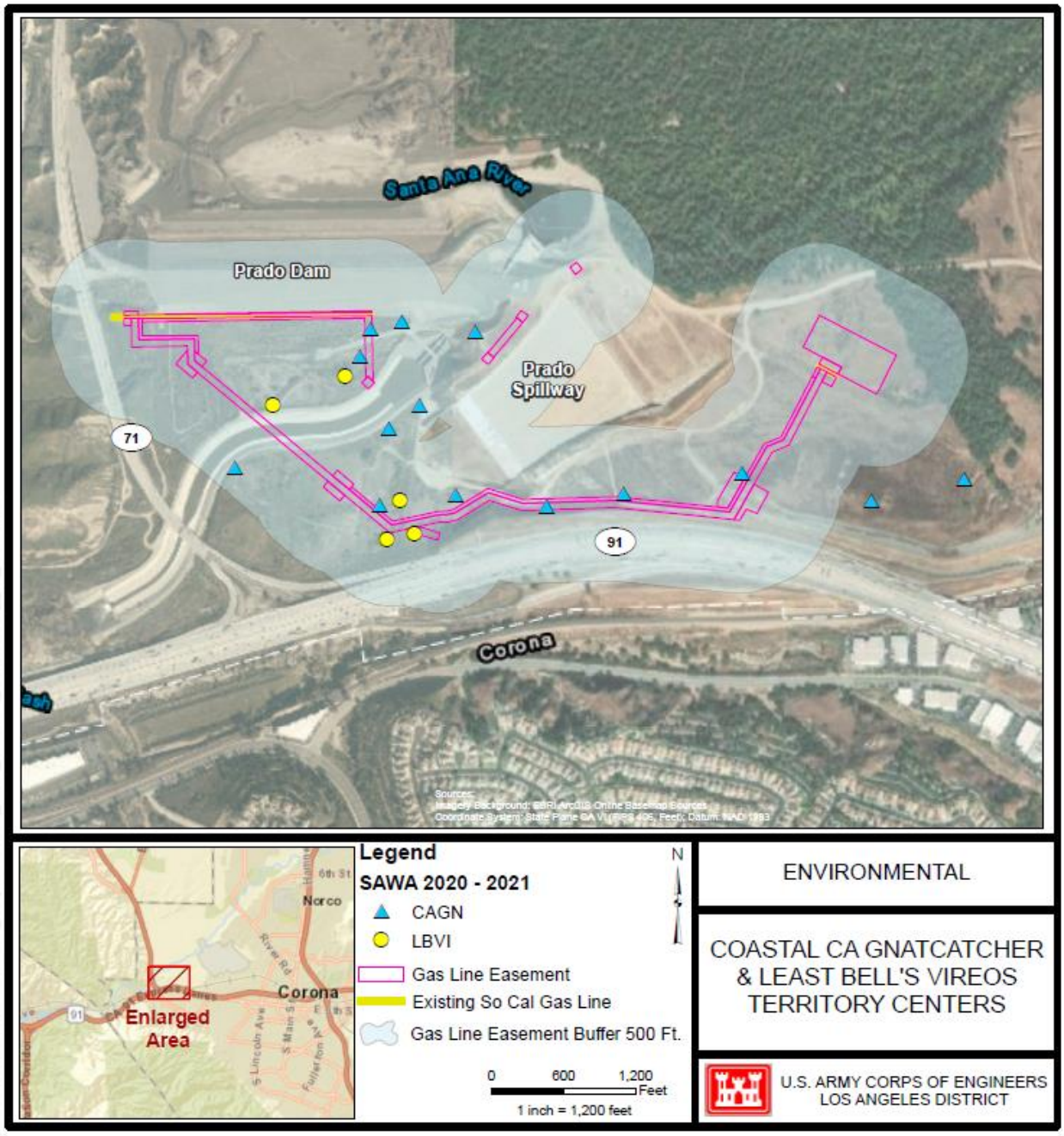

Figure 8. CAGN 2020 and LBVI 2021 Data

California Gnatcatcher (CAGN)

Based on the type of activity, equipment and estimated noise levels (with sound reducing measures in place), direct (vegetation removal) and indirect (noise and disturbance) effects of the proposed action are expected to occur within a 500'-wide buffer surrounding each alignment. An excavator produces noise on average at about 87 decibels. The sound walls reduce sound by about 5 decibels and around 500 feet noise levels are around 60 decibels. Therefore, the proposed action would potentially result in a temporary displacement of or indirect effect of up to 12 territories that occur within

this 500'-wide buffer. Two of these territories occur within the direct footprint. Considering the large width of the floodplain, the movement of gnatcatcher would not be constricted with the adjacent area. While gnatcatchers may still be able to successfully forage and nest within the vicinity and possibly within the 500' buffer zone, this analysis assumes a temporary, adverse effect to all twelve of the previously established territories within this area.

Construction will continue past February 15th into CAGN nesting season (through at least April 2022). Most of the work that would occur during nesting season would likely be in a less suitable habitat (removal and abandonment portion of construction). Those areas have fewer CAGN and LBVI territories. Dust can create a visual impairment and degrade air quality and human presence can cause CAGN to abandon territories and nests. Increased competition for nest sites and other resources could occur until construction is completed and onsite and offsite habitat restoration occurs. The proposed action would temporarily impact 11.54 acres of well-established CSS communities.

To minimize potential effects to CAGN, vegetation clearing would occur outside of the nesting season, and sensitive species monitoring would occur throughout the duration of the construction activities. Work during nesting season will mainly be gasline removal and, abandon and grout in place. Portable sound walls will be required for work occurring between February 15th to September 15th of any year, and noise levels will be monitored during that time period (Section 4.2, environmental commitment #4). In addition, the Corps has committed to perform or require offsite noise mitigation for every acre of occupied CSS habitat that is exposed to noise levels exceeding 2 consecutive 8 hour workdays during each nesting season that the impact occurs at a 1 to 1 ratio (Section 4.2 Environmental Commitment #5). And as previously mentioned, onsite restoration of the temporary construction easement as well as offsite restoration to address the temporal loss of CSS (at a 1:1 ratio) would also occur. All temporary impact areas will be restored with native vegetation (coastal sage scrub seed mix; see **Appendix A**) and monitored and managed (weeded) for at least 8 years after construction to reduce the potential for infestation of invasive plant species. Dust control measures will be implemented during the construction phase to reduce excessive dust emissions (Section 4.2 Environmental Commitment #8). A full list of avoidance, minimization, restoration, and offsetting measures is provided in section 4.2 Environmental Commitments. With implementation of the specified environmental commitments, adverse effects would be avoided and minimized to the extent practicable and adverse effects would not diminish the regional population of CAGN. As a result, impacts to CAGN are less than significant.

Least Bell's Vireo and Critical Habitat

Critical Habitat:

A portion of the Proposed Action would occur within LBVI designated critical habitat. However, none of this area provides the PBFs of LBVI critical habitat, which includes riparian woodland vegetation the generally contains both canopy and shrub layers and includes some associated upland habitats. Temporary impacts within designated critical habitat would occur on disturbed upland vegetation from moving and staging heavy equipment. A total of 3.25 acres of designated critical habitat would be temporarily impacted by the Proposed Action. No permanent impacts would occur. Commitments

presented under Environmental Commitments lists measures to reduce and avoid impacts to designated critical habitat therefore, the proposed action May Affect but is not Likely to Adversely Affect least Bell's vireo designated critical habitat (Section 4.2 Environmental Commitment #8).

Species: As discussed under the CAGN analysis above, indirect impacts are expected to be limited to a 500' wide buffer. The movement of LVBI would not be constricted by the proposed activity and they may use a more suitable habitat north/northeast of Prado Dam. While vireo may still be able to successfully forage and nest within the vicinity and possibly within the 500' buffer zone, this analysis assumes an adverse effect to previously and currently established territories within this area.

Dust can also visually impair vireos and degrade air quality and human presence can cause vireos to abandon territories and nests. Increased competition for nest sites and other resources could occur until construction is completed and onsite and offsite habitat restoration occurs. Construction will continue past March 1st into LBVI nesting season. However, the majority of the work that would continue through April would be in areas with less suitable habitat for LBVI. The proposed action would result in the potential temporary displacement of 2 LBVI territories within the TCE and potential indirect disturbance of a total 5 LBVI territories in adjacent areas.

All temporary impact areas will be restored with native vegetation (riparian vegetation mix or coastal sage scrub seed mix; see Appendix A) and monitored and managed (weeded) for at least 8 years after construction to reduce the potential for infestation on invasive. To minimize potential effects to least Bell's vireo, vegetation clearing would occur outside of the nesting season, and sensitive species monitoring would occur through the duration of the construction activities. Work will continue into nesting season although, no LBVI territories were found in 2021, 2020 or 2019 near the sections of the gasline that would be removed during nesting season. There was a territory within 110 feet of the gasline removal in 2018. To minimize any potential impact to LBVI that were not detected, portable sound walls will be placed around work equipment when work continues into nesting season (Section 4.2, environmental commitment #4). Noise monitoring will take place during nesting season. Dust control measures will be implemented during the construction phase to reduce excessive dust emissions (Section 4.2, Environmental Commitment #8). Measures to minimize and avoid impacts to this species include monitoring, removing vegetation outside of nesting season, habitat restoration, noise monitoring, sound walls around equipment during nesting season, controlling of excess dust, and continued monitoring during construction for special status species.

With implementation of the specified environmental commitments, adverse effects would be avoided and minimized to the extent practicable and adverse effects would not diminish the regional population of LBVI. As a result, impacts to LBVI are less than significant.

Wildlife

Any wildlife corridor such as the project area east of the Prado Dam that connects to Chino Hills State Park, and all of the vegetated ramps (specifically created for wildlife movement), shall not be blocked

overnight by equipment (Section 4.2, environmental commitment # 20). During overnight work, lights will be focused on the work to avoid impacts on wildlife movement (Section 4.2, environmental commitment #13). With the added measures, impacts to wildlife movement and wildlife species are expected to be less than significant and no permanent loss of biodiversity is anticipated.

Operations and Maintenance

No additional effects to least Bell's vireo or California Gnatcatcher would occur during routine O&M activities that take place on or from existing established maintenance roads or other permanent features.

SECTION - 3.4 Cultural Resources

SECTION - 3.4.1 Affected Environment

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, federal agencies must consider the effects of federal undertakings on cultural resources that are listed or eligible for listing in the National Register of Historic Places (NRHP). Cultural resources that are listed or eligible for listing in the NRHP are referred to as historic properties.

As previously discussed in the introduction, the current undertaking (relocating a utility line in support of raising the spillway) is a feature of the larger SARMP, a comprehensive flood risk management project. In order to comply with Section 106 of the NHPA, the Corps, 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 D**). The PA is still valid and will expire once construction of the SARMP is complete.

Federal preservation laws require that the agency define the area of potential effect (APE) for an undertaking. The APE is the geographic area within which historic properties may be directly or indirectly affected by an undertaking. In this case, the Corps consulted with the California State Historic Preservation Officer (SHPO) regarding the APE for the entire SARMP. The entire APE was surveyed for the presence of historic and prehistoric resources in 1985 by ECOS Management Criteria, Inc. (Lagenwalter and Brock 1985). This survey identified and inventoried NRHP resources along the Santa Ana River from Prado Dam Flood Control Basin all the way to the Pacific Ocean including the gasline relocation corridor. No cultural resources are located within the proposed gasline route, the 3.77 acre staging area, or along the existing gasline that would be removed or grouted in place.

Following the 1985 survey most of the proposed gasline route was used as a borrow area for the Prado Dam embankment raise. Those portions of the proposed gasline corridor that are outside of the previously used borrow area were disturbed during the reconstruction of the outlet channel and main dam embankment raise. Due to the level of previous ground disturbance, the Corps has determined that no further inventory of the gasline relocation corridor is necessary under Stipulation 1 of the PA.

SECTION - 3.4.2 Environmental Consequences

Significance Criteria. An impact to Cultural Resources will 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

Proposed Action: The proposed action involved the installation of a new gas gasline, the removal or grouting in place of the old gasline, and a 3.77 acre staging area. Installation of the new gasline would involve a combination of trenching and directional boring under the Prado Dam outlet channel. The total width of disturbance would be 75' at the widest points and the total depth would be 7 feet. HDD will bore 45' below the Santa Ana River outlet channel for a total depth of 65' below the ground. The entire gasline corridor has been inventoried for cultural resources and none have been recorded within the proposed corridor or the existing corridor. The proposed route has been heavily disturbed with approximately half of the proposed route falling within the borrow area used for raising the height of the main dam embankment and the remaining areas falling within the construction footprint of the outlet channel or the raised dam embankment. The staging area has been utilized as a staging area for other SARMP features. Impacts to cultural resources would be less than significant.

No Action Alternative: No ground disturbing activities would occur and there would be no impacts to cultural resources.

SECTION - 3.5 Noise

SECTION - 3.5.1 Affected Environment

The project area is bordered by the SR-91 and SR-71 highways. The highways impact the range of sounds across the landscape creating a mosaic of sound ranges from averages around 50 decibels next to the southern embankment, or up to averages around 68 decibels in open areas. In areas closer to the freeway there can be spikes in sound readings due to loud speeding vehicles as high as in the 90's decibels range. 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 sensitive receptors. 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 half a mile of the project area.

SECTION - 3.5.2 Environmental Consequences.

Significance Criterion. Noise related impacts would be considered significant if:

- construction related noise violated any applicable County and City ordinances without obtaining a variance or exemption.

Proposed Action: The proposed work is bordered by the SR-91 and SR-71, and is about half a mile away from any residential areas. There are no sensitive receptors. As long as construction activities occur from 7:00 a.m. to 6:00 p.m., Monday through Friday, which are the exempted time periods per the County of Riverside Municipal Code and the City of Norco Municipal Code, the proposed construction would comply with local (city and county) noise ordinances. Overnight work is expected to occur, which may require obtaining a variance from local authorities. The project will assume the most restrictive ordinance, of applicable city and county ordinances, to remain within compliance with both county and city policies. Therefore, less than significant impacts would occur from construction equipment noise generated during construction of the Proposed Action.

No Action Alternative: Under the No Action Alternative, the existing gasline would not be relocated, and no construction-related noise would be created. However, the purpose and need would not be met.

SECTION - 3.6 Hazardous Materials

SECTION - 3.6.1 Affected Environment

The Corps prepared a Hazardous, Toxic and Radioactive Waste (HTRW) evaluation for the Prado Spillway Modification Project, which includes the project area for the gasline relocation efforts. The HTRW analysis focused on the known residual and active releases of HTRW into the adjacent property and environment within a 1-mile distance of the study area. The California State Water Resources Control Board's Geotracker environmental database was searched for environmental pollutant information and no known active HTRW sites were identified within the project area.

There is one known stationary source of hazardous waste pollution at the project site not covered by the Geotracker database. The Prado Spillway has a mural known to contain lead-based paints and other heavy metals. However, downstream soil analyses indicate that toxins from the spillway are not being transported downstream (University of California, 1996).

SECTION - 3.6.2 Environmental Consequences

Significance Criteria

Impacts associated with hazardous materials would be considered significant if the proposed action resulted in:

- a potential public health hazard involving the use, production, or disposal of materials, which pose a hazard to human, animal or plant populations in the project area.

Proposed Action: No known hazardous material sites will be impacted due to construction of the proposed action. During construction, trenching has the potential to encounter unknown hazardous materials. Based on previous projects within the area such as the reconstruction of the channelized outlet, the chance of encountering hazardous materials is low. It is highly unlikely that the gasline being removed contain asbestos due to their age, and a remediation plan is in place (Section 4.2, environmental commitment 19) to deal with asbestos, if found. In addition, a spill prevention plan will be implemented (Section 4.2, environmental commitment #12) in case there is a release of oil, diesel fuel, transmission fluid or other materials for equipment. Due to the lack of hazardous materials in the project area, and with implementation of environmental commitments to prevent against unforeseen hazardous material impacts (reference ECs above), the proposed action will not result in a public health hazard to human, animal or plant populations and impacts would be less than significant.

SECTION 4 – ENVIRONMENTAL COMPLIANCE AND COMMITMENTS

SECTION - 4.1 COMPLIANCE

SECTION 4.1.1 National Environmental Policy Act (NEPA)

This EA has been prepared in compliance with NEPA. Based on the analyses summarized in this EA, the proposed action will not have a significant impact on the human environment and preparation of an Environmental Impact Statement is not warranted. .

SECTION - 4.1.2 Clean Water Act

The CWA was passed to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Specific sections of the CWA control the discharge of pollutants and wastes into aquatic and marine environments. Sections of the CWA that apply to the Proposed Action are Section 401, which requires certification that the proposed discharges affecting waters of the United States comply with the State Water Quality Standards, and Section 404(b)(1), which establishes guidelines for discharge of dredged or fill materials into waters of the United States.

No work would occur within the San Ana River, and indirect impacts would be avoided through the implementation of standard stormwater protection measures; therefore, no 404 or 401 permits would be required for this action. The proposed action is in compliance with the Clean Water Act.

SECTION - 4.1.3 Endangered Species Act.

Under ESA Section 7(a)(2), each federal agency must ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of the species' designated critical habitat (16 U.S.C. § 1536(a)(2)). If an agency determines that its actions "may affect" a listed species or its critical habitat, the agency must conduct informal or formal consultation, as appropriate, with either the USFWS or the NMFS, depending on the species at issue (50 C.F.R. §§402.01, 402.14(a)–(b)). If, however, the action agency independently determines that the action would have "no effect" on listed species or critical habitat, the agency has no further obligations under the ESA.

The Corps has determined the Proposed Action may adversely affect the least Bell's vireo, California Gnatcatcher and may affect but not likely adversely affect the least Bell's vireo's critical habitat. Formal consultation was initiated June 24, 2021. The Corps will receive a final biological opinion prior to construction commencing. With implementation of the conservation measures contained in the Corps' Biological Assessment (see **Appendix E**), as well as any requirements contained in the subsequent Biological Opinion, this project would be in compliance with the ESA.

SECTION - 4.1.4 Bald and Golden Eagle Protection Act, as amended

The proposed action 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. A preconstruction survey will be conducted to identify any eagles onsite. A Corps approved biological monitor will be present for the entirety of the work to ensure compliance with the Bald and Golden Eagle Protection Act.

SECTION - 4.1.5 Clean Air Act

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 action conforms with the 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 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.

SECTION - 4.1.6 National Historic Preservation Act.

In order to comply with Section 106 of the NHPA, the Corps, SHPO, and the ACHP executed a PA in 1993 for the entire SARMP of which the current undertaking is just one small piece **(Appendix D**). The PA is still valid and will expire once construction of the SARMP is complete. The PA details the procedures to be followed for each feature of the project. Under the Proposed Action, no additional consultation is required. Prior to the PA's execution, the entire SARMP APE, including the existing and proposed pipeline corridors and staging area were surveyed for the presence of historic and prehistoric resources (Lagenwalter and Brock, 1985). No cultural resources were located within the proposed gas-line route, the 3.77 acre staging area, or along the existing pipeline that would be removed or grouted in place.

Following the 1985 survey most of the proposed gas-line route was used as a borrow area for the Prado Dam embankment raise. Those portions of the proposed pipeline corridor that are outside of the previously used borrow area were disturbed during the reconstruction of the outlet channel and main dam embankment raise. Due to the level of previous ground disturbance, the Corps has determined that no further inventory of the gas-line relocation corridor is necessary under Stipulation 1 of the PA. The Proposed Action is in compliance with the Act.

SECTION - 4.1.7 Section 10 of the Rivers and Harbors Act.

Section 10 of the Rivers and Harbors Act approved March 3, 1899, (33 U.S.C. 403), prohibits the unauthorized obstruction or alteration of any navigable water of the United States. The construction of any structure in or over any navigable water of the United States, the excavating from or depositing of material in such waters, or the accomplishment of any other work affecting the course, location, condition, or capacity of such waters is unlawful unless the work has been recommended by the Chief of Engineers and authorized by the Secretary of the Army. All work will be outside of the Santa Ana River and would not have any effects on navigation therefore, the Proposed Action is in compliance with the Rivers and Harbors Act.

SECTION – 4.1.8 Migratory Bird Treaty Act

The proposed action is in compliance. The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711) makes it unlawful to possess, buy, sell, purchase, barter or "take" any migratory bird listed in Title 50 of the Code of Federal Regulations Part 10. "Take" is defined as possession or destruction of migratory birds, their nests or eggs. Birds protected under the MBTA include essentially all native birds in a given region. Initial vegetation clearing must be conducted outside of the nesting bird season. Because the Corps also wants to minimize impacts to federally listed species, vegetation removal is planned within a shorter span of time than the migratory nesting season (removal is planned between September 15th and February 15th).

SECTION – 4.1.9 Executive Order 12898, Environmental Justice in Minority and Low-Income Populations

E.O. 12898 focuses Federal attention on the environment and human health conditions of minority and low-income communities and calls on agencies to achieve environmental justice as part of its mission. The order requires the USEPA 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, 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 (CEQ 1997).

An analysis of demographic data was conducted to derive information on the approximate locations of low-income and minority populations in the community of concern. Since the analysis considers disproportionate impacts, two areas must be defined to facilitate comparison between the area actually affected and a larger regional area that serves as a basis for comparison and includes the area actually affected. The larger regional area is defined as the smallest political unit that includes the affected area and is called the community of comparison. For purposes of this analysis, the affected area is a half-mile radius around the project areas, and the city of Corona is the community of comparison.

Minority populations: EO 12898 defines a minority as an individual belonging to one of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. A minority population, for the purposes of this environmental justice analysis, is identified when the minority population of the potentially affected area is greater than 50% or the minority population is meaningfully greater than the general population or other appropriate unit of geographic analysis. USEPA's EJScreen tool and the U.S. Census data quick facts was used to obtain the study area demographics. Data is provided in Appendix B. Table 5 provides a summary of the study area demographics.

Table 5. Minority Population and Low-Income Population Demographics

Demographics	Affected Area	State	City
Minority Population	n/a%	62%	n/a%
Low-income Population	n/a%	33%	n/a%

Poverty Rates: The EO does not provide criteria to determine if an affected area consists of a low-income population. For purposes of this assessment, the CEQ criterion for defining a low-income population has been adapted to identify whether or not the population in an affected area constitutes a low-income population. An affected geographic area is considered to consist of a low-income population (i.e., below the poverty level, for purposes of this analysis) where the percentage of low-income persons 1) is greater than 50%, or 2) is meaningfully greater than the low-income population percentage in the general population or other appropriate units of geographic analysis. The United States Census Bureau poverty assessment weighs income before taxes and excludes capital gains and non-cash benefits (such as public housing, Medicaid, and food stamps). Table 4 provides a summary of the low-income population for the affected area, city of Corona, and the state of California.

Due to the remote location the affected area does not constitute an EJ community. Therefore, there would be no impacts resulting from the Proposed Action that would result in disproportionately high and adverse impacts to minority and low-income communities. The proposed action is in compliance with Executive Order 12898.

SECTION - 4.1.10 Executive Order 11988, Floodplain Management

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

SECTION - 4.1.11 Executive Order 13112, Invasive Species

The proposed action 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 were added to reduce impacts from invasive species. Furthermore, restoration areas will be monitored and managed (weeded) for 8 years after restoration.

SECTION - 4.2 ENVIRONMENTAL COMMITMENTS

The Proposed Action includes the following environmental commitments that would be included in contract specifications:

1 All vegetation removal must occur between September 15th to February 15th to avoid impacts to CAGN, LBVI and other nesting birds.

2. Corps-approved biological monitor will continue to monitor and survey the proposed action area and adjacent habitats throughout construction and restoration activities for the presence of special status species, and will confirm that conservation measures are sufficient to avoid or minimize impacts to these species, or shall recommend additional measures as warranted. Prior to construction activities, the Corps-approved biological 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. The training shall also include a summary of sensitive species and habitats potentially present within and adjacent to the proposed action area.

3 Prior to construction activities, the Corps-approved biological 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. The training shall also include a summary of sensitive species and habitats potentially present within and adjacent to the proposed action area.

4 Portable sound walls will be required for work occurring between February 15th to September 15th of any year.

5 The construction contractor will be required to monitor noise regularly during the nesting season (February 15 – September 15). Ambient noise levels will be recorded by the Corps-approved biological monitor prior to the nesting season, or prior to construction during that period to ensure that 1) noise does not exceed 60 dBA for

LBVI and 73dB for CAGN, or another agreed upon limit with the USFWS, within occupied CA Gnatcatcher and least Bell's vireo habitat during nesting season; or, (2) noise does not exceed 5 dBA above ambient conditions if said levels are above 60 dBA LBVI and 73 dBA for CAGN, or another agreed upon limit. If construction noise levels within occupied adjacent habitat cannot be reduced below 60 dBA LBVI and 73 dBA for CAGN or another agreed upon limit, during nesting season of any year, and if those exceedances are documented to occur on two or more consecutive days, the Corps or project proponent will offset impacts at a 1:1 ratio per any period during the breeding season affected by such noise levels. This 1:1 ratio will be based on the acreage of occupied coastal sage scrub or riparian habitat outside the project footprint subject to noise levels above agreed-upon thresholds during the nesting season, per the number of breeding seasons affected (e.g., 1 acre of coastal sage scrub habitat affected by noise in two breeding seasons will result in 2 acres of restoration). The area affected will be determined by the periodic project noise monitoring. The Corps will identify restoration areas for offsetting noise impacts in coordination with USFWS and will maintain (continue weeding) those areas for a period of 5 years.

6 In addition to revegetating temporary impact areas, and to address temporal impacts, the Corps will perform or require offsite restoration at a 1 to 1 ratio for all coastal sage scrub habitat and riparian habitat impacted by the proposed action (e.g., 1 acre of coastal sage scrub habitat impacted by proposed action will result in 1 acres of offsite restoration), Offsite restoration area(s) will be identified in coordination with the U.S. Fish and Wildlife Service prior to completion of construction. Offsite restoration sites will be actively managed (weeded, planted, irrigated as needed) for a period of 5 years or until success criteria (as defined above) are met (a) for work areas that don't overlap with the potential future spillway project, the gasline project would provide offsite 1:1 mitigation (restoration would occur within areas that are outside of the spillway TCE) and, (b) for work areas that do overlap with the potential future spillway TCE, this BA assumes that the spillway project will perform any required onsite and/or offsite mitigation for direct impacts to that habitat. If the spillway project is not approved for construction within 2 years of the relocation, or if the TCE changes (and overlap is reduced), then the Corps will conduct or require 1 acre of offsite restoration for each acre directly impacted by the gasline work.

7 A storm water pollution prevention plan (SWPPP) and soil erosion and sediment plan will be developed prior to construction to minimize erosion and identify measures to eliminate or control pollution sources onsite during and following the construction phase. The SWPPP will determine specific Best Management Practices (BMPs) needed during the project construction phase and after to minimize erosion, identify specific pollution prevention measures that will eliminate or control potential point and non-point pollution sources onsite, and to avoid causing or contributing to any water quality standard exceedances.

8 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.

9 Upon construction completion, the contractor will immediately re-vegetate bare and disturbed areas with a native hydroseed mix approved by the Corps and depending on the time of year the hydroseed is placed, temporary supplemental watering may

be needed. Watering need and frequency for hydroseeded areas will be approved by the Corps to ensure successful germination and establishment of native vegetation. These restoration areas must be monitored and managed (weeded) for at least 8 years after construction to reduce the potential for infestation. However, any areas that overlap with the Prado Dam Spillway project (if or when that project is approved and funded) will transfer over to Corps for long-term monitoring after completion of Spillway construction.

10 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 best management practices to prevent runoff carrying toxic substances from entering the Santa Ana River and associated drainages. If a spill occurs outside of a designated area, the cleanup will be immediate and documented.

b. Fire suppression equipment including shovels, water, and extinguishers will be available onsite during the fire season (as determined by Riverside County Fire Department) and when activities may produce sparks. Emergency contacts for the Norco Fire Station No. 57 on Corydon Avenue will be established.

c. To the extent feasible, the contractor will prevent exotic weeds from establishing within the work site during construction. Construction equipment will be cleaned of mud or other debris prior to mobilizing and before leaving the site to reduce the potential spread of invasive plants and/or seeds.

11 Construction personnel will strictly limit their activities, vehicles, equipment, and construction materials to the TCE including designated staging areas or routes of travel. The construction area(s) will be the minimal area necessary to complete the proposed action and will be specified in the construction plans. Highly visible barriers (such as orange construction fencing or sound walls) will be installed in sensitive habitats adjacent to the TCE to designate limits of construction activities. These barriers will be maintained until the completion of all construction activities.

12: A spill prevention plan will be developed to prescribe BMPs to prevent hazardous material releases and ensure cleanup of any hazardous material releases.

13: Most work will occur during daylight hours (7am to 5pm) except during HDD pullback (pulling the pipe through the HDD tunnel) and Tie-in (reconnecting the gasline). Lights required for nighttime work will be directed inward toward the TCE to the extent possible and not directed into adjacent habitat areas to reduce impacts to wildlife movement.

14. All local noise ordinance must be followed including obtaining any necessary variance from local authorities. 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.

15. Prior to any ground-disturbing activities (e.g. mechanized clearing or rough grading) for all project related construction activities, a Corps qualified biologist (or environmental monitor) shall conduct a pre-construction surveys of Federally-listed 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.

16. 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. Emergency contacts for the Norco Fire Station No. 57 on Corydon Avenue will be established.

c. To the extent feasible, the contractor will prevent exotic weeds from establishing within the work site during construction. Construction equipment will be cleaned of mud or other debris prior to mobilizing and before leaving the site to reduce the potential spread of invasive plants and/or seeds.

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

18. 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.

19. If any segment of the gasline tests positive for asbestos, the soil will be back-filled and a remediation plan will be prepared.

20. Any wildlife corridor (e.i. project area east of the Prado Dam that connects to Chino Hills State Park, and all of the vegetated ramps) shall not be blocked overnight by equipment.

21. The project construction contractor shall restrict the idling of construction equipment to

10 minutes.

22. 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. Emergency contacts for the Norco Fire Station No. 57 on Corydon Avenue will be established.

c. To the extent feasible, the contractor will prevent exotic weeds from establishing within the work site during construction. Construction equipment will be cleaned of mud or other debris prior to mobilizing and before leaving the site to reduce the potential spread of invasive plants and/or seeds.

SECTION - 5 REFERENCES

Calflora: Information on California plants for education, research and conservation. Berkeley, California: The Calflora Database [a non-profit organization]. Available: https://www.calflora.org/ (Accessed: April 2021).

California Department of Fish and Wildlife (CDFW). 2021. California Natural Diversity Database, Rarefind 5. Accessed April 27, 2021.

FEMA Technical Manual 484. "Conduits through Embankment Dams", 2005.

Franzreb, K. 1989. Ecology and Conservation of the Endangered Least Bell's Vireo. U.S. Department of the Interior, Fish and Wildlife Service.

Kus, Barbara, Steven L. Hopp, R. Roy Johnson and Bryan T. Brown. 2010. Bell's Vireo (Vireo bellii), version 2.0. In The Birds of North America (P. G. Rodewald, editor). Cornell Lab of Ornithology, Ithaca, New York, USA.

Langenwater, Paul E. II, and James Brock. 1985. Phase II Archaeological Studies of Prado Basin and the Lower Santa Ana River. ECOS Management Criteria, Cypress CA.

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U.S. Fish and Wildlife Service. 2020. Reinitiation of Formal Section 7 Consultation on the Santa Ana River Project, Reach 9 (BNSF Bridge Project), San Bernardino, Riverside and Orange Counties, California (FWS-WRIV-08B0408-15F0592-R003). Palm Springs Fish and Wildlife Office, Palm Springs, California.

USFWS. 1994. Designation of Critical Habitat for Least Bell's Vireo. Federal Register 50 CFR 17. 02 February, 1994.

SECTION - 6 ACRONYMS

ACHP ..... Advisory Council on Historic Preservation
APE ..... Area of Potential Effects
CAA ..... Clean Air Act
CEQ ..... Council on Environmental Quality
CO ..... Carbon monoxide
CWA ..... Clean Water Act
EA ..... Environmental Assessment
EFH ..... Essential Fish Habitat
ESA ..... Endangered Species Act
FONSI ..... Finding of No Significant Impact
NEPA ..... National Environmental Policy Act
NHPA ..... National Historic Preservation Act
NO2 ..... Nitrogen dioxide
SHPO ..... State Historic Preservation Officer
USFWS ..... U.S. Fish and Wildlife Service

SECTION - 7 PREPARERS/REVIEWERS

Preparers

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Danielle Storey	Corps, Archeologist, Ecosystems Planning Section

Reviewers

Hayley Lovan	Corps, Acting Environmental Resources Branch Chief

SECTION - 8 DISTRIBUTION LIST

Federal Agencies

U.S. Environmental Protection Agency
Environmental Review Branch
Region 9

U.S. Fish & Wildlife Service Palm Springs Office

U.S. Geological Survey, Palm Springs Office

State Agencies

CA. Dept. of Conservation District 1,
Division of Oil, Gas, and Geothermal Resources

California Department of Fish and Wildlife

State Historic Preservation Officer
Office of Historic Preservation

Regional Water Quality Control Board Region 8

Native American Heritage Commission

State Water Resources Control Board

Department of Parks and Recreation

Caltrans District 12 and 8

Caltrans Office of Encroachment Permits 464

CA Dept. of Toxic Substances Control

CA Dept. of Public Health

Local Agencies

Orange County Water District

Inland Empire Utilities Agency
Riverside Co. Flood Control

Orange County Public Works Flood Control Div./
Santa Ana River Section

OC Public Works/OC Development Services

South Coast Air Quality Management District

General Manager Metropolitan Water District

Orange County Transportation Authority

Riverside County, County Recorder

Riverside County Planning Department

Riverside County Regional Parks and Open Space

Orange County Clerk – Recorderer

Western Riverside County Regional Conservation Authority

Eastvale City Hall

City of Norco

Organizations/Groups
Santa Ana Watershed Association

Riverside-Corona Resource Conservation District

Riverside Audubon Society

Audubon Society
San Bernardino Valley Chapter

Prado Basin Group Sierra Club San Gorgonio Chapter

Glenn Parker Wildlife Corridor Conservation Authority

Associate Director Inland Empire Waterkeeper

Endangered Habitats League

Private Entity
Public Projects BNSF Railway

BNSF Railway

Libraries
Corona Public Library

Riverside Public Library

Chino Branch Library

Native American Contacts
Gabrieleno Band of Mission Indians - Kizh Nation

Gabrieleno/Tongva San Gabriel Band of Mission Indians

Gabrielino /Tongva Nation

Gabrielino Tongva Indians of California Tribal Council

Juaneno Band of Mission Indians

Pauma Band of Luiseno Indians - Pauma & Yuima Reservation

Pechanga Band of Mission Indians

Rincon Band of Mission Indians

Soboba Band of Luiseno Indians

APPENDIX A- Air Quality Analysis

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.

Data Preparation & Data Entry (Off-Road Equipment)

Using data from cost estimating worksheets, various pieces of off-road equipment were grouped into classes of off-road equipment recognized in CalEEMod. Total hours for each class of equipment were adjusted for the approximately 122-day construction period. See enclosed Off-road Equipment Data Sheet.

Data Entry (On-Road Equipment)

All on-road emission estimates assume the following for each construction year:

- 6 heavy duty trucks (HHDT) traveling 20 miles per day.
- 10 worker vehicles (LDA) traveling 14.7 miles per day, the CalEEMod default value.

Data Presentation

Emissions Summary from Section 2.0 of CalEEMod's annual emissions report were reported as estimated annual emission (enclosed).

General Conformity requires estimation of ozone. 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.

Off-road Equipment Data

Equipment	CalEEMod Equivalent Classes	Number	Horsepower	Hours per Day	Total Days on Site	hours per day adjusted for 122 total work days
Air Compressor- 175 CFM	AIR COMPRESSOR	1	75	4	40	1.311475
DDR 420 Drill Rig (for HDD)	BORE/DRILL RIG	1	180-186	10	42	3.442623
R.T. 30 Ton Crane (for HDD)	CRANES	3	152	4	14	0.459016
Excavator- CAT 330 Size	EXCAVATOR	1	270	4	40	1.311475
Power Generator	GENERATOR SETS	2	125	8	80	5.245902
OMEGA D-750 Triplex Pump (for HDD)	GENERATOR SETS	1	750	10	42	3.442623
Power Generator 275 kW (for HDD)	GENERATOR SETS	1	419-449	10	42	3.442623
Motor Grader- CAT 12 Size	GRADER	1	135-175	8	15	0.983607
Low-bed with Trailer	NOT COUNTED	2	325-425	4	7	0.229508
Pickup 1/2 ton (4WD)	NOT COUNTED	8	300-360	4	80	2.622951
HDD	**NOT COUNTED**					0
End Dump Truck (for HDD)	NOT COUNTED	2	295-335	4	7	0.229508
120 BBL Vacuum Truck (for HDD)	NOT COUNTED	2	250	5	21	0.860656
Low-bed with Trailer (Delivery for HDD)	NOT COUNTED	2	325-425	4	7	0.229508
Pickup 1/2 ton (4WD)	NOT COUNTED	4	300-360	3	42	1.032787
Pump- Fill and Test	NOT COUNTED	1	100	6	5	0.245902
3 AX Water Truck 6x6	OFF-HIGHWAY TRUCKS	1	300-360	2	80	1.311475
TRI MCS 1000 Mud System (for HDD)	OTHER MATERIAL HANDLING EQ	1	540	10	42	3.442623
Forklift - 10,000# & Over	ROUGH TERRAIN FORKLIFE	1	90	4	40	**1.311475**
Crawler Dozer w/Winch D-7	TRACTOR CRAWLER	2	235-240	8	15	0.983607
Pipelayer- 572 Size	TRACTOR CRAWLER	1	230	4	40	1.311475
Bending Machine 22-36"	TRACTOR CRAWLER	1	173	2	40	0.655738
Backfill/Padding Machine Outlaw	TRACTOR CRAWLER	2	300-400	4	20	0.655738
Pipelayer- 572 Size	TRACTOR CRAWLER	2	230	4	21	0.688525
Backhoe- 420/430/C580	TRACTOR/LOADER/BACKHOES	1	85-95	4	40	1.311475
Backhoe CAT 420 (for HDD)	TRACTOR/LOADER/BACKHOES	2	85-93	5	7	0.286885
Welding Truck (for HDD)	WELDER	1	50	4	21	0.688525
Welder	WELDER	1	50	4	45	1.47541

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

PRADO GAS LINE RELOCATION

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
	1.00		5.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2023
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Z

Off-road Equipment - Z

Trips and VMT - TOTAL TRIPS = TRIPS USED TO HAUL EQUIPMENT TO AND FROM SITE

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	122.00
tblConstructionPhase	PhaseEndDate	11/16/2022	5/3/2022
tblConstructionPhase	PhaseStartDate	12/30/2021	11/15/2021
tblOffRoadEquipment	HorsePower	158.00	84.00
tblOffRoadEquipment	HorsePower	168.00	172.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	HorsePower	78.00	46.00
tblOffRoadEquipment	HorsePower	97.00	231.00
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.38	0.74
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.40	0.42
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.48	0.45
tblOffRoadEquipment	LoadFactor	0.37	0.29
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Other Material Handling Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType	Welders	Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	UsageHours	7.00	0.45
tblOffRoadEquipment	UsageHours	8.00	5.20
tblOffRoadEquipment	UsageHours	8.00	3.40
tblOffRoadEquipment	UsageHours	8.00	0.68
tblOffRoadEquipment	UsageHours	7.00	1.30
tblOffRoadEquipment	UsageHours	7.00	0.28
tblOffRoadEquipment	UsageHours	8.00	0.68
tblOffRoadEquipment	UsageHours	8.00	1.40
tblTripsAndVMT	HaulingTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	0.00	10.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0325	0.3214	0.2610	5.9000e-004	1.9300e-003	0.0140	0.0159	5.1000e-004	0.0134	0.0139	0.0000	51.0284	51.0284	0.0109	5.0000e-005	51.3165
2022	0.0731	0.6983	0.6377	1.4600e-003	4.8100e-003	0.0301	0.0349	1.2800e-003	0.0287	0.0300	0.0000	126.6948	126.6948	0.0268	1.2000e-004	127.4027
Maximum	**0.0731**	**0.6983**	**0.6377**	**1.4600e-003**	**4.8100e-003**	**0.0301**	**0.0349**	**1.2800e-003**	**0.0287**	**0.0300**	**0.0000**	**126.6948**	**126.6948**	**0.0268**	**1.2000e-004**	**127.4027**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0325	0.3214	0.2610	5.9000e-004	1.9300e-003	0.0140	0.0159	5.1000e-004	0.0134	0.0139	0.0000	51.0283	51.0283	0.0109	5.0000e-005	51.3164
2022	0.0731	0.6983	0.6377	1.4600e-003	4.8100e-003	0.0301	0.0349	1.2800e-003	0.0287	0.0300	0.0000	126.6946	126.6946	0.0268	1.2000e-004	127.4025
Maximum	**0.0731**	**0.6983**	**0.6377**	**1.4600e-003**	**4.8100e-003**	**0.0301**	**0.0349**	**1.2800e-003**	**0.0287**	**0.0300**	**0.0000**	**126.6948**	**126.6948**	**0.0268**	**1.2000e-004**	**127.4025**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	11-16-2021	2-14-2022	0.6245	0.6245
2	2-16-2022	5-14-2022	0.4940	0.4940
		Highest	0.6245	0.6245

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	11/15/2021	5/3/2022	5	122	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Bore/Drill Rigs	1	3.40	221	0.50
Building Construction	Cranes	3	0.45	231	0.29
Building Construction	Excavators	1	1.30	84	0.74
Building Construction	Generator Sets	2	5.20	84	0.74
Building Construction	Generator Sets	1	3.40	84	0.74
Building Construction	Generator Sets	1	0.68	84	0.74
Building Construction	Graders	1	0.98	187	0.41
Building Construction	Off-Highway Trucks	1	1.30	402	0.38
Building Construction	Other Material Handling Equipment	1	3.40	172	0.42
Building Construction	Rough Terrain Forklifts	1	1.30	100	0.40
Building Construction	Crawler Tractors	2	0.98	212	0.43
Building Construction	Crawler Tractors	1	1.30	212	0.43
Building Construction	Crawler Tractors	1	0.65	212	0.43
Building Construction	Crawler Tractors	2	0.65	212	0.43
Building Construction	Crawler Tractors	2	0.68	212	0.43
Building Construction	Air Compressors	1	1.30	46	0.45

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	Tractors/Loaders/Backhoes	1	1.30	231	0.29
Building Construction	Tractors/Loaders/Backhoes	2	0.28	97	0.37
Building Construction	Welders	1	0.68	46	0.45
Building Construction	Welders	1	1.40	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	27	10.00	0.00	6.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0318	0.3207	0.2542	5.7000e-004		0.0140	0.0140		0.0133	0.0133	0.0000	49.3724	49.3724	0.0108	0.0000	49.6431
Total	**0.0318**	**0.3207**	**0.2542**	**5.7000e-004**		**0.0140**	**0.0140**		**0.0133**	**0.0133**	**0.0000**	**49.3724**	**49.3724**	**0.0108**	**0.0000**	**49.6431**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	1.7000e-004	4.0000e-005	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0539	0.0539	0.0000	1.0000e-005	0.0565
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	5.4000e-004	6.7600e-003	2.0000e-005	1.9200e-003	1.0000e-005	1.9300e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.6021	1.6021	5.0000e-005	5.0000e-005	1.6169
Total	**8.4000e-004**	**7.1000e-004**	**6.8000e-003**	**2.0000e-005**	**1.9300e-003**	**1.0000e-005**	**1.9600e-003**	**5.1000e-004**	**1.0000e-005**	**5.3000e-004**	**0.0000**	**1.6560**	**1.6560**	**5.0000e-005**	**6.0000e-005**	**1.6734**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0318	0.3207	0.2542	5.7000e-004		0.0140	0.0140		0.0133	0.0133	0.0000	49.3723	49.3723	0.0108	0.0000	49.6430
Total	**0.0318**	**0.3207**	**0.2542**	**5.7000e-004**		**0.0140**	**0.0140**		**0.0133**	**0.0133**	**0.0000**	**49.3723**	**49.3723**	**0.0108**	**0.0000**	**49.6430**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	1.7000e-004	4.0000e-005	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0539	0.0539	0.0000	1.0000e-005	0.0565
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	5.4000e-004	6.7600e-003	2.0000e-005	1.9200e-003	1.0000e-005	1.9300e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.6021	1.6021	5.0000e-005	5.0000e-005	1.6169
Total	**8.4000e-004**	**7.1000e-004**	**6.8000e-003**	**2.0000e-006**	**1.9300e-003**	**1.0000e-006**	**1.9600e-003**	**5.1000e-004**	**1.0000e-006**	**5.3000e-004**	**0.0000**	**1.6560**	**1.6560**	**5.0000e-006**	**6.0000e-006**	**1.6734**

3.2 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0716	0.6968	0.6222	1.4200e-003		0.0300	0.0300		0.0287	0.0287	0.0000	122.7058	122.7058	0.0267	0.0000	123.3737
Total	**0.0716**	**0.6968**	**0.6222**	**1.4200e-003**		**0.0300**	**0.0300**		**0.0287**	**0.0287**	**0.0000**	**122.7058**	**122.7058**	**0.0267**	**0.0000**	**123.3737**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.6000e-004	8.0000e-005	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1304	0.1304	1.0000e-005	2.0000e-005	0.1367
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4600e-003	1.1800e-003	0.0154	4.0000e-005	4.7700e-003	3.0000e-005	4.8000e-003	1.2700e-003	3.0000e-005	1.2900e-003	0.0000	3.8586	3.8586	1.1000e-004	1.0000e-004	3.8923
Total	**1.4700e-003**	**1.5400e-003**	**0.0155**	**4.0000e-005**	**4.8100e-003**	**3.0000e-005**	**4.8400e-003**	**1.2800e-003**	**3.0000e-005**	**1.3000e-003**	**0.0000**	**3.9890**	**3.9890**	**1.2000e-004**	**1.2000e-004**	**4.0290**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0716	0.6968	0.6222	1.4200e-003		0.0300	0.0300		0.0287	0.0287	0.0000	122.7057	122.7057	0.0267	0.0000	123.3735
Total	**0.0716**	**0.6968**	**0.6222**	**1.4200e-003**		**0.0300**	**0.0300**		**0.0287**	**0.0287**	**0.0000**	**122.7057**	**122.7057**	**0.0267**	**0.0000**	**123.3735**

3.2 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.6000e-004	8.0000e-005	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1304	0.1304	1.0000e-005	2.0000e-005	0.1367
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4600e-003	1.1800e-003	0.0154	4.0000e-005	4.7700e-003	3.0000e-005	4.8000e-003	1.2700e-003	3.0000e-005	1.2900e-003	0.0000	3.8586	3.8586	1.1000e-004	1.0000e-004	3.8923
Total	**1.4700e-003**	**1.5400e-003**	**0.0155**	**4.0000e-005**	**4.8100e-003**	**3.0000e-005**	**4.8400e-003**	**1.2800e-003**	**3.0000e-005**	**1.3000e-003**	**0.0000**	**3.9890**	**3.9890**	**1.2000e-004**	**1.2000e-004**	**4.0290**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Total					

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.544109	0.060768	0.184625	0.129879	0.023845	0.006339	0.011719	0.008584	0.000815	0.000515	0.024285	0.000743	0.003774

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B- Environmental Protection Agency: Environmental Justice Screener

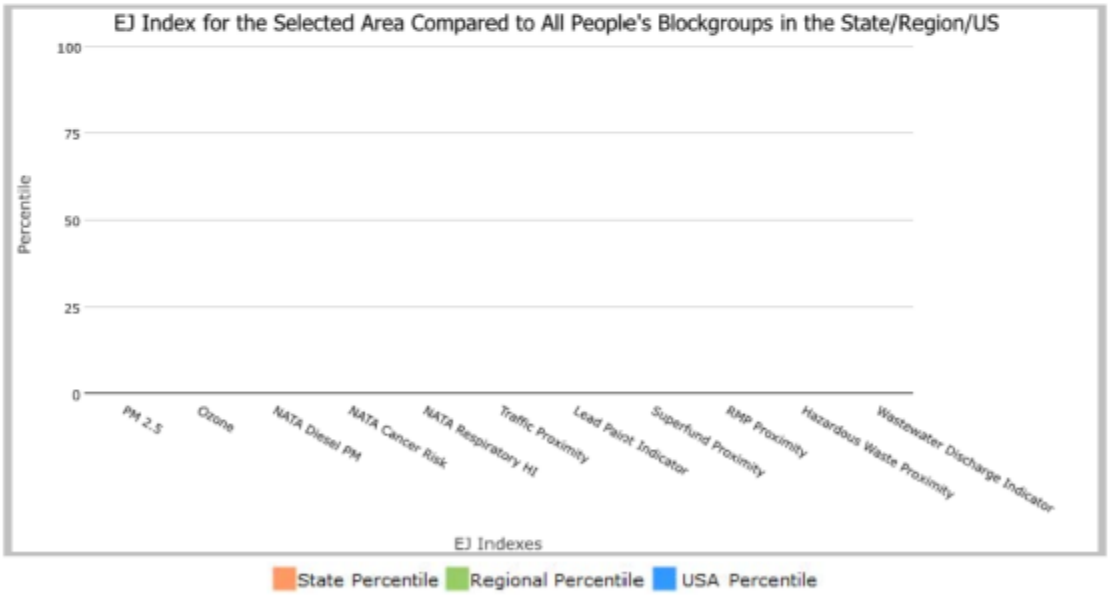
EJSCREEN Report (Version 2020)

the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 0

Input Area (sq. miles): 0.23

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	N/A	N/A	N/A
EJ Index for Ozone	N/A	N/A	N/A
EJ Index for NATA* Diesel PM	N/A	N/A	N/A
EJ Index for NATA* Air Toxics Cancer Risk	N/A	N/A	N/A
EJ Index for NATA* Respiratory Hazard Index	N/A	N/A	N/A
EJ Index for Traffic Proximity and Volume	N/A	N/A	N/A
EJ Index for Lead Paint Indicator	N/A	N/A	N/A
EJ Index for Superfund Proximity	N/A	N/A	N/A
EJ Index for RMP Proximity	N/A	N/A	N/A
EJ Index for Hazardous Waste Proximity	N/A	N/A	N/A
EJ Index for Wastewater Discharge Indicator	N/A	N/A	N/A



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJSCREEN Report (Version 2020)

the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 0

Input Area (sq. miles): 0.23

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EJSCREEN Report (Version 2020)

the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 0

Input Area (sq. miles): 0.23

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	N/A	10.6	N/A	9.99	N/A	8.55	N/A
Ozone (ppb)	N/A	49.2	N/A	50.1	N/A	42.9	N/A
NATA* Diesel PM (µg/m³)	N/A	0.467	N/A	0.479	N/A	0.478	N/A
NATA* Cancer Risk (lifetime risk per million)	N/A	36	N/A	35	N/A	32	N/A
NATA* Respiratory Hazard Index	N/A	0.55	N/A	0.53	N/A	0.44	N/A
Traffic Proximity and Volume (daily traffic count/distance to road)	N/A	2000	N/A	1700	N/A	750	N/A
Lead Paint Indicator (% Pre-1960 Housing)	N/A	0.29	N/A	0.24	N/A	0.28	N/A
Superfund Proximity (site count/km distance)	N/A	0.17	N/A	0.15	N/A	0.13	N/A
RMP Proximity (facility count/km distance)	N/A	1.1	N/A	0.99	N/A	0.74	N/A
Hazardous Waste Proximity (facility count/km distance)	N/A	6.2	N/A	5.3	N/A	5	N/A
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	N/A	18	N/A	18	N/A	9.4	N/A
Demographic Indicators							
Demographic Index	N/A	47%	N/A	46%	N/A	36%	N/A
People of Color Population	N/A	62%	N/A	60%	N/A	39%	N/A
Low Income Population	N/A	33%	N/A	33%	N/A	33%	N/A
Linguistically Isolated Population	N/A	9%	N/A	8%	N/A	4%	N/A
Population With Less Than High School Education	N/A	17%	N/A	16%	N/A	13%	N/A
Population Under 5 years of age	N/A	6%	N/A	6%	N/A	6%	N/A
Population over 64 years of age	N/A	14%	N/A	14%	N/A	15%	N/A

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

Appendix C: Seed Mix

This coastal sage scrub seed mix was prepared by a biologist based on existing coastal sage scrub composition and was used to seed the wildlife ramp that goes over the auxiliary dike of Prado Dam. This is a potential list but substitutions may be made based on review and recommendations by Corps biologists and consultants.

Common Name	Botanical Name	Pounds per Acre	Plant Type
California sagebrush	*Artemisia californicus*	2	Perennial
Black sage	*Salvia mellifera*	3	Perennial
White sage	*Salvia apiana*	2	Perennial
Coyote brush	*Baccharis pilularis*	2	Perennial
California bush sunflower	*Encelia californica*	4	Perennial
California buckwheat	*Eriogonum fasciculatum*	8	Perennial
Coast goldenbush	*Isocoma menziesii*	3	Perennial
Deerweed	*Lotus scoparius*	5	Bi-annual
Arroyo lupine	*Lupinus succulentus*	1	Annual
California poppy	*Eschscholtzia californica*	1	Perennial herb/Annual
Plantain	*Plantago ovata*	5	Annual
Purple needle grass	*Nassella pulchra*	1.5	Perennial grass
Foothill needle grass	*Nassella lepida*	1.5	Perennial grass
Nodding needle grass	*Nassella cernua*	1.5	Perennial grass
Foxtail fescue	*Vulpia (Festuca)megalura*	1	Annual
Total pounds per acre		41.5	

Appendix D: Programmatic Agreement (PA)

Enclosure One

PROGRAMMATIC AGREEMENT
AMONG
THE LOS ANGELES DISTRICT, CORPS OF ENGINEERS,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING IMPLEMENTATION OF THE SANTA ANA RIVER FLOOD CONTROL
PROJECT

Advisory Council On Historic Preservation

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

Reply to: 730 Simms Street, #401
Golden, Colorado 80401

April 23, 1993

Robert S. Joe
Chief, Planning Division
Department of the Army
Los Angeles District
Corps of Engineers
P.O. Box 2711
Los Angeles, CA 90053-2325

REF: Programmatic Agreement regarding the Santa Ana River Flood Control Project, California.

Dear Mr. Joe:

The enclosed Programmatic Agreement regarding the Santa Ana River Flood Control Project has been executed by the Council. This action constitutes the comments of the Council required by Section 106 of the National Historic Preservation Act and the Council's regulations. Please send copies of the signed Agreement to the California State Historic Preservation Officer and your Federal Preservation Officer.

The Council appreciates your cooperation in reaching a satisfactory resolution of this matter.

Sincerely,

Claudia Nissley
Director, Western Office
of Review

Enclosure

PROGRAMMATIC AGREEMENT
AMONG
THE LOS ANGELES DISTRICT, CORPS OF ENGINEERS,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING IMPLEMENTATION OF THE SANTA ANA RIVER FLOOD CONTROL PROJECT

WHEREAS, the Los Angeles District, Corps of Engineers (COE) proposes to administer the Santa Ana River Flood Control Project, authorized by the Water Resources Development Act of 1986 (Public Law 99-662); and

WHEREAS, the Santa Ana River Project (the Project) will involve flood control improvements as described in *Supplemental Environmental Impact Statement, Santa Ana River Mainstem Including Santiago Creek, Phase II General Design Memorandum* (1988); and

WHEREAS, the COE, has determined that the Project may have an effect on properties included in or eligible for inclusion in the National Register of Historic Places and has consulted with the Advisory Council on Historic Preservation (Council) and the California State Historic Preservation Officer (SHPO) pursuant to Section 800.13 of the regulations (36 CFR Part 800) implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) and Section 110(f) of the same Act (16 U.S.C. 470h-2(f)); and

WHEREAS, the Flood Control Districts of the Counties of Orange, Riverside, and San Bernardino, and the local Native American community participated in the consultation and have been invited to concur in this Programmatic Agreement; and

WHEREAS, the definitions given in 36 CFR 800.2 are applicable throughout this agreement;

NOW, THEREFORE, the COE, the Council, and the SHPO agree that the project shall be administered in accordance with the following provisions in order to satisfy the COE's responsibility under Section 106 for all individual aspects of the project.

STIPULATIONS

The COE will ensure that the following measures are carried out:

1. Archeological Survey.

Almost all of the project's area of potential effects has been surveyed. If there are additional lands that need to be surveyed for reasons such as, for example, project redesign or previously denied access, then the COE shall ensure that an archaeological survey of these lands is conducted. The survey shall be conducted in a manner consistent with the *Secretary of the Interior's Standards and Guidelines for Identification* (48 FR 44720-23) and taking into account NPS publication, *The Archeological Survey: Methods and Uses* (1978:GPO stock #024-016-00091). The survey shall be conducted in consultation with the SHPO, and a report of the survey, meeting the standards of the SHPO, shall be submitted to the SHPO for review and approval.

2. Recording.

Archeological site record forms shall be completed for all locations where cultural materials are identified. The site record forms will be completed in accordance with the California *Archeological Inventory Handbook for Completing An Archeological Site Record* (DPR 422-A-I, Rev. 5/86).

3. Evaluation.

Regional context summaries have been developed Goldberg and Arnold (1988), and Greenwood and Foster (1990) for local prehistoric districts, historic archeological districts, and a number of individual historic archeological properties and historic structures. The COE shall use the Goldberg and Arnold, and Greenwood and Foster summaries to develop an evaluation plan to evaluate properties identified within the Project's Area of Potential Effects (APE) for eligibility for inclusion in the National Register of Historic Places (NRHP). This evaluation plan shall detail site- or area-specific studies for the archival, architectural or subsurface testing which may be necessary to resolve questions of eligibility and to identify the values that qualify a property as eligible. The COE shall submit the evaluation plan to the SHPO for review and comment. Unless the SHPO objects within thirty days after receipt of the plan, the COE shall ensure that it is implemented.

Once an evaluation plan is accepted by the SHPO, the COE shall, in consultation with the SHPO, apply the National Register Criteria (36 CFR 60.4) to determine whether the properties are eligible. Should the COE and the SHPO determine that any of the properties are eligible for listing in the NRHP, the properties shall be considered eligible for purposes of this agreement. Should the COE and SHPO disagree that some or any of the properties are eligible, the COE shall submit documentation to the Keeper of the National Register for a formal determination of eligibility. Should COE and SHPO agree that a property is not eligible, such concurrence shall be, for the purposes of this Agreement, deemed conclusive that the property is not eligible and need not be the subject of further consideration.

4. Treatment Plan.

The COE shall assess the effects of the project on all National Register eligible properties in accordance with 36 CFR 800.5. A Treatment Plan (TP) shall be developed to take into account the effects of the project on historic properties that are determined to be eligible for listing in the NRHP.

The TP shall be consistent with the Secretary of the Interior's *Standards and Guidelines for Archeological Documentation* (48 FR 44734-37) and take into account the Council's publication, *Treatment of Archeological Properties - A Handbook* (Advisory Council on Historic Preservation, draft 1980), subject to any pertinent revisions the Council may take in the publication prior to completion of the TP. It shall also take into account the Secretary of Interior's *Guidelines for Historical and Architectural Engineering Documentation* (48 FR 44729-34).

The TP shall include, but not be limited to:

A. Measures to be taken to ensure avoidance and protection of historic properties, including floodproofing where feasible;

B. Data recovery plans founded on research designs to guide data recovery at historic properties significant for their information potential and which cannot be avoided by the effects of the project, or otherwise preserved in place. The research designs shall be developed in accordance with the standards and guidelines attached as Appendix 1.

C. A plan for historical documentation for historic archeological properties;

D. A plan for the relocation and interpretation of suitable historic structures that cannot be preserved in place;

F. A curation agreement that ensures that all materials and data from archeological sites are curated in accordance with 36 CFR 79. Materials recovered from privately owned lands that are to be returned to their owners will be maintained in accordance with 36 CFR 79 until their analysis is complete;

G. A plan for the treatment and disposition of items of cultural patrimony and human remains developed in consultation with the SHPO and representatives of relevant local Native American groups;

H. A plan for the treatment of historic properties that may be discovered during the implementation of the undertaking;

I. A schedule for the submission and review by the SHPO of progress reports, and the methods by which the consulting parties, and interested persons, including relevant Native American groups will be kept informed of the work and afforded the opportunity to participate;

5. Review of Treatment Plan.

The COE shall submit the TP to the SHPO, Council, and concurring parties to this Agreement for review and comment. The reviewers shall have thirty (30) days from receipt of the Treatment Plan to respond to the COE with comments. Failure to respond by any consulting party within the 30-day comment period shall not prohibit the COE from implementing the Treatment Plan.

6. Historic Properties Management Plan.

Within one year of the implementation of the TP, the COE will develop a Historic Properties Management Plan (HPMP) for Prado Basin in accordance with the standards and guidelines attached as appendix 2. The COE will provide copies of the draft HPMP to the SHPO and the Council for review and acceptance. Upon acceptance of the HPMP by the SHPO and the Council, the COE will finalize and implement it in lieu of compliance with 36 CFR 800.4 through 800.6 and 36 CFR 800.11. The COE will prepare an annual report on its implementation, and provide the report to the SHPO and Council for review, comment and consultation as needed.

7. Archeological Report Dissemination.

The COE shall ensure that all final archeological and historic reports resulting from actions

pursuant to this agreement will be provided to the SHPO and to the National Park Service for possible peer review and submission to the National Technical Information Service (NTIS). The agency official shall ensure that all reports are responsive to contemporary professional standards and to the Department of Interior's *Format Standards for Final Reports of Data Recovery Programs* (42 FR 5377-79). Precise locational data may be provided only in a separate appendix, if it appears that their release could jeopardize archeological sites.

8. Provision of Information to Data Base.

The COE will ensure that information resulting from the archeological data recovery project provided for in Stipulation 4.A is provided to the Orange, San Bernardino, and Riverside Counties Information Centers of the California Archeological Inventory.

9. Disputes.

Should the Council, SHPO, or consulting parties object within 30 days to any plans provided for review pursuant to the Programmatic Agreement, the COE shall consult with the objecting party to resolve the objection. If the COE determines that the objection cannot be resolved, the COE shall forward all documentation relevant to the dispute to the Council. Within 30 days after receipt of all documentation, the Council will either:

A. provide the COE with recommendations, which the COE will take into account in reaching a final decision regarding the dispute; or

B. notify the COE that it will comment pursuant to 36 CFR 800.6(b), and proceed to comment. Any comment provided in response to such a request will be taken into account by the COE in accordance with 36 CFR 800.6(c)(2) with reference to the subject of the dispute.

10. Amendment of this Agreement.

Any party to this agreement may request that it be amended, whereupon the parties will consult in accordance with 36 CFR 800.13 to consider such amendment.

11. Termination of this agreement.

Any party to this agreement may terminate it by providing thirty (30) days notice to the other parties, provided that the other interested parties will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. In the event of termination, the COE will comply with 36 CFR 800.4 through 36 CFR 800.6 with regard to individual activities covered by this agreement.

12. Expiration of Agreement.

This agreement shall expire upon completion of the project. COE shall provide the parties to this agreement within thirty (30) days notice of a final project date.

Execution and implementation of this agreement evidences that the COE has satisfied its Section 106 responsibilities and taken into account the effects of the undertaking on historic properties.

ADVISORY COUNCIL ON HISTORIC PRESERVATION

BY: Robert D. Bush Date 4/16/93

U.S. ARMY CORPS OF ENGINEERS LOS ANGELES DISTRICT

BY: R.L. VanAntwerp Date 8/17/92

R. L. VanAntwerp,
Colonel, Corps of Engineers
District Engineer

CALIFORNIA STATE HISTORIC PRESERVATION OFFICER

BY: Knox Mellon Date August 19, 1992

Concur:

ORANGE COUNTY FLOOD CONTROL DISTRICT

BY: William E. Thom Date: 2-3-93

APPROVED AS TO FORM
TERRY C. ANDRUS, County Counsel
ORANGE COUNTY, CALIFORNIA
By Daniel P. Jones
Deputy

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

BY:_____ Date:_____

SAN BERNARDINO FLOOD CONTROL DISTRICT

BY:_____ Date:_____

Concur:

ORANGE COUNTY FLOOD CONTROL DISTRICT

BY:_____ Date:_____

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

BY: Kenneth L. Edwards Date: 3-16-93

FORM APPROVED,
COUNTY COUNSEL

FEB 2 3 1993

BY K. Watts-Bazan

SAN BERNARDINO FLOOD CONTROL DISTRICT

BY:_____ Date:_____

Concur:

ORANGE COUNTY FLOOD CONTROL DISTRICT

BY:_____ Date:_____

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

BY:_____ Date:_____

SAN BERNARDINO FLOOD CONTROL DISTRICT

BY: Larry Walker Date: NOV 30 1992
LARRY WALKER 92-1155
Chairman, Board of Supervisors

SIGNED AND CERTIFIED THAT A COPY OF THIS DOCUMENT HAS BEEN DELIVERED TO THE CHAIRMAN OF THE BOARD.

EARLENE SPROAT
Clerk of the Board of Supervisors
of the County of San Bernardino

By Mary Louise Loomis
Deputy

NATIVE AMERICAN REPRESENTATIVE

BY: Vera Cooks Date: 4-7-93
Chief Ya-Anna Gabrielino Nation

NATIVE AMERICAN REPRESENTATIVE

BY: Manuel G Rocha Date: 4/7/93
Spiritual Leader

APPENDIX 1
STANDARDS AND GUIDELINES FOR RESEARCH DESIGNS

The research designs shall be consistent with the Secretary of the Interior's *Standards and Guidelines for Archeological Documentation* (48 FR 44734-37) and take into account the Council's publication, *Treatment of Archeological Properties* (Advisory Council on Historic Preservation (draft) 1980), subject to any pertinent revisions the Council may make in the publication prior to completion of the research design, and the SHPO Preservation Planning Bulletin No. 5, *Guidelines for Archaeological Research Designs* (1991). They shall specify, at a minimum:

- the property, properties, or portions of properties where data recovery is to be carried out;
- any property, properties, or portions of properties that will be destroyed without data recovery;
- the research questions to be addressed through the data recovery, with an explanation of their relevance and importance;
- the methods to be used, with an explanation of their relevance to the research questions;
- the methods to be used in analysis, data management, and dissemination of data, including a schedule;
- the proposed disposition of recovered materials and records;
- proposed methods for involving the interested public in the data recovery;
- proposed methods for disseminating results of the work to the interested public;
- proposed methods by which the participants to the Programmatic Agreement, including the Gabrielino Indian representatives, will be kept informed of the work and afforded the opportunity to participate; and
- a proposed schedule for the submission of progress reports to the SHPO.

APPENDIX 2
STANDARDS AND GUIDELINES FOR THE HISTORIC PROPERTIES MANAGEMENT PLAN

The Historic Properties Management Plan (HPMP) for Prado Dam Basin shall be prepared in accordance with the following guidelines.

1. The HPMP will be prepared by or under the supervision of an individual who meets, or individuals who meet, at a minimum, the "professional qualifications standards" for archeologist, historian, and architect in the Secretary of the Interior's Professional Qualifications Standards (48 FR 44738-9).

2. The HPMP will be prepared with reference to: (a) the Secretary of Interior's *Standards and Guidelines for Preservation Planning* (48 FR 44716-20); (b) the *Section 110 Guidelines* (53 FR 4727-46); and (c) U.S. Army Corps of Engineers regulations, *Project Construction and Operation Historic Preservation Program*, ER1130-2-438.

3. The HPMP will be prepared in consultation with the San Bernardino County Museum and Native Americans representing the Gabrielino people.

4. The essential purpose of the HPMP will be to establish processes for integrating the preservation and use of historic properties with the mission and programs of the Los Angeles District, Corps of Engineers (COE) in a manner appropriate to the nature of the historic properties involved, the nature of Prado Dam Basin, and the nature of the COE's mission, programs, and planning processes.

5. In order to facilitate such integration, the HPMP, including all maps and graphics, will be made consistent with the data base management system used by the COE.

6. The HPMP will include the following:

   a. Foreword. The foreword shall explain the basis upon which the HPMP is being prepared.

   b. Introduction. The introduction shall explain the organization and use of the various sections of the HPMP.

   c. Overview. This element of the HPMP will synthesize available data on the history, prehistory, architecture, architectural history, landscape architecture, past and present environment, and ethnography of Prado Dam Basin and its surrounding area, to provide a context in which to evaluate and consider alternative treatment strategies for different classes of historic properties. It will also include a brief description of previous archeological, historic, and ethnographic investigations conducted within the basin.

   d. Inventory. This element of the HPMP will include descriptions of all properties within the basin that are known or thought to meet the National Register criteria (36 CFR 60.4), including but not limited to the following information on each property: (1) the class of historic property; (2) the location and areal extent of the property; (3) the current status and integrity of the property; and (4) the National Register

criteria that the property is known or thought to meet and the documentation supporting this determination.

e. Predictions. Based on the overview, this element of the HPMP will predict the distribution and nature of buried properties that have been identified through old maps and other historic archives, and, if applicable, structures that are not of sufficient age, but should be evaluated for National Register eligibility in the future. This element will also offer an estimate of the accuracy of the predictions, and outline ways and the conditions under which the predictions will be tested, refined, and verified to the extent needed through test excavations, remote sensing, architectural, historic, and other further research.

f. Identification system. Based on the overview and predictions, this element of the HPMP will establish procedures for the identification and evaluation of historic properties that may be affected by operations, maintenance and land use activities within the basin. This element of the HPMP will take into account the *Section 110 Guidelines*, Section 110(a)(2), Discussion (b)(2) through (b)(10) as applicable, and will provide for identification and evaluation to take place in a timely manner during the planning of any actions that might affect historic properties.

g. Management system. This element of the HPMP will establish procedures for the management of historic properties within the basin, including but not limited to:

i. procedures for the use of historic properties for agency purposes or the purposes of others, in a manner that does not cause significant damage to or deterioration of such properties, with reference to the *Section 110 Guidelines*, Section 110(a)(1), Discussion (b), and specifically providing for interpretation;

ii. procedures for affirmatively preserving historic properties, with reference to the *Section 110 Guidelines*, Section 110(a)(1), Discussion (c);

iii. procedures for the maintenance of historic properties, with reference to the *Section 110 Guidelines*, Section 110(a)(2), Discussion (d)(1)(i);

iv. procedures for the avoidance or mitigation of adverse effects on historic properties, with reference to the *Section 110 Guidelines*, Section 110(a)(2), Discussion (d)(1)(iii);

v. procedures for the treatment of properties discovered during any future undertaking; and

vi. procedures for consultation with relevant parties during implementation of the HPMP, with reference to the *Section 110 Guidelines, Part III.*

Appendix E: Biological Assessment (BA)

Biological Assessment

for

Prado Dam Gas-line Removal Project

U.S. Army Corps of Engineers

Los Angeles District

June 2021

Contents

Figures

Tables

Chapter 1. Introduction

This Biological Assessment (BA) for the Prado Dam Gas-line removal (Proposed Project) has been prepared by the U.S. Army Corps of Engineers (Corps) in accordance with the requirements set forth under regulations implementing Section 7 of the Endangered Species Act (ESA) (50 C.F.R. Pt. 402). This BA evaluates the potential effects of the action on listed and proposed species and their designated and proposed critical habitat and determines whether any species or habitat are likely to be adversely affected by the action, as required in 50 CFR 402.12. This BA contains the information required to initiate formal consultation.

1.1. Purpose and Need of the Proposed Project

The Prado Dam Spillway Modification Project is the last major component of the Prado Dam element of the Santa Ana River Mainstream Project (SARMP) to provide the level of flood risk reduction authorized by Congress. In its current location, the high pressure, natural gas-line (L-2000) conflicts with the Prado Dam spillway and embankment raise construction and needs to be relocated away from the dam for the public safety of both facilities. Therefore, to raise the spillway safely and for structural soundness, a portion of the existing pipeline will first need to be removed or abandoned in place and a new pipeline installed along a different alignment by the Southern California Gas Company (SCG) (**Figure 3 & 4**). Thus, the purpose of the gas-line removal is to facilitate the Prado Dam Spillway Raise Project.

A separate BA and National Environmental Policy Act (NEPA) documentation will be prepared to address the effects of the Spillway Raise and a proposed Dam Safety Modification project.

1.2. Threatened, Endangered, Proposed Threatened or Proposed Endangered Species, Designated Critical Habitat

Below are the federally protected species and associated designated critical habitat that will be discussed in this document, as part of the Corps' formal consultation request under Section 7 of the ESA, as well as species that have the potential to occur in the vicinity of the project, but for which the Corps has made a no effect determination (and thus are not discussed further in this BA). Table 1 lists the federally listed species and designated critical habitat with the potential to occur within the Action Area (defined in Section 2), and the Corps' assessment of whether the Proposed Project has the potential to directly or indirectly affect those species or critical habitat based on habitat suitability and best available data. Supporting analyses are provided in Chapter 4 of this document.

Table 1: Federally Endangered and Threatened Species and Critical Habitat

Common Name	Habitat Requirements	Status	Corps' Determination
San Diego Ambrosia (*Ambrosia pumila)*	Found in a variety of habitats along the coastal strip, inland valleys, and foothills at elevations below 2,000 ft, near vernal pools and in disturbed areas. Does not tolerate shade.	E	No Effect. No suitable habitat present within the action area, and not detected during 2021 surveys.
Thread-leaved brodiaea (Brodiae filifolia)	Typically grows in herbaceous plant communities such as grassland communities, alkali playa, and in vernal pools. In some locations, thread-leaved brodiaea grows in open areas associated with coastal sage scrub.	T	No Effect. No suitable habitat is present within the action area, and not detected during 2021 surveys.
Delhi sands flower-loving fly (*Rhaphiomidas terminatus abdominalis)*	Found only in areas of the Delhi sands formation in southwestern San Bernardino and northwestern Riverside Counties. Requires fine, sandy soils, often with wholly or partly consolidated dunes and sparse vegetation. Oviposition requires shade.	E	No Effect. No suitable habitat is present within the action area. Not detected during 2021 surveys.
Least Bell's vireo (*Vireo bellii pusillus)*	Nesting summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2,000 feet. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, baccharis, or mesquite.	E	May Adversely Affect
Least Bell's vireo Critical Habitat		D	May Affect, Not Likely to Adversely Affect
Southwestern willow flycatcher (*Empidonax traillii extimus)*	Nesting habitat of riparian woodlands in southern California.	E	No Effect. No suitable habitat is present within the action area.
Coastal California gnatcatcher (*Polioptila californica californica)*	Obligate, permanent resident of coastal sage scrub in southern California. Low, CSS in arid washes, on mesas and slopes. Not all areas classified as CSS are occupied.	T	May Adversely Affect

Santa Ana Sucker (*Catostomus santaanae)*	Endemic to Los Angeles basin and south coastal streams. Habitat generalists, but prefer sand-rubble-boulder bottoms, cool, clear water, and algae.	T	No Effect. All impacts to waters will be avoided by using horizontal directional drilling (HDD).
E = endangered, T = threatened, D = designated			

1.3. Description of Proposed Project

1.3.1. Project Location

The Proposed Project is located in the city of Corona, Riverside County, California adjacent to the Santa Ana River (Prado Dam Outlet Channel). The project area is bordered by State Route 71 (SR-71) to the west, State Route 91 (SR-91) to the south, and the Prado Dam Embankment to the north **(Figure 1**). The current pipeline runs north of the spillway and along the south side of the Dam Embankment **(Figure 2).** The spillway is directly adjacent to Prado Dam Embankment and the Prado Dam Outlet Channel.

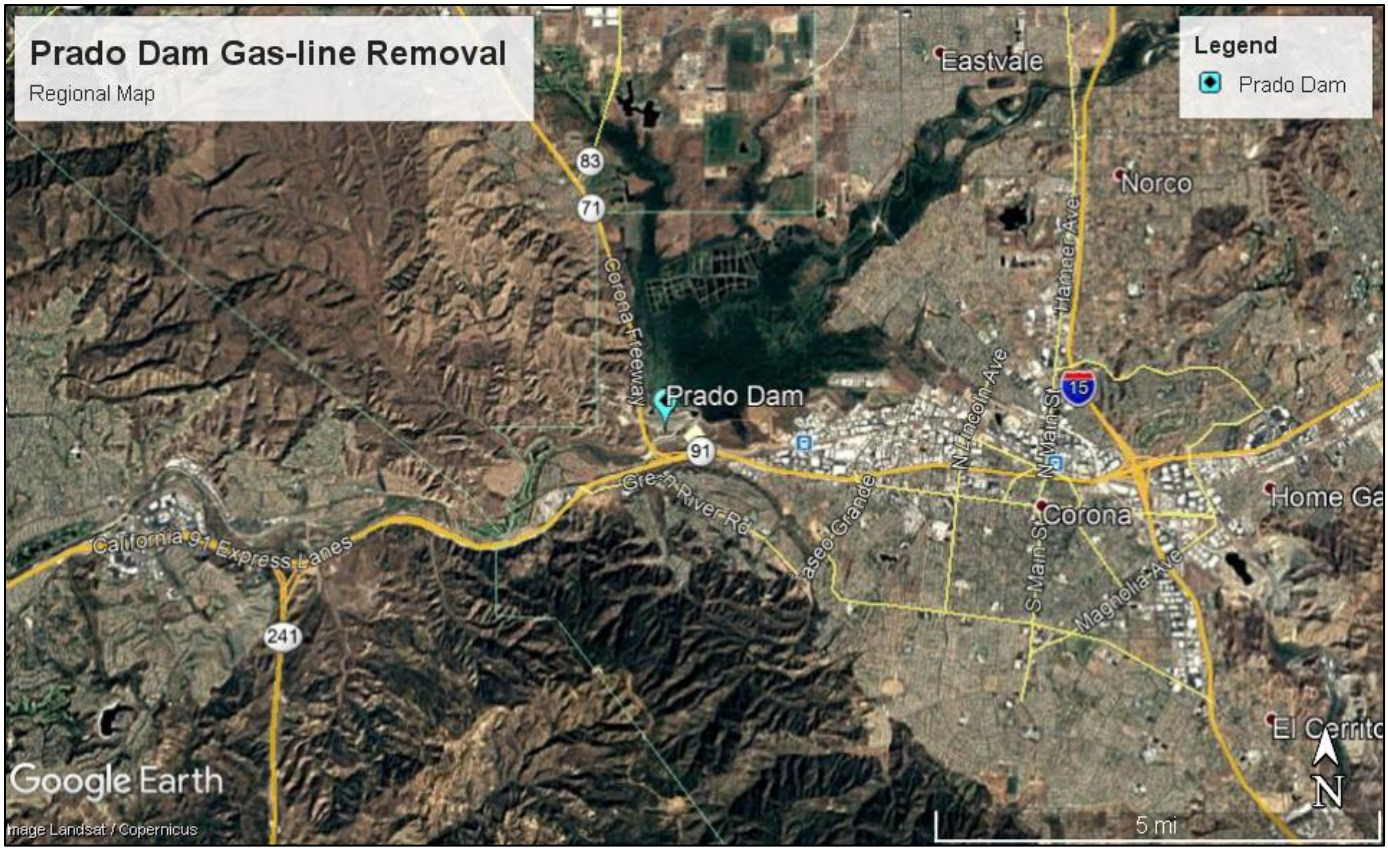


Figure 1. Regional Map

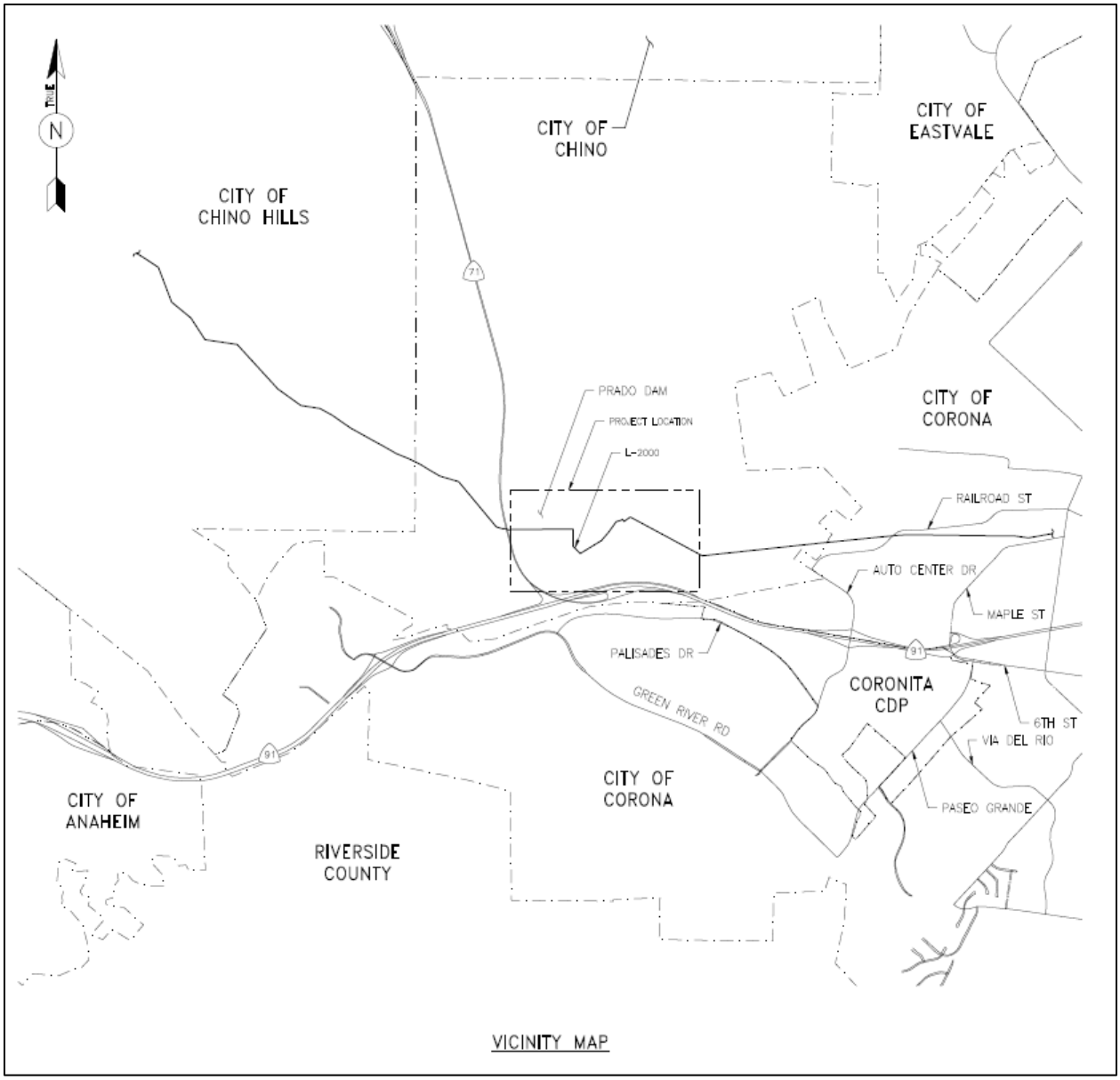


Figure 2. Project Boundary and Existing Gas-line

1.3.2. Project Description

The project consists of two main phases 1) removing or grouting in place the old gas-line, and 2) relocating the new gas-line. “Relocation” refers to installation of new pipe in a different alignment; existing pipe would not be moved to a new location. The new alignment would start northeast of the spillway, then following almost parallel to the SR 91 highway, then north west towards the area between the Prado Dam Embankment and the SR 91 highway, where it would tie into the existing gas-line as shown on Figure 4.

Grout in Place Pipeline Abandonment and Removal

Portions of the pipeline that will be abandoned in place would be filled with grout. Partial abandonment rather than full removal of the entire pipeline is proposed in order to reduce excavations in the vicinity of the outlet channel and prevent damage to the outlet channel lining. Grout would be designed to compensate for potential shrinkage and installation would incorporate procedures to ensure the full filling of the pipe. The pipe would be video-inspected and cleaned per Federal Emergency Management Agency Technical Manual 484 (Reference 6.h) guidance prior to grouting. If the pipe is deteriorated or damaged and cannot be safely grouted, a new abandonment approach would be developed. Removal is planned for the existing pipeline at the toe of the dam and sections near but outside of the channelized outlet (**Figure 3**). Grout in-place is planned for the portion that is north of the spillway and the portion that extends underneath the channelized outlet. Based on SCG Geotechnical Engineering consultant analysis, the pipeline that would be left in place would not create a hazard or leach any contaminants into the soil. Sections of pipeline to be removed would be located using potholing and tested for asbestos before removal. No asbestos is anticipated to be found based on the type of pipe that was installed, but in the rare possibility that a pipe tests positive for asbestos, remediation would occur. The soil removed would be backfilled.

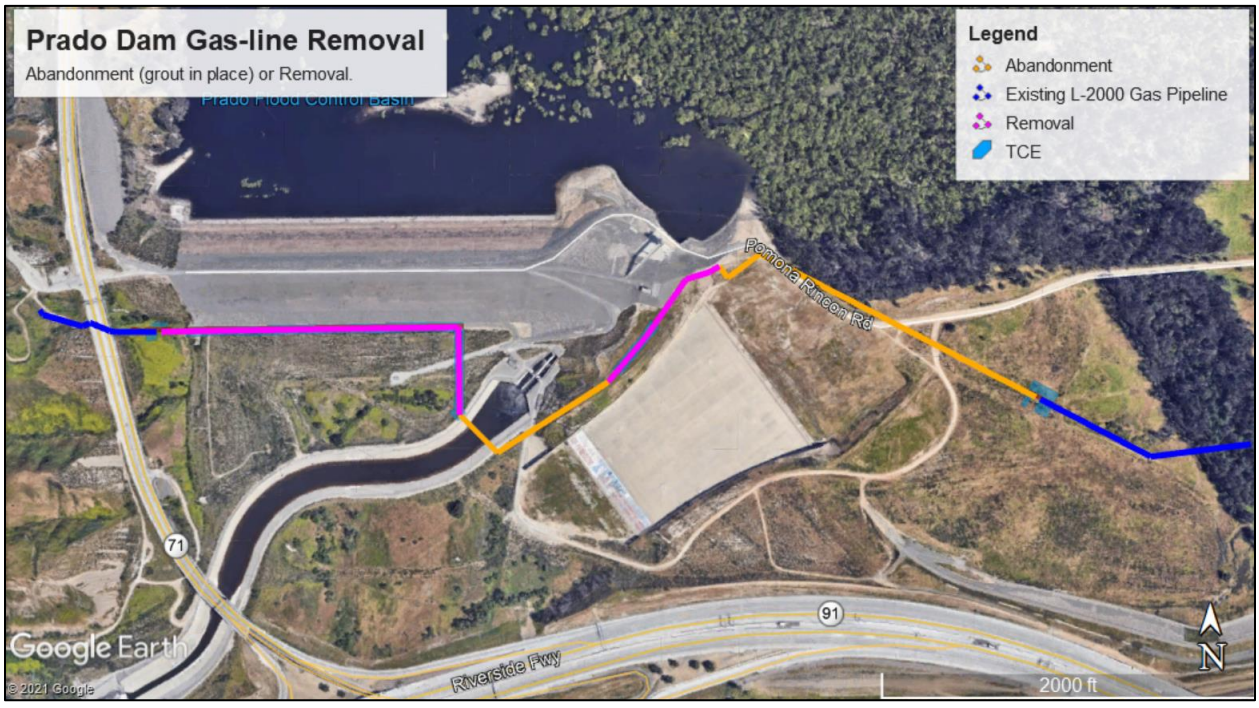


Figure 3. Proposed Grout in Place and Gas-line Removal

Pipeline Relocation

The new pipeline installation connects from an existing (unaffected) gas line segment located on the east side of the spillway, extending south of the spillway along the 91 freeway, crossing under the outlet channel and connecting back to the existing gas line near the SR-71**.** Sections of pipe would be installed by digging an approximately 6’ wide and 7’ deep open trench for a total of 0.91 miles on either side of a 0.25 mile-long HDD path under the outlet channel. The excavator used for the trench segments would require a 75’-wide workspace to dig, stockpile soil, and install the new pipeline. The soil dug out to place the new gas-line would be stockpiled within the 75’ TCE, and reused to cover

the pipeline. Any remaining soil would either be used to fill in areas where pipeline is removed permanently or spread and graded within Temporary Construction Easement (TCE) areas. HDD requires a string layout area, where the pipe would be fabricated before going underground. Vegetation removal would occur within the open trench segments but is not anticipated for the HDD segment, other than minor removal that may occur at the boring entry and exit. Boring entrance would begin on the southeast side of the outlet channel and exit on the northwest side of the channel, close to its connection to the existing pipeline near SR-71 (**Figure 5**). HDD involves boring a hole using a drill to tunnel underneath the outlet at a 15-degree angle. The truck would require a workspace at the entrance and exit. The pipeline that would be installed is a new 30-inch high pressure pipeline that meets current standards. Most of the work will be done from 7am to 5pm except under two conditions. The first condition would be during HDD pullback, which is when the pipe would be pulled through the HDD tunnel. This must be completed as quickly as possible, so the tunnel does not collapse. This work would take minimum 24 hours and maximum 48 hours to complete. The second time work will go beyond 5 pm is during the gas-line tie-in, which is when the new gas-line is being reconnected with the existing pipe. The gas must be shut off during this time, therefore the work will be done as quickly as possible but would take a minimum of 24 hours to a maximum of 48 hours to complete. For both HDD pullback and tie-in, multiple mobile light towers will be required to maintain a safe work environment along with two cranes, two reach lifts, x-ray van, multiple company trucks. Nighttime work would require use of lighting to illuminate work areas including access roads and ensure worker safety. Lights will be directed inward toward the TCE to the extent possible and not directed into adjacent habitat areas to reduce impacts to wildlife movement.

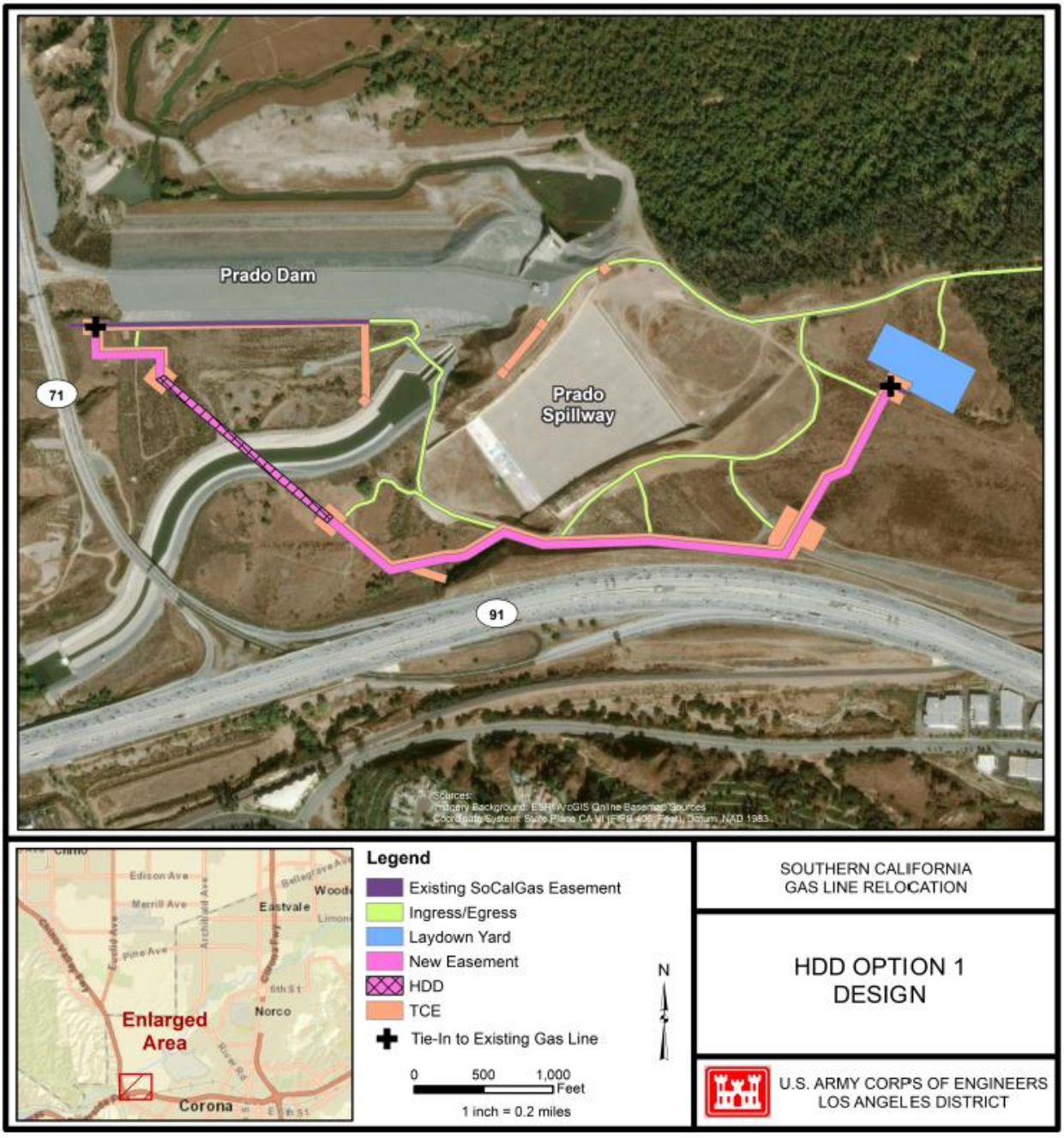


Figure 4. Proposed Alignment.

Staging, Borrow Sites, TCE and Access Routes

A 3.77 acres staging area for construction equipment is planned on an open area northeast of the spillway (blue polygon titled laydown yard in **Figure 3**). Already-established roads will be used to drive equipment to staging area. A work space is required for the HDD drill entrance and exit. This project does not require a borrow site. No new roads will be created, and crew members will use existing maintenance roads for access.

Schedule
Construction for the gas-line relocation is scheduled to begin October 20, 2021 and is planned to end by April 2022. The gas-line relocation includes pipeline installation via trenching and HDD and vegetation removal (between September 15th through February 15th). After the new gas-line has been installed, then the gas-line removal and grout in place will begin, and continue beyond February 15th and conclude in April 2022.

1.3.3. Future Operation and Maintenance

Typical operations and maintenance of the pipeline are minor and infrequent. SCG perform typical leak detection inspections either via drone or truck, depending on access. Inspections occur on an infrequent basis which is about every 5-7 years. The method of inspection typically does not cause any disturbance above ground as the pipe is inspected via an internal tool. Per California Fire Marshal regulation, SCG is required to have quick access to their pipeline in case of emergency. For these kinds of emergencies, existing access is sufficient.

1.3.4. Environmental Committments

Environmental Commitments are measures that would be implemented to avoid, minimize, and offset impacts to the federally listed species and designated critical habitat associated with the Proposed Project.

Commitments relate to avoiding or minimizing impacts during construction (for instance, conducting pre-construction surveys, ensuring activities remain within the authorized footprint, limiting noise intrusions through monitoring and use of sound barriers, etc.); restoring temporarily impacted areas after construction, and providing offsite habitat restoration in another location in the watershed to offset temporal losses that occur within the Action Area.

Onsite habitat restoration activities would meet the following conditions:

- Restoration activities would be initiated immediately following the completion of the construction, avoiding California Gnatcatcher (CAGN) and least Bell's vireo (LBVI) disturbance if during the nesting season.

- Success criteria would include a minimum of 30% native ground cover with less than 10% invasive plant cover.

- The establishment of a monitoring protocol that documents the maintenance and status of native and non-native cover in the restored area, in order to scientifically show success of native habitat establishment. This includes documenting the following characteristics:

    - Structure and composition of the restored plant community
    - Wildlife occupying restored habitat

1.3.4.1. ENVIRONMENTAL COMMITMENTS

1 All vegetation removal must occur between September 15th to February 15th to avoid impacts to CAGN, LBVI and other nesting birds.

2 A Biological monitor approved by the Corps' Environmental Resources Branch will monitor construction activities to ensure compliance with all environmental commitments.

3 Prior to construction activities, the Corps-approved biological 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. The training shall also include a summary of sensitive species and habitats potentially present within and adjacent to the Proposed Project area.

4 Portable sound walls will be required for work occurring between February 15th to September 15th of any year.

5 The construction contractor will be required to monitor noise regularly during the nesting season (February 15 – September 15). Ambient noise levels will be recorded by the Corps-approved biological monitor prior to the nesting season, or prior to construction during that period to ensure that 1) noise does not exceed 60 dBA for LBVI and 73dB for CAGN, or another agreed upon limit with the USFWS, within occupied CA Gnatcatcher and least Bell's vireo habitat during nesting season; or, (2) noise does not exceed 5 dBA above ambient conditions if said levels are above 60 dBA LBVI and 73 dBA for CAGN, or another agreed upon limit. If construction noise levels within occupied adjacent habitat cannot be reduced below 60 dBA LBVI and 73 dBA for CAGN or another agreed upon limit, during nesting season of any year, and if those exceedances are documented to occur on two or more consecutive days, the Corps or project proponent will offset impacts at a 1:1 ratio per any period during the breeding season affected by such noise levels. This 1:1 ratio will be based on the acreage of occupied coastal sage scrub or riparian habitat outside the project footprint subject to noise levels above agreed-upon thresholds during the nesting season, per the number of breeding seasons affected (e.g., 1 acre of coastal sage scrub habitat affected by noise in two breeding seasons will result in 2 acres of restoration). The area affected will be determined by the periodic project noise monitoring. The Corps will identify restoration areas for offsetting noise impacts in coordination with USFWS and will maintain (continue weeding) those areas for a period of 5 years.

6. In addition to revegetating temporary impact areas, and to address temporal impacts, the Corps will perform or require offsite restoration at a 1 to 1 ratio for all coastal sage scrub habitat impacted by the proposed project (e.g., 1 acre of coastal sage scrub habitat impacted by proposed project will result in 1 acres of offsite restoration), Offsite restoration area(s) will be identified in coordination with the U.S. Fish and Wildlife Service prior to completion of construction. Offsite restoration sites will be actively managed (weeded, planted, irrigated as needed) for a period of 5 years or until success criteria (as defined above) are met (a) for work areas that don't overlap with the potential future spillway project, the gas line project

would provide offsite 1:1 mitigation (restoration would occur within areas that are outside of the spillway TCE) and, (b) for work areas that do overlap with the potential future spillway TCE, this BA assumes that the spillway project will perform any required onsite and/or offsite mitigation for direct impacts to that habitat. If the spillway project is not approved for construction within 2 years of the relocation, or if the TCE changes (and overlap is reduced), then the Corps will conduct or require 1 acre of offsite restoration for each acre directly impacted by the gas line work.

7 A storm water pollution prevention plan (SWPPP) and soil erosion and sediment plan will be developed prior to construction to minimize erosion and identify measures to eliminate or control pollution sources onsite during and following the construction phase. The SWPPP will determine specific Best Management Practices (BMPs) needed during the project construction phase and after to minimize erosion, identify specific pollution prevention measures that will eliminate or control potential point and non-point pollution sources onsite, and to avoid causing or contributing to any water quality standard exceedances.

8 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.

9 Corps-approved biological monitor will continue to monitor and survey the Proposed Project area and adjacent habitats throughout construction and restoration activities for the presence of special status species, and will confirm that conservation measures are sufficient to avoid or minimize impacts to these species, or shall recommend additional measures as warranted.

10 Upon construction completion, the contractor will immediately re-vegetate bare and disturbed areas with a native hydroseed mix approved by the Corps and depending on the time of year the hydroseed is placed, temporary supplemental watering may be needed. Watering need and frequency for hydroseeded areas will be approved by the Corps to ensure successful germination and establishment of native vegetation. These restoration areas must be monitored and managed (weeded) for at least 8 years after construction to reduce the potential for infestation. However, any areas that overlap with the Prado Dam Spillway project (if or when that project is approved and funded) will transfer over to USACE for long-term monitoring after completion of Spillway construction (Figure 8).

11 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 best management practices to prevent runoff carrying toxic substances from entering the Santa Ana River and associated drainages. If a spill occurs outside of a designated area, the cleanup will be immediate and documented.

b. Fire suppression equipment including shovels, water, and extinguishers will be available onsite during the fire season (as determined by Riverside County Fire Department) and when activities may produce sparks. Emergency contacts for the Norco Fire Station No. 57 on Corydon Avenue will be established.

c. To the extent feasible, the contractor will prevent exotic weeds from establishing within the work site during construction. Construction equipment will be cleaned of mud or other debris prior to mobilizing and before leaving the site to reduce the potential spread of invasive plants and/or seeds.

12 Construction personnel will strictly limit their activities, vehicles, equipment, and construction materials to the TCE including designated 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 in sensitive habitats adjacent to the TCE to designate limits of construction activities. These barriers will be maintained until the completion of all construction activities.

13: Spill Prevention prepared a spill prevention, control, and countermeasure plan or soil prevention and response plan, as applicable, to prescribe BMPs to prevent hazardous material releases and ensure cleanup of any hazardous material releases.

14: Most work will occur during daylight hours (7am to 5pm) except during HDD pullback (pulling the pipe through the HDD tunnel) and Tie-in (reconnecting the gas-line). Lights required for nighttime work will be directed inward toward the TCE to the extent possible and not directed into adjacent habitat areas to reduce impacts to wildlife movement.

Chapter 2. Environmental Baseline

A description and analysis of the existing conditions within the Proposed Project area and its vicinity, including descriptions of plant and animal species, natural communities, and special status species that have either been observed or have the potential to occur within the Proposed Project area. The information is based on surveys, literature reviews, and coordination with regulatory agencies and technical experts. The Proposed Project area and adjacent habitat have been surveyed by biologists from Santa Ana Watershed Association, Orange County Water District and Aspen Environmental Group to document the presence and locations of biological resources and sensitive species. California Department of Fish and Wildlife (CDFW), USFWS, and California Native Plant Society (CNPS) sensitive species occurrence databases were reviewed for the localized area. This section summarizes the results of database reviews and surveys in order to present an up-to-date and thorough description of the existing conditions.

2.1. Define Action Area

The Action Area includes the entire project footprint that contains project actions including the permanent footprint, temporary construction easement, and staging area, plus a 200-foot buffer around each area (**Figure 3**). Where activities are within or adjacent to occupied or suitable habitat for Federally listed species, the buffer was extended to 500 feet to account for a larger indirect effect caused by noise. The Action Area includes the area subject to direct impacts within the footprint as well as the surrounding area subject to indirect impacts such as noise, vibrations or dust that extend beyond the project footprint.

2.2. Habitat Condition in the Action Area

The project spans across the channelized outlet of the Prado Dam. The Santa Ana River conveys flow southwest within the Action Area and remains channelized within the Action Area. The topography of the Action Area ranges from flat especially in the disturbed areas to steep hills near the SR-91. Within the Action Area the habitat is a mix of disturbed, nonnative upland habitat, and native upland species. The native habitat is mainly composed of coastal sage scrub while the non-native upland habitat is mainly mustards and other ruderal species.

2.3. Vegetation

Vegetation within the project area is mainly composed of coastal sage scrub communities. Most of the project area's vegetation was surveyed by Aspen in 2020 and the remainder of the project area was mapped by an expert biologist familiar with the area and its vegetation. The native and disturbed vegetation communities are interspersed; therefore, breaks in community type are determined based on dominant species type and professional judgment of the biologist surveying. There are a total of three main vegetation and cover types within the Action Area. Maps were created using ArcGIS with recent basemap imagery. The plant communities in the Action Area are

considered important nesting habitat for CAGN. In addition, the Action Area includes designated critical habitat for least Bell's vireo. Both native and non-native habitats provide important foraging and refugia habitat for a variety of sensitive plants and wildlife species.

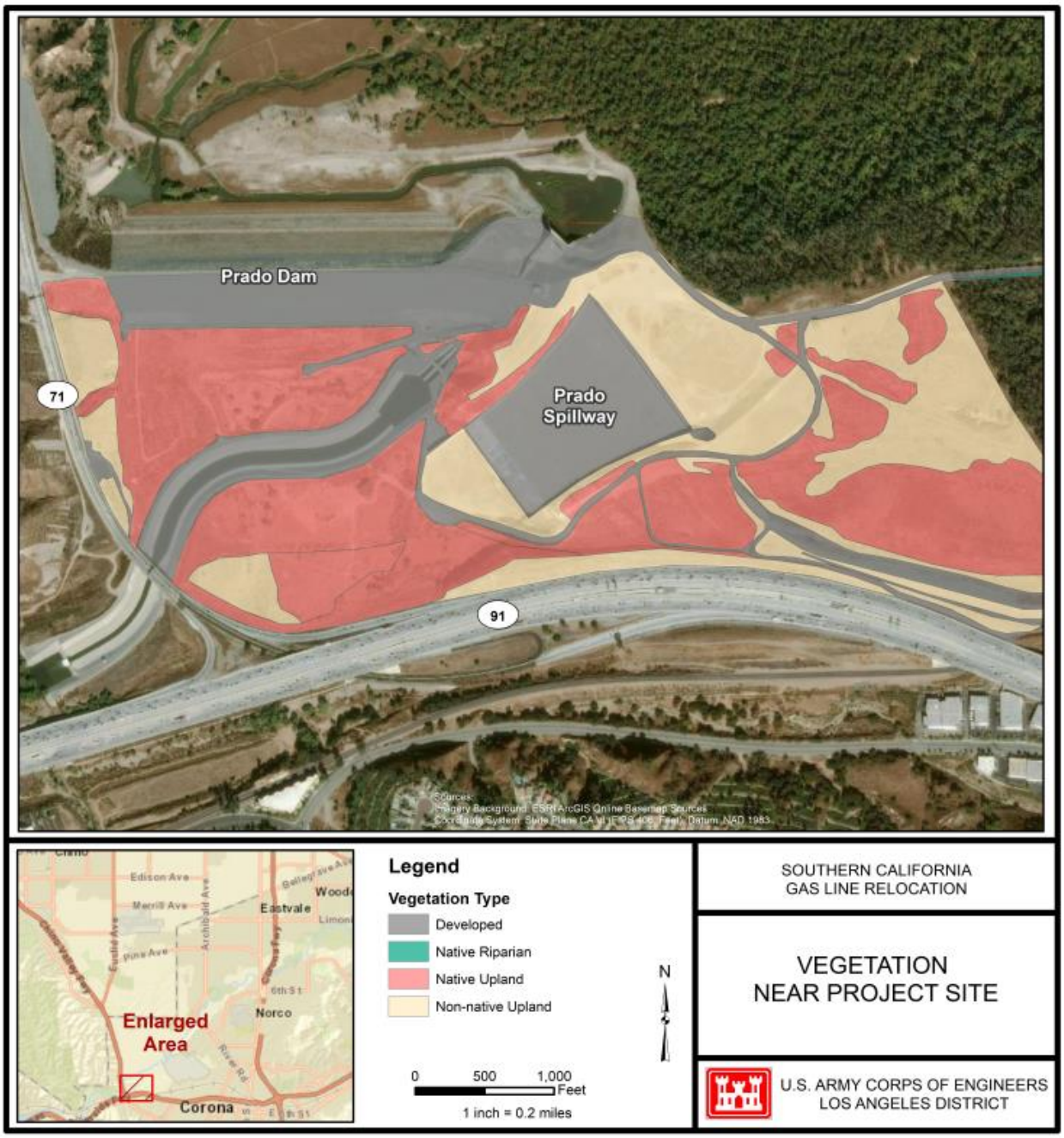


Figure 5. Vegetation Map

2.3.1. Coasal Sagebrush (Native Upland)

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 farinose*). All native upland vegetation within the project area was restored as part of previous work at Prado Dam over the last twenty years. The native upland vegetation in the project area is occupied by threatened coastal California gnatcatcher (*Polioptila californica californica*).

2.2.2 Non-native Upland (ruderal species)

Non-native uplands within the project area are dominated by non-native grasses and herbs such as ripgut brome (*Bromus diandrus*), foxtail brome (*Bromus madritensis spp. rubens*), wild oat (*Avena* spp.), wall barley (*Hordeum maurinum*), and Russian thistle (*Salsola tragus*). The species are widespread in and adjacent to the project area. Non-native uplands are present in patches surrounding the spillway and throughout much of the borrow area. Non-native uplands provide very little wildlife habitat and are not known to be occupied by any threatened or endangered species.

2.2.3 Developed / Disturbed

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 above under non-native uplands. Developed areas provided very little habitat for wildlife species.

2.4. Aquatic Resources

The National Wetland Inventory (NWI) maps a riverine feature on the left-hand side of the channelized outlet, but based on aerial imagery, there is no riparian vegetation, no ordinary high-water mark, or water present to suggest a riverine waterway. Water may run along the base of the hill from the culvert on the upper left-hand side, but not enough water is present to support wetland plant species or other aquatic resources. Furthermore, NWI most likely maps a river there because that was the previous location of the Prado Embankment outlet channel. Originally the outlet was at the base of that hill on the left-hand side of the dam which was later moved to its current location. Therefore, no jurisdictional delineation was conducted.

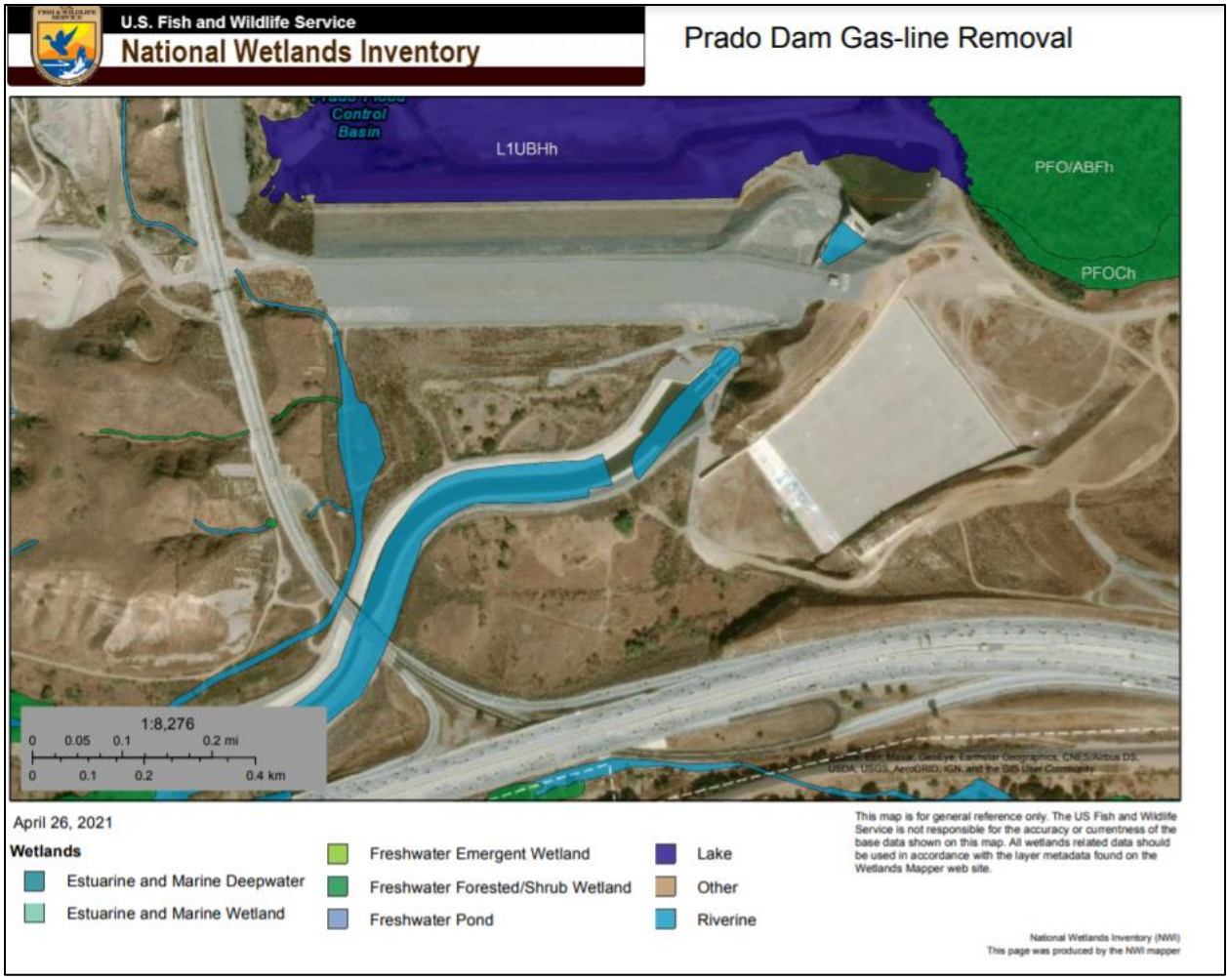


Figure 6. National Wetland Inventory Map

Table 2. Total Acreage of Potential Jurisdictional Wetlands/Waters

Jurisdictional Habitat			
	Total Potential Jurisdictional Waters of the U.S.		Total Potential Jurisdictional Waters of the State
	Wetland Waters (Acres)	Non-wetland Waters (Acres)	CDFW Waters (Acres)
Total	0	0	0

2.5. Wildlife

The riparian and upland community types that occur in the Santa Ana River watershed provide habitat for a variety of resident and migratory wildlife species including several special status species. Of particular importance are riparian and streambed areas that provide potential habitat for the federally threatened Santa Ana sucker (*Catostomus santaannae*), federally and state-

endangered least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii exitmus*), Coastal California gnatcatcher (*Polioptila californica californica*), and various raptor species.

The project lies entirely within upland habitats but is adjacent to riparian habitats and surface water. Due to development surrounding the majority of the project, the habitats within the project site function as a movement corridor and/or dispersal habitat for a number of wildlife species. Continuous riparian riverine habitat is upstream and downstream of the project area, increasing the likelihood of wildlife presence within and adjacent to the project area. Ongoing camera monitoring efforts by the Corps have revealed heavy wildlife use of the vegetated ramp over the main embankment of Prado Dam. This is an important crossing location because it allows wildlife to get up and over the dam without navigating through maintenance roads and other infrastructure necessary for operating the Dam. The area surrounding the Prado Spillway is critical for wildlife connectivity because it is one of the few remaining passageways into Prado Basin from Reach 9 to the west and the Cleveland National Forest to the south. Radio-collared bobcats and coyotes have been documented using the area around the Spillway heavily and it contains the core home range for several individuals.

2.6 Critical Habitat

The staging area is within designated least Bell's vireo critical habitat. Already established roads will be used to stage heavy equipment. LBVI overwinter in Mexico but migrate north to breed in riparian habitats. Riparian vegetation includes Cottonwood forests, willows woodlands and riparian scrub. This habitat type is not found within or relatively close to the around the staging area. North of the road and staging area the vegetation is mostly non-native Eucalyptus trees.

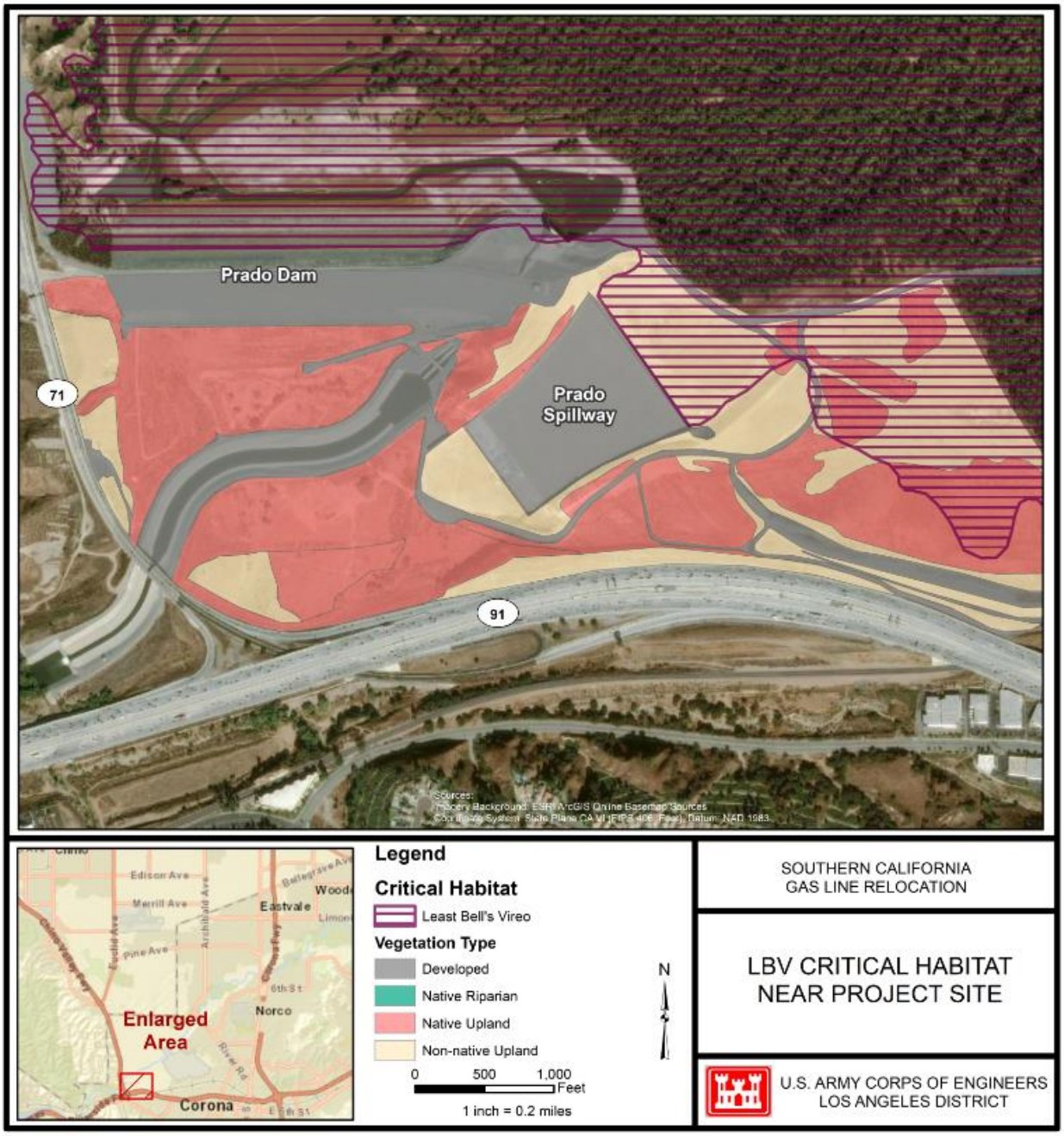


Figure 7. Designated Critical Habitat for Least Bell's Vireo.

2.7 Existing Projects

Oak Mitigation Project (Ongoing)

To fulfill an environmental commitment from a previous construction project, the Corps agreed to plant oak trees at a 4 to 1 ratio. Approximately 31 oak saplings are expected to be impacted by

proposed project. Whenever possible, the oak saplings will be left in place. To ensure that some oak trees are retained, a Corps approved biologist or a Corps biologist, would go out and flag the oak trees within the TCE to see which ones can be kept. In addition, a majority of these oak saplings are only in the work area easement that is not in the direct line of trenching. Lastly, more trees than previously agreed upon were planted. Therefore, impacts to the oak mitigation project are considered insignificant. Watering and occasional site visit of the oak trees would result in negligible impacts on listed species and would not result in substantial negative cumulative effects along with the proposed action.

Spillway Modification Project (Planned)

The spillway raise project, which is the final Prado Dam element of the Santa Ana River Mainstem Project planned to be constructed, would also include Dam Safety construction elements and would allow for full implementation of the Final Water Control Manual as addressed in the 2001 SEIS/EIR for SARMP. Construction of this project feature is planned to begin after the gas-line is removed and relocated, and would continue for approximately four to five years. The project footprint is just to the east of the proposed project and would impact a different footprint than the proposed action. Because both projects would hydroseed impacted areas and both projects would include offsetting measures, no substantial cumulative impacts are anticipated. Any areas overlapped by the Spillway Project will become the Corps responsibility for vegetation monitoring.

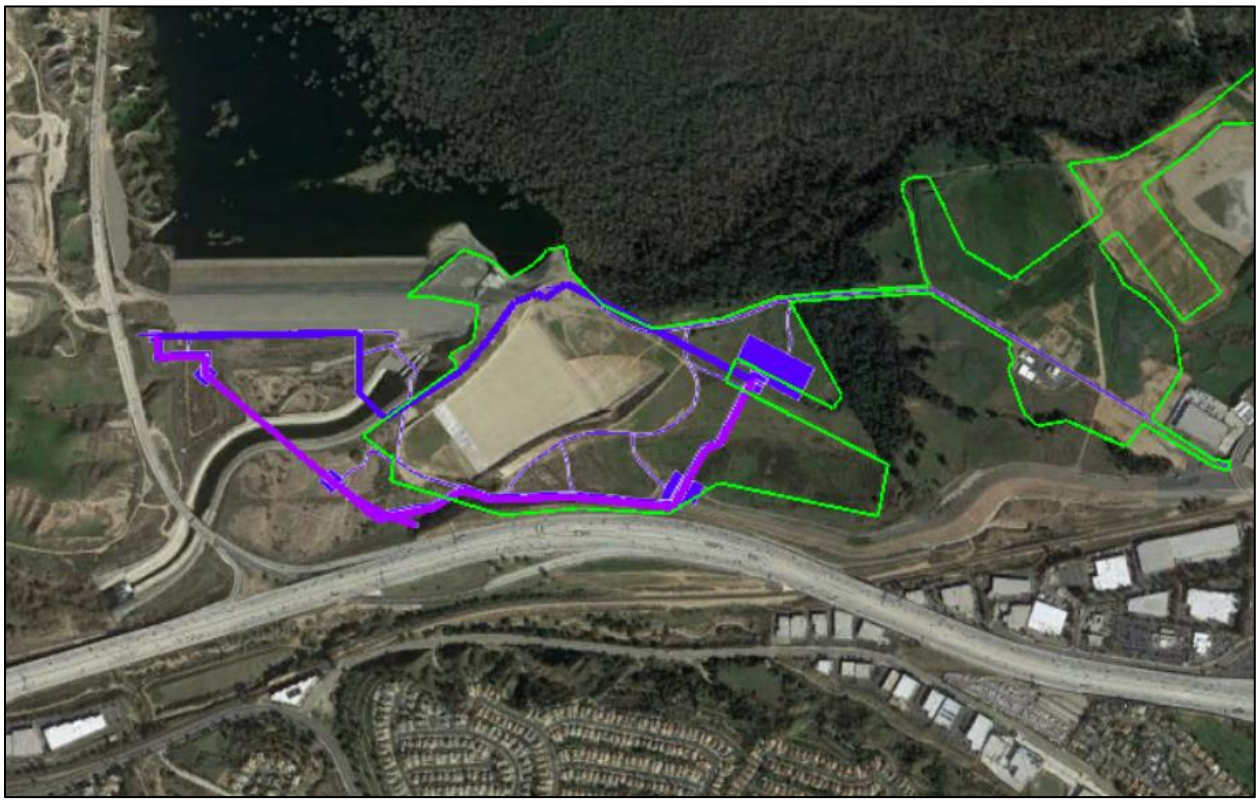


Figure 8. Gas-line Project Footprint (purple) versus Spillway Footprint (green).

Chapter 3. Federally Listed/Proposed Species and Designated Critical Habitat within Action Area

3.1. Federally Listed/Proposed Species

Of the seven federally listed wildlife species reviewed (2 federally listed plant species, one insect, one fish, and three birds), the least Bell's vireo (*Vireo bellii pusillus*), and California Gnatcatcher (*Polioptila californica californica*)) were determined to potentially occur within the Action Area and would potentially be affected by the Proposed Action based on species requirements and Action Area conditions. The Action Area is mainly coastal sage scrub with non-native patches. Critical habitat was assessed by federal mapping and presence of Physical and Biological Features (PBFs, formerly PCEs) within the mapped areas. PBFs are features that are essential to the conservation of the species. These features includes species needs for life processes and successful reproduction such as: space for growth or individuals and populations, cover and shelter for different life stages of a species, biological and physiological requirements, sites for breeding and rearing of offspring, germination, seed dispersal, and historical habitat or habitat protected from disturbance.

The following sections discuss the species of concern, results of surveys, and critical habitat designation in the Action Area.

3.2. Least Bell's Vireo

Least Bell's vireo is a federal and state endangered species and a Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) covered species. Least Bell's vireo is found as a summer resident of Southern California where it inhabits low riparian growth in the vicinity of water or dry river bottoms below 2,000 feet. The least Bell's vireo breeds in dense, shrubby riparian vegetation, often dominated by willows (Franzreb 1989). Nests are typically found in dense vegetation located low in the riparian zones, most frequently in 5- to 10-year-old stands. When least Bell's vireo nest in mature riparian woodlands, they nest in areas with a substantial, robust understory of willows as well as other plant species. Least Bell's vireo generally prefer semi-complex riparian habitats that have understory scrub and ample vertical complexity; riparian areas with no understory are less likely to be used. In California, a dense shrub layer associated with riparian habitat was found to be the most critical structural component of occupied least Bell's vireo habitat (Kus et al. 2010). In more xeric areas, this species will readily utilize unconventional habitats, including mesquites and tamarisk. In riverine habitat, in Southern California, this species typically utilizes territory sizes of about 2 acres on average (Kus et al., 2010).

3.2.1. Survey Results

Annual surveys are conducted by the Santa Ana Watershed Association (SAWA). In 2020, SAWA reported a total of 719 territories in Prado Basin and a total of 2,293 territories in Santa Ana Watershed (SAWA 2020). Of the documented territories, approximately 3 were identified as

potentially occurring within the Action Area. Preliminary 2021 data, provided by SAWA identified 5 territories within the project area (Figure 11).

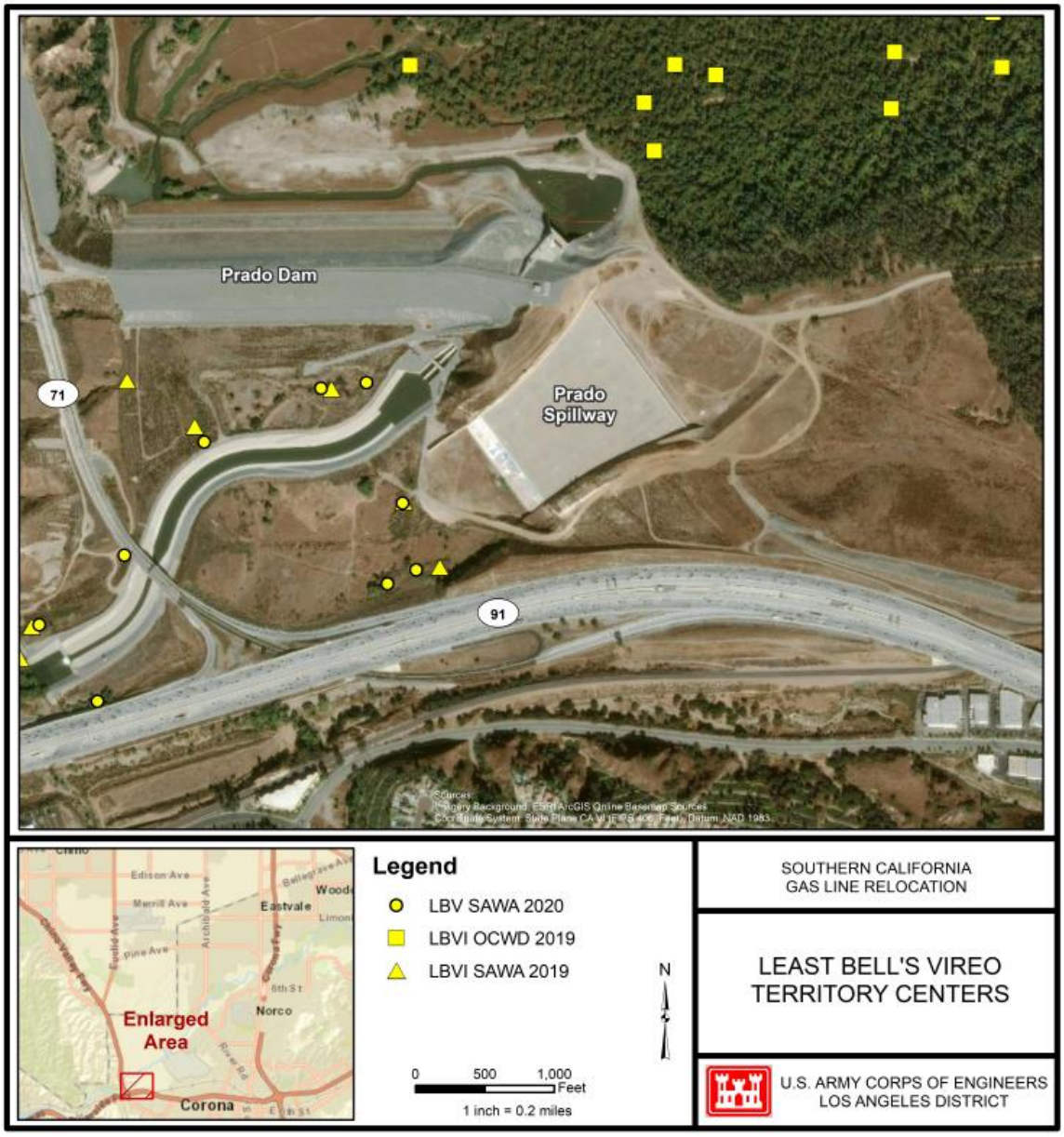


Figure 9. Least Bell's Vireo Territories.

3.2.2. Status of Designated Critical Habitat in the Action Area for Least Bell's Vireo

Designated critical habitat for this species occurs within the portion of the Action Area, although it does not contain the PBFs typically required for least Bell's vireo breeding and foraging. The Action Area within designated critical habitat consists of disturbed upland communities or are

developed areas (i.e. ruderal, grassland and disturbed coastal sage scrub) that do not provide habitat for least Bell's vireo.

3.3. California Gnatcatcher

The California Gnatcatcher is a federally and state-listed endangered species and a Western Riverside MSHCP covered species. They live in coastal sage scrub, desert scrub, and coastal dune scrub year-round. In California, they occur along the coast in areas dominated by California sagebrush. They generally occur in areas less than 1,600 feet in elevation, but sometimes occur at higher elevation at inland scrub sites. In Baja California and Mexico, they occur in sparse desert woodlands, coastal dune scrub, and desert scrub. During the non-breeding season, they may forage in chaparral areas especially if it borders sage scrub. The project area contains suitable coastal sage scrub habitat. The California Gnatcatcher's diet includes leafhoppers, beetles, bugs, and spiders. Male California Gnatcatchers select a nest site in sagebrush, buckwheat, or other shrub species and create the nest at about 2.5 feet high, typically on the outer edges.

3.3.1. Survey Results

Annual surveys are conducted by SAWA in addition to the environmental consulting company, Aspen. About 11 to 14 CAGN territories are found within the action area (**Figure 10**). They both breed within the Prado Basin and live there during non-breeding season. Preliminary 2021 data, provided by SAWA identified 4 territories within the project area (**Figure 11**).

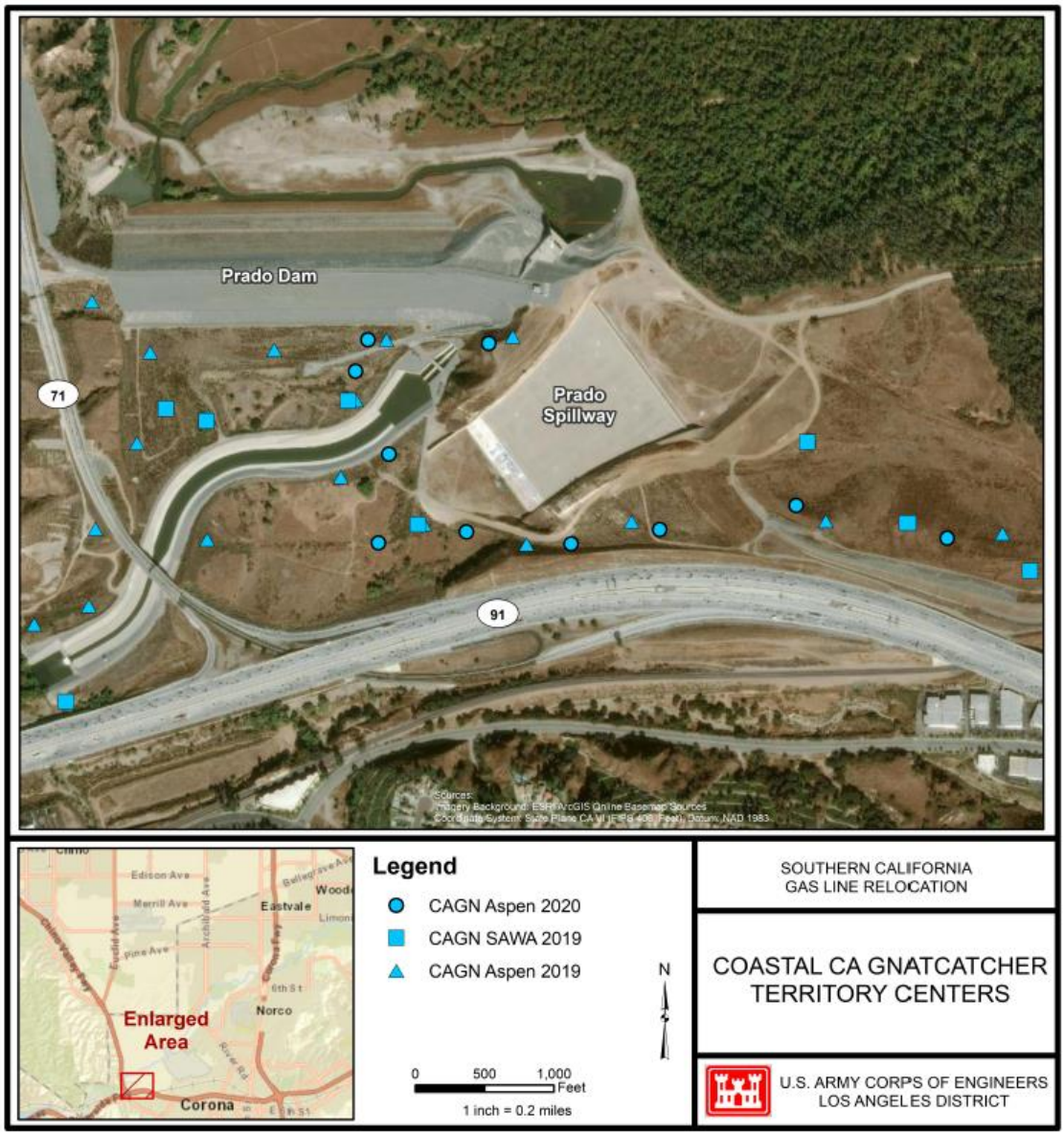


Figure 10. CAGN Survey

Figure 11. SAWA 2021 Preliminary Data

Chapter 4. Effects Analysis

4.1. Effects of the Proposed Project on Federally Listed Species and Critical Habitat

The primary impacts from the Proposed Project will be from direct effects, primarily the temporary loss of habitat during trenching and other construction activities, and indirect effects of noise, dust and increased human presence that would cause impacts beyond the project footprint. Habitat loss within designated critical habitat or potentially occupied habitat for listed wildlife species is considered an adverse effect when this habitat contains PBFs required by the species. Noise from mechanized equipment performing actions such as vegetation removal, grading, transport of material, and excavation/drilling will likely affect the listed riparian and coastal sage scrub bird species present in the Action Area. Birds are sensitive to noise and may avoid the Action Area if noise is too loud. Vegetation removal within the Action Area would temporarily reduce the availability of foraging and nesting habitat and shelter from predators. However, vegetation removal would occur outside nesting bird season in order to minimize stress to or loss of nestlings, fledglings and parents. It is anticipated that adult birds would likely have more exposure to the stressors of noise and habitat loss while returning to establish territories where vegetation has been removed and human presence has increased. Per the 2020 Burlington Northern Santa Fe (BNSF) Bridge Project Biological Opinion (BO), least Bell's vireo did not abandon territories from 2018 to 2019 even while noise-increasing activities (pile driving) were occurring during the months when territory establishment takes place. Least Bell's vireo and California Gnatcatcher could be affected by removal or degradation of habitat and continued loud noise during construction of the Proposed Project.

Vegetation Impacts

The proposed action would impact 23.42 acres of vegetation, 12.64 acres of which is comprised of coastal sage scrub (CSS) communities. The direct impact to listed species from the removal of native upland habitat (CSS), from trenching 6', would result in the temporary displacement of 2 CAGN and 2 LBVI territories (**Table 4 & 5**). Indirect and other effects to the species are discussed below. To reduce direct impacts to listed species, all vegetation removal will occur outside of nesting season between September 15-February 15 (Environmental Commitment #1 in 1.3.4.1). To offset temporal impacts caused by vegetation removal, offsite restoration for every acre of impact to CSS would be required (Environmental Commitment #6 in 1.3.4.1). In addition, all vegetated temporary construction areas will be restored with native habitat (Environmental Commitment #10 in 1.3.4.1).

Table 3. Summary of Vegetation Impacts

Developed (Acres)	Native Upland (Acres)	

12.65	12.64

** Temporary impacts do not include areas where work would occur underground only (HDD).*

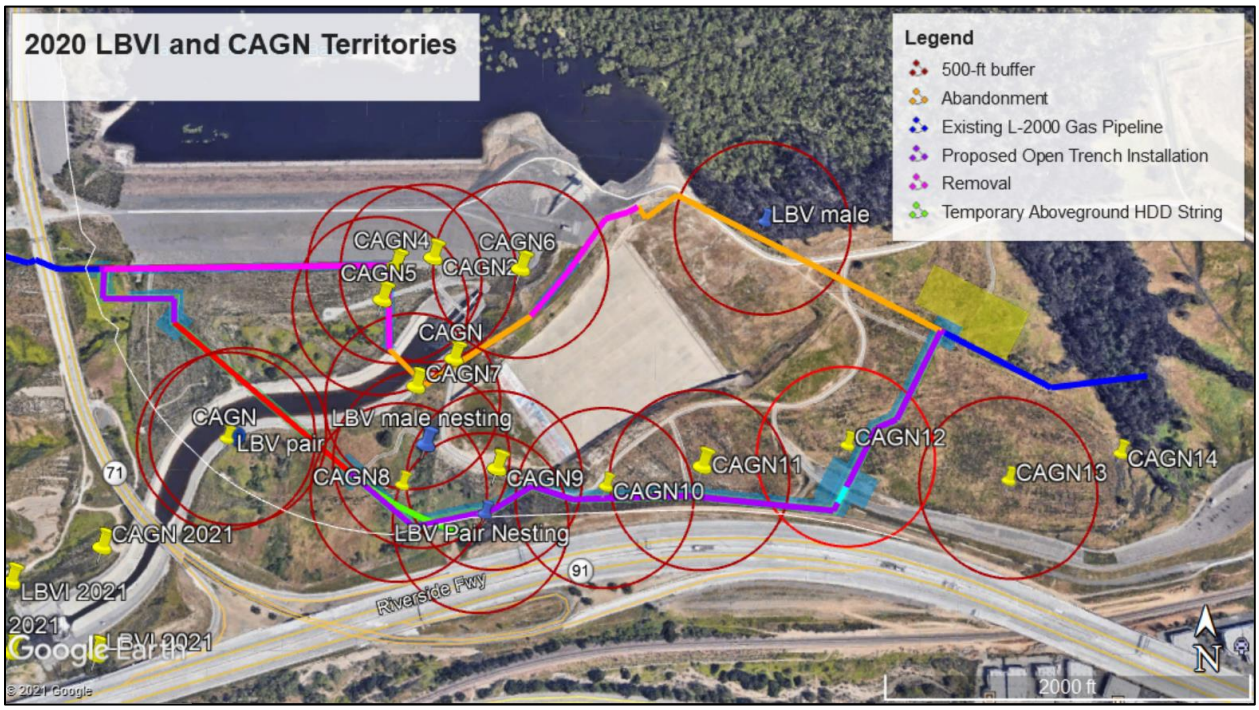


Figure 12. 2020 LBVI and CAGN Territories with 500-foot Buffer

California Gnatcatcher (CAGN)

About 19 territories are found within the action area. Based on the type of activity, equipment and estimated noise levels (with sound reducing measures in place), it is assumed that the direct (vegetation removal) and most of the indirect (noise and disturbance) effects of the proposed action would occur within a 500'-wide buffer surrounding each alignment. An excavator produces noise on average at about 87 decibels. The sound walls reduce sound about 5 decibels and around 500 feet noise levels are around 60 decibels. Therefore, the proposed action would potentially result in a temporary displacement of or effect to 11 territories that occur within this 500'-wide buffer (**Table 5**). Two of these territories occur within the direct footprint. Considering the large width of the floodplain, movement of gnatcatcher would not be constricted with the adjacent area. While gnatcatchers may still be able to successfully forage and nest within the vicinity and possibly within the 500' buffer zone, this analysis assumes an adverse effect to previously established territories within this area. Preliminary 2021 data provided by SAWA suggests lower impact to CAGN (0 CAGN territories impacted by direct and 3 from indirect) found in Figure 11. But the Corps and SAWA expect there to be higher numbers that were not caught during the site visit. Therefore, impacts to CAGN are based on 2020 territories.

Construction will continue past February 15th into CAGN nesting season (through at least April 2022). Most of the work that would occur during nesting season would likely be in less suitable habitat (removal and abandonment portion of construction). Those areas have fewer CAGN and LBVI territories. Dust can create a visual impairment and degrade air quality and human presence can cause CAGN to abandon territories and nests. Increased competition for nest sites and other resources could occur until construction is completed and onsite and offsite habitat restoration occurs.

The Proposed Project would temporarily impact 10.62 to 14.48 acres of well-established CSS communities. Because several CAGN territories will be temporarily displaced due to the proposed action, the proposed action May Adversely Affect CAGN.

Table 4. California Gnatcatcher (CAGN) Impacts Per Alignment Option

CAGN Territories in Footprint	CAGN Territories in 500' Buffer
2	12

** Territory numbers were conservatively estimated using survey data from 2020 breeding seasons. SAWA 2020.*

To minimize potential effects to gnatcatcher, vegetation clearing would occur outside of the nesting season, and sensitive species monitoring would occur through the duration of the construction activities. Work during nesting season will mainly be pipeline removal and, abandon and grout in place. Based on 2020 territories, there are 5 CAGN territories within a 500 foot buffer of the pipeline planned for removal **(Figure 11**). Portable sound walls will be required for work occurring between

February 15th to September 15th of any year, and noise levels will be monitored during that time period. In addition, the Corps has committed to perform or require offsite noise mitigation for every acre of coastal sage scrub habitat that is exposed to noise levels exceeding 2 consecutive 8 hour work days during each nesting season that the impact occurs at a 1 to 1 ratio (Environmental Commitment #5 in 1.3.4.1). And as previously mentioned, onsite restoration of the temporary construction easement as well as offsite restoration to address temporal loss of CSS (at a 1:1 ratio) would also occur. All temporary impact areas will be restored with native vegetation (coastal sage scrub seed mix; see **Appendix A**) and monitored and managed (weeded) for at least 8 years after construction to reduce the potential for infestation of invasive plant species. Dust control measures will be implemented during the construction phase to reduce excessive dust emissions (Environmental Commitment #8 in 1.3.4.1). A full list of avoidance, minimization, restoration and offsetting measures are provided in section 1.3.4.1.

Least Bell's Vireo and Critical Habitat

Critical Habitat: A portion of the Proposed Project would occur within Least Bell's vireo designated critical habitat. However, no riparian vegetation would be affected. Temporary impacts within designated critical habitat would occur on disturbed upland vegetation from moving and staging heavy equipment. A total of 3.25 acres of designated critical habitat would be temporarily impacted by the Proposed Project. No permanent impacts would occur. None of this area provides PBFs for vireo which includes riparian woodland vegetation the generally contains both canopy and shrub layers and includes some associated upland habitats. These PBFs are required for least Bell's vireo occupation as the area is mainly upland communities (i.e. ruderal, grassland and disturbed coastal sage scrub) that do not provide habitat for least Bell's vireo. Commitments presented in section 1.3.4.1 lists measures to reduce and avoid impacts to designated critical habitat therefore, the proposed action May Affect but is not Likely to Adversely Affect least Bell's vireo designated critical habitat.

Species: Based on preliminary 2021 data provided by SAWA, this species is currently known to maintain 5 territories within the project area, outside of the designated critical habitat boundary **(Figure 10**). In 2020, there were only 4 territories within the project area. Because there are more individuals captured in 2021 data, this was used to account for impacts. Therefore, based on 2021 data, two of these territories are directly within the TCE, and 5 territories are within the 500-foot buffer zone and could be indirectly affected by noise or other disturbance. A total of 719 territories were documented by SAWA in 2020 within the Prado Basin (SAWA 2020). Based on the type of activity, equipment and estimated noise levels (with sound reducing measures in place), it is assumed that the direct (vegetation removal) and most of the indirect (noise and disturbance) effects of the proposed action would occur within a 500'-wide buffer surrounding each alignment. An excavator produces noise on average at about 87 decibels. With sound walls in place and considering natural attenuation over distance, it is anticipated that sound levels would approach ambient conditions outside of the 500' buffer area. Movement of LVBI would not be constricted by the proposed activity and they may use more suitable habitat north/northeast of Prado Dam. While vireo may still be able to successfully forage and nest within the vicinity and possibly within the 500' buffer zone, this analysis assumes an adverse effect to previously and currently established territories within this area.

Dust can also visually impair vireos and degrade air quality and human presence can cause vireos to abandon territories and nests. Increased competition for nest sites and other resources could occur until construction is completed and onsite and offsite habitat restoration occurs.

Construction will continue past March 1st into LBVI nesting season. However, the majority of the work that would continue through April would be in areas with less suitable habitat for LBVI.

The proposed action would result in the potential temporary displacement of 2 LBVI territories within the TCE and potential indirect disturbance to 5 LBVI territories in adjacent areas (**Table 5**). Therefore, the proposed action May Affect LBVI.

Table 5. Least Bell's Vireo (LBVI) Impacts Per Alignment Option

LBV Territories in Footprint	LBV Territories in 500' Buffer
2	5

** Territory numbers were conservatively estimated using survey data from SAWA 2021.*

All temporary impact areas will be restored with native vegetation (coastal sage scrub seed mix; see Appendix A) and monitored and managed (weeded) for at least 8 years after construction to reduce the potential for infestation on invasive. To minimize potential effects to least Bell's vireo, vegetation clearing would occur outside of the nesting season, and sensitive species monitoring would occur through the duration of the construction activities. Work will continue into nesting season although, no LBVI territories were found in 2021, 2020 or 2019 near the sections of pipe that would be removed during nesting season. There was a territory within 110 feet of the gas-line removal in 2018. To minimize any potential impact to LBVI that were not detected, portable sound walls will be placed around work equipment when work continues into nesting season. Noise monitoring will take place during nesting season. Dust control measures will be implemented during the construction phase to reduce excessive dust emissions (Environmental Commitment #8 in 1.3.4.1). Measures to minimize and avoid impacts to this species include monitoring, removing vegetation outside of nesting season, habitat restoration, noise monitoring, sound wall around equipment during nesting season, controlling of excess dust, and continued monitoring during construction for special status species (see 1.3.4.1).

Operations and Maintenance

No additional effects to least Bell's vireo would occur during routine O&M activities that take place on or from existing established maintenance roads or other permanent features.

4.2. Cumulative Effects

Over past decades this region has seen increased developments, including substantial commercial, residential, and transportation expansions, which has resulted in substantial losses of habitat and produced extensive habitat fragmentation. In the immediate area, there are four planned or ongoing

projects that were assessed for the potential to cause cumulative effects; the Santa Ana Trail Project, and the State Route 71/ State Route 91 Interchange Improvement Project.

State Route 71/ State Route 91 Interchange Improvement Project (Planned)

The Interchange Project would improve the SR-71/SR-91 interchange by constructing a new direct flyover connector from EB SR-91 to NB SR-71. The project also includes bridge widening and restriping of SR-91 EB lanes, modification or construction of new drainage facilities, grading of hillside slopes, construction of retaining walls, SR-71 realignment and widening, and modification of access driveways. A portion of the State Route 71 freeway would have two bridge piers on either side of the Prado Dam channelized outlet. This work is further southwest of the action area towards the end of the channelized outlet. Installation of the bridge footing will not result in any vegetation removal. The work is not anticipated to occur within the same year as the proposed project. Caltrans plans to begin construction in July 2022. Both this project and the proposed action have added avoidance and minimization measures that reduce impacts and would not result in substantial negative cumulative effects.

The Santa Ana Trail Project (Planned)

The Santa Ana Trail project would go through a portion of the proposed project area and add a biking/walking path and equestrian trail. Construction is anticipated to begin in 2023. The path would follow a well-defined access road across the project area (southeast to northwest) and then use the top of the channelized outlet to come back down (northwest to southwest) and out of the project area. The proposed project and the Santa Ana Trail project would not occur within the same year and added minimization measures would reduce impacts to listed species. No substantial negative cumulative impacts are anticipated.

Chapter 5. Literature Cited

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Appendix A Seed Mix for Hydroseeding

This coastal sage scrub seed mix was prepared by a biologist based on existing coastal sage scrub composition and was used to seed the wildlife ramp that goes over the auxiliary dike of Prado Dam. This is a potential list but substitutions may be made based on review and recommendations by Corps biologists and consultants.

Common Name	**Botanical Name**	**Pounds per Acre**	**Plant Type**
California sagebrush	*Artemisia californicus*	2	Perennial
Black sage	*Salvia mellifera*	3	Perennial
White sage	*Salvia apiana*	2	Perennial
Coyote brush	*Baccharis pilularis*	2	Perennial
California bush sunflower	*Encelia californica*	4	Perennial
California buckwheat	*Eriogonum fasciculatum*	8	Perennial
Coast goldenbush	*Isocoma menziesii*	3	Perennial
Deerweed	*Lotus scoparius*	5	Bi-annual
Arroyo lupine	*Lupinus succulentus*	1	Annual
California poppy	*Eschscholtzia californica*	1	Perennial herb/Annual
Plantain	*Plantago ovata*	5	Annual
Purple needle grass	*Nassella pulchra*	1.5	Perennial grass
Foothill needle grass	*Nassella lepida*	1.5	Perennial grass
Nodding needle grass	*Nassella cernua*	1.5	Perennial grass
Foxtail fescue	*Vulpia (Festuca)megalura*	1	Annual
Total pounds per acre		41.5	