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SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
&
ENVIRONMENTAL IMPACT REPORT ADDENDUM

FOR

SANTA ANA RIVER MAINSTEM PROJECT, PRADO DAM
SEPARABLE ELEMENT: RIVER ROAD DIKE
RIVERSIDE COUNTY, CALIFORNIA

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

DECEMBER 2020

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1 PROJECT OVERVIEW

This draft Supplemental Environmental Assessment/Environmental Impact Report (SEA/EIR) Addendum has been prepared by the U.S. Army Corps of Engineers (Corps) as a supplement to the Final Supplemental Environmental Impact Statement (SEIS) and EIR for Prado Basin and Vicinity, Including Reach 9 and Stabilization of the Bluff Toe at Norco Bluffs, dated November 2001. The 2001 SEIS/EIR identified a number of protective dikes and embankments in the Prado basin necessary to provide protection to nearby residential developments, businesses and infrastructure from a proposed expansion of the reservoir. This expansion is part of the Prado Separable Element of a comprehensive flood risk management project (the Santa Ana River Mainstem Project or SARMP) that extends throughout much of the Santa Ana River watershed. One of the protective features described in the 2001 SEIS/EIR is the River Road Dike, which is the focus of this SEA/EIR Addendum. Design modifications have been developed by the Corps' Engineering Division. Construction of the dike is scheduled to begin in the late summer/early fall 2021 and would continue for approximately twenty (20) months. It is possible that the proposed project would be built in stages, with multiple start dates and construction periods for various sections of the proposed project depending on land acquisition and utility relocations schedule, environmental windows and weather delays. Clearing and grubbing activities may occur as early as the winter of 2020/2021 prior to the bird nesting season. Construction phasing may result in an extension of the overall project duration beyond spring 2023, i.e. beyond the approximate duration of twenty months.

This SEA/EIR Addendum describes the proposed modifications to the dike design and location and analyzes potential environmental impacts associated with its construction due to the design modifications. This document has been prepared pursuant to NEPA (42 United States Code 4321 et seq.), Council on Environmental Quality regulations published at 40 Code of Federal Regulations (CFR) Part 1500, et seq., other environmental laws, Executive Orders, Corps regulations, CEQA (Public Resources Code Section 21000, et seq.) and the State of California CEQA Guidelines (California Code of Regulations [CCR], Title 14, Section 15000, et seq.).

The Corps is the lead agency under NEPA and the lead agency under CEQA is the Orange County Flood Control District (OCFCD). Other agencies (i.e., cooperating, responsible, and trustee agencies) that may use this SEA/EIR Addendum in the decision making or permit process would consider the information in this document along with other information that may be presented during the NEPA/CEQA process. As identified in the Prado and Vicinity SEIS/SIER (2001), these agencies may include:

- California Department of Fish and Wildlife (CDFW)
- Santa Ana Regional Water Quality Control Board (RWQCB)
- U.S. Fish and Wildlife Service (USFWS)
- City of Eastvale

1.1 Authority and Background

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

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

In 2001, the Corps submitted a Limited Reevaluation Report (LRR) entitled Prado Dam Separable Element, Prado Basin & Vicinity, including Stabilization of Bluff Toe at Norco Bluffs Santa Ana River Basin, California, dated September 2001 pursuant to Section 309(a) of WRDA of 1996, which required the Corps to review the Prado Dam feature, a component of the SARMP. The LRR was approved by the Director of Civil Works on August 16, 2002. The LRR recognized, consistent with the Phase I GDM and Phase II GDM, that the purpose of the proposed Prado Dam improvements was to increase reservoir storage capacity from 217,000 acre-feet to 362,000 acre-feet and to enable the release of 30,000 cubic feet per second (CFS) flows from Prado Dam into the downstream channels. In accordance with the determination in the LRR to construct Prado Dam as a separable element, the Prado Dam component was removed from the definition of the project in the LCA by a second modification to the LCA dated February 24, 2003. A Project Cooperation Agreement for the Prado Dam feature as a separable element was signed on February 11, 2003, with OCFCD as the non-Federal sponsor. The River Road Dike is a feature of the Prado separable element. The River Road Dike was analyzed in the 2001 LRR and SEIS/EIR for the purpose of River Road Dike was…

1.2 Project Location

The proposed River Road Dike project is located in the city of Eastvale, east of Hellman Avenue between Shoreham Street and River Road, within Riverside County, California (Figure 1).

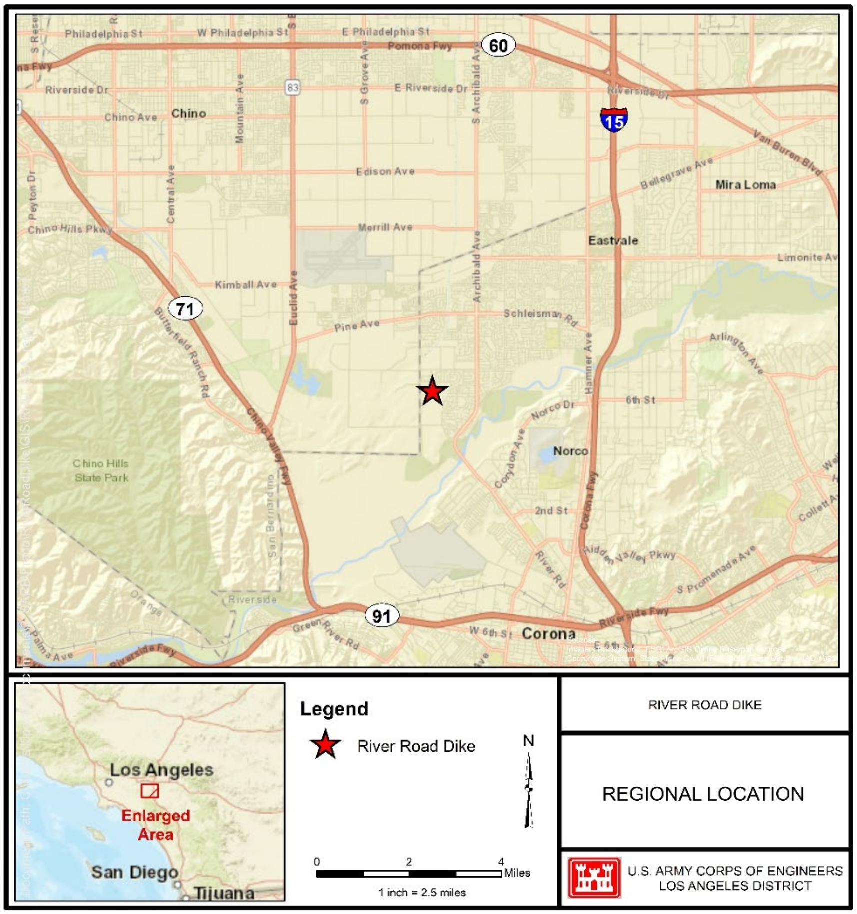

Figure 1. Regional Project Location

The proposed modifications for River Road Dike consists of a compacted earth fill dike, approximately 1,750 feet in length. At the south end, the dike would abut the existing raised ground of the residential tract (Tract No. 31961) in a nearly east-west direction. The dike would then turn north across a tributary drainage to Mill Creek and former dairy land and then turn west and parallel the southern edge of residential tracts (Tract No. 30905 and Tract 29997), ending just west of Port Arthur Drive (Figure 2). The existing concrete channel will be extended 532 feet to the two proposed 48" culverts. An additional proposed 230 feet concrete channel will connect to the concrete channel. The concrete channel would be constructed in the southeastern corner of the site to allow drainage into Mill Creek.

Figure 2. Project footprint

1.3 Previously Prepared Documents

The environmental impacts of the SARMP have been evaluated in several documents since the initial SARMP study commenced in the 1970s. Below is a partial list of environmental documents that have been completed for the SARMPand may be referenced throughout this SEA/EIR Addendum.

- Survey Report and Environmental Impact Statement (EIS), United States Army Corps of Engineers, Los Angeles District, 1975.
- Phase I General Design Memorandum (GDM) and Supplemental Environmental Impact Statement (SEIS), United States Army Corps of Engineers, Los Angeles District, 1980.
- Upstream Dam Alternatives SEIS, United States Army Corps of Engineers, Los Angeles District, 1985.

- Santa Ana River Mainstem including Santiago Creek Phase II General Design Memorandum and Supplemental Environmental Impact Statement (GDM/SEIS), United States Army Corps of Engineers, Los Angeles District, 1988.
- Prado Basin and Vicinity, Including Reach 9 and Stabilization of the Bluff Toe at Norco Bluffs SEIS/Environmental Impact Report (EIR), United States Army Corps of Engineers, Los Angeles District, 2001.
- Yorba Slaughter Adobe Dike SEA/EIR Addendum to EIS/EIR No 583, United States Army Corps of Engineers, Los Angeles District, 2010
- California Institution for Women's Dike SEA/EIR Addendum to EIS/EIR No 583, United States Army Corps of Engineers, Los Angeles District, 2013.
- SEA/EIR Addendum, Santa Ana River Mainstem, Prado Dam Basin, Auxiliary Embankment and Floodwall Phase 2, Santa Ana River Flood Control Project, Riverside County, California, 2017.
- Alcoa Dike Project, Final SEA/EIR Addendum, United States Army Corps of Engineers, Los Angeles District, 2018.

1.4 Agency and Public Input

This document is available for public review and comment for a period of thirty (30) days, beginning December 8, 2020 through January 8, 2021. Comments should be mailed to:

U.S. Army Corps of Engineers
Los Angeles District, Planning Division (PDR-N)
Attn: Megan Wong
915 Wilshire Boulevard, Suite 930
Los Angeles, California 90017

¬¬**and** via electronic submission to: Megan.T.Wong@usace.army.mil

If you have questions or would like additional information, please contact Megan Wong, Environmental Coordinator, Ecosystem Planning Section at (213) 448-4517.

1.5 Objectives and Purpose and Need

The federal objective of the SARMP is to provide flood risk management within the Santa Ana River watershed. The SARMP ranges over the counties of San Bernardino, Riverside, and Orange in an area that includes residences, thousands of businesses and other structures. Over two million people populate this area. River Road Dike is one of the last remaining features of Prado Basin separable element of the SARMP to be implemented. Other remaining features include Alcoa Dike Phase 1 and Auxiliary Embankment Phase 2 (both currently under construction), Alcoa Phase 2, Norco Bluffs, Prado Spillway modifications including a tie-in to the Auxiliary Embankment, minor modifications to other existing structures, and continued habitat restoration and mitigation management. Other features of SARMP remain to be constructed or completed in the Santa Ana River below Prado Dam and in Santiago Creek.

The River Road Dike was approved as part of the LRR and SEIS/EIR as a value-engineering solution to reduce otherwise-required land acquisition for the Prado Dam Separable Element

Statement of Need
Operation of the Prado Dam for flood risk management, once the spillway raise is complete, will inundate lands up to elevation 566 in the absence of constructed features that otherwise allow for basin operation.

Statement of Purpose

The purpose of this project is to reduce flood risk as an alternative to purchasing lands within the 556-566 feet elevation contours. The proposed construction would reduce flood risk and thereby protect the lives and properties of public and privately owned properties in the project area.

This SEA/EIR Addendum addresses modifications to the original design of River Road Dike to better align with residential developments and roadways.

2 PROJECT ALTERNATIVES

Two alternatives will be considered for environmental analysis in this document.

Alternative 1: Proposed Action

Alternative 2: 2001 Design Alternative, also known as the Previously Approved Design Alternative, which is defined as constructing the River Road Dike embankment and floodwall exactly according to the plan presented in the 2001 SEIS/EIR. Note that the location and design details differ from the Proposed Action (Figure 3). This alternative is the No Action Alternative.

See Table 2-1 for a summary of changes between the Proposed Action and the 2001 Design.

No Construction Alternative

The No Construction Alternative was addressed in the 2001 SEIS/EIR, along with the previously approved design. The No Construction Alternative would not meet the purpose and need and is not carried forward in this document.

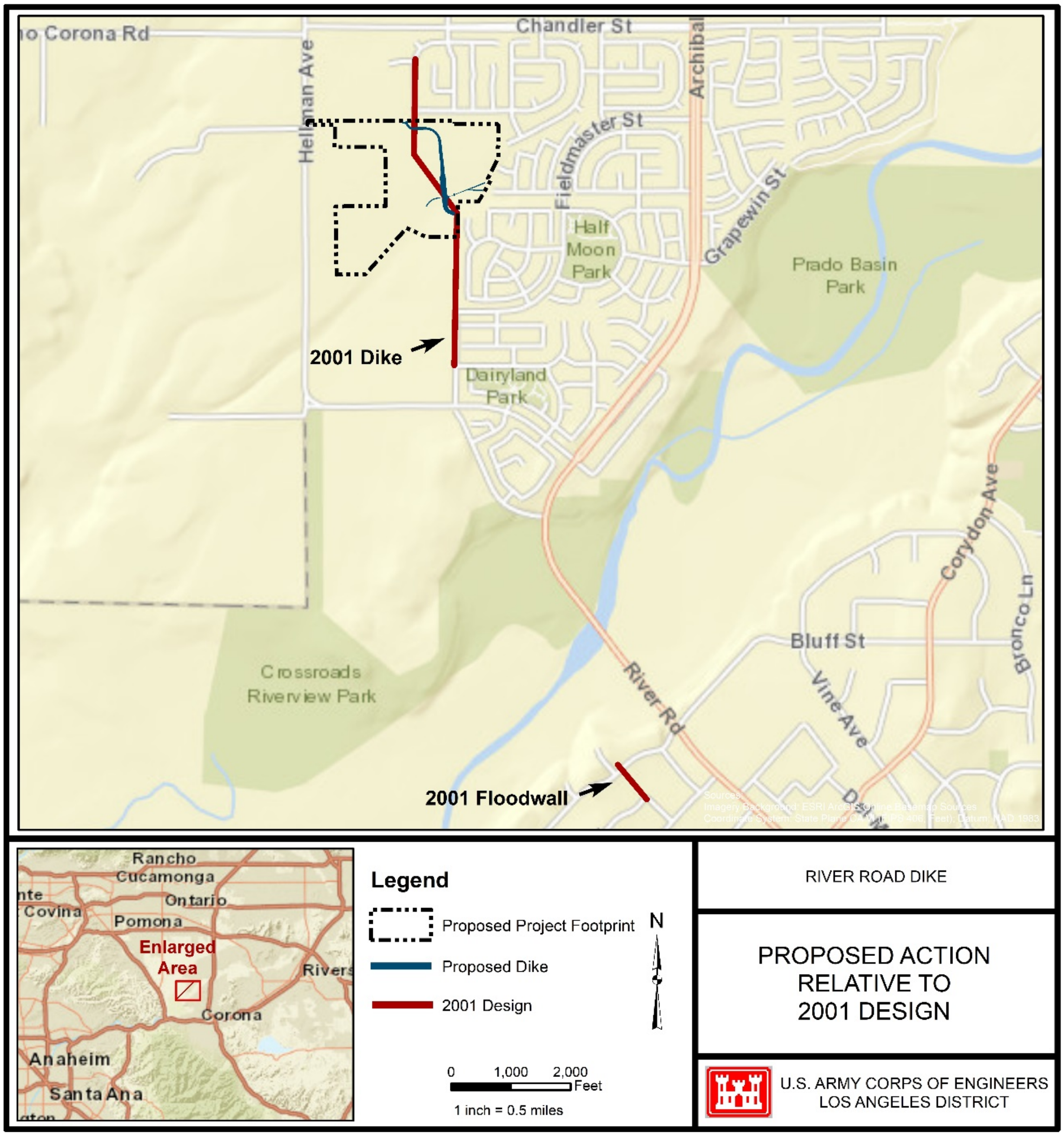

Figure 3. Location of dike and floodwall in 2001 Design relative to the Proposed Action.

2.1 Alternative 1: Proposed Action

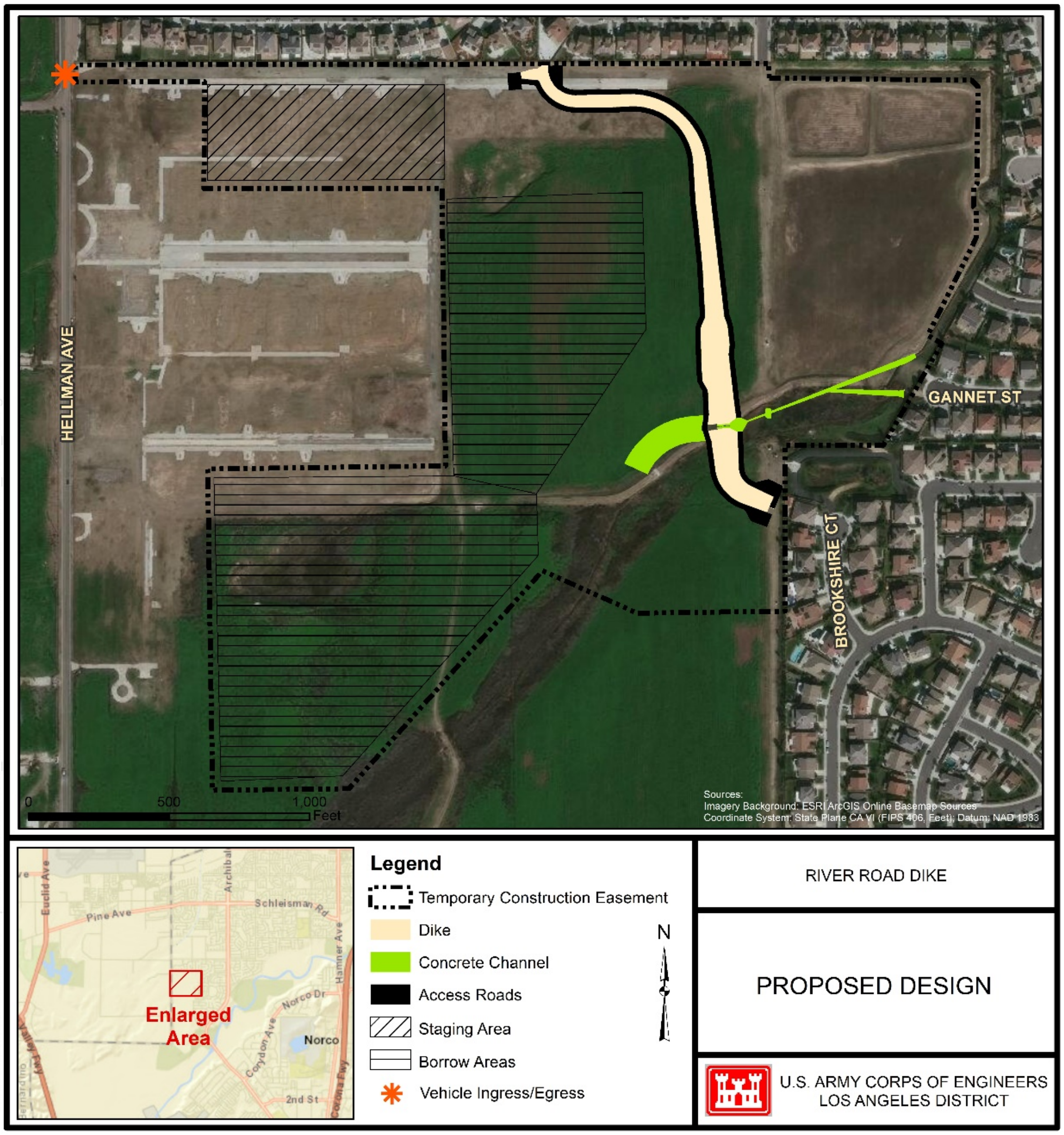

Figure 4. Proposed River Road Dike construction design

Dike Design

The proposed design for River Road Dike is a 1,750 foot long compacted earth fill dike (Figure 4). The dike would have a maximum height of 18 feet with an average height of approximately 8 feet above existing grade. The dike would consist of approximately 30,000 cubic yards of compacted fill. The crest width at the top of the dike would be 21 feet wide and sides would slope at 2.25 horizontal feet to one vertical foot on each side of the dike (2.25H:1V). Both the landward-facing and reservoir sides of the dike would be armored with 18 inch thick riprap with a 12 inch thick layer of bedding.

The dike would also be equipped with 15 foot wide asphalt paved road at the crest, and aggregate base course access roads along the landward and reservoir facing toes of the dike. There will be extensive site grading, a culvert and open concrete channels to ensure positive drainage off-site.

Staging Area

The staging area is located in the northwest corner, approximately 1,000 feet southeast of the intersection of Hellman Avenue and Shoreham Street (Figure 4). The staging area would be used for storage of construction equipment and materials. The staging area would be cleared and grubbed prior to project construction and it would be restored with native upland vegetation upon completion.

Haul Roads

A vehicle ingress and egress entry point to the site would be located on Hellman Avenue, approximately 300 feet south of the intersection of Hellman Avenue and Shoreham Street (Figure 4). Construction traffic would only affect civilian traffic when entering and exiting the ingress and egress location. Traffic control would be provided at the ingress and egress location.

Construction Phasing

It is anticipated that River Road Dike will be constructed in three major phases: 1) site preparation, 2) construction of the dike and 3) grading for interior drainage, site access and hydroseeding.

1) Site Preparation
Site preparation consists of clearing and grubbing, stripping, and dike foundation excavation. Clearing and grubbing activities include removing and disposing of objects that may obstruct work performed in the project area. This includes felling, trimming and cutting of trees and other vegetation into sections for removal as well as removing and disposing of any existing structures that may impede work. Stripping consists of removal of the top 12 inches of soil within the grading limits of the project. Dike foundation excavation includes removing unsuitable soil within the footprint of the dike. Removal limits can range from three to six feet deep.

2) Dike Construction
Construction of the dike will consist of placing suitable compacted fill and riprap. Dike construction will include excavation of approximately 36,000 cubic yards of suitable soil from the onsite borrow site (as shown in Figure 4) then hauling and placing compacted fill within the limits and grades indicated in the dike description. Dike construction also includes placement of riprap with 12 inch maximum stone size over 12 inch thick layer of bedding material on the reservoir side slope of the dike. The placement limits of the riprap will be three feet below existing grade to the crest of the dike.

The proposed dike would reduce the flood storage of the Prado Basin by 115.2 acre-feet, or 0.04 percent of the total future volume of the facility (292,026 acre-feet). Use of the proposed borrow area would restore a portion of this lost reservoir capacity by excavating approximately 36,000 cubic yards from this onsite borrow site area.3) Site Grading and Hydroseeding
Interior drainage grading, site access, and hydro seeding will consist of grading the project site to promote positive drainage, constructing access roads to provide a access to major project features, and hydroseeding to restore native vegetation throughout the project site. Site grading activities include placing and moving soil in a matter that will promote positive drainage throughout the site to Mill Creek. Slopes indicated for the site grading are generally a minimum of one percent to prevent ponding of water within the site. Proposed access roads at the toe of the dike will be graded at a higher elevation to ensure water is directed away from the dike. A 15 foot paved road will be constructed on the crest of the dike. Six inch thick by 15 foot wide aggregate base course access roads will be constructed on the landward and reservoir side toes

of the dike to provide access to major project features. A 15-foot vegetation free zone would be established from each toe of the dike. The landward side slope and 15-foot vegetation free zone would be planted with low-growing grasses. The disturbed areas outside of the 15-foot zone and the borrow area would be seeded with forbs and grasses to compensate for adverse effects of construction on the land.

Construction Equipment

Construction equipment would include a combination of concrete pumpers, water trucks, waste trucks, haul trucks, dump trucks, scrapers, loaders, dozers, cranes, back hoes, soil compactors, rollers, graders, vegetation chippers, and excavators.

Construction Schedule

Construction is expected to take approximately 20 months to complete. Clearing and grubbing is proposed to be initiated and completed outside of the bird breeding season in the winter of 2020/2021 to avoid impacts to nesting birds. If needed, sound walls would be constructed prior to March 1 of each year. Construction is expected to be complete in the summer of 2023. However, funding constraints, weather delays, and other issues could potentially move the move the clearing and grubbing schedule into the late summer of 2021 and construction timeline into late 2023. Daily construction would normally occur between 7:00 a.m. and 6:00 p.m., Monday through Friday, although additional hours or Saturday work may occasionally be permitted for specific activities. The construction contractor would need to obtain a variance from local noise ordinances if needed in those circumstances.

Water Source

The construction contractor would determine and acquire a water source for construction of the proposed project. The most likely source is the city of Eastvale. City of Eastvale requires the use of reclaimed water for construction purposes and will not authorize temporary potable water meters to existing fire hydrants for construction activities.

Source of Material

The embankment would be constructed using riprap imported from a local quarry. For the purposes of this analysis, it is assumed that the nearest quarry would be used. Fill material for construction would be borrowed from the onsite borrow area.

Disposal Sites

Construction of the Proposed Action would produce organic, inorganic, and unsuitable construction materials which must be disposed of in the manner and areas specified so that the proposed project site would be restored after completion of construction. Organic materials, trees, shrubs, and abandoned timber structures, would be disposed of by hauling to a local commercial site. Topsoil containing organic material may be stockpiled and spread on embankment slopes or borrow areas as a part of site restoration. Disposal of these materials by burning or burying at the proposed project site would not be permitted. Inorganic materials would include, but are not limited to, broken concrete, rubble, asphaltic concrete, metal, and other types of construction materials. These materials would also be taken to a commercial landfill.

Dewatering

If dewatering is necessary, the construction contractor would be responsible for obtaining and complying with a dewatering permit from the Santa Ana Regional Water Quality Control Board.

Future Operation and Maintenance

Future operation and maintenance, including routine inspections and minor repairs, of the embankment and its associated project features would be required after construction is completed and conducted by the non-federal sponsor. The following activities would occur:

- Routine and special inspection and patrol with pickup trucks and sport utility vehicles weekly to daily during flood season, and weekly to monthly during the non-flood season;
- Mobilizing dump trucks to haul stones and using hydraulic excavators to place stones along eroded areas of the embankment to protect and reinforce the dike as necessary during floods;
- Periodic weeding and patching stone and aggregate base course maintenance roads along the landward and reservoir facing toes of the dike;
- Rodent control;
- Periodic mending of fencing and painting metal gates;
- Maintenance of hydroseeded and mitigation restoration areas.

Environmental Commitments/Avoidance and Minimization Measures During Construction

Due to the limited nature of construction disturbance, the activities of the Proposed Action are not expected to cause any long term adverse environmental effects. Environmental commitments and best management practices from the 2001 SEIS/EIR along with new commitments, as summarized in Section 5 of this document, would be implemented for the proposed action to ensure that potential construction-related effects are either avoided or minimized.

2.2 Alternative 2: 2001 Design

2001 Design: Floodwall

The previously approved floodwall would be constructed within Norco's public road right-of-way, along the westerly side of River Road (Figure 3). In addition to the wall, a flowage easement would be required for approximately half of the parcel located at the southeast corner of River Road and Bluff Street.

There are six homes along the previously approved River Road floodwall. All six are above 566-ft elevation, but the backyards are not. The purpose of the floodwall is to prevent reservoir water from flooding property below 566-ft that would otherwise be required to be acquired. Each of these properties is on approximately half acre lots with no permanent structures below 566-ft elevation.

The proposed floodwall would be a 6-ft high "L-wall" design and would replace an existing buff-colored reinforced masonry block wall. The proposed wall would be pattern stamped and colored to resemble the existing wall. The floodwall would be placed at the right-of-way line between residential homes and River Road. The footing, for the wall, would be as much as 12-ft wide on the flood side of the wall. There is approximately 12-ft between the existing masonry wall and the existing curb and gutter along River Road. The area between the masonry wall and curb and gutter is currently earthen and serves as a footpath. When the proposed wall footing is complete, it would serve as a sidewalk along this area.

2001 Design: Dike

The previously approved dike would be approximately 4,500 feet in length and would range in height from 7 to 14 feet (Figure 3). It would generally follow the perimeter of the parcels to be protected (refer to 2001 SEIS/EIR Appendix D) and as such, would diverge somewhat from the 566-ft elevation contour. The dike would have 2.25:1 (H:V) slopes and would vary in width from 6 to 30 meters.

A 12 to 15-ft wide maintenance road would be located on top of the proposed dike and another on the outer side. Seven 36-inch diameter reinforced concrete drain pipes would ensure proper drainage for the watershed draining toward the dike. On the side facing towards Prado Basin, the dike would be covered with an 18-inch layer riprap above a sheet of filter fabric to provide protection from wave action. The slope facing outward away from the basin would be hydroseeded with grasses. The total footprint of the dike encompasses approximately 5.93 acres.

A total of 50,225 cubic meters of earth would be excavated from an adjacent parcel to be used as compacted fill in the dike. In addition, 8,157 tons of riprap would be imported to the project for placement on the basin side of the dike. Other materials to be imported include 91-cm diameter reinforced concrete pipe for drains, 19,400 square meters of geotextile, 7,100 square meters of filter cloth, and 8,989 linear feet of chain link fence.

The dike would reduce the flood storage of the Prado Basin by 307 acre-feet, or 0.11 percent of the total future volume of the facility (292,026 acre-feet). It is proposed to replace this lost volume by excavating approximately 453,000 cubic meters (366 acre-feet) from a site identified in Appendix D of the 2001 SEIS/EIR. OMRRR actions under the 2001 Design Alternative would be the same as those identified under the Proposed Action Alternative in section 2.1-1.

Implementation of this alternative would require the use of a borrow area and haul routes different from the Proposed Action. As identified in the 2001 SEIS/EIR, the fill material is anticipated to be obtained from the northern portion of the Prado Basin, referred to as Borrow Area No. 2, which is located at the confluence of Mill Creek and Chino Creek near the southern terminus of Cucamonga Avenue (Figure 5). Haul routes to transport fill to the project site would be north along Cucamonga Ave, east on Chino Corona Road and south on Hellman Ave.

Future Operation and Maintenance

Future operation and maintenance actions under the 2001 Design Alternative would be the same as those identified in the Proposed Action Alternative above.

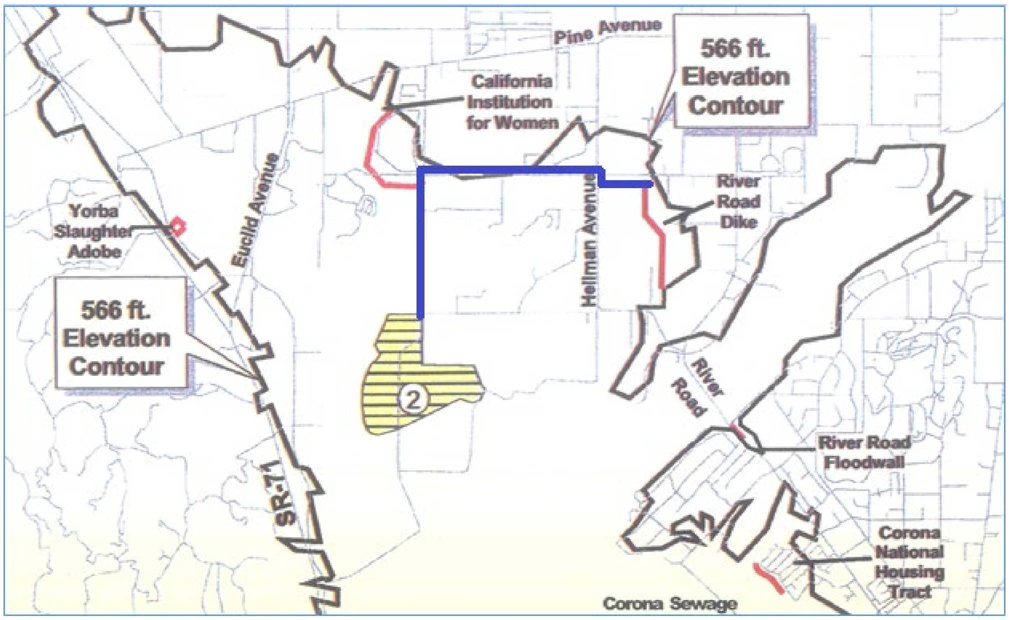

Figure 5. 2001 Design Borrow Area 2 (yellow polygon with hash lines) and haul routes (blue line)

Table 2-1. Summary of changes between the 2001 Design and the Proposed Action.

	2001 Design	Proposed Action
Location	The 2001 Design included two features: a dike and a flood wall. The dike would be constructed on the westerly side of Hall Road, north of River Road. The floodwall would be constructed within Norco's public road right-of-way, along the westerly side of River Road at Bluff Street.	The Proposed Action includes a dike. The dike would be located in a 70 acre site just southeast of the intersection of Hellman Avenue and Shoreham Street in the city of Eastvale.
Size	The dike would be approximately 4,500 linear feet and would range in height from 7 to 14 feet for a short distance. The floodwall would be 6 feet high.	The proposed dike would be approximately 1,750 total linear feet of earthen dike. Dike height would range from 5 to 16 feet above existing grade.
Design	The proposed floodwall will be an "L-wall" design and will replace an existing buff colored reinforced masonry block wall. The dike would have 2.25:1 horizontal-to-vertical side (H:V) slopes and would vary in width from about 19 feet to 98 feet.	The crest width at the top of the dike would be approximately 21 feet wide with 2.25:1 H:V side slopes on each side of the dike.
Access	A 13 to 16 feet wide maintenance road would be located on top of the proposed dike and another on the outer side.	The dike would be equipped with 15 foot wide asphalt paved road at the crest and aggregate base course access roads along both the landward and the reservoir facing toes of the dike.
Drainage	Seven 36-inch diameter reinforced concrete drain pipes would ensure proper drainage for the watershed draining toward the dike.	There would be extensive site grading, a culvert and open concrete channels to ensure positive drainage to Mill Creek.
Surface Materials	The dike would be covered with 18-inch layer riprap on the reservoir facing side above a sheet of filter fabric to provide protection from wave action. The landward facing side would be hydroseeded with grasses.	The dike would be armored with 18 inch thick riprap with 12 inch thick bedding on both the landward and reservoir-facing sides.
Fill Materials	A total of 50,225 cubic yards of earth would be excavated from an adjacent parcel to be used as compacted fill in the dike. In addition, 81,571 tons of riprap would be imported to the project for placement on the basin side of the dike.	Dike construction would include excavation of approximately 36,000 cubic yards of suitable soil from the onsite borrow site then hauling and placing compacted fill within the limits and grades indicated in the dike description. Dike construction also includes placement of 18 inch thick riprap with 12 inch maximum stone size over a 12 inch thick layer of bedding material. The placement limits of the riprap would be three feet below existing grade to the crest of the dike.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section summarizes the existing condition of the physical and human environment within the area of potential effects surrounding the project site. It also provides an assessment of potential impacts to the environment. Impacts on environmental resources were evaluated in comparison to those impacts that were originally identified and mitigated for in the 2001 Final SEIS/EIR. Any incremental impacts or changes identified herein that are additional to those identified in the previous documents are addressed accordingly. Construction-related environmental commitments from the 2001 Final SEIS/EIR, additional environmental commitments developed for the Proposed Action project design features and best management practices (BMPs) have been incorporated into the project description of each alternative to avoid and/or reduce potential impacts. The finding or conclusion of level of significance following each resource category assumes that appropriate measures will be applied. A full list of environmental commitments that are applicable to the River Road Dike feature can be found in Chapter 5 of this document.

3.1 Air Quality

Air quality conditions in the proposed project area are similar to those described in other Corps environmental documents prepared for Prado Basin features, including the 2017 SEA/EIR Addendum for the Auxiliary Embankment and Floodwall Phase 2 project, the 2013 California Institution for Women's Dike SEA/EIR Addendum, and the 2018 Alcoa Dike SEA/EIR Addendum. The Corps' 2001 SEIS/EIR is also a reference for air quality in the proposed project area, and it documented anticipated air quality impacts from construction of all Prado Basin and Vicinity projects. These reports are hereby incorporated by reference, as per 40 CFR 1502.21.

3.1.1 Existing Conditions

The proposed project area is entirely within the Prado Flood Control Basin's Mill Creek drainage area, which is part of the larger Prado Dam Reservoir basin area, and is located in the central part of the South Coast Air Basin (SCAB) of California, an approximate 6,600 square mile (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 by federal, state, and regional control authorities, including the U.S. Environmental Protection Agency (EPA); the California Air Resources Board (ARB), which is part of the California Environmental Protection Agency (Cal EPA); the South Coast Air Quality Management District (SCAQMD) and the Southern California Association of Governments (SCAG).

Regional Air Quality

Air pollutant emissions in the SCAB are generated from stationary, mobile, and natural sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at an identified location and usually are associated with manufacturing and industry. Examples are boilers or combustion equipment that produce electricity or generate heat. Area sources are distributed widely and produce many small emissions. Examples of area sources include residential and commercial water heaters, painting operations, portable generators, lawn mowers, agricultural fields, landfills, and consumer products such as barbeque lighter fluid and hair spray. Construction activities that create fugitive dust such as excavation and grading also contribute to area source emissions. Mobile sources refer to emissions from on- and off-road motor vehicles, including tailpipe and evaporative emissions. On-road sources may be operated legally on roadways and highways. Off-road sources include aircraft,

trains, and construction equipment. Mobile sources account for the majority of the air pollutant emissions within the air basin. Air pollutants also can be generated by natural sources such as when fine dust particles are pulled off the ground surface and suspended in the air during high winds.
To protect the public health and welfare, the federal government has identified common air pollutants (also known as “criteria air pollutants”) and established ambient air quality standards for these pollutants through the Federal Clean Air Act and the California Clean Air Act. The six air pollutants for which Federal standards have been promulgated and that are most relevant to air quality planning and regulation in the air basins include ozone (O3), carbon monoxide (CO), sulfur dioxide (SO2), nitrogen dioxide (NO2), lead (Pb) and suspended particulate matter (PM). PM comes in a range of sizes and PM emissions are regulated in two size classes: Particulates up to 10 microns in diameter (PM10) and particulates up to 2.5 microns in diameter (PM2.5). PM10 and PM2.5 are so small that they can enter the lungs and cause serious health problems.

Air pollutants are classified as primary or secondary pollutants. Primary pollutants are emitted directly into the atmosphere and include carbon monoxide, nitrogen dioxide, particulate matter, sulfur dioxide, and lead. Ozone is considered a secondary pollutant because it is formed through a photochemical reaction in the atmosphere with volatile organic compound (VOC) and nitric oxide in the presence of sunlight.

While ambient air quality standards have been developed specifically for O3 and NOX, there is no National Ambient Air Quality Standard (NAAQS) for VOCs. VOCs include many compounds of carbon. There are certain classes of carbon compounds that are not VOCs, including: carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and methane, among others. While the Federal government has not established ambient attainment levels for VOCs, they have for O3. Because VOCs react with NOX through photochemical reactions to form ozone, air districts, including SCAQMD, have provided VOC significance thresholds for study level analysis in order to further limit the levels of VOCs in the atmosphere that could be converted to O3. Reactive organic compounds (ROC) and reactive organic gases (ROG) can also be considered in a group with VOCs.
Criteria air pollutants and levels at which they occur in the project area include:

Ozone (O3) and O3 precursors [Reactive Organic Gases (ROG)]: Ozone (O3) is a problematic air contaminant in the SCAB. O3 is formed from the precursor pollutants volatile organic compounds (VOC), Reactive Organic Gases (ROG), Reactive Organic Compound (ROC), and nitrogen oxides. VOC, ROG, ROC, and nitric oxides react to form O3 in the presence of sunlight through a complex series of photochemical reactions. As a result, unlike inert pollutants, O3 levels usually peak several hours after the precursors are emitted and many miles downwind of the source. O3, VOC, ROG, ROC, and are sometimes used interchangeably. SCAB, which includes the Proposed Project area, is designated as in NAAQS (Federal) extreme nonattainment for Ozone (O3) (8-hour). The project area is within a non-attainment area for state and national ozone standards.

Carbon Monoxide (CO): Carbon monoxide (CO) is a product of inefficient combustion, principally from automobiles and other mobile sources of pollution. In many areas of California, CO emissions from sources such as wood-burning stoves and fireplaces also can be measurable contributors during cold-weather months. Industrial sources of pollution generally contribute less than 10 percent of ambient CO levels. Peak CO levels occur typically during winter months because of a combination of seasonal contributions from home heating devices and stagnant weather conditions. SCAB is designated as in Federal attainment/maintenance for CO. Prado Basin is within a non-attainment area for the national and state carbon monoxide standards. Riverside County is in attainment for Federal CO standards.

Sulfur Dioxide (SO2). Sulfur dioxide (SO2) is produced when any sulfur-containing fuel is burned. Chemical plants that treat or refine sulfur or sulfur-containing chemicals also emit SO2. Because of the complexity of the chemical reactions that convert SO2 to other compounds (such as sulfates), peak concentrations of SO2 occur at different times of the year in different parts of the state, depending on local fuel characteristics, weather, and topography. In moist environments, SO2 may combine with water to form sulfuric acid, a component of acid rain. SCAB is designated as in Federal attainment for SO2.

Lead (Pb). Lead is found in old paints and coatings, plumbing, and various other materials. SCAB is designated as in Federal nonattainment for Pb.

A state or region is given the status of "attainment" or “unclassified” if ambient air quality standards have not been exceeded. A status of "nonattainment" for particular criteria pollutants is assigned if the ambient air quality standard for that pollutant has 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.

Air quality problems in the SCAB include periodic violations of Federal air quality standards for ozone and PM2.5. The frequency with which ozone standards have been exceeded has declined significantly over recent decades.

Federal attainment status designations for the SCAB are summarized in Table 3-1.

Table 3-1 Federal Attainment Status Designation for the South Coast Air Basin (SCAB)

Air Pollutants	Federal
Ozone (1-Hour)	-
Ozone (8-Hour)	Nonattainment - extreme
PM10 (24-Hour)	Attainment/Maintenance
PM10 (Annual)	Unclassified
PM2.5	Nonattainment - serious
NO2	Attainment/Maintenance
CO	Attainment/Maintenance
SO2	Attainment
Lead	Nonattainment

Suspended Particulate Matter (PM) 10 and 2.5: PM10 and PM2.5 levels regularly exceed the national standard in Los Angeles, Riverside, San Bernardino, and Orange counties. The more stringent state PM10 standard is exceeded in all four counties. Prado Basin is designated as non-attainment for PM10 and PM2.5 standards.

Local Air Quality

Greenhouse Gases and Climate Change: Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. These gases are emitted as a result of natural processes and human activities. The accumulation of GHGs in the atmosphere regulates earth’s temperature and scientific evidence indicates a trend of increasing global temperature over the past century due to an increase in GHGs. It is the policy of the Corps to integrate GHG and climate change adaptation planning and actions into its missions, operations, programs, and projects. The Corps shall continue undertaking its GHG climate change adaptation planning and shall implement the results of that planning using the best available – and actionable – climate science and climate change information. The successful implementation of this Corps adaptation policy will help enhance the resilience of the built and natural water-resource infrastructure the Corps manages and reduce its potential vulnerabilities to the effects of climate change and variability.

3.1.2 Significance Criteria

An impact to air resources will be considered significant if:

- The project would violate any ambient air quality standard, contribute substantially to an existing air quality violation, expose sensitive receptors to substantial pollutant concentrations, or conflict with adopted environmental plans and goals of the community where it is located

3.1.3 Environmental Commitments/Avoidance and Minimization Measures

Environmental Commitments (ECs) AQ-1 through AQ-22 would be implemented as part of the project to avoid and/or reduce potential impacts to air quality during construction. For the Proposed Action Alternative, these environmental commitments would include:

- **AQ-1** The project construction contractor shall retard diesel engine injection timing by two degrees before top center on all construction equipment that was manufactured before 1996, and which does not have an existing IC engine warranty with the manufacturer. The contractor shall provide a certification from a third-party certified mechanic prior to start of construction, stating the timing of all diesel-powered construction equipment engines have been retarded two degrees before top center.
- **AQ-2** The project construction contractor shall use high-pressure injectors on all diesel engines that were manufactured before 1996, and which do not have existing IC engine warranties with the manufacturer. The contractor shall provide documentation of warranty and manufacture date or a certification from a third-party certified mechanic stating that all diesel construction equipment engines are utilizing high-pressure fuel injectors.
- **AQ-3** The project construction contractor shall use Caterpillar pre-chamber diesel engines or equivalent, and perform proper maintenance and operation.
- **AQ-4** The project construction contractor shall electrify equipment, where feasible.
- **AQ-5** The project construction contractor shall restrict the idling of construction equipment to 10 minutes.
- **AQ-6** The project construction contractor shall ensure that equipment will be maintained in proper tune to prevent visible soot from reducing light transmission through the exhaust stack exit by more than 20 percent for more than 3 minutes per hour and use low-sulfur fuel as required by SCAQMD regulation.
- **AQ-7** The project construction contractor shall use catalytic converters on all gasoline equipment (except for small [2-cylinder] generator engines). If this measure is not implemented, emissions from gasoline equipment shall be offset by other means (*e.g.*, Emission Reduction Credits).
- **AQ-8** The project construction contractor shall cease construction during periods of high ambient ozone concentrations (*i.e.*, Stage 2 smog alerts) near the construction area (SCAQMD, 1993).

- **AQ-9** The project construction contractor shall schedule all material deliveries to the construction spread outside of peak traffic hours, and minimize other truck trips during peak traffic hours, or as approved by local jurisdictions.
- **AQ-10** The project construction contractor shall use only solar powered traffic signs (no gasoline-powered generators shall be used).

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

- **AQ-11** The project construction contractor shall apply non-toxic soil stabilizers according to manufacturers' specification to all inactive construction areas (previously graded areas inactive for 10 days or more; soil stock piled for 2 days or more).
- **AQ-12** The project construction contractor shall enclose, cover, water twice daily, or apply non-toxic soil binders according to manufacturers' specifications to exposed stock piles (i.e., gravel, sand, dirt) with 5 percent or greater silt content.
- **AQ-13** In areas where dewatering is not required, the project construction contractor shall water active grading/excavation sites at least twice daily.
- **AQ-14** The project construction contractor shall increase dust control watering when wind speeds exceed 15 miles per hour for a sustained period of greater than 10 minutes, as measured by an anemometer. The amount of additional watering would depend upon soil moisture content at the time; but no airborne dust should be visible.
- **AQ-15** The project construction contractor shall suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph (40 kph).
- **AQ-16** The project construction contractor shall ensure that trucks hauling dirt on public roads to and from the site are covered and maintain a 50 mm (2 in) differential between the maximum height of any hauled material and the top of the haul trailer. Haul truck drivers shall water the load prior to leaving the site to prevent soil loss during transport.
- **AQ-17** The project construction contractor shall ensure that graded surfaces used for off-road parking, materials lay-down, or awaiting future construction are stabilized for dust control, as needed.
- **AQ-18** The project construction contractor shall sweep streets in the project vicinity once a day if visible soil material is carried to adjacent streets.
- **AQ-19** The project construction contractor shall install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip.
- **AQ-20** The project construction contractor shall apply water three times daily, or apply non-toxic soil stabilizers according to manufacturers' specifications to all unpaved parking, staging areas, or unpaved road surfaces.
- **AQ-21** The project construction contractor shall ensure that traffic speeds on all unpaved roads to be reduced to 15 mph (25 kph) or less.
- **AQ-22** Prior to the approval of plans and specifications, the Corps shall ensure that plans and specifications specify that all heavy equipment shall be maintained in a proper state of tune as per the manufacturer's specifications.

3.1.4 Environmental Consequences

Regulatory Framework

The 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 (O3); suspended particulate matter (PM) including particulates up to 10 microns in diameter (PM10) and particulates up to 2.5 microns in diameter (PM2.5); nitrogen dioxide (NO2); carbon monoxide (CO); sulfur dioxide (SO2), and; lead (Pb).

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

General Conformity Rule

Section 176(a) 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 EPA-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 the General Conformity applicability rates specified in 40 C.F.R. section 93.153.

The SCAB is currently designated as in Federal extreme nonattainment for 8-hour ozone (O3) (precursors: VOC, ROC, ROG or NOx); Federal attainment/maintenance for PM10 (24-Hour); Federal serious nonattainment for PM2.5; Federal attainment/maintenance for NO2; Federal attainment/maintenance for CO; Federal attainment for SO2, and; Federal nonattainment for Pb. Based on present Federal attainment designation for the SCAB, a federal action would conform to the SIP if annual emissions are below 10 tons of O3, 100 tons of NO2, 100 tons of CO, 100 tons of SO2, 100 tons of PM10, 70 tons of PM2.5, or 25 tons of Pb.

Greenhouse Gases (GHG) and Climate Change

The Corps policy is to integrate climate change adaption planning and actions into its missions, operations, programs, and projects to enable resiliency to potential changes in hydrologic processes. Effective April 5, 2017, the Council on Environmental Quality withdrew its "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews", which established a recommended reference point of 25,000 metric tons of annual CO2 emissions as warranting further review. Therefore, the Corps will not make a NEPA significance impact determination for GHG emissions or climate change. Rather, in compliance with NEPA implementing regulations, the anticipated GHG emissions and climate change impacts will be disclosed for the proposed project.

Alternative 1: Proposed Action

Assumptions

The proposed borrow area for this project is located within the temporary construction easement. Approximately 36,000 cubic yards of borrow material would be used for construction of the dike. Rip rap to protect the dike would come from a local quarry. A contractor staging area would also be within the site footprint. Several pieces of heavy earth-moving equipment would be used to clear and grub the site.

Materials to be disposed of would be loaded onto trucks and materials would be disposed at an off-site location. Haul routes include Hellman Street, Chino Corona Road and Chandler Street. Personal vehicles would be parked in the area, arriving in the early morning and leaving in the late afternoon.

Site footprint: The proposed work area or temporary construction easement (TCE) for dike construction includes an area of approximately 70 acres.

Total project construction work: Construction duration would take approximately 20 months. Daily construction assumes an 8 hour workday, 5 days per week (Monday through Friday), excluding holidays. The project would be complete and operational in 2023.

Phases of work: Site preparation, grading and dike construction.

Construction equipment: A combination of water trucks, dump trucks, tractors/loaders/backhoes, dozers, crane, roller, graders, chipper (crusher/processing equipment), hydroseed truck, excavators, auger (bore/ drill rig), generators would be used. See Appendix A: Air Quality Calculations for equipment list. An estimated 15 pickup trucks will commute to the project site daily with a maximum of 15 laborers.

Future Operation and Maintenance: An approximately two-week period annually.

<u>Methods</u>

CalEEMod 2016.3.2 program was used to calculate emissions for the proposed project: calculating maximum daily emissions in units of pounds per hour (lbs/hr), maximum annual emissions, in units of (tons per year), for criteria pollutants [Ozone (O3 or VOC), NOx, CO, SO2, PM10, and PM2.5), and annual greenhouse gas (GHG/CO2e) emissions in units of Metric Tons/yr (MT/yr). California Emissions Estimator Model (CalEEMod) uses sources such as the United States Environmental Protection Agency (USEPA) AP-42 emission factors, and California Air Resources Board (ARB) vehicle emission models (CalEEMod, 2017). The summer lbs/day emissions for the proposed project are typically higher in air pollutant air emissions when compared to the winter lbs/day and therefore, the summer lbs/day are referenced as the maximum lbs/day instead of the winter lbs/day. The proposed project CalEEMod air quality calculations are in Appendix B, Air Quality Calculations. Estimates of lead (Pb) emissions were not calculated. Lead emissions from mobile sources have significantly decreased due to the near elimination of lead in fuels. Thus, CalEEMOD 2016.3.2 does not provide estimated emissions for lead. Little to no quantifiable and foreseeable lead emissions would be generated by any of the alternatives.

The proposed project would result in air quality construction impacts daily and during each year of construction. See Table 3-2 and Table 3-3 below for comparison of estimated daily emissions (maximum daily construction lbs/day) to SCAQMD threshold and comparison of estimated annual emissions (maximum construction tons/year) to Federal threshold.

Table 3-2 Comparison of Proposed Project Daily Construction Emissions to SCAQMD, Pound per day (Lbs/Day)

Construction	VOC	NOx	CO	SO2	PM10	PM2.5	Pb	GHG/CO2e (MT/yr)
Proposed Project Maximum Daily lb/day	21.6640	**225.6443**	126.2529	0.3082	17.6893	10.0758	Not calculated	30,031.8558
SCAQMD Daily lb/day	75	100	550	150	150	55	3	No criteria unless industrial facilities; 10,000 MT/yr CO2eq for industrial facilities

Table 3-3 Comparison of Proposed Project Annual Construction Emissions to General Conformity de minimis Thresholds Tons/Year

Construction	Ozone	NOx	CO	SO2	PM10	PM2.5	Pb	GHG/CO2e (MT/yr)
Proposed Project Maximum (Tons/Year)	1.9640	20.5674	11.8417	0.0296	0.8947	0.8236	Not calculated	2,615.1481
Federal (Tons/Year)	10	100	100	100	100	70	25	Recommends that agencies quantify a proposed agency action's projected direct and indirect GHG emissions, taking into account available data and GHG quantification tools that are suitable for the proposed agency action

Based on the above, the proposed project construction daily emissions for all air criteria pollutants and GHG/CO2e would be below the SCAQMD significant threshold, except for NOx, and the proposed project construction annual emissions are below the General Conformity de *minimis* threshold. NOx emissions are estimated to exceed the SCAQMD lbs/day threshold by approximately 126 lbs/day. As a result, applicable environmental commitment AQ-1 through AQ-22 were developed to reduce below significance impacts to air quality. Pursuant to Clean Air Act (CAA) regulations at 40 CFR 932.158(a)(5)(v), emissions of ozone (i.e., VOC and NOx – the precursors to ozone) or NO_2 are deemed to be in compliance with applicable State Implementation Plan (SIP) for projects where the action involves regional water and/or wastewater projects. Furthermore, as indicated in Section 4.4.4 of the 2001 SEIS/EIR, the project is sized to meet the population projection in the SIP. As a result, emissions of VOC, NOx, and NO_2 are deemed to be in compliance with the SIP and a conformity analysis is not required for these pollutants. Additionally, impacts as a result of the Proposed Action would be temporary and would not result in substantial long-term air quality impacts. With the implementation of Environmental Commitments AQ-1 through AQ-22 and Best Management Practices (BMPs), and as this project is an element of a regional water (flood control) project, it is assumed that emissions would not equal or exceed General Conformity applicability rate(s) as established in 40 CFR 93.153(b), and would not exceed SCAQMD daily construction thresholds. Therefore, the Proposed Action would not result in significant impacts.

Future Operation and Maintenance

Estimated annual emission for the Proposed Action Operations and Maintenance (O&M) could include placement of eroded topsoil on the dike and dike inspections. These activities would result in periodic use of a few pieces of heavy duty equipment. Emissions would be short-term since the duration of routine O&M is assumed to be approximately two weeks a year. Emissions from maintenance activities are exempt from the CAA General Conformity Rule per 40 CFR 93.153(c)(2)(iv).

See Table 3-4 below for comparison of estimated daily emissions (maximum daily O&M lbs/day) to SCAQMD threshold and Table 3-5 below for comparison of estimate annual (maximum annual O&M Tons/Year).

Table 3-4 Comparison of Proposed Project Daily O&M Emissions to SCAQMD Lbs/Day

O&M	VOC	NOx	CO	SO2	PM10	PM2.5	Pb	GHG/CO2e (MT/yr)
Proposed Project Maximum Daily lb/day	4.4341	45.63345	22.8627	0.0401	20.6591	12.1843	not calculated	4,001.1419
SCAQMD Daily lb/day	55	55	550	150	150	55	3	No criteria unless industrial facilities; 10,000 MT/yr CO2eq for industrial facilities

Table 3-5 Comparison of Proposed Project Annual O&M Emissions to General Conformity de minimus Thresholds

O&M	ROG/VOC	NOx	CO	SO2	PM10	PM2.5	Pb	GHG/CO2e (MT/yr)
Proposed Project Maximum Ton/Year	0.0243	0.2510	0.1251	0.00022	0.1136	0.0670	not calculated	19.8822
Federal Ton/Year	10	100	100	100	100	70	25	Recommends that agencies quantify a proposed agency action's projected direct and indirect GHG emissions, taking into account available data and GHG quantification tools that are suitable for the proposed agency action

Based on the above, daily and annual O&M emissions are below the SCAQMD and General Conformity de *minimis* thresholds for all air emission criteria pollutants and GHG/CO2e. With the implementation of Environmental Commitments AQ-1 through AQ-22 and Best Management Practices (BMPs), and as this project is an element of a regional water (flood control) project, it is assumed that emissions would not equal or exceed General Conformity applicability rate(s) as established in 40 CFR 93.153(b), and would not exceed SCAQMD daily construction thresholds. Therefore, the Proposed Action would not result in significant impacts.

Level of Impact

Less than Significant. With implementation of Environmental Commitments (ECs) AQ-1 through AQ-22, construction and O&M activities for the Proposed Action would not violate any ambient air quality standard, would not contribute substantially to an existing air quality violation, would not expose sensitive receptors to substantial pollutant concentrations, or would not conflict with adopted environmental plans and goals of the community where it is located. . Impacts from emissions would be temporary and would return to pre-project conditions following completion of construction. Therefore, the Proposed Action would not result in significant impacts.

Alternative 2: 2001 Design Alternative

Expected dike length of the 2001 Design (4,500 feet) is more than twice the length of the Proposed Action (1,750 feet). The 2001 Design also included a 600 foot flood wall at a separate site approximately 1 mile to the southeast (Figure 3). Therefore, the 2001 Design Alternative is expected to produce approximately twice the emissions and impacts to air quality as compared to the Proposed Action due to larger project footprint and additional vehicular travel on local roads. However, similar to the Proposed Action, the 2001 Design Alternative construction daily emissions for all air criteria pollutants and GHG/CO2e would also be below the SCAQMD significant thresholds, except for NOx. With the implementation of Environmental Commitments AQ-1 through AQ-22 and Best Management Practices (BMPs), daily and annual air construction emission impacts would be reduced for NOx and for all air criteria pollutants including GHG/CO2e discussed above. Further, doubling the Project total emissions for the 2001 Design would still not exceed the General Conformity Applicability Rates for both construction and O&M activities. Implementation of environmental commitments (AQ-1 to AQ-22) and BMPs and as this project is an element of a regional water (flood control) project, it is assumed that emissions would not equal or exceed General Conformity applicability rate(s) as established in 40 CFR 93.153(b), and would not exceed SCAQMD daily construction thresholds. Therefore, same as the Proposed Action, there would would be no significant impacts. Impacts from emissions would be temporary and would return to pre-project conditions following completion of construction.

3.2 Biological Resources

3.2.1 Existing Conditions

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

General Setting

The project region is located within the Santa Ana River (SAR) watershed. This area includes lands contiguous to the SAR both up and downstream of Prado Dam. Natural conditions in this region are generally dictated by climate, which is typical of southern California inland areas. The Mediterranean climate of the SAR watershed is characterized by typical hot, dry summers and relatively cooler, wetter winters. The annual precipitation in the region averages 18 inches per year. Most precipitation occurs between November and March with little to no rainfall during the summer months. Prevailing temperatures in the watershed vary depending on location, elevation, and topography. These conditions all contribute to the unique composition of vegetation communities and wildlife species occurring in the region.

Vegetation

On a local scale, the presence of Prado Dam, ongoing development in the region, and various other anthropogenic features have affected the location and distribution of biological resources in this portion of the watershed. Plants and wildlife are abundant in the expansive Prado Basin. Common native species include willows (*Salix spp.*), mulefat (*Bacharis salicifolia*), laurel sumac (*Malosma laurina*), California sagebrush (*Artemisia californica*), coastal goldenbush (*Isocoma menziesii*). However, habitat loss, fragmentation, invasive species and roads surrounding the basin act as barriers to impede wildlife movement and plant dispersal.

The site is dominated by a few weedy, non-native species such as pepperweed (*Lepidium latifolium)*, London rocket (*Sisymbrium irio)* and cheeseweed (*Malva spp.*). The vegetation within neighboring developed parcels is largely comprised of non-native turf grasses and ornamental trees such as Peruvian and Brazilian pepper trees (*Schinus spp.)*, Canary Island pine (*Pinus canariensis*) and bottlebrush (*Melaleuca viminalis*). Located approximately 0.5 mile west of the proposed site lies Mill Creek, which collects storm water runoff and nuisance flows from an approximate 77 square mile watershed that incorporates the cities of Ontario, Chino, Rancho Cucamonga and Upland. Habitat within Mill Creek is primarily composed of Fremont cottonwood (*Populus fremontii*), black willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), narrow-leaf willow (*Salix exigua*), mulefat (*Baccharis salicifolia*) with minor components of western sycamore (*Platanus racemosa*), elderberry (*Sambucus mexicana*), and non-natives cocklebur (*Xanthium spp.*) and castor bean (*Ricinus communis*). Adjacent to Mill Creek are Mill Creek wetlands, a 23 acre constructed wetlands that provide multiple regional benefits including native habitat in the Prado Basin, 2.25 miles of recreational trails, and improved water quality in the watershed.

Approximately 0.75 mile southeast of the proposed River Road dike, lies the Santa Ana River. Habitat in this open space is similar to that described above in Mill Creek, except that it also includes large stands of the non-native and highly invasive giant reed (*Arundo donax*).

The vacant lots surrounding the site were previously used for agricultural purposes and are now colonized by weedy species, also known as ruderal habitat. Ruderal areas are characterized by broad-leafed herbaceous plants that quickly colonize disturbed or compacted soils. They are typically found on roadsides, equipment staging areas, previously graded areas and abandoned agricultural fields. The majority of the proposed project site was previously used for agriculture, but it is now vacant.

Wildlife

This site supports wildlife species typically found in disturbed, urban areas. During field visits in April 2019 and February 2020, the most commonly observed wildlife species were Western and California gulls, American crows (*Corvus brachyrhynchos*), red-tailed hawks (*Buteo jamaicensis*), various kingbirds (*Tyrannus spp.*), Brewer's blackbird (*Euphagus cyanocephalus)*, black phoebe (*Sayornis nigricans*), California ground squirrel (*Otospermophilus beecheyi*) and coyote (*Canis latrans*; scat observed).

The proposed project site is within Prado Basin. However, the open space within and immediately surrounding the project site is surrounded by dense residential developments and agricultural fields, therefore the project site does not function as a wildlife corridor to/from Prado Basin or other surrounding open spaces. The 1.7 acre riparian area within the site does not contain perennial water and the riparian vegetation does not continue throughout the drainage. It is an isolated patch of riparian habitat. Species that utilize Mill Creek and/or the Santa Ana River, especially aquatic species, likely do not pass between the project site and Mill Creek. However, some bird species may pass between the Proposed Action site and these waterways.

Special Status Species

The Corps reviewed the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB), U.S. Fish and Wildlife Service (USFWS) and California Native Plant Society (CNPS) sensitive species occurrence and critical habitat databases for the project area. Occurrences or designated critical habitat for three special status species were identified in the vicinity of the project site: least Bell's vireo (LBV; *Vireo bellii pusillus*), southwestern willow flycatcher (SWFL*; Empidonax traillii extimus*) and western burrowing owls (*Athene cunicularia hypergia*) (Figure 6). No special status species or critical habitat is known to occur within the project boundaries.

The Corps also coordinated with USFWS to confirm that the project would not impact any listed species or designated critical habitats. Because LBV is known to nest throughout nearby Prado Basin, USFWS recommended LBV surveys be conducted during the breeding season (pers. comm. E. Hock, Mar 2019). A Corps-approved biologist conducted a site survey of the proposed project area and its vicinity to document existing biological resources and sensitive species in April 2019 and May 2020.

Least Bell's Vireo: LBV is listed as both federally and state endangered. Formerly a common and widespread breeder, this species is now confined to isolated riparian woodlands in southern and central California. LBV prefers riparian habitats consisting of various willow species (*Salix spp.),* Fremont cottonwoods and western sycamores with a dense understory of brush for nesting.

Although there is no suitable riparian habitat within the proposed project site itself, LBV is known to nest throughout Prado Basin. Furthermore, USFWS designated critical habitat for LBV occurs approximately 500 feet south of the project site boundary (Figure 6). Therefore, Corps biologists conducted surveys at the proposed project site in April 2019 and May 2020. No LBV were observed at the project site, including within the riparian patch.

Southwestern Willow Flycatcher: SWFL is also federally and state endangered. This species requires dense thickets of riparian shrubs and small trees such as willows, cottonwoods, mulefat, and other wetland plants with adjacent surface water. The southwestern willow flycatcher only breeds near surface water or saturated soils (Paradzick and Woodward 2003). Therefore, surface water must be continually available from May to September during the SWFL breeding season. Flycatchers currently breed in scattered locations in southwestern U.S./northern Baja California and they winter in Central America.

Small numbers of southwestern willow flycatchers have been documented sporadically in Prado Basin since 1996. The number of recorded SWFL within Prado Basin peaked at nine territories in 2003. Since then, there has been a steady decline in flycatcher presence, and no nesting pairs have been detected since 2013 (Pike et al. 2013).

The proposed project site does not contain suitable habitat for SWFL. The vegetation here is sparse and scattered and surface water depends on residential water flows. Southwestern willow flycatchers were not observed in the proposed area during recent site visits. There is low potential for this species to occur in the project area. However, this area is not consistent with typical patch size required for this species and there are no known territories within the project site.

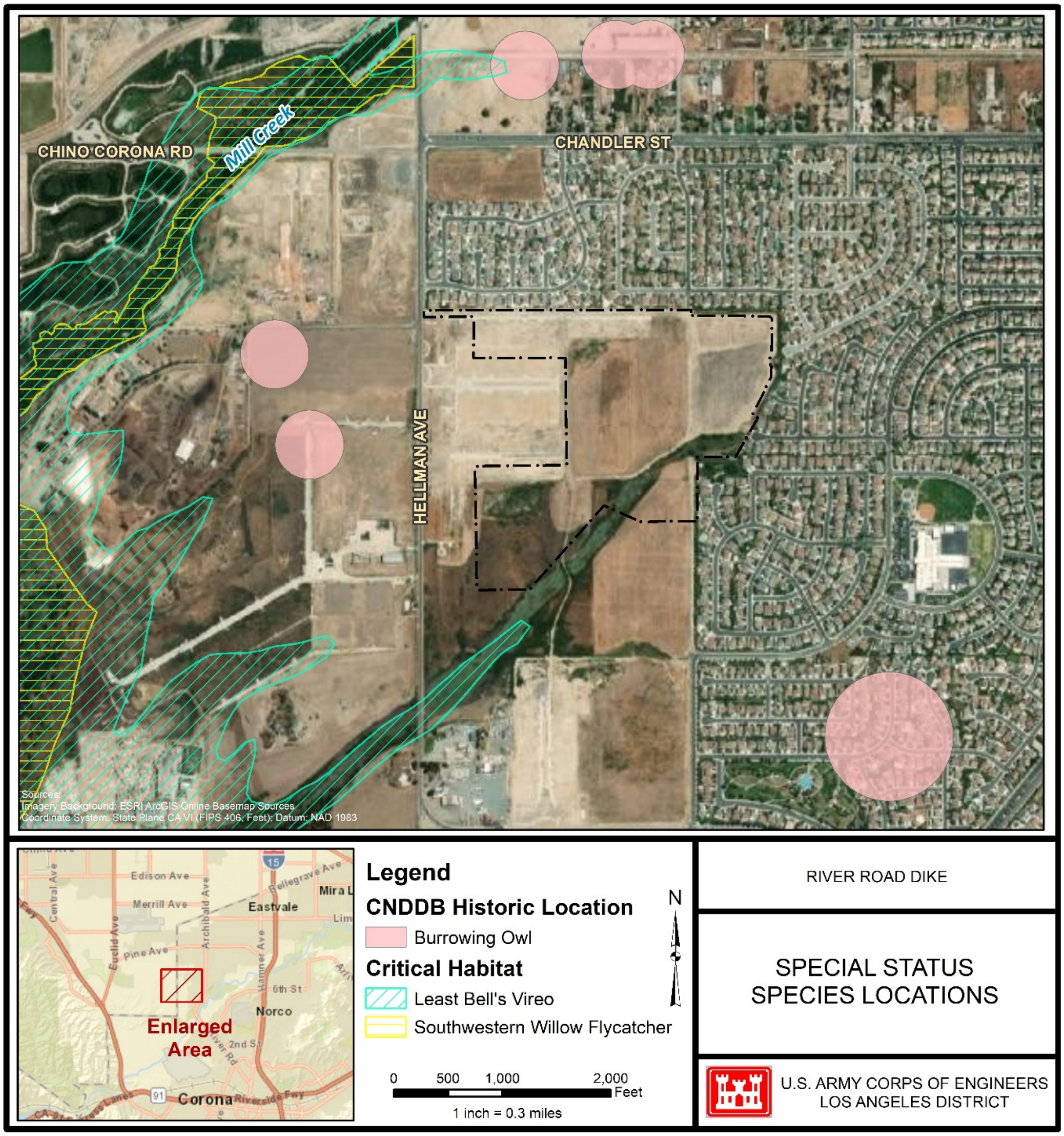

Figure 6. Special status species occurrence records and critical habitat in the vicinity of the proposed project.

Western Burrowing Owls: Formerly common in California, burrowing owl populations have significantly declined as a result of habitat destruction for development and small mammal eradication programs. This species is not federally listed, but is a CDFW Bird Species of Concern due to declining population numbers and the continuing threat of urban development. Burrowing owls prefer flat and open areas such as native grasslands and agricultural areas, particularly those with mammal burrows, which the owls use once mammals have abandoned the site.

Burrowing owls have been known to occur in the Prado Basin and surrounding areas. Burrowing owls historically preferred the agricultural habitats in the Chino Valley, but recent development has removed much of the species' potential nesting habitat. CNDDB identified a handful of burrowing owl occurrences in the vicinity of the project site (Figure 6). These individuals were observed in 2006 and

2007 and are not likely to be extant. During 2019 and 2020, Corps biologists conducted surveys throughout the site and did not observe any indication that burrowing owls may be present.

3.2.2 Significance Criteria

An impact to biological resources will be considered significant if:

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

3.2.3 Environmental Commitments (Avoidance and Minimization Measures)

The following measures would be implemented to further avoid and minimize potential effects to the biological resources. Biological commitments that were developed in the 2001 SEIS/EIR are prefaced with "BR-", with additional clarifications *written in italics*. Biological commitments that were developed after the 2001 SEIS/EIR are prefaced with "EC-".

- **BR-12** Construction activities shall be monitored by the Corps to assure that vegetation is removed only in the designated areas. Riparian areas not to be disturbed shall be flagged *(staked, or otherwise demarcated)*.
- **BR-13** The construction contractor shall install a noise barrier prior to March 1 *(anywhere the TCE is adjacent to riparian habitat)* to shield nesting vireos *(and other birds)* from excessive noise generated by construction vehicles and equipment.
- **BR-14A** When construction is completed in a given area, the construction contractor shall hydroseed the completed dikes and all temporarily disturbed upland areas, including borrow sites, with local native shrubs and groundcover. The mix of native species in the hydroseed shall be approved in advance by the Environmental Resources Branch of the Corps, Los Angeles District. (*Hydroseeding of dikes shall be limited to native grasses in compliance with Corps Dam and Levee Safety Regulations; other areas greater than 15' from the structures will be seeded/planted with a more diverse mix of native species.)*
- **BR-14C** The Contractor shall mow (*or clear vegetation from*) all areas that will be excavated prior to March 1 to preclude nesting of and impacts to grasshopper sparrows and other species of concern (*and all nesting birds).*

The following environmental commitments are in addition to those described in the 2001 SEIS/EIR:

- **EC-BR-1** Prior to construction activities and throughout the construction period, a Corps qualified biologist (or the environmental monitor) shall continue to inspect the construction site and adjacent areas to determine if any raptors are nesting within 200 feet of the construction site. If active nests are found, the Corps biologist will coordinate with CDFW to determine appropriate avoidance or minimization measures.
- **EC-BR-2** Prior to any ground-disturbing activities (e.g. mechanized clearing or rough grading) for all project related construction activities, a Corps qualified biologist (or environmental monitor) shall conduct a pre-construction surveys of the project site for terrestrial special-status, including MSHCP covered, wildlife species. During these surveys the biologist will:
  - Inspect the project area for any sensitive wildlife species;
  - Ensure that potential habitats within the construction zone are not occupied by sensitive species (e.g., potential burrows/nests are inspected); and

    - In the event of the discovery of a non-listed, special-status ground-dwelling animal, recover and relocate the animal to adjacent suitable habitat within the project site at least 200 feet from the limits of construction activities.
- **EC-BR-3** Prior to construction activities, a Corps qualified biologist (or the environmental monitor) shall conduct pre-construction environmental training for all construction crew members. The training shall focus on required mitigation measures and conditions of regulatory agency permits and approvals (if required). The training shall also include a summary of sensitive species and habitats potentially present within and adjacent to the project site.
- **EC-BR-4** The Corps' construction contractor will prepare a Spill Prevention and Contingency Plan. The Plan shall be implemented prior to and during site disturbance and construction activities. The plan will include measures to prevent or avoid an incidental leak or spill, including identification of materials necessary for containment and clean-up and contact information for management and agency staff. The plan and necessary containment and clean-up materials shall be kept within the construction area during all construction activities. Workers shall be educated on measures included in the plan at the pre-construction meeting or prior to beginning work on the project.
- **EC-BR-5** The Corps biologist (or the environmental monitor) will monitor construction activities to ensure compliance with environmental commitments.
- **EC-BR-6** Upon development of final construction plans and prior to site disturbance, the Corps shall clearly delineate the limits of construction on project plans. All construction, site disturbance, and vegetation removal shall be located within the delineated construction boundaries. The storage of equipment and materials, and temporary stockpiling of soil shall be located within designated areas only, and outside of natural habitat areas/channel. The limits of construction shall be delineated in the field with temporary construction fencing, staking, or flagging.
- EC-BR-7 Permanent impacts to 1.2 acres of disturbed riparian habitat due to construction of the concrete channel where water source will be diverted away from the existing habitat will be mitigated at 3:1 ratio (3.6 acres) with vegetation restoration. This mitigation area is located immediately below the newly-constructed concrete channel.
- EC-BR-8 Offsetting measures for permanent impacts to 0.64 acre to WOTUS include restoration of one acre of native habitat downstream of the project area.

3.2.4 Environmental Consequences

Alternative 1: Proposed Action

Vegetation

Implementation of the Proposed Action would result in potential effects on existing disturbed riparian vegetation through vegetation clearing and ground-disturbing activities within the project area. Vegetation clearing and grading activities are expected to occur within the TCE to prepare the site for construction of the embankment structure, site access, and drainage systems. Three vegetation types, as described in Table 3-6 and as shown in Figure 7 and Figure 8, are expected to be removed from project construction and appropriate restoration or mitigation would be implemented. The loss of this vegetation would be minor, given that these vegetation types provide low habitat quality and generally contain low species diversity. Potential impacts to vegetation and to the wildlife species that utilize these habitats would be further be minimized by scheduling vegetation removal activities during the non-nesting season, implementing erosion control measures during construction, implementing a weed control program, hydroseeding all temporary work areas with appropriate native vegetation and mitigating for loss of riparian habitat (see minimization measures below and in section 5.2 of this document).

Table 3-6 Acres of affected riparian vegetation and proposed mitigation efforts.

Habitat	Temporary	Permanent	Total	Restoration/Mitigation
Ruderal	62.8 acres (staging area, borrow sites, and access roads)	3.7 acres (dike)	66.5 acres	66.5 acres (1:1)
Disturbed Riparian	0	1.2* acres	1.2 acres	3.6 acres (3:1)
Non-Native Riparian (Pepperweed)	0	1.7* acres	1.7 acres	none
Total	62.8 acres	6.6 acres	69.4 acres	70.1 acres
** Not directly removed by construction activities. Concrete channel will divert water source away from existing riparian habitat.*				

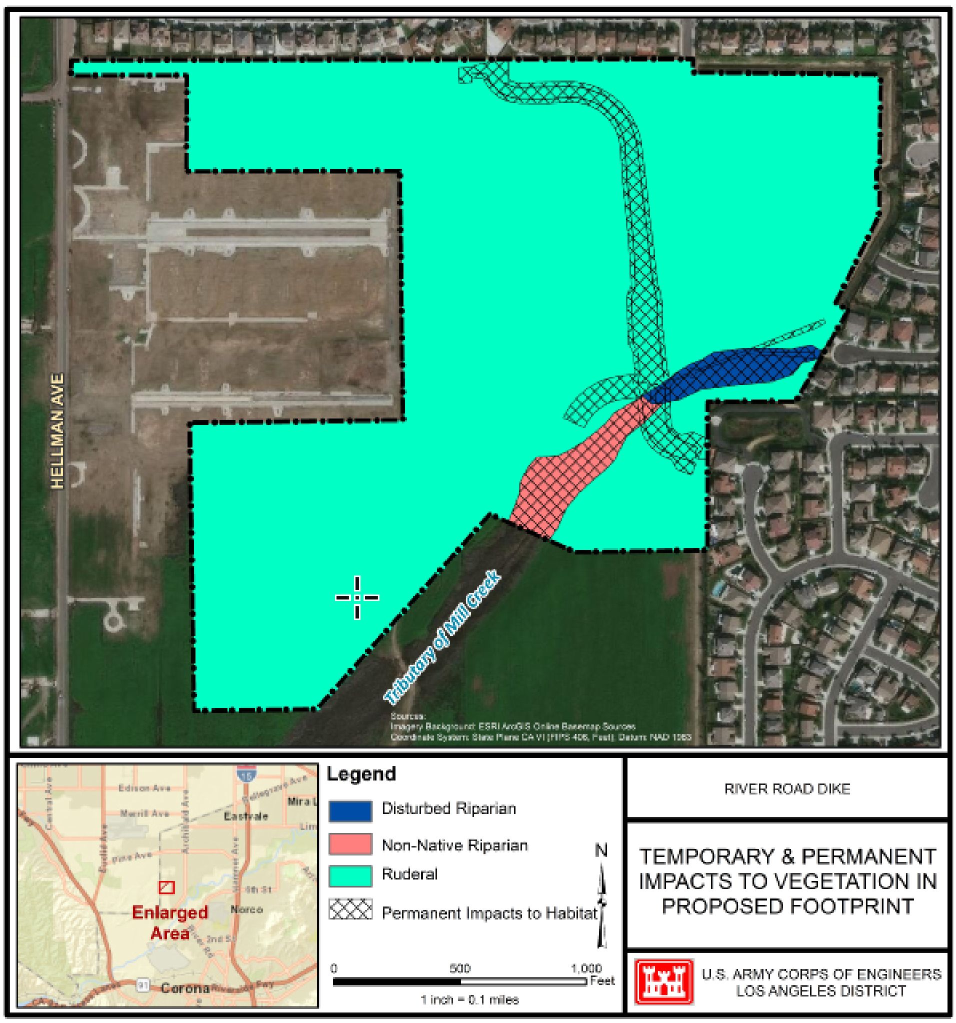

Figure 7. Temporary and Permanent Impacts to Vegetation from the Proposed Project

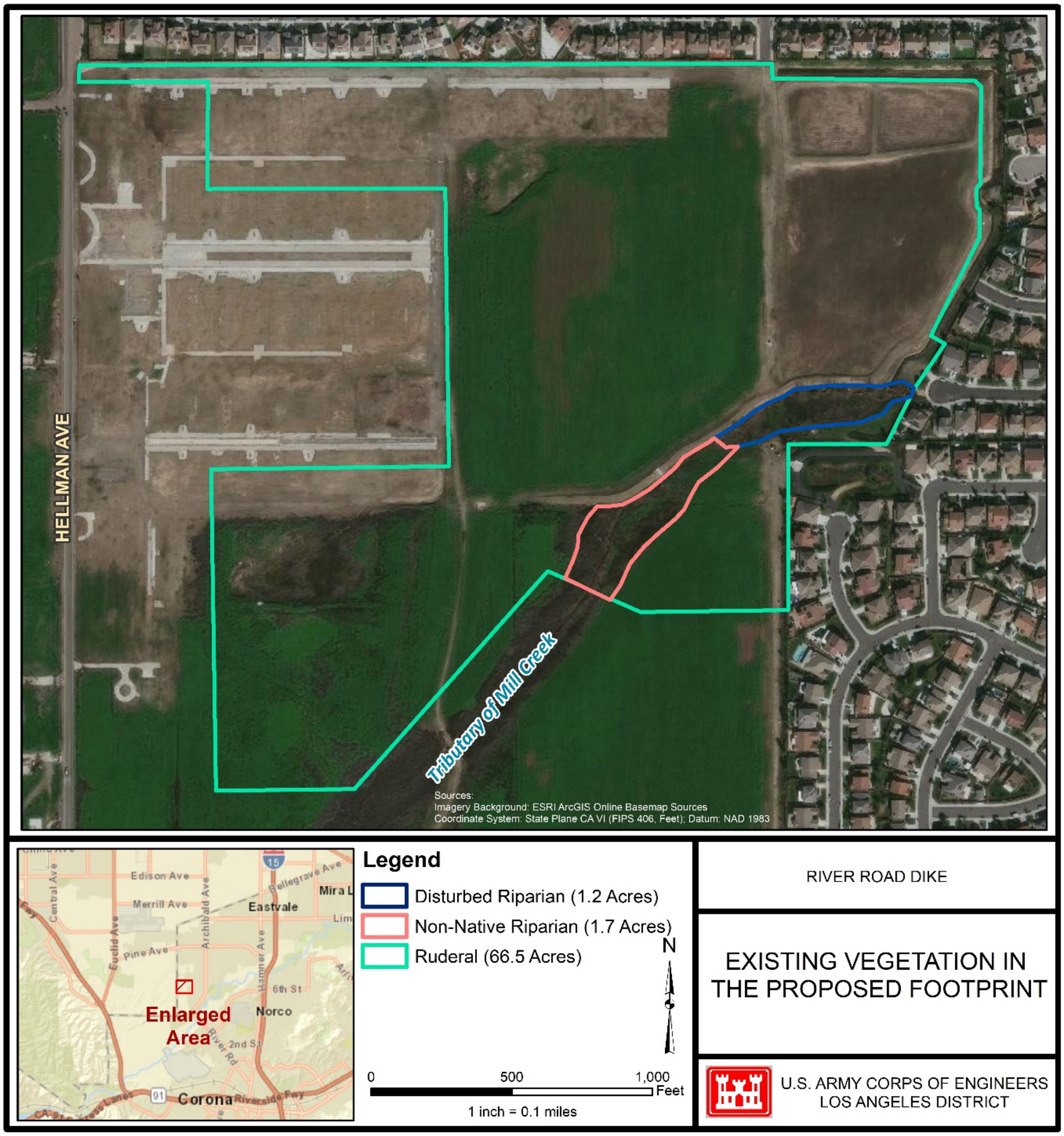

Figure 8. Existing vegetation within the Proposed Action Area.

Ruderal Vegetation: The project site has been colonized by invasive weeds (primarily cheeseweed and pepperweed) (Figure 10). Following construction, restoration of the site would include hydroseeding the temporarily affected ruderal areas with native upland species. The Corps' construction contractor will also comply with environmental commitments such as EC-BR-4, which requires development and implementation of a Stormwater Pollution Prevention Plan; EC-BR-8, which requires controlling the flow of water containing mud, silt or other pollutants from grading, aggregate washing, or other activities; EC-BR-9, which requires to the maximum extent practicable, equipment, haul routes and staging areas will be located outside of the active channel/wash; and EC-BR-10, which requires the construction contractor to avoid all impacts to the Mill Creek drainage and restrict all construction-related access to outside of the channel whenever water is present.

Disturbed Riparian Vegetation: 1.2 acres of disturbed riparian vegetation lie in the southeast corner of the proposed project site (Figure 9). This vegetation lies at the end of an existing concrete drainage channel that carries storm water runoff and other nuisance flows from residential communities to the north and east. Flows are ephemeral and drain in a southwest direction, meeting with Mill Creek approximately 1 mile southwest of the Proposed Action area. Vegetation in this riparian pocket is dominated by cattails (*Typha spp*.), pepperweed and cocklebur, with scattered mulefat and black willows.

Figure 9. Disturbed riparian vegetation in the site (picture taken 22 May 2019).

Figure 10. Ruderal vegetation within the site (taken 19 Feb 2020).

Due to a low grade within the footprint of the proposed project site, the design includes construction of a concrete channel so that runoff can drain away from the dike in a southwest direction. If the concrete channel is not incorporated, flows may pool within the site, providing mosquito breeding habitat and potentially leading to vector control issues for local residents. Construction of the dike and channel would not require the removal of the 1.2 acres of riparian habitat. However, implementation of the channel would divert flows from the existing riparian pocket. Therefore, it is assumed that this vegetation would not persist and would be permanently type-converted to ruderal or upland vegetation.

As coordinated with the FWS, three (3) acres of native riparian habitat will be established for each (1) acre of disturbed riparian habitat that is permanently and indirectly affected by the change in hydrology for a total of 3.6 acres of native riparian restoration. The proposed mitigation sites are shown in Figure 13. OCPW would maintain the site in perpetuity. Implementation of the Proposed Action would therefore not have an adverse effect on the disturbed riparian habitat.

Non-Native Riparian Vegetation: Downstream of the disturbed riparian area, land cover transitions into a monoculture of the non-native and highly invasive pepperweed (Figure 11). 1.7 acres of pepperweed occur within the tributary drainage in the proposed footprint and the pepperweed invasion extends uninterrupted to Hellman Avenue. As coordinated with the FWS, mitigation is not required as implementation of the Proposed Action would have no effect on this highly invasive non-native riparian area.

Figure 11. Non-native riparian vegetation in the site (picture taken 19 Feb 2020).

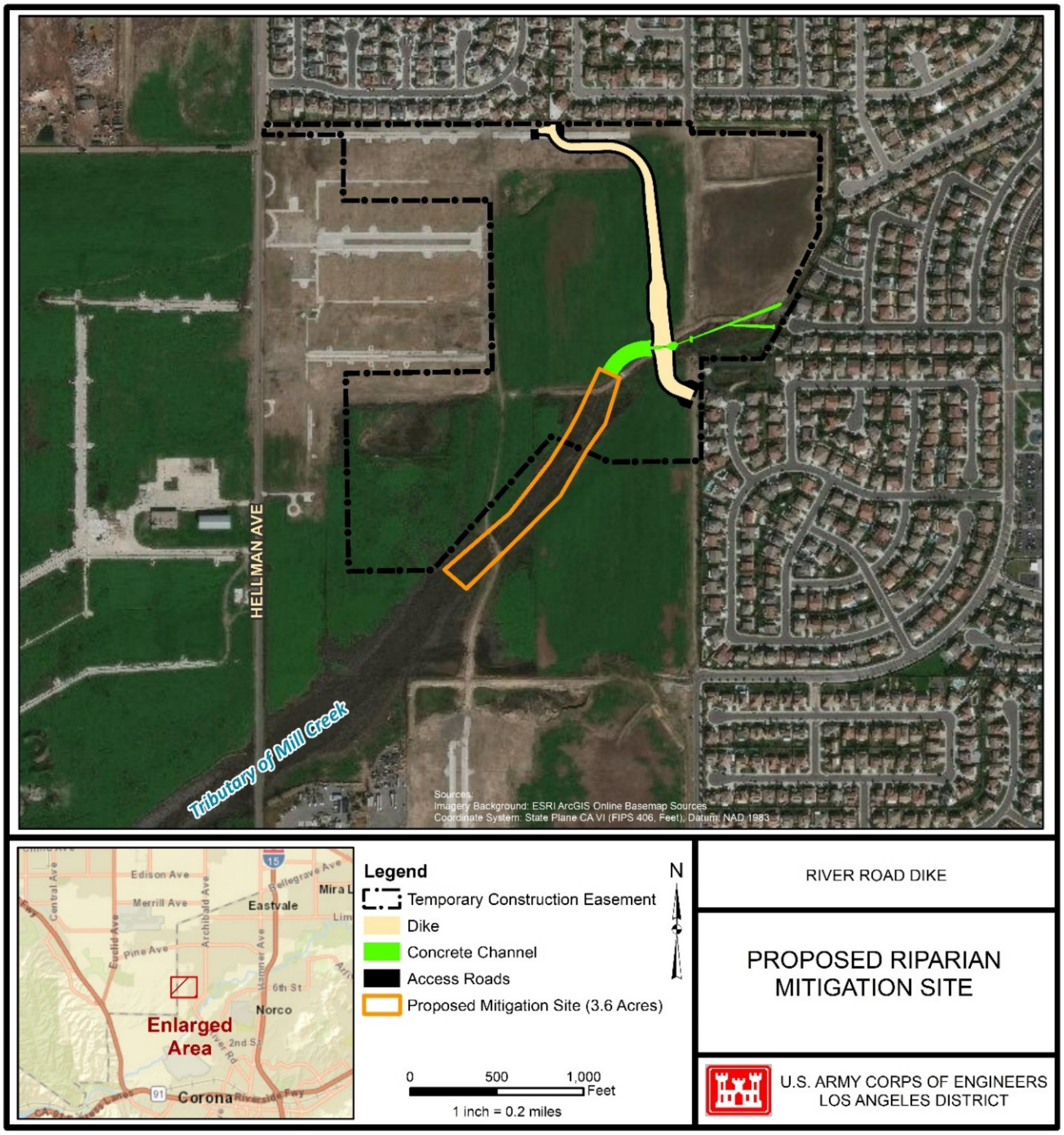

Figure 12. Location of proposed riparian mitigation site.

Wildlife

Elements of the Proposed Project could potentially affect wildlife and wildlife habitat, including construction-related noise disturbance, disruption of movement, and potential wildlife mortality. Short-term effects of construction, including noise and other disturbances caused by heavy equipment and construction crews may cause wildlife to move away from the construction zone. Vegetation clearing and soil grading to assemble and install the dike could result in the mortality of individual small mammals, such as ground squirrels. Species with limited mobility or that occupy burrows within the construction zones could be crushed during clearing and grading activities (Catlin and Rosenberg 2006). Noise and activity associated with construction and use of access roads adjacent to the riparian pocket could disturb birds and other wildlife that may be using this habitat.

Several minimization measures would be implemented to minimize these impacts to wildlife. Prior to and throughout construction being done at the Proposed Action site, biological surveys will be conducted to document the species occupying adjacent areas (EC-BR-1, EC-BR-2). To provide a visual, physical and noise barrier, a temporary sound wall will be constructed along the perimeter of the construction boundary where it is adjacent to riparian habitat (BR-13). Noise monitoring will also be conducted to ensure construction noise does not negatively impact wildlife in neighboring habitat (EC-BR-7).

Wildlife Movement

Wildlife movement corridors would not be significantly impacted as there is limited habitat or cover to attract most wildlife to the area. The project site is surrounded by residential developments and ruderal landscapes so the presence of the dike would not impede or affect wildlife movement.

1.2 acres of degraded riparian habitat would be permanently lost. However, mitigation downstream of the project would add 3.6 acres of newly created riparian habitat. Seeding and planting with native species and invasive removal would enable this mitigation site to provide higher quality habitat for wildlife than what currently exists. In addition, the mitigation site would be physically closer to Mill Creek than what currently exists. Thus, the proposed action could potentially result in increased habitat connectivity, migration and movement with Mill Creek and the Prado Basin as a whole.

Special-Status Species

Vegetation: No federally or state-listed plant species have been identified in the proposed project area. In addition, the Proposed Action area mostly consists of ruderal, weedy habitat, which has low potential to support most species of rare plants. Therefore, no direct or indirect impacts on special-status plant species are anticipated.

Wildlife: As previously described, three special status wildlife species have been documented or have designated critical habitat in the vicinity of the site: least Bell's vireo, southwestern willow flycatcher and burrowing owl. Vireo surveys were conducted throughout the site and within a 500-foot buffer around the site. Burrowing owl surveys were conducted by walking meandering transects throughout the site. No indications of the presence of these species were observed. Southwestern willow flycatcher have not been seen within the Prado Basin since 2013 despite annual surveys. Therefore, no effect would occur to these species. However, several bird species protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGC) such as the western kingbird (*Tyrannus verticalis*) and Cooper's hawk (*Accipiter cooperii*) have the potential to nest on-site or in close proximity.

> **Least Bell's Vireo:** The least Bell's vireo has not been documented in or near the Proposed Project area, but is known to nest throughout the Prado Basin. The Corps has determined that the Proposed Action (construction and operation) will have no effect on the least Bell's vireo since there have been no documented occurrences of vireos in the immediate area. Designated critical habitat for this species does not occur within the proposed project area. In addition, all vegetation clearing will take place outside of the breeding season and there is no suitable habitat in the immediate vicinity. The sound walls described above would also further reduce the potential for any affects to least Bell's vireo if they begin utilizing adjacent riparian habitat during construction. Therefore, the Proposed Project would have no effect on the Least Bell's Vireo.
>
> **Southwestern Willow Flycatcher:** Southwestern willow flycatcher was not identified in the proposed project area during recent site visits. Due to the narrow breadth of the riparian corridor through the area and proximity to human development, the River Road project area does not

support suitable breeding habitat and no flycatcher home ranges have been reported from this area. Therefore, there is a low potential for this species to occur in the project area, and no effect to flycatcher is anticipated. Designated critical habitat for this species does not occur within the proposed project area. Therefore, the Proposed Project would have no effect on the southwestern willow flycatcher.

Burrowing Owl: Direct impacts to this species could include a temporary loss of foraging opportunities, although this species has not been identified within the project area. The removal of existing vegetation and topsoil within the work areas would cause the resident small mammal population to move into unaffected areas. Foraging opportunities may increase within the first few days or weeks of construction as the small mammals are displaced. Direct impacts also include a potential reduction in foraging attempts or success within the immediate area due to increased dust, noise, and human presence associated with construction and O&M activities. However, this species would continue to find adequate foraging opportunities within the hundreds of acres of grassland adjacent to the site, which will be unaffected by this action. Therefore, impacts to burrowing owls are not anticipated.

Jurisdictional Waters of the U.S. (WOTUS)

Section 404 of the Clean Water Act regulates discharges of dredged or fill material into waters of the U.S., including wetlands. The limits of Corps geographic jurisdiction under Section 404 as defined in 33 CFR Section 328.4 are as follows: (a) Territorial seas: three nautical miles in a seaward direction from the baseline; (b) Tidal waters of the U.S.: high tide line or to the limit of adjacent non-tidal waters; (c) Non-tidal waters of the U.S.: ordinary high water mark (OHWM) or to the limit of adjacent wetlands; (d) Wetlands: to the limit of the wetland.

In the proposed project footprint, the 4.2 acres of degraded riparian habitat and non-native riparian habitat in the southeast corner of the site can be identified as potential wetland and/or non-wetland "waters of the U.S.". The three parameters listed in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (U.S. Army Corps of Engineers 2008)* that are used to determine the presence of wetlands are: (1) hydrophytic vegetation, (2) wetland hydrology, and (3) hydric soils. According to the Manual:

> "….*Evidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil, and vegetation) must be found in order to make a positive wetland delineation…" (p. 58)*

On February 19, 2020, the Army Corps of Engineers conducted a formal jurisdictional delineation of the proposed project area to identify jurisdictional waters and wetlands within the proposed project area. Vegetation and hydrology indicated wetland waters; however, soil test pits did not support hydric soils. Therefore, wetlands do not occur within the project site. Non-wetland waters of the U.S. were delineated following the limits of the OHWM as determined by changes in physical and biological features such as bank erosion, deposited vegetation or debris, and vegetative characteristics (Figure 13).

Implementation of the Proposed Action would result in 0.64 acre of permanent impacts to Waters of the U.S. (WOTUS or federal waters) due to the change in hydrology post construction. The Corps has prepared a 404(b)(1) Evaluation (Appendix D) for the proposed action. Coordination with the Santa Ana River Water Quality Control Board (SARWQCB) is ongoing to obtain a 401 certification pursuant to the Corps' Clean Water Act implementing regulations (33 CFR 336.1[a][1]). The 401 certification will be obtained prior to the award of the construction contract.

To offset the effects of the Proposed Action on jurisdictional waters, the Corps would implement several minimization measures, BR-12, which indicates construction activities shall be monitored by the Corps to assure vegetation is removed only from designated areas; and EC-BR-7 and EC-BR-8, which would mitigate for impacts to riparian habitats and to WOTUS, respectively.

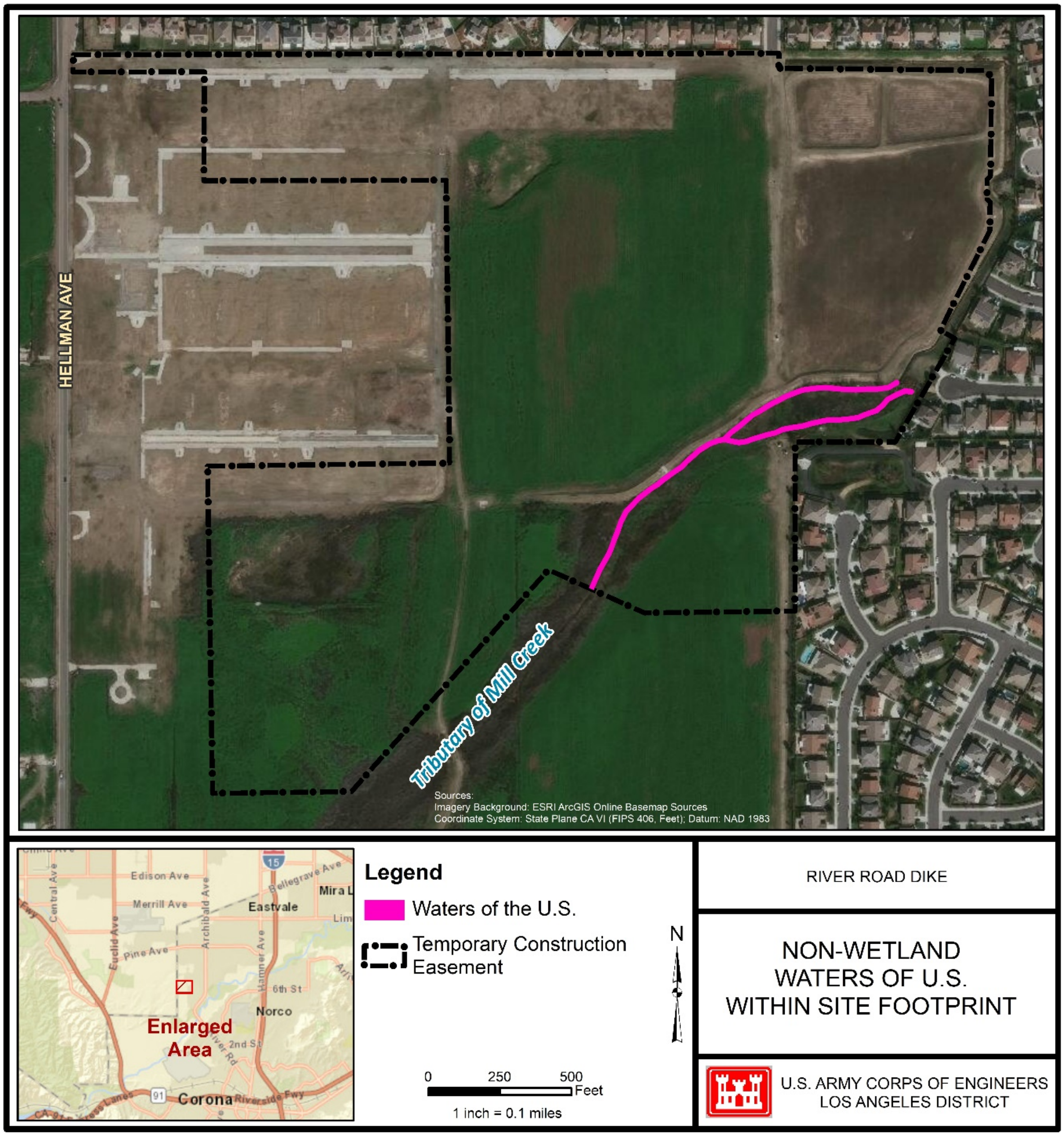

Figure 13. Non-wetland waters of the U.S., delineated according to the ordinary high water mark 19 Feb 2020.

Future Operation and Maintenance

Future maintenance activities may include routine inspections and monitoring of structures using access roads constructed for this project, periodic weeding, patching grouted stone, vegetation free road maintenance, periodic clearing of debris around drainage structures; and, periodic repairs to fencing and gates. Most inspections and minor repairs would be confined to paved maintenance and access roads. If repairs are required, potential effects to nesting birds and wildlife would likely be similar to those described for construction of the proposed project, but would be of a smaller magnitude because repair activities would not generally include ground disturbance and would be completed over a short time period (usually one day to one week of activity). Impacts to native vegetation and wildlife, therefore, would be minimal and short-term.

Level of Impact

The Proposed Action would have adverse but not significant impacts on biological resources resulting from constructing a dike structure on primarily non-native grassland. There would be no substantial loss in the population or habitat of any native wildlife or plant species. Impacts to native vegetation are minimal. There would be no net loss of sensitive biological or jurisdictional habitat. No effects to threatened, endangered, or candidate species or designated critical habitat are expected. The movement or migration of wildlife would not be permanently impeded.

With vegetation restoration and riparian mitigation, native habitat would be restored due to hydroseeding of native vegetation and weed control after project completion. The Proposed Action has the potential to benefit wildlife due to a newly created riparian pocket that will be spatially closer to Mill Creek.

Alternative 2: 2001 Design Alternative

Biological consequences of the 2001 Design would be greater than those due to the Proposed Action because the previous design was double the length of the Proposed Action and would cover a substantially larger footprint. It also included two distinct project sites (one for the dike and one for the floodwall). However, this alternative would not result in the loss of population or habitat of native wildlife or plant species (including federally listed species), and permanent loss of native or jurisdictional habitat would be fully mitigated. As with the Proposed Action, there would be no significant impacts to wildlife corridors. Therefore, this alternative would have adverse but not significant impacts on biological resources.

3.3 Recreation

3.3.1 Existing Conditions

In the immediate vicinity of the proposed dike are three small local parks. Half Moon Park is approximately 1,500 feet east of the project. It contains walking paths and children's play areas. Dairyland Park is approximately 2,500 feet southeast of the site. Amenities include a dog park, playground with a water park and picnic tables. Approximately 0.5 mile northwest of the project site, Mill Creek wetlands provide recreational hiking and bird watching opportunities. Prado Regional Park is located approximately 2 miles southeast of the project boundary. Prado Regional Park is a 2,000 acre recreational park that provides a wealth of recreational opportunities including fishing, camping, hiking, biking, boating, nature trails, disc golf, picnic facilities, golf courses, a model airplane field, an archery and shooting range, horseback riding, horseshoe pits and restrooms. Stagecoach Park, Fairview Park, and CC Paintball facility exist south of the SAR at approximately greater than 4,000 feet in distance.

3.3.2 Significance Criteria

An impact to recreation will be considered significant if:

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

3.3.3 Environmental Commitments/Avoidance and Minimization Measures

None required or proposed.

3.3.4 Environmental Consequences

Alternative 1: Proposed Action

Construction and use of the dike are compatible with existing land uses and designated zoning ordinances. Project construction would not directly or indirect prevent or inhibit existing recreational activities. Based on the distance between the proposed project site and local parks mentioned above, there would be no substantial or permanent decrease in existing use, quality, or availability of recreational areas. Recreational users of these facilities would continue to have full access during and after construction of the project. The project would not cause or create an increase in demand at other facilities such that there would be substantial physical or accelerated deterioration of those facilities.

Future Operation and Maintenance

Future maintenance of the proposed dike would include routine inspections and occasional minor repairs of the embankment and its associated features following construction completion. Given the distance from the site to recreational amenities, these activities would not interfere with recreational activities and therefore effects to overall recreation resources are not anticipated.

Level of Impact

Not Significant. Local parks would still be available or accessible to the public during and after project construction. The Proposed Action would not result in a permanent decrease in existing use, quality, or availability of local recreational areas and would not result in the increased use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

Alternative 2: 2001 Design Alternative

Although the 2001 Design has a larger footprint over two locations at approximately one mile apart compared to the Proposed Action, the public would still have access to the local parks and recreational facilities during and after project construction. Therefore, as the Proposed Action, construction of the 2001 Design alternative would not significantly impact recreation resources.

3.4 Water Resources and Hydrology

3.4.1 Existing Conditions

There is no perennial surface water within the project footprint. An ephemeral stream of urban runoff that flows into upper Mill Creek lies in the southeast corner of the project site (Figure 9). Typically, local surface runoff drains to Mill Creek below ground and onward into Prado Basin via this drainage. Jurisdictional waters are discussed in 3.2 above.

Monitoring wells at the site indicate groundwater levels range from 14 to 29 feet below grade and groundwater flows to the southwest at a gradient of approximately 0.0013 feet/foot. These data show a slight seasonal variation in groundwater levels of less than two feet, with a punctuated response to precipitation events.

3.4.2 Significance Criteria

Impacts to water resources and hydrology would be considered significant if the Proposed Action would:

- Cause or result in substantial flooding;
- Substantially alter drainage patterns or the rate and amount of surface water runoff;
- Substantially alter flow within Mill Creek;
- Substantially degrade water quality; and/or
- Interfere substantially with groundwater recharge.

3.4.3 Environmental Commitments/Avoidance and Minimization Measures

The following measures would be implemented to further avoid and minimize potential effects to water resources. These environmental commitments for water resources were developed in the 2001 SEIS/EIR with additional clarifications *written in italics*.

WR-1 Construction Stormwater Pollution Prevention Plan (SWPPP). A SWPPP shall be developed for the project by the construction contractor, and filed with the Santa Ana Regional Water Quality Control Board (RWQCB) prior to construction. The SWPPP shall be stored at the construction site for reference or inspection review. Implementation of the SWPPP would help stabilize graded areas and waterways, and reduce erosion and sedimentation. The plan would designate BMPs that would be adhered to during construction activities. Erosion minimizing efforts such as straw wattles, water bars, covers, silt fences, and sensitive area access restrictions (for example, flagging) would be installed before clearing and grading begins. Mulching, seeding, or other suitable stabilization measures would be used to protect exposed areas during construction activities. During construction activities, measures would be in place to ensure that contaminates are not discharged from the construction sites. The SWPPP would define areas where hazardous materials would be stored, where trash would be placed, where rolling equipment would be parked, fueled and serviced, and where construction materials such as reinforcing bars and structural steel members would be stored. Erosion control during grading of the construction sites and during subsequent construction would be in place and monitored as specified by the SWPPP. *Construction contractors shall implement BMPs to prevent erosion and sedimentation to avoid potential release of contaminants into surface waters and groundwater. These shall be incorporated into a SWPPP.* A silting basin(s) would be established, as necessary, to capture silt and other materials, which might otherwise be carried from the site by rainwater surface runoff.

- **WR-2 Hazardous Materials Management Plan and Emergency Response Plan.** A project-specific hazardous materials management and hazardous waste management plan would be developed prior to initiation of construction. The plan would identify types of hazardous materials to be used during construction and the types of wastes that would be generated. All project personnel would be provided with project-specific training to ensure that all hazardous materials and wastes are handled in a safe and environmentally sound manner. This plan shall include an emergency response program to ensure quick and safe cleanup of accidental spills.
- **WR-3 Water quality permits**. Prior to engaging in any soil-disturbing activities, the construction contractor shall document compliance with the Clean Water Act (CWA) Section 402 NPDES General Permit for Storm Water Discharges Associated with Construction Activities, and shall also receive any necessary permits for dewatering activities, as applicable.

3.4.4 Environmental Consequences

Alternative 1: Proposed Action

Flooding: The Proposed Action has been designed to protect local residences and businesses from flood-related hazards and damage that could be caused by rising pool levels within the Prado Reservoir. Water may accumulate behind the dike during storms; however, this effect would be temporary and would be minimized through provision of culverts to drain this local runoff, as described below.

Drainage and runoff: The Proposed Action design includes a concrete culvert and open channel drainage system designed to continue directing runoff to Mill Creek and ensure neither construction nor routine maintenance would alter draining patterns. Additionally, following completion of the construction period, the borrow area would be graded to prevent ponding of water. Therefore, no substantial changes in drainage patterns would result from implementation of the proposed dike.

SAR flow: Construction of the Proposed Action would not directly cause or contribute to water fluctuations in Mill Creek or other waterways. Drainage minimization measures listed above would ensure existing drainage patterns and downstream flow into Mill Creek would be maintained.

Water quality: Although no activities are planned to occur within the Mill Creek drainage, construction, operation, and maintenance of the Proposed Action would include soil-disturbing activities that could result in soil erosion and sedimentation that may subsequently cause and/or contribute to water quality degradation, particularly if a precipitation event occurs while soils are actively disturbed. The potential also exists for impacts to surface water quality to result from accidental leaks or spills of potentially hazardous materials, including fuels and lubricants required for operation of construction vehicles and equipment.

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

- Human waste and other pollutant or hazardous material discovered during construction would be removed from the site.
- Temporary impact areas would be actively restored through vegetation plantings after construction.
- Permanent impact areas with drains, such as maintenance roads, would be designed to avoid or minimize the potential of the drain to increase fine-grained sediment delivery to nearby water bodies.
- As stated in the 2001 SEIS/EIR, Environmental Commitment WR-1 to WR-3 would require the contractor to develop and implement a Stormwater Pollution Prevention Plan (SWPPP), which would include Best Management Practices (BMPs), and an Erosion and Sedimentation Control Plan to reduce impacts to water quality during project construction.
- Sound walls would be designed to not block streamflow and, therefore, avoid causing local scour or breaking during a storm event and colliding with downstream infrastructure. The walls would also be designed to be easily removed prior to a forecasted storm event.

Groundwater recharge: The surface of the proposed project site currently contains several concrete slabs and footings from previous agricultural activities. These slabs would be removed during construction and would be replaced with native upland vegetation. Therefore, construction of the dike would not result in significantly more impervious surfaces and groundwater recharge would not be altered.

The Corps would implement environmental commitments WR-1 to WR-3 to minimize potential effects to hydrology in the area, including plans and permits to ensure water quality is not impacted such as dewatering and NDPES permits, a pollution prevention plan and an erosion control plan. Due to low grade within the site, site grading would be required to prevent ponding of water and a concrete culvert and open channel drainage system would be implemented to direct runoff to Mill Creek.

Future Operation and Maintenance

Future maintenance would include routine inspections and minor repair of the dike and its associated features, as needed. Maintenance activities would not alter the overall hydrology or drainage patterns of the area. Although future maintenance may introduce potential water quality impacts associated with the use of motorized vehicles and equipment and soil-disturbing activities, potential impacts would be avoided or minimized through the implementation of the BMPs and design criteria described above.

Level of Impact

Less than Significant. Construction and O&M activities could contribute to short-term water quality impacts, although these would be minimal or negligible due to the distance from the project site to any perennial water body. Furthermore, environmental commitment measures would be implemented and thus water quality impacts would be less than significant. There would be no substantial changes to drainage, Mill Creek flow, regional water quality or groundwater recharge. This alternative would provide a beneficial impact for decreased flood risk for local communities.

Alternative 2: 2001 Design Alternative

The level of potential impacts to water resources by construction of the 2001 Design would be similar to the Proposed Action since similar minimization measures would be implemented. There would be no substantial changes to drainage, Mill Creek flow, regional water quality or groundwater recharge. This alternative would provide a beneficial impact for decreased flood risk for local communities.

3.5 Earth Resources

3.5.1 Existing Conditions

Deposits beneath the proposed River Road project site consist of: quaternary very old alluvium (moderately- to well-consolidated highly dissected clay, silt, sand and gravel), quaternary young alluvium (unconsolidated to slightly consolidated, undissected to slightly dissected clay silt sand and gravel) and artificial fill. Foundation soils include both younger and older alluvial sediments. These soils vary widely in texture, density, and stiffness along the project alignment, in part due to the variable geometry and temporal variability commonly associated with aggrading and degrading fluvial deposition and erosion. Soil types encountered in the foundation vary from highly plastic clays through virtually the whole range of soil classifications to gravel.

The site is in seismically active southern California and is subject to shaking from both local and distant earthquakes. The nearest substantial local sources of earthquakes are the Fontana fault, located approximately 4 miles northeast of the site, and the Elsinore fault zone, approximately 3.5 miles southwest of the site. The site to fault distances were determined using the Caltrans ARS Online web tool (Caltrans, 2009).

3.5.2 Significance Criteria

An impact to earth and geologic resources would occur if the Proposed Action would:

- Cause substantial flooding, erosion, or siltation;

- Result in unstable earth conditions; and/or
- Expose people or structures to major geologic hazards.

3.5.3 Environmental Commitments/Avoidance and Minimization Measures

- **EC-ER-1** Design the dike in compliance with ER 1110-2-1806.
- **EC-ER-2** Construct the dike with highly compacted materials that would maintain strength and stability during seismic activities.

3.5.4 Environmental Consequences

Alternative 1: Proposed Action

There is potential for an earthquake or other geologic hazard to occur during the lifetime of the dike. Due to the alluvial nature of the Prado Basin and relatively high groundwater table, there is also potential for liquefaction of the dike. To minimize this risk, the dike would be designed in accordance with the requirements of ER 1110-2-1806, "Earthquake Design and Analysis for Corps of Engineers Projects" as per environmental commitment EC-ER-1 and EC-ER-2. Note, however, that the probability of a high pool event and an earthquake occurring simultaneously are very low due to the infrequent occurrence of design floods and the relatively short pool duration. The River Road earthen dike would also be highly compacted, and materials used for construction would not substantially lose strength under earthquake loading and would not liquefy during shaking. Therefore, the Proposed Action would not would not alter the overall geologic characteristics of the area, and is not expected to cause substantial flooding, erosion, or siltation; expose people or structures to major geologic hazards; or result in unstable earth conditions or changes in geologic substructure.

Future Operation and Maintenance

Routine inspections and minor repairs would not alter the overall geologic characteristics of the area, and is not expected to cause substantial flooding, erosion, or siltation; expose people or structures to major geologic hazards; or result in unstable earth conditions or changes in geologic substructure.

Level of Impact

No significant geologic impacts would result from the Proposed Action. River Road dike would be designed in accordance with the requirements of ER 1110-2-1806, "Earthquake Design and Analysis for Corps of Engineers Projects" as per environmental commitment EC-ER-1 and EC-ER-2. The Proposed Action would not would not alter the overall geologic characteristics of the area, and is not expected to cause substantial flooding, erosion, or siltation; expose people or structures to major geologic hazards; or result in unstable earth conditions or changes in geologic substructure.

Alternative 2: 2001 Design Alternative

Geologic consequences of the 2001 Design would be very similar to the Proposed Action. Since the footprints of the two sites overlap substantially, soil composition and distance to faults are very similar. Impacts would not be substantially different as analyzed in the Proposed Action. Therefore, the Proposed Action would not would not alter the overall geologic characteristics of the area, and is not expected to cause substantial flooding, erosion, or siltation; expose people or structures to major geologic hazards; or result in unstable earth conditions or changes in geologic substructure.

3.6 Cultural Resources

Cultural resources are locations of past human activities on the landscape. The term generally includes any material remains that are at least 50 years old and are of archaeological or historical interest. Examples include archaeological sites such as lithic scatters, villages, procurement areas, resource extractions sites, rock shelters, rock art, shell middens; and historic era sites such as trash scatters, homesteads, railroads, ranches, and any structures that are over 50 years old. Under the National Historic Preservation Act, federal agencies must consider the effects of federally regulated 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.

3.6.1 Existing Conditions

The River Road Dike project is just one aspect of the larger SARMP. 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. (Langenwalter 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. As part of their survey, Langenwalter and Brock also completed a review of historical records and maps to identify where historic era archaeological sites may exist. Many of these “sites” identified via historic era maps were not field-verified and/or recorded. One of these possible sites, PB-44, is located within the River Road Dike construction footprint. While the data for the site was minimal, Langenwalter and Brock identified the site as the Martin Ranch, established sometime prior to 1933 on lands belonging to the Fuller Ranch. No standing structures were remaining in 1985.

The Corps contracted with Aspen Environmental Group in 2020 to complete an assessment of any possible archaeological remains of the Martin Ranch. Aspen found that that there never was a formally designated Martin Ranch. Rather, the resources at PB-44 were part of the former Pioneer Ranch–Fuller Rancho from 1889 until it was acquired by the Corps in 1940. Their geographic analysis of historic imagery indicated that the former structures designated PB-44 were situated well outside the current limits of the River Road levee. The majority of structures associated with PB-44 were razed or relocated before 1940 and residential development around 2007 destroyed any remnant archaeological features where the structures once stood. Fieldwork identified no evidence of historic structural remains or archaeological features. There are no historic properties located within the River Road project area

3.6.2 Significance Criteria

The NHPA “criteria of adverse effect” was identified as the significance threshold for NEPA. The criteria of adverse effects are defined in 36 CFR 800.5a as follows:

- “An adverse effect is found when an action may alter the characteristics of a historic property that qualify it for inclusion in NRHP in a manner that would diminish the integrity of the property’s location, design, setting, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects caused by the action that may occur later in time, be farther removed in distance, or be cumulative”.

3.6.3 Environmental Commitments (Avoidance and Minimization Measures)

- **EC-CR-1** 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, are met. This would include coordination with the California State Historic Preservation Officer, the Advisory Council on Historic Preservation, and appropriate Indian Tribes and/or other interested parties. It may require additional measures such as test and data recovery excavations, archival research, avoidance measures, etc.

3.6.4 Environmental Consequences

Alternative 1: Proposed Action

There are no historic properties located within the River Road Dike project area and therefore the project would not affect any historic properties. The Corps is in the process of consulting with the SHPO regarding their finding of no historic property affected.

Future Operation and Maintenance

Future operation and maintenance of the Proposed Action would include routine inspections and minor repairs, of the River Road embankment and its associated features after construction is completed (see Section 2.4 for a detailed list of future maintenance activities). No historic properties are located within the project area; therefore, future maintenance activities would not result in an adverse effect.

Level of Impact

Not Significant. The proposed action including future operation and maintenance activities would not result in an adverse effect to a historic property.

Alternative 2: 2001 Design Alternative

The 2001 SEIS/SEIR identified one potential archaeological site within the design alignment, PB-44. The document stated that the site would need to be evaluated for the NRHP and potentially mitigated if the site was found to be eligible for the NRHP prior to project construction. The 2020 cultural resource investigations at the project site did not find any remnants of the site. Impacts under the 2001 alternative would be the same as the proposed action. There would be no historic properties affected.

3.7 Land Use

3.7.1 Existing Conditions

The River Road Dike site is in the northern part of Prado Basin in an area formerly occupied by agricultural land (primarily dairy farms). Some agricultural operations are ongoing. However, the majority of former agricultural parcels in this area have been developed into tracts of single-family residences or are vacant. Land use within a 1-mile radius surrounding the proposed site consists of approximately 33% developed, 27% agriculture, 23% open space/parks and 17% vacant lots.

The proposed construction site within the basin was previously used as a dairy farm and is currently vacant. Adjacent land to the north and east is primarily residential. Land to the west and south includes agricultural parcels and open space in Prado Reservoir consisting of a mix of habitat types. In the southeast corner of the footprint, urban runoff supports a narrow riparian habitat that flows into Mill Creek (Figure 14).

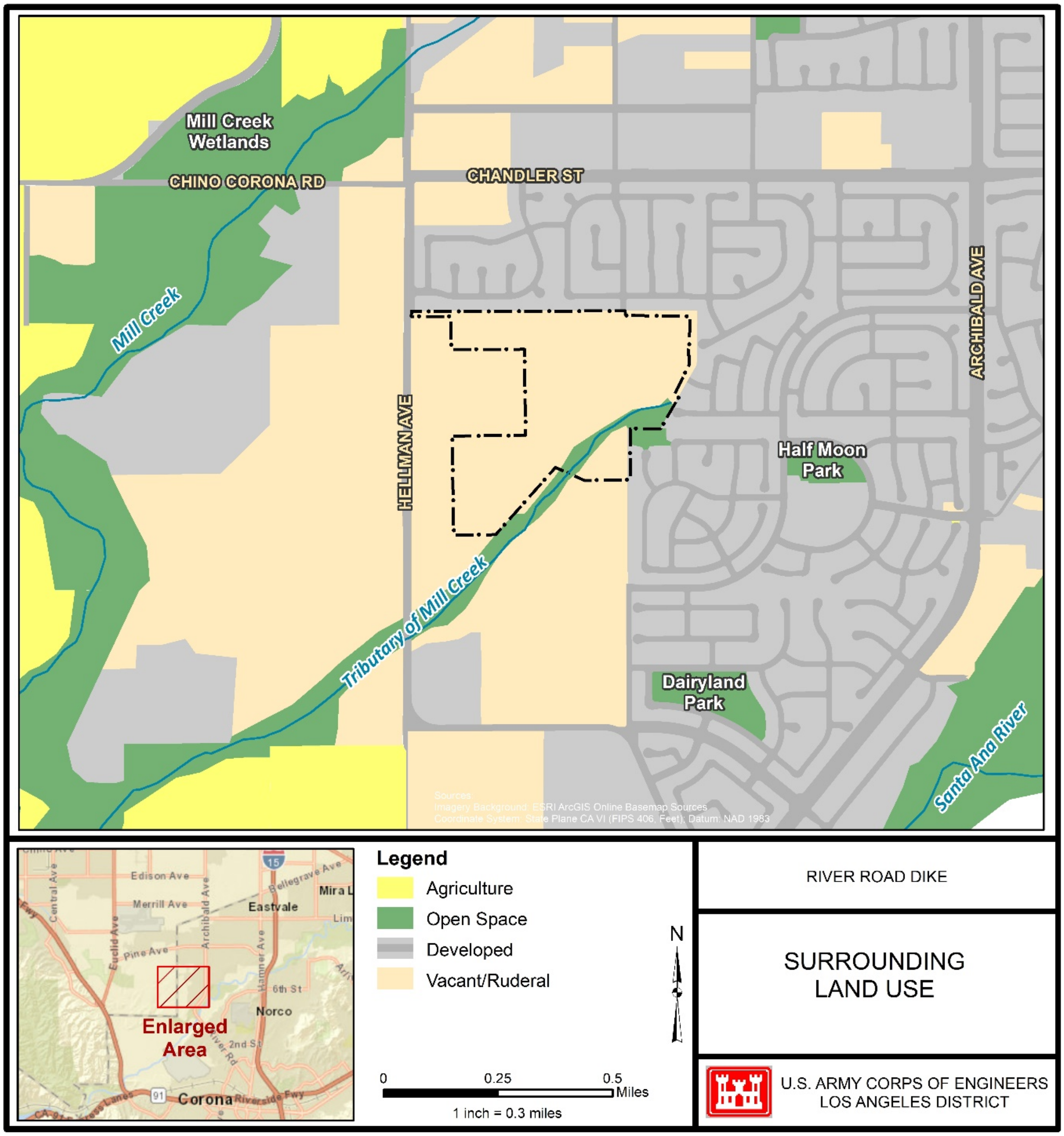

Figure 14. Land use types surrounding the proposed River Road project site.

Developed: Developed land cover type represents residential communities and businesses that have been landscaped for aesthetic and recreational value surrounding the proposed project area. The vegetation within neighboring developed parcels is largely comprised of non-native turf grasses and ornamental trees such as Peruvian and Brazilian pepper trees (*Schinus spp.)*, Canary Island pine (*Pinus canariensis*) and bottlebrush (*Melaleuca viminalis*).

Agriculture: The Chino Valley was historically a productive agricultural region, with a majority of lots serving as dairy farms. Currently, the area is experiencing large-scale land use conversion from agricultural activities to residential communities. Therefore, there are a number of abandoned, inactive farms surrounding the proposed project site. Many of these inactive farms are in the process of converting to ruderal landscapes.

Open Space: Open space is land that is not intensively developed for residential, commercial, industrial or institutional use. It can serve many purposes, including forest land, undeveloped shorelines, undeveloped scenic lands, water bodies, public parks and preserves. Open space surrounding the River Road Dike site includes a handful of urban pocket parks (within developed areas directly southeast of the site; Figure 15) and the natural areas around waterways in the Prado Basin (west and southeast of the site; Figure 15). The majority of nearby open space includes sections of the Santa Ana River and Mill Creek (which the concrete lined Cucamonga Creek flows into directly north of the Proposed Action area).

Vacant/Ruderal: The vacant lots surround the project site were previously used for agricultural purposes and are now colonized by weedy species, also known as ruderal habitat.

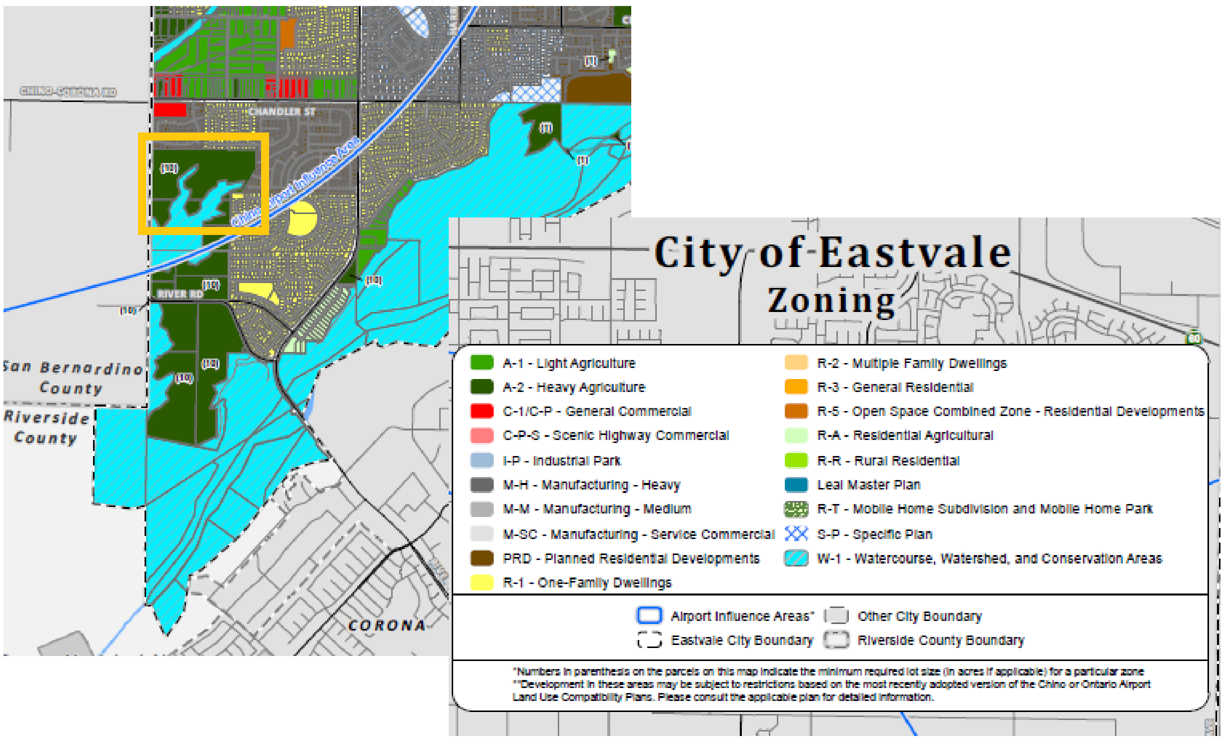

Figure 15. City of Eastvale Zoning Designations

3.7.2 Significance Criteria

The proposed project will be considered to have an impact on land use if it would be:

- incompatible with existing land uses; or
- in conflict with applicable plans or policies

3.7.3 Environmental Commitments (Avoidance and Minimization Measures)

None proposed or required.

3.7.4 Environmental Consequences

Alternative 1: Proposed Action Alternative

Under the Proposed Action Alternative, construction activities would predominately occur in the City of Eastvale Vacant/Ruderal land use zone as per Figure 15. Construction activities may temporarily affect n atural resources, as described in earlier sections, however BMPs and minimization measures would be implemented to avoid or minimize land use impacts (See Section 4.4 Biological Resources) and would not be incompatible with existing land uses or be in conflict with applicable plans or policies.

Post-Construction

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

Future Operation and Maintenance

Future operation and maintenance of the Proposed Action would include routine inspections and minor repairs, of the River Road embankment and its associated features after construction is completed (see Section 2.4 for a detailed list of future maintenance activities). Future maintenance activities would not be incompatible with existing on-site or surrounding land uses or be in conflict with applicable plans or policies.

Level of Impact

Not Significant. The Proposed Action is consistent with the City of Eastvale Land Use Zoning designations and would not be incompatible with existing on-site or surrounding land uses or be in conflict with applicable plans or policies.

Alternative 2: 2001 Design Alternative

Similar to the Proposed Action, the 2001 Design construction activities would predominately occur in the City of Eastvale Vacant/Ruderal land use zone as per Figure 15. The flood wall portion located further below would also fall within the Vacant/Ruderal land use zone. Construction activities would have similar impacts as the Proposed Action and BMPs and minimization measures would be implemented to avoid or minimize land use impacts (See Section 4.4 Biological Resources) and would not be incompatible with existing land uses or be in conflict with applicable plans or policies.

3.8 Aesthetics

3.8.1 Existing Conditions

The aesthetic character of a site is defined by the landforms, vegetation and built modifications that give the site its distinguishing visual qualities. The proposed site is currently vacant and was previously used as a dairy farm. Concrete slabs and footings remain in many locations and are visible at ground surface. Thus, residents in developments to the north and east of the site currently have views of a vacant lot with concrete slabs and predominantly ruderal (weedy) vegetation. Following completion of either alternative, these residences would have views of the proposed dike surrounded by vacant and agricultural parcels.

3.8.2 Significance Criteria

The project would significantly impact the aesthetics of the area if there is:

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

3.8.3 Environmental Commitments (Avoidance and Minimization Measures)

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

3.8.4 Environmental Consequences

Alternative 1: Proposed Action Alternative

Under the Proposed Action Alternative, development of the project would be visible during construction. Temporary aesthetic impacts include the presence of construction equipment, vehicles and use of the staging and borrow areas. The dike embankment would be a permanent feature and there would also be a temporary scar in the landscape due to construction activities including the use of material from the borrow area. However the area surrounding the Proposed Action as a whole currently has a low scenic quality due to the history of land use in the area (dairy farms, vacant lots, ruderal habitat). Therefore impacts to scenic vista or degradation of the existing visual character or quality of the site and its surroundings would be less than significant. Further, as previously described, biological minimization measures of upland habitat restoration and riparian mitigation within the footprint would improve aesthetics significantly. Once established, these restored areas would provide habitat for many native species and would improve the viewshed for local residences to include bird watching and other wildlife observations.

Artificial light may be necessary, though infrequently, during the construction period since the proposed construction hours would occur between 7:00 a.m. to 6:00 p.m., Monday through Saturday, except nationally recognized holidays. Substantial light or glare during construction affecting daytime views in the area or work occurring after dark would be less than significant with the implementation of environmental commitment EC-A-1.

The closest designated State scenic highway to the City of Eastvale are Route 71 and Route 91, approximately 4 miles west and south respectively of the project site. Therefore, the proposed project would not result in impacts to scenic resources within a State scenic highway or other scenic roadway.

Future Operation and Maintenance

Future maintenance of the Proposed Action would include routine inspections and minor repairs of the embankment and its associated features after construction is completed. Routine maintenance of the dike would not alter nor degrade the existing visual character or quality of the site and its surroundings.

Substantial light or glare during construction affecting daytime views in the area or work occurring after dark would be less than significant with the implementation of environmental commitment EC-A-1.

Level of Impact

Less than Significant. The Proposed Action would alter visual character during construction and a permanent structure would be introduced in the area. However, construction would be temporary, and the permanent structure would not degrade the existing visual character or quality of the site given the location of the embankment and the location and distance of vista points. Post construction vegetation restoration would also improve local aesthetics in the long run. During construction, a new source of light could be introduced since construction work hours occur between 7:00 a.m. to 6:00 p.m., Monday through Saturday, except nationally recognized holidays; however the occurrences would be temporary and infrequent. The contractor would also be required to submit a lighting plan, which would outline lighting locations strategically chosen to minimize impacts to surrounding residences. Therefore, effects to degradation of existing quality of the site and surroundings and daytime/nighttime views would also be less than significant.

Alternative 2: 2001 Design Alternative

As described in the 2001 EIS/EIR, because there were no sensitive residential viewsheds in the project vicinity, no other effects upon residential views would result from implementation of the 2001 Design. Compared to the Proposed Action, the 2001 Design is a much larger structure and would change the viewshed more substantially. Temporary construction activities and permanent structures would alter the viewshed for residents, but the features would be consistent with aesthetics in the area. Similar to the Proposed Action, measures will be implemented to reduce impacts associated with construction and future operation and maintenance and therefore effects to degradation of existing quality of the site and surroundings and daytime/nighttime views would also be less than significant.

3.9 Noise

Noise is defined as unwanted sound. Noise disrupts normal activities and diminishes the quality of the environment. There are two types of noise sources: stationary sources which are typically related to specific land uses, and transient sources which move through the environment. A locale's total acoustical environment is the blend of the background or ambient acoustics with unwanted noise. Human response to noise is diverse and varies with the type of noise, the time of day, and the sensitivity of the receptor. The decibel (dB) is the accepted standard unit for measuring the level of noise.

Riverside County Municipal Code

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

City of Eastvale Municipal code (Sec. 110.01.020. - Hours of construction)

Any construction within the city located within one-fourth of a mile from an occupied residence shall be permitted Monday through Saturday, except nationally recognized holidays, 7:00 a.m. to 7:00 p.m. There shall be no construction permitted on Sunday or nationally recognized holidays unless approval is obtained from the city building official or city engineer.

(Ord. No. 2010-08, § 2, 1-12-2011)

3.9.1 Existing Conditions

The area surrounding the project site is characterized by residential areas to the north and east, and vacant farming operations to the south and west. Therefore, ambient noise sources are mostly from the residential neighborhoods and vehicle traffic on roads. Residential use to the north is expected to typically generate noise levels associated with personal vehicle and outdoor use activities. Other primary noise sources within the proposed project area include: airport noise from Corona Municipal Airport located approximately 3.2 miles south of the site; a private sand and gravel sorting facility immediately south of the project area, and traffic on Hellman Avenue to the west.

Sensitive Receptors: Some land uses are considered more sensitive to elevated noise levels because of the purpose and intended use. Places where people are meant to sleep or places where a quiet environment is necessary for the function of the land are normally considered sensitive. For instance, residential areas, schools and places of worship are more sensitive to noise than commercial and industrial land uses. The nearest sensitive receptors to the proposed River Road site include adjacent residential developments (less than 100 feet away) and Ronald Reagan Elementary School (approximately one half mile southeast of the site).

3.9.2 Significance Criteria

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

- Construction occurs outside of the allowable hours per the County of Riverside and the City of Eastvale Municipal Codes without obtaining a waiver or variance.

3.9.3 Environmental Commitments (Avoidance and Minimization Measures)

The following minimization and avoidance measure would be implemented:

- **EC-N-1** The construction contractor would be required to comply with the noise ordinances of the County of Riverside and the City of Eastvale. Activities requiring use of heavy equipment shall be limited to the hours of 7:00 a.m. to 6:00 p.m. Monday through Saturday, except nationally recognized holidays. There shall be no construction permitted on Sunday or nationally recognized holidays unless approval is obtained from the city building official or city engineer.

3.9.4 Environmental Consequences

Alternative 1: Proposed Action Alternative

Project noise sources are primarily limited to the mobile construction equipment and the operation of stationary construction equipment. Construction of the dike would require short distance daily hauling of fill material to the dike segments. Trucks are expected to use an interior road between the borrow area and the dike segments. Additionally, trips on city streets and highways would be required for delivery of other construction materials that cannot be obtained at the borrow site as well as removal of unsuitable materials. These trips would result in short-term periodic increases in noise levels during normal construction hours. A noise level model presented in the 2001 Final SEIS/EIR predicted that a maximum level of 64 dB would be expected at 50 feet along haul routes.

While local ordinances do not limit the decibel level of construction that occurs during authorized time periods, information on anticipated noise levels that could be experienced by nearby resident is provided as follows. Noise levels for typical pieces of construction equipment that may be utilized for this project (at 50 feet) are listed in Table 3-7.

Table 3-7 Typical Noise Levels for Construction Equipment

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

Source: FHWA Construction Noise Handbook, 2006

Spreading losses account for an attenuation factor of 6 dBA per doubling of distance. For “line- of-sight” noise in the absence of any intervening terrain, an estimated average peak 92 dBA level is projected at 50 ft. and would be reduced to 86 dBA at 100 ft., 80 dBA at 200 ft., 74 dBA at 400 ft., etc. Noise from construction equipment attenuates over distance because of spreading losses, absorption of the intervening terrain, and reflection off any intervening walls or berms, as is occurring on the project site where residents adjacent to the dike construction are separated by their backyard retaining walls.
The nearest sensitive receptors to the Proposed Action site are the surrounding residential development at approximately 100 ft to the north and to the east of the project area. Construction activities typically generate noise at a short-term rate throughout the workday and do not result in long-term, steady noise generation. The project will assume the most restrictive ordinance, of applicable city and county ordinances, to remain in compliance with both county and city policies. Therefore, noise impacts are not anticipated from as construction would occur within the allowable hours as per the County of Riverside and the City of Eastvale Municipal Codes.

Future Operation and Maintenance

Maintenance of the Proposed Action would be required to ensure that the dike remains functional after each major storm. Damage may require immediate repair. Routine maintenance and repairs would require temporary access to and within the site and may involve equipment and activities that generate noise. In addition, special inspection and patrol with pickup trucks and sport utility vehicles weekly to the site daily during the flood season would occur. Mobilizing dump trucks to haul stones and use of hydraulic excavators to place stones to protect and reinforce the constructed embankment as necessary during flood fight activities are part of routine operation and maintenance. Similar to construction of the Proposed Action, these activities could result in temporary short-term periodic noise from construction equipment use. Routine maintenance would occur within allowable work hours established by the County of Riverside and City of Eastvale noise ordinance. Due to the short-term nature of maintenance and repair activities, and due to construction activities being exempt if conducted within the indicated time periods, any noise generated would not be significant for sensitive receptors.

Level of Impact

Not Significant. Construction and future operation maintenance activities for the Proposed Action would be temporary and periodic would take place during the hours and days established by the County of Riverside and City of Eastvale noise ordinances.

Alternative 2: 2001 Design Alternative

Noise impacts from construction of the 2001 Design are expected to be greater and longer in duration than the Proposed Action due to larger project footprint and occurrence at two distinct sites, located at approximately 1 mile apart. Construction of the 2001 Design would require daily hauling of fill material to both the dike and the floodwall. In the 2001 Final SEIS/EIR, a noise analysis concluded that over 300 truck trips would be necessary to result in a significant impact. Because the 2001 Design would result in approximately 175 truckloads per day during the most intensive phase of implementation, substantial roadway noise impacts could result when trucks leave and return along the same roadways, resulting in 350 trips per day. However, construction would occur within the allowable hours as per the County of Riverside and the City of Eastvale Municipal Codes and impacts to noise are not anticipated.

3.10 Socioeconomics & Environmental Justice

3.10.1 Existing Conditions

Population: The 2013-2017 U.S. Census Bureau American Community Survey (ACS) estimated the city of Eastvale has a population of 59,733 (Table 5). This represents 2.5 percent of the Riverside County population. The median age in city of Eastvale (33.2) is slightly lower than the county median age (35.0). city of Eastvale’s younger population may be attributable to the higher average family size (4.37 as compared to 3.82 in the county) and more young children in households (17.5% under age 10 as compared to 13.9% in the county).

Housing: The 2017 ACS estimated 15,400 housing units in the city of Eastvale. Housing growth analysis not possible since the city was incorporated in 2010 after the 2010 census was conducted. City of Eastvale’s average household size (3.27) is nearly equal to Riverside County (3.26).

Employment and Income: The unemployment rate in Eastvale is 8.4%. In comparison, the Riverside County unemployment rate is 9.9%. The median household income in Eastvale ($110,685) is nearly double the county’s median income of $60,807. The lower unemployment rate and higher median income suggest that Eastvale is significantly more affluent than the county as a whole.

Ethnic Demographics: The ethnic makeup of city of Eastvale differs from Riverside County in several ways as presented in Table 3.8. City of Eastvale contains fewer people that identify as White (42.6% vs 61.6% in the county), more who identify as Asian (26.8% compared to 6.3%) and fewer who identify as Hispanic or Latino (41.2 % vs 48%).

Table 3-8 Demographic data for the city of Eastvale and Riverside County

	Subject	City of Eastvale	Riverside County
Population	Total Population	59,733	2,355,002
	Total Families	12,716	522,332
	Average Family Size	4.37	3.82
	Median Age	33.2	35.0
	Percent Age 0-9 Years	17.5%	13.9%
Housing	Total Housing Units	15,400	711,724
	Average Household Size	3.27	3.26
Employment and Income	Unemployment Rate	8.4%	9.9%
	Median Household Income	$110,685	$60,807
Ethnicity	White	42.6%	61.6%
	Black or African American	8.7%	6.3%
	American Indian and Alaska Native	0.5%	0.8%
	Asian	26.8%	6.3%
	Native Hawaiian and Other Pacific Islander	0.1%	0.3%
	Two or more races	7.2%	4.5%
	Persons of Hispanic or Latino Origin	41.2%	48.0%

Source: 2017 American Community Survey 5-Year Estimates

Environmental Justice

The EPA has lead responsibility for implementation of Executive Order 12898. In exercising its responsibility, the EPA developed EJSCREEN, an online environmental justice screening and mapping tool, to assist federal agencies.

The Council on Environmental Quality (CEQ) has oversight of the federal government's compliance with this Executive Order and NEPA. The CEQ, in consultation with the EPA and other agencies, has prepared guidance to assist federal agencies in NEPA compliance in its Environmental Justice: Guidance under the National Environmental Policy Act (CEQ Guidance). The CEQ Guidance provides an overview of Executive Order 12898; summarizes its relationship to NEPA; recommends methods for the integration of environmental justice analysis into NEPA documents; and definitions of key terms and concepts contained in the order.

Per the CEQ Guidance, minority refers to people who are Hispanic or Latino of any race, as well as those who are non-Hispanic or Latino of a race other than White or European-American. The same CEQ Guidance suggests low-income populations be identified using the national poverty thresholds from the U.S. Census Bureau.

Methodology

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

- Fifty Percent Analysis: The ratio of minority or low-income population of the area of analysis equals to or exceeds 50% of the total population of the area of analysis.

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

The area of analysis is defined as a 1-mile radius around the project site.

The reference area is defined as the cities of Eastvale, Chino, Corona and Norco. EJSCREEN analysis was conducted on each city. The percentage of minority and low-income populations for each city were collected and used to quantify the 50th percentile value for the reference area. The percentages of these groups within the area of analysis were then compared to the 50th percentile of the reference area. See Appendix E for all EJSCREEN output, including area of analysis and each city within the reference area.

As shown in Table 3-9, 17% of the individuals in the affected area are considered below the poverty level within the 1-mile radius of the area of analysis or just slightly above the poverty level in the surrounding cities. This percentage in the affected area does not exceed 25% relative to the surrounding area. The percent of minority population in within the 1-mile radius area of analysis is 80%, but generally lower in the surrounding cities. Therefore, the affected area contains a higher concentration of a minority population as compared to 69% relative to the surrounding area.

Table 3-9 Environmental Justice Populations Data

	% Minority Population	% Low Income Population
Area of Analysis (1 mile radius)	80	17
Reference Area		
Corona	63	28
Norco	50	24
Chino	75	26
Eastvale	81	16
50th Percentile	**69**	**25**
Source: USEPA EJ Screen, https://ejscreen.epa.gov/mapper/		

3.10.2 Significance Criteria

For this analysis, the Proposed Project would be considered to have an impact if it would:

- Result in substantial shifts in population trends,
- Adversely affect regional spending and earning patterns, or
- Have disproportionately high and adverse human health or environmental effects on minority and/or low-income populations.

3.10.3 Environmental Commitments (Avoidance and Minimization Measures)

None proposed or required.

3.10.4 Environmental Consequences

Alternative 1: Proposed Action Alternative

Construction of the Proposed Action would be short-term and would not attract a long-term worker population to the project area. The majority of construction-related jobs are expected to be filled by both currently employed and unemployed labor force participants from the surrounding area. Therefore, construction of the Proposed Action would not increase the region's population. Implementation of the Proposed Action would neither place a demand on employment opportunities, housing, or public facilities, nor would it create new employment opportunities, housing, or public facilities in the region. Therefore, the Proposed Action would not result in substantial shifts in population trends or adversely affect regional spending and earning patterns.

The Proposed Action would not have a disproportionately high or adverse human health or environmental effect on minority or low-income populations, and therefore is in compliance with this Executive Order 12898. Construction of the Proposed Action would affect minority populations since the area of analysis consists of 80% minority demographics. However, these impacts are minor; no high or adverse human health effects are anticipated, and no significant adverse environmental impacts would occur. Moreover, the need for this project is fixed to this particular location. This dike would not be built if there were not a flood risk in the area. The entire community including minority populations would receive the provision of flood protection.

Future Operation and Maintenance

The routine inspections and minor repairs of the dike and associated features included under future maintenance activities would not result in substantial shifts in population trends or adversely affect regional spending and earning patterns. There would be no disproportionately high and adverse human health or environmental effects on minority and/or low-income populations as a result of future operation and maintenance.

Level of Impact

No impact. The majority of the construction-related jobs for the Proposed Action are expected to be filled by labor force participants from the surrounding area, which would not create demand on employment opportunities or housing. Additionally, minority or low-income communities would not be disproportionately, adversely affected by implementation of the proposed project. Local populations would directly benefit from construction of the River Road Dike Project through the provision of additional flood protection.

Alternative 2: 2001 Design Alternative

Because residential development has increased significantly in this region since the 2001 Design was developed, this alternative, as designed, would require the acquisition and removal of homes that have been built within the footprint of the dike and surrounding the floodwall. This would include the removal and partial take of homes along Shoreham Street and Rick Lane in Eastvale as well as Bluff Street in Norco. In order to prevent the outcome of significant socioeconomic impacts by removing residences and requiring the residents to relocate, the design of this alternative would need to be modified.

3.11 Transportation

3.11.1 Existing Conditions

Major roadways surrounding the Proposed Action area include State Route 71 (SR-71), State Route 91 (SR-91), Interstate 15 (I-15), River Road, Archibald Avenue, Hellman Avenue, Chandler Avenue and Pine Avenue/Schleisman Road. The highways are maintained by Caltrans whereas the surface streets are maintained by the cities of Chino, Eastvale and Norco.

The following summarizes the lane configurations and directional configuration of roadways providing both regional and local access to the River Road Dike Project area:

- **SR-91** is a fourteen lane east-west freeway south of the project site.

- **SR-71** is four lane north-south freeway west of the project site.
- **I-15** is an eight lane north-south freeway merging with SR-91 to the east of the project site.
- **Shoreham Street** is a residential street that connects to Hellman Avenue. It provides access to the project and central access to the site.
- **Hellman Avenue, Chandler Avenue, Pine Avenue/Schleisman Road, Archibald Ave, River Road** are two-lane roadways that will be used as the primary haul route to transport material (i.e. rip rap) to the construction site via Shoreham Street.

Average daily traffic (ADT) and Annual average daily traffic (AADT) volumes measured for State Routes and local roadways in the vicinity of the River Road Dike Project area are presented in Table 3-10.

Table 3-10 Annual Average Daily Traffic on Selected Roadways in the Project Area

Location	1998 ADT
SR-91 west of I-15	233,000[1]
SR-71 to SR-83 (Euclid Ave.)	210
River Road, South of city boundary	7,230

[1] Year 2010 AADT

Source: City of Eastvale 2000, Caltrans 2017

Other transportation related land uses in the vicinity include Chino and Corona Municipal Airports, located approximately 2.7 miles northwest and directly south of the project site respectively and the BNSF Railroad lines aligned east-west 3.5 miles south of the site. Besides freight operations, Metrolink commuter trains also utilize this rail line. The Metrolink West Corona Station at 155 Auto Center Drive. This rail line is also currently used by Amtrak commuter carrier's Southwest Chief train, although the train does not stop at this station. The Riverside Transit Agency is a bus service in the vicinity responsible for providing transit service to all citizens in western Riverside County.

3.11.2 Significance Criteria

The proposed project will be considered to have an impact on traffic and transportation if it would cause:

- A substantial increase in traffic compared to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in the number of vehicle trips or congestion at intersections).

3.11.3 Environmental Commitments (Avoidance and Minimization Measures)

The following minimization measures would be implemented to mitigate transportation impacts from construction activities:

- **EC-T-1** The Contractor shall develop a Traffic Management Plan and ensure that designated roads are used during construction, in particular at the ingress/egress to the project site. The Contractor shall coordinate in advance with the City of Eastvale and its emergency services to avoid roads restricting movements of emergency vehicles. At locations where access to nearby property is blocked, provision shall be ready at all times to accommodate emergency vehicles, such as plating over excavations, short detours, and alternate routes in conjunction with local agencies. The Traffic Management Plan shall include details regarding emergency services coordination and procedures. Additionally, the Traffic Management Plan shall clearly identify all affected roadways, bike paths, and pedestrian paths within the affected area. The plan shall identify measures to notify the public and divert automobile and pedestrian traffic safely around the construction area, including but not limited to a notice posted in the local publication, posted signage, and written notification to the City of Eastvale Public Works Department and Recreation and Parks Department, and California Department of Transportation.

3.11.4 Environmental Consequences

Alternative 1: Proposed Action Alternative

Since the borrow area would be adjacent to the dike, a separate haul road outside of the construction easement is not necessary for the proposed action (Figure 4). Entry to the site is located approximately 325 feet south of the intersection of Hellman Avenue and Shoreham Street. Construction traffic would predominately be within the Proposed Action construction easement and would only affect civilian traffic when entering through the ingress/egress location on Shoreham Street and Hellman Avenue. With implementation EC-T-1, substantial impacts in traffic compared to the existing traffic load and capacity of the street system would be minimized and would be less than significant.

Future Operation and Maintenance

Future operation and any necessary maintenance and repairs would be predominantly conducted within the project footprint. Typically, maintenance work such as periodic weeding and patching stone and aggregate base course maintenance roads and rodent controls would require a single vehicle that would only drive within the project site and thus would not significantly impact traffic compared to the existing traffic load and capacity of the street system. Mobilizing dump trucks to haul stones and use of hydraulic excavators to place stones to protect and reinforce the constructed embankment, as necessary during flood fight activities, are also part of routine operation and maintenance. The number of vehicle trips required for stone replacement maintenance would be dependent on the amount of stone removed during a flood event. The replacement of stone is expected to occur infrequently, and more trips would likely be necessary during the winter months compared to the summer months. Similar to construction traffic, these trips would be dispersed amongst I-15, SR-91 and SR-71 for regional access, and utilize Chandler Avenue, Hellman Avenue, and Shoreham Street to access the project site. Any permanent increase in traffic would be infrequent and would account for a negligible increase to average daily trips along utilized roadways. Therefore, future maintenance activities would not have a significant effect on roadway capacity, traffic, or roadway hazards.

Level of Impact

Less than Significant. The Proposed Action would not substantially increase local traffic loads. It would have a minor and temporary impact on local traffic near the project site (i.e., intersection of Hellman Ave and Shoreham Street), but is not expected to significantly increase traffic congestion at the major intersections. Therefore, the Proposed Action would have a less than significant impact on transportation. Any increase in traffic volumes related to future maintenance would be dependent on the type of maintenance activity occurring, but would likely be negligible and temporary. Therefore, potential effects to traffic are considered less than significant.

Alternative 2: 2001 Design Alternative

Transportation impacts from the 2001 Design would be greater than the Proposed Action due to construction being conducted at two distinct sites. Construction traffic would affect two localities, leading to temporary congestion and at more sites. Construction of the 2001 Design would likely require daily hauling of materials to both the dike and the floodwall. Therefore, more trips on city streets between the two sites would be required during construction, particularly on Archibald Avenue/River Road. The 2001 Design Alternative estimated that approximately 175 truckloads per day during the most intensive phase of implementation, significant roadway impacts could result when trucks leave and return along the same roadways, resulting in 350 trips per day. However, this impact could be reduced to a less-than-significant level by providing a separate haul route for trucks entering and leaving the site, thus avoiding the doubling of truck trips on any one street. Since these impacts would be temporary and EC-T1 would be implemented, transportation impacts would not be significant and would not cause a substantial increase in traffic compared to the existing traffic load and capacity of the street system.

3.12Public Health and Safety

This section focuses on public health and safety issues with regard to existing flooding potential and emergency response. The Federal Emergency Management Agency (FEMA) is the federal agency that advises jurisdictions on floodplain management issues. FEMA’s mission is to reduce loss of life/property and protect the nation’s critical infrastructure from all types of hazards through a comprehensive, risk-based, emergency management program of mitigation, preparedness, response, and recovery.

As part of proposed project, a Hazardous, Toxic and Radioactive Waste (HTRW) evaluation was prepared. A HTRW, also known as a Phase I Environmental Site Assessment, Phase I ESA evaluation was previously performed for three conceptual River Road Dike alignments in 2017 by the Corps before a final dike alignment had been selected. The dike alignment has been changed substantially from what was presented in 2017. The alignment is smaller and is only in the southwest portion of the area away from much of the Recognized Environmental Conditions (RECs) noted in the 2017 HTRW report. Based on the final alignment, there are two potential RECs that may impact the current project alignment, the former Jongsma Dairy and the former truck trailer parking areas that are within the proposed alignment and construction limits of the dike.

The Envirostor website was searched again and reviewed in December 2019 (HTRW Survey Report) in Appendix C of this report to ascertain the status of the 2017 previous known contaminated sites and to discover any new known sites. The results of this review indicate that known site status has not changed and no new known sites were found. The contamination threat and resulting recognized environmental condition of the sites reported in 2017 has lessened substantially since this report was prepared. There are no RECs for the majority of the previous know sites at this time because the final alignment of the dike footprint is located much farther to the southeast. As seen on the figure 16 below are three petroleum underground storage tanks (USTs) and a truck parking area. The USTs were removed in 1990s are shown approximately 1,600 feet to the west of the dike footprint. These sites are now considered closed and all petroleum related hydrocarbon contamination has been remediated. The former truck parking area surrounds the final alignment footprint and no record of release of hazardous substances or petroleum contamination has been reported. All four of these sites pose a very low threat of HTRW contamination to the final River Road dike footprint and surrounding work project areas.

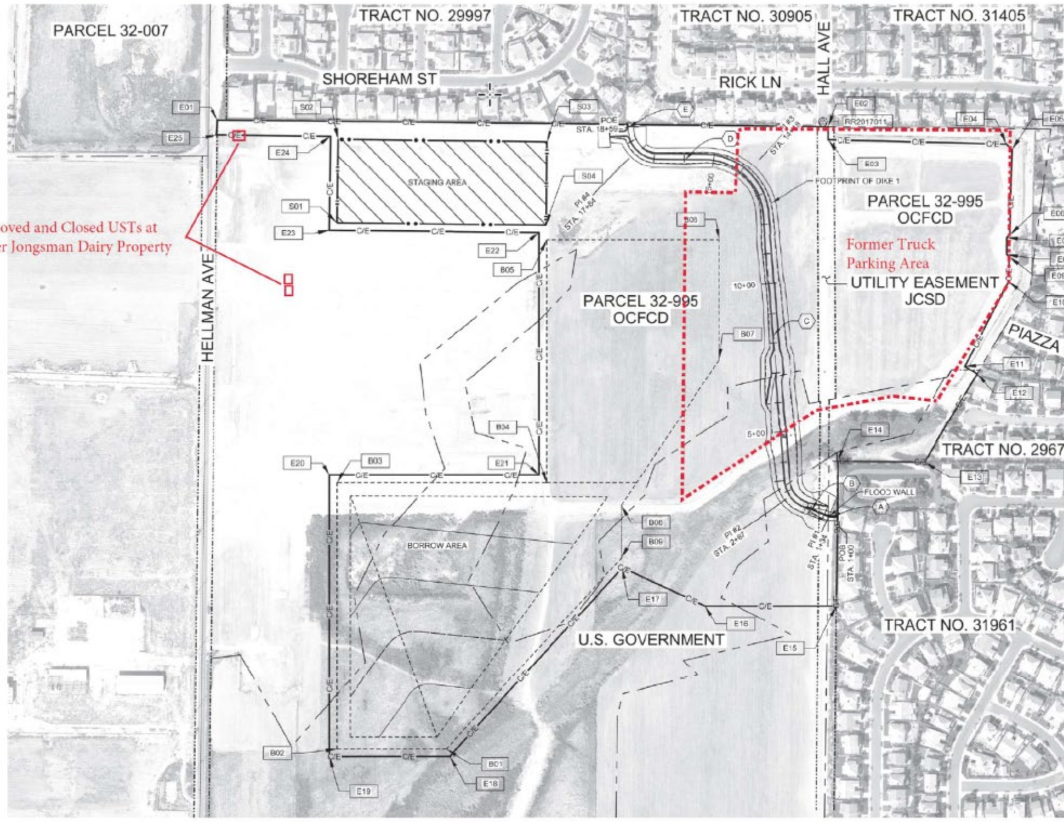

Figure 16. Map of final dike alignment and closest known HTRW (hazardous substances and/or petroleum hydrocarbon contaminated sites). Three removed and now closed UST sites on former Jongsma Dairy.

3.12.1 Existing Conditions

River Road Dike is designed to retain the maximum reservoir surcharge pool elevation of 566 feet elevation on the reservoir side and maximum elevation of 563 feet on the landward side of the dike. This feature will remain dry most of the time as the lowest toe of the dike at elevation 553 will only be wetted for a flood event with an annual probability of exceedance of 1 percent (100-year event).

The dike alignment and borrow area overlies the former Jongsma Dairy and the former truck trailer parking areas. Monitoring during foundation preparation and borrow excavations would be implemented to ensure that no hydrocarbon-contaminated soil is present. If stained soil is found, it would be excavated, segregated, tested by a qualified firm to remove and properly dispose of the unsuitable material. These sites pose a low threat of HTRW contamination to the final River Road dike footprint and surrounding work project areas.

3.12.2 Significance Criteria

A significant impact would occur if the Proposed Action would cause one or more of the following:

- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment; or
- Interferes with any emergency response or evacuation plans.

3.12.3 Environmental Commitments (Avoidance and Minimization Measures)

See Environmental Commitments WR-1 to WR-3 in Section 3.4.3.

3.12.4 Environmental Consequences

Alternative 1: Proposed Action Alternative

The proposed project activities would not require long-term storage, treatment, disposal, or transport of substantial quantities of hazardous materials. However, small quantities of hazardous materials would be stored, used, and handled during the proposed project activities, including petroleum hydrocarbons and their derivatives (e.g., diesel, gasoline, oils, lubricants, and solvents) to operate the construction equipment. These materials would be contained within vessels engineered for safe storage. Storage of substantial quantities of these materials along the dike is not anticipated. Furthermore, construction vehicles may require on-site fueling, or routine or emergency maintenance that could result in the release of oil, diesel fuel, transmission fluid or other materials; however, the materials would not be used in quantities or stored in a manner that would pose a significant hazard to the public or the workers themselves.

The potential for an accidental release of toxic materials from construction vehicles (e.g., oil and diesel fuel) would be mitigated by the fueling and servicing of construction vehicles in protected areas so that fluids would be contained within an isolated or impervious area a safe distance from the active flow path. Spills or leaks would be cleaned up immediately, and any contaminated soil would be disposed of properly. Groundwater will therefore be monitored by the construction contractor for water levels and tested for primary petroleum fuel constituents of Benzene, Xylene, Ethylene, Toluene (BTEX) and Total Petroleum Hydrocarbons, VOCs, metals and perchlorate, Methyl Toluene Butyl Ether (MTBE). Results would be reported to the Corps for documentation and due diligence purposes. This monitoring and testing must occur before major construction activities (large excavations) and prior to and during any dewatering or disturbance to the groundwater.

The contractor will also have to obtain a National Pollutant Discharge Elimination System (NPDES) permit from the Santa Ana Regional Water Quality Control Board (SARWQCB) for groundwater discharges to surface waters from dewatering activities that may occur during construction of the dike in which shallow groundwater interferes with excavation of its foundation footprint. This NPDES permit would also require common additional groundwater geochemistry parameters and Total Dissolved Solids (TDS) to be tested for and monitored during the actual dewater discharge activities. Therefore, hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment from construction activities would be less than significant with the implementation of EC-WR-1 to EC-WR-3 and the project would not interfere with any emergency response or evacuation plan.

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

Future Operation and Maintenance

Future maintenance at the project site would include routine inspections and occasional minor repairs of the dike and its associated features. Implementation of EC-WR-1 to EC-WR-3 during O&M would result in less than significant impacts to the overall public health and safety.

Level of Impact

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

Alternative 2: 2001 Design Alternative

Impacts on safety and hazards through the implementation of this alternative would be similar to that of the Proposed Action. Effects related to public health and safety due to the potential for accidental release of hazardous materials into the environment from the 2001 Design Alternative would also be less than significant.

3.13 Public Services and Utilities

3.13.1 Existing Conditions

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

Fire Protection: The Eastvale Fire Department provides a full range of fire protection services to its citizens. There are currently two fire stations located within the city. Eastvale Fire Station #31, located at 14491 Chandler Street, is the closest to the proposed project site at 1 mile to the northeast.

Police Protection: The Eastvale Police Department provides complete law enforcement to its population as a contract city with the Riverside County Sheriff's Department. The personnel assigned to Eastvale Police Department operate out of the Jurupa Valley Station, located at 7477 Mission Boulevard.

Schools: The Corona-Norco Unified School District serves the school needs for the city of Eastvale. The city of Eastvale has five elementary schools, two intermediate schools and one high school. None of these schools are located within the proposed project area. Ronald Reagan Elementary School, located 1 mile east at 8300 Fieldmaster Street, is the closest to the proposed site.

Utilities: This area is served by utility systems located in Riverside County and within the city of Eastvale. During the design of the River Road Dike Project, utilities were identified within the location of the proposed construction area:

- Natural gas is distributed by the Southern California Gas Company
- Electrical service is provided by Southern California Edison
- Water and waste water is handled by Jurupa Community Services District
- Solid waste disposal and recycling is handled by Waste Management
- Internet services are provided by AT&T
- Cable services are provided by Frontier Cable

To evaluate which facilities would be impacted by the construction of River Road Dike, the Corps requested maps and geospatial data depicting locations of existing electricity, water, sewer, solid waste, natural gas and cable/internet infrastructure from local service agencies. The Corps identified two utility types that need to be protected and or moved based on the River Road Dike footprint: Jurupa Community Services sewer line and manholes. These utilities occur at one key location:

- The southeast corner of the River Road footprint near Brookshire Court and Alder Brook Lane is in proximity to Jurupa Community Services District (JCSD) sewer lines and manholes (Figure 17).

Figure 17. Utilities located near the southeast corner of the project footprint.

3.13.2 Significance Criteria

Impacts of the Proposed Action to Public Services and Utilities would be significant if:

- Existing utility systems would be adversely affected by the proposed embankment construction activities, without equitable replacement, protection or relocation; and/or

- There is an increase to the size of the population and geographic area served, the number and type of calls for service, physical development, or demand for service that could result in capacity constraints to utility providers.

3.13.3 Environmental Commitments (Avoidance and Minimization Measures)

None proposed or required.

3.13.4 Environmental Consequences

Alternative 1: Proposed Action Alternative

Neither construction nor operation of the Proposed Action is expected to directly or indirectly result in the increase of the local population. There is a large available labor pool in Riverside County and nearby areas, so workers are not expected to relocate to the area for construction or operations and maintenance tasks. The Proposed Action is not expected to result in any long term hazards that would place increased demands on emergency service providers.

Fire Protection: Construction activities would increase potential fire hazards. Vegetation present in or near the construction areas could be ignited by a spark or heat-related incident due to the operation of construction equipment (vehicles, generators, tools, etc.). In addition, the presence of construction personnel increases the potential for fires through the increase of human influenced ignition (i.e., smoking, use of flammables, etc.). Therefore, construction of the proposed project could have the potential to result in a temporary increase in fire service calls. However, this increase would be short term and temporary and would not result in a permanent demand on local fire services. Implementation of the Proposed Action would not affect the long term capacities of fire services.

Police Protection: Constructing River Road Dike could increase the need for police services due to accidents caused by construction personnel or equipment. This potential increase in risk is considered short term and temporary, only occurring during the limited construction phase of the proposed project. The Proposed Action would not lower the level of service for police protection in the long term.

Schools: Construction workers are expected to commute to the project site locally. Therefore, there are no anticipated demands on local schools due to worker relocation to the project area.

Utilities: The Proposed Action would not generate any additional population that could exceed the capacity of local public service providers. However, some utilities would be temporarily impacted.

- **Water:** Water would be required during project construction for dust abatement and cleaning of construction equipment. The amount of water required depends on the length of access roads, weather conditions, road surface conditions, and other site-specific conditions. Reclaimed water would be used for dust control. Water use would also include water necessary to make the soil cement used during project construction as well as for vegetation restoration. However, water use for the proposed project would not significantly impact the ability of Jurupa Community Services District to serve the needs of the proposed project area.
- **Wastewater:** Alteration of the design of the River Road Dike Project would not substantially change any wastewater impacts compared to the original design described in the 2001 Final SEIS/EIR. Wastewater generated during the proposed project construction would be limited to that generated by project personnel and would be accommodated by portable toilets brought to staging areas for construction crews. These portable toilets would be emptied into septic tanks or municipal sewage systems. Because this increase would be short-term and temporary,

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

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

Temporary Impacts to Utilities: As described above, sewer lines and manholes currently exist near the proposed project site and some will require protection or relocation (new locations are currently unknown) due to the River Road Dike construction. The Corps will coordinate with the appropriate jurisdictions prior to and during construction to ensure that only short term, temporary disruptions occur to the services provided by the utilities mentioned above.

Long Term Impacts to Utilities: There are two potential long term impacts to utilities. First, the functionality of the utilities may be affected by the proposed construction (e.g., the weight of the embankment and/or road fills may induce settlement). Each of the utilities will be affected to some degree by ground settlement. Differential settlement along a given utility can induce stresses in the utility and could potentially affect its integrity. Pipelines that carry water by gravity may be particularly sensitive to ground settlement which can change their gradients and thus potentially impact their performance. However, the total settlement of buried utilities should be expected to be less than the total ground settlement since influence of the applied load dissipates with depth.

Second, the presence of underground utilities can pose potential hazards to the dike embankment and dike performance if not modified properly. The existing large sewer main near the south abutment and any other underground utilities that may be identified beneath the dike alignment will need to be relocated, protected-in-place, or abandoned prior to construction of the dike.

As the local sponsor, the OCFCD will be responsible for coordinating the utility relocations, modifications, removals, and abandonments. Potential failure modes related to utilities through or under the dike may include, but are not limited to: seepage along the outer surface of the pipe during high water conditions, resulting in piping of fill or foundation material, uplift pressures from high water conditions that may result in buoyancy of some structures, seepage due to leakage from the pipe and loss of fill or foundation material into the pipe if joints are open.

Future Operation and Maintenance

Periodic regular maintenance and required maintenance following flood and scour events would require relatively small amounts of material and would typically occur for only short periods of time. Consequently, any increases in fire or police calls would be temporary and would not substantially alter the level of service of these providers. There would be no operational impacts to existing schools.

Demands on utilities during maintenance would also be temporary and relatively minor. As such, future maintenance is not expected to result in any significant impacts to public services and utilities.

Level of Impact

Less than Significant. The Proposed Action would not generate any additional population that could exceed the capacity of local public service providers. There would be no operational impacts to existing schools, fire, or police department service capabilities. Any affected utilities would be relocated or sufficiently protected to avoid long-term disruption. Therefore, impacts to public services or utilities from the proposed project would be less than significant.

Alternative 2: 2001 Design Alternative

The 2001 Final SEIS/EIR did not find any significant impacts to public services and utilities due to temporary construction and operations and maintenance on public services and utilities associated with the 2001 Design Alternative. The 2001 Design Alternative would result in more potential construction related impacts or temporary increases to public services and utility infrastructure than the Proposed Action due to a significantly longer dike length (4,500 feet versus 1,750 feet), a subsequently larger footprint and work being conducted at two distinct project sites. However, as with the Proposed Action, this alternative would not generate any additional population that could exceed the capacity of local public service providers. There would be no operational impacts to existing schools, fire, or police department service capabilities. Any affected utilities would be relocated or sufficiently protected to avoid long-term disruption. Therefore, impacts to public services or utilities would also be less than significant.

4 CUMULATIVE IMPACTS

A cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time in the proposed activity area. Those actions could be undertaken by various agencies (federal, state, or local) or private entities. Cumulative environmental impacts are most likely to arise when a relationship exists between a proposed activity and other projects expected to occur in a similar location, time period, and/or involving similar actions. Projects in proximity to the proposed action are expected to have more potential cumulative impacts than more geographically distant projects.

This cumulative impact discussion analyzes projects located within five miles of the River Road Dike site that may have the ability to combine with impacts from the Proposed Action (Table 4-1). The assessment below focuses on addressing the following: (1) the area(s) in which the effects of the Proposed Action would be felt; (2) the effects that are expected in the area(s) from the Proposed Action; (3) past, present, and reasonably foreseeable future actions that have or that are expected to have impacts in the same area; (4) the impacts or expected impacts from these other actions; (5) and the overall impact(s) that can be expected if the individual impacts are allowed to accumulate.

Table 4-1 Projects within five miles of the proposed River Road Dike project site.

Project Name	General Location	Description
City of Chino Pine Ave Extension	Northwest of Proposed Action	City of Chino is proposing to connect Pine Avenue west of SR-71 to Pine Avenue east of SR-71. As part of the extension project, Pine Avenue would be widened from a 2-lane roadway to a 4-lane roadway to match the existing 4-lane roadway east of SR-71 when connected, as well as elevated to above the 50-year flood level for Prado Basin and the 100-year flood level for Chino Creek and Cypress Channel. ***Construction schedule is undetermined as a preferred alternative has not been defined.***
Majestic Chino Heritage	Northwest of Proposed Action	Majestic Realty Co. is proposing to develop two industrial/warehouse buildings on approximately 97 acres of land in the City of Chino (City) located at the southeast corner of Mountain Avenue and Bickmore Avenue in the southern part of the City (Project Site). ***Construction is planned to last approximately 18-24 months beginning in the spring/summer of 2021.***
SR-71/SR-91 Interchange Improvement	Southwest of the Proposed Action	Riverside County Transportation Commission and Cal Trans are proposing to improve the SR-91/SR-71 interchange by constructing a new direct flyover connector from eastbound (EB) SR-91 to northbound (NB) SR-71 for current and future operational efficiency and enhance the capacity of the EB SR-91 to NB SR-71 connector. ***Construction is planned to begin in 2021 for a period of two years.***
Rancho Miramonte Easement Exchange/Housing Development	Northwest of Proposed Action	TH Miramonte Investors, LLC is proposing to modify an existing flowage easement within the Prado Dam Flood Control Basin (Proposed Action) to facilitate the development of the Rancho Miramonte Project on a 272.91-acre residential community, located in the southeast portion of the city of Chino, California ***The easement exchange has not yet been approved. Construction is planned to begin in 2021 for a period of two years.***
Prado Dam Spillway Raise	Southwest of Proposed Action	Raising the Prado Dam spillway is the last major project component of the Santa Ana River Mainstem Project. To continue to protect communities and infrastructure from future anticipated storms, USACE will increase the height of the ogee (on top of spillway) and construct wing walls to direct flow onto the spillway. ***Construction is planned to begin in early 2024.***

Project Name	General Location	Description
City of Corona Santa Ana River Trail	Southern end of Prado Basin	The 22-mile Santa Ana River trail is divided into three sections: Lower, Middle, and Upper, and includes bicycle trails and hiking/equestrian trails. The Upper trail consists of proposed trail alignments that would cross over the adjacent Lower Norco Bluffs Project area. ***Construction of some segments is on-going and anticipated to be completed in 2025 or later, pending further reviews and approvals by regulatory agencies including the Corps.***
Norco Bluffs Stabilization Project	Southeast of Proposed Action	The purpose of this project is to stabilize the toe of the bluff within the project area so that the 566-ft elevation line associated with Prado Dam is stabilized, thereby avoiding the need for additional real estate acquisition. ***Project is scheduled to begin in September 2021 and complete in October 2023***
RCRCD Conservation Easement	The conservation lands are located adjacent to the north side of the proposed project.	RCRCD purchased 111 acres on the main stem of the Santa Ana River near Norco and Eastvale. *Arundo donax* has invaded the riparian habitat and the invasive weeds are being removed to help restored the area to a plant community with native species. ***Active restoration is on-going.***
Santa Ana River Mainstem Mitigation Areas (Norco site and Target Areas 1-4)	The Norco site is located east of Archibald Ave., northwest of Norco Dr., and south of Riverwalk Park in Norco, CA. Target Areas 1-4 are located within the Santa Ana River Floodplain downstream of the Norco site and along Temescal Creek.	This project includes several mitigation parcels that have been restored, through arundo removal, to offset construction impacts related to SARMP. ***Monitoring, management, and maintenance of the restoration sites will continue in perpetuity.***
Hamner Ave Bridge	The bridge site is near the border between Norco and Eastvale, approximately 1,300 feet to the west of the I-15 Bridges over the Santa Ana River in the City of Norco, California.	The purpose of the project is to replace the existing 2-lane bridge with a 6-lane bridge to provide enhance public safety and traffic circulation in the area. ***Construction is scheduled to start January 2021 and complete January 2023.***
Orange County Water District Prado Basin Sediment Management Project	Southwest of Proposed Action	OCWD's Sediment Management Demonstration Project includes removal of up to 120,000 cubic yards of sediment from the Prado Basin. The sediment would be processed and temporarily stored on Federal land within the basin (immediately adjacent to the Alcoa borrow site) and then either hauled to a landfill for permanent disposal or spread over the borrow site to assist with final grading and habitat restoration. ***Project is scheduled to begin in September 2020 and will last approximately 4 months or prior to the storm season for a period of 5 years.***

4.1 Air Quality

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

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

4.2 Biological Resources

The Proposed Action combined with other projects would not contribute to cumulative biological resource impacts within the region. The effects of the Proposed Action are site-specific and localized and would not result in incremental cumulative impacts to biological resources through increased human encroachment (e.g., removal of habitat, degradation of habitat through trampling, increased noise, or decreased water quality). Upon completion of construction, the Corps would improve habitat in the project area by planting and maintaining appropriate native plant species in impacted areas. Impacts of the Proposed Action would be reduced to less than significant levels and effects of this proposed project would not be considered cumulatively significant with implementation of EC-BR-7 and EC-BR-8.

4.3 Recreation

As described in Section 3.3, implementation of the Proposed Action would not result in impacts to recreation. The Proposed Action would not result in a permanent decrease in existing use, quality, or availability of local recreational areas and would not result in the increased use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. The River Road Dike project, when combined with other activities, would not result in significant cumulative impacts to recreation in the area.

4.4 Water Resources and Hydrology

The cumulative scenario relevant to the Proposed Action is largely characterized by other flood control projects in and downstream of the Prado Basin. As described in Section 3.4 of this document and the 2001 SEIS/EIR, implementation of the Proposed Action would include full compliance with applicable laws and regulations, as well as environmental commitments identified in the 2001 SEIS/EIR. As such, water resources and hydrology impacts of the Proposed Project would not singly, or cumulatively, combine with similar impacts of other projects as significant impacts. Furthermore, the proposed action would contribute to the national economic development (NED) objective of providing flood protection for the surrounding area. Other flood control projects in the cumulative scenario would also contribute to this NED objective, resulting in an overall benefit.

4.5 Earth Resources

No significant impacts to earth resources or geology would occur from implementation of the Proposed Action. Potential effects to soils and geology would be site-specific and less than significant, so no contribution to cumulative impacts in the region would occur.

4.6 Cultural Resources

Because the proposed action would not affect historic properties, the proposed action would not cumulatively add to the loss of historic properties within the Prado Basin.

4.7 Land Use

Land use impacts tend to be localized, affecting properties in the immediate vicinity of the project. The area potentially affected by cumulative land use impacts is the local vicinity of the proposed flood control features where construction and operation activities will take place. These areas are largely residential, agricultural and light industrial facilities (i.e., gravel sorting facility).

Although some potential localized adverse land use impacts from construction and operation may occur, the land use benefits of the project, in terms of flood protection for populated areas, are regional in scope, benefiting extensively developed areas in Orange, Riverside, and San Bernardino Counties.

4.8 Aesthetics

Implementation of the Proposed Action would occur at a site that has low scenic quality and therefore, would not significantly impact or conflict with the current viewshed. Most activities associated with the project would be short term, localized and would not conflict with current visual resources. Permanent features would not contribute to a degradation or alteration of the scenic viewscape. The River Road Dike project, when combined with other activities, would not result in significant cumulative impacts to aesthetics in the area.

4.9 Noise

With regard to a cumulative increase in temporary noise levels of the Proposed Action construction in conjunction with construction of cumulative projects identified in Table 4-1, Proposed Action construction would temporarily increase ambient noise levels in the vicinity of the Proposed Action area. As discussed in Section 3.8, the nearest sensitive receptors are located approximately 100 feet east of the site. Construction activities associated with other projects in Table 5 could potentially occur at the same time as the Proposed Action, further increasing noise levels at these sensitive receptor locations. However, due to the distances and construction timing of the other projects, it is unlikely that construction noise from the proposed dike would combine with noise from those projects to increase potential cumulative noise impacts to sensitive receptors. In the event this occurred, these impacts would be temporary and of short duration. Based on location of the other projects, shared travel routes would be limited to regional access roadways (I-15 and SR-91) and would not have a cumulative impact on local roads. Due to the high traffic volume on these roadways, no significant cumulative noise from construction vehicles would occur to sensitive receptors along shared travel routes.

Each cumulative project identified in Table 4-1 would be required to comply with local noise ordinances. Per discussion in Section 3.8, as long as construction activities occur during 7 AM to 6 PM, Monday through Saturday, the proposed construction projects would be in compliance with local (city and county) noise ordinances. Any changes to that schedule, including occasional overtime work, would require obtaining a variance from local authorities. As a result, the Proposed Action would not result in significant construction or operational noise impact. Therefore, while development of the River Road Dike area could result in cumulative temporary increases to existing ambient noise levels, the Proposed Action would have a minimal cumulative contribution to these potential noise impacts. Noise impacts of the Proposed Action would not combine with impacts of present and reasonably foreseeable projects to result in a significant cumulative impact.

4.10 Socioeconomics and Environmental Justice

The proposed action would not create socioeconomic impacts to any adjacent communities in the region (see Section 3.9). As such, implementation of the Proposed Action would not contribute to an incremental socioeconomic effect that would be cumulatively considerable.

4.11 Transportation

Cumulative projects within the area (Table 4-1) will generate trips to and from the respective project sites using local roadways. The combined contribution of these vehicle trips could result in an increase to existing roadway network levels of service. However, each project would be required to comply with the performance standards identified in the Riverside County General Plan. While development of cumulative projects will result in a cumulative addition to traffic volumes on study area roadways, the Proposed Action's contribution to this impact would be minimal during both construction and operation. Therefore, the contribution of the Proposed Action to cumulative impacts would be less than significant.

4.12 Public Health and Safety

The Proposed Action would not result in increased risks to public safety. The construction of the dike would be a beneficial impact to safety of the community with the provision of flood risk protection. Safety risks associated with the proposed project would not result in a significant cumulative impact.

4.13 Public Services and Utilities

The Proposed Action would have no significant temporary or permanent impacts on public services and utilities. The proposed project would not contribute to an incremental impact on public services and utilities that would be cumulatively considerable.

5 ENVIRONMENTAL COMMITMENTS

Due to the limited nature of construction disturbance, the activities of the Proposed Action are not expected to cause any long term adverse environmental effects. Environmental commitments (ECs) and best management practices (BMPs) identified in the 2001 SEIS would be implemented for the proposed project to ensure that potential construction-related effects are minimized and/or reduced to a less than significant level. New ECs are also developed in addition to the 2001 SEIS for the Proposed Action and are prefaced with "EC-". Impacts to recreation, aesthetics, socioeconomics and public services/utilities are not anticipated for the Proposed Action and therefore no additional minimization measures are proposed for these resources.

5.1 Air Quality

- **AQ-1** The project construction contractor shall retard diesel engine injection timing by two degrees before top center on all construction equipment that was manufactured before 1996, and which does not have an existing IC engine warranty with the manufacturer. The contractor shall provide a certification from a third-party certified mechanic prior to start of construction, stating the timing of all diesel-powered construction equipment engines have been retarded two degrees before top center.
- **AQ-2** The project construction contractor shall use high-pressure injectors on all diesel engines that were manufactured before 1996, and which do not have existing IC engine warranties with the manufacturer. The contractor shall provide documentation of warranty and manufacture date or a certification from a third-party certified mechanic stating that all diesel construction equipment engines are utilizing high-pressure fuel injectors.
- **AQ-3** The project construction contractor shall use Caterpillar pre-chamber diesel engines or equivalent, and perform proper maintenance and operation.
- **AQ-4** The project construction contractor shall electrify equipment, where feasible.
- **AQ-5** The project construction contractor shall restrict the idling of construction equipment to 10 minutes.
- **AQ-6** The project construction contractor shall ensure that equipment will be maintained in proper tune to prevent visible soot from reducing light transmission through the exhaust stack exit by more than 20 percent for more than 3 minutes per hour and use low-sulfur fuel as required by SCAQMD regulation.
- **AQ-7** The project construction contractor shall use catalytic converters on all gasoline equipment (except for small [2-cylinder] generator engines). If this measure is not implemented, emissions from gasoline equipment shall be offset by other means (*e.g.*, Emission Reduction Credits).
- **AQ-8** The project construction contractor shall cease construction during periods of high ambient ozone concentrations (*i.e.*, Stage 2 smog alerts) near the construction area (SCAQMD, 1993).
- **AQ-9** The project construction contractor shall schedule all material deliveries to the construction spread outside of peak traffic hours, and minimize other truck trips during peak traffic hours, or as approved by local jurisdictions.
- **AQ-10** The project construction contractor shall use only solar powered traffic signs (no gasoline-powered generators shall be used).

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

- **AQ-11** The project construction contractor shall apply non-toxic soil stabilizers according to manufacturers' specification to all inactive construction areas (previously graded areas inactive for 10 days or more; soil stock piled for 2 days or more).
- **AQ-12** The project construction contractor shall enclose, cover, water twice daily, or apply non-toxic soil binders according to manufacturers' specifications to exposed stock piles (i.e., gravel, sand, dirt) with 5 percent or greater silt content.
- **AQ-13** In areas where dewatering is not required, the project construction contractor shall water active grading/excavation sites at least twice daily.
- **AQ-14** The project construction contractor shall increase dust control watering when wind speeds exceed 15 miles per hour for a sustained period of greater than 10 minutes, as measured by an anemometer. The amount of additional watering would depend upon soil moisture content at the time; but no airborne dust should be visible.
- **AQ-15** The project construction contractor shall suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph (40 kph).
- **AQ-16** The project construction contractor shall ensure that trucks hauling dirt on public roads to and from the site are covered and maintain a 50 mm (2 in) differential between the maximum height of any hauled material and the top of the haul trailer. Haul truck drivers shall water the load prior to leaving the site to prevent soil loss during transport.
- **AQ-17** The project construction contractor shall ensure that graded surfaces used for off-road parking, materials lay-down, or awaiting future construction are stabilized for dust control, as needed.
- **AQ-18** The project construction contractor shall sweep streets in the project vicinity once a day if visible soil material is carried to adjacent streets.
- **AQ-19** The project construction contractor shall install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip.
- **AQ-20** The project construction contractor shall apply water three times daily, or apply non-toxic soil stabilizers according to manufacturers' specifications to all unpaved parking, staging areas, or unpaved road surfaces.
- **AQ-21** The project construction contractor shall ensure that traffic speeds on all unpaved roads to be reduced to 15 mph (25 kph) or less.
- **AQ-22** Prior to the approval of plans and specifications, the Corps shall ensure that plans and specifications specify that all heavy equipment shall be maintained in a proper state of tune as per the manufacturer's specifications.

5.2 Biological Resources

Biological commitments that were developed in the 2001 SEIS/EIR are prefaced with "BR-", with additional clarifications *written in italics*. Biological commitments that were developed after the 2001 SEIS/EIR are prefaced with "EC-".

- **BR-12** Construction activities shall be monitored by the Corps to assure that vegetation is removed only in the designated areas. Riparian areas not to be disturbed shall be flagged *(staked, or otherwise demarcated)*.
- **BR-13** The construction contractor shall install a noise barrier prior to March 1 *(anywhere the TCE is adjacent to riparian habitat)* to shield nesting vireos *(and other birds)* from excessive noise generated by construction vehicles and equipment.
- **BR-14A** When construction is completed in a given area, the construction contractor shall hydroseed the completed dikes and all temporarily disturbed upland areas, including borrow sites, with local native shrubs and groundcover. The mix of native species in the hydroseed shall be approved in advance by the Environmental Resources Branch of the Corps, Los Angeles

District. (*Hydroseeding of dikes shall be limited to native grasses in compliance with Corps Dam and Levee Safety Regulations; other areas greater than 15' from the structures will be seeded/planted with a more diverse mix of native species.)*

- **BR-14C** The Contractor shall mow (*or clear vegetation from*) all areas that will be excavated prior to March 1 to preclude nesting of and impacts to grasshopper sparrows and other species of concern (*and all nesting birds).*

The following environmental commitments are in addition to those described in the 2001 SEIS/EIR:

- **EC-BR-1** Prior to construction activities and throughout the construction period, a Corps qualified biologist (or the environmental monitor) shall continue to inspect the construction site and adjacent areas to determine if any raptors are nesting within 200 feet of the construction site. If active nests are found, the Corps biologist will coordinate with CDFW to determine appropriate avoidance or minimization measures.
- **EC-BR-2** Prior to any ground-disturbing activities (e.g. mechanized clearing or rough grading) for all project related construction activities, a Corps qualified biologist (or environmental monitor) shall conduct a pre-construction surveys of the project site for terrestrial special-status, including MSHCP covered, wildlife species. During these surveys the biologist will:
    - Inspect the project area for any sensitive wildlife species;
    - Ensure that potential habitats within the construction zone are not occupied by sensitive species (e.g., potential burrows/nests are inspected); and
    - In the event of the discovery of a non-listed, special-status ground-dwelling animal, recover and relocate the animal to adjacent suitable habitat within the project site at least 200 feet from the limits of construction activities.
- **EC-BR-3** Prior to construction activities, a Corps qualified biologist (or the environmental monitor) shall conduct pre-construction environmental training for all construction crew members. The training shall focus on required mitigation measures and conditions of regulatory agency permits and approvals (if required). The training shall also include a summary of sensitive species and habitats potentially present within and adjacent to the project site.
- **EC-BR-4** The Corps' construction contractor will prepare a Spill Prevention and Contingency Plan. The Plan shall be implemented prior to and during site disturbance and construction activities. The plan will include measures to prevent or avoid an incidental leak or spill, including identification of materials necessary for containment and clean-up and contact information for management and agency staff. The plan and necessary containment and clean-up materials shall be kept within the construction area during all construction activities. Workers shall be educated on measures included in the plan at the pre-construction meeting or prior to beginning work on the project.
- **EC-BR-5** The Corps biologist (or the environmental monitor) will monitor construction activities to ensure compliance with environmental commitments.
- **EC-BR-6** Upon development of final construction plans and prior to site disturbance, the Corps shall clearly delineate the limits of construction on project plans. All construction, site disturbance, and vegetation removal shall be located within the delineated construction boundaries. The storage of equipment and materials, and temporary stockpiling of soil shall be located within designated areas only, and outside of natural habitat areas/channel. The limits of construction shall be delineated in the field with temporary construction fencing, staking, or flagging.
- EC-BR-7 Permanent impacts to 1.2 acres of disturbed riparian habitat due to construction of the concrete channel where water source will be diverted away from the existing habitat will be mitigated at 3:1 ratio (3.6 acres) with vegetation restoration. This mitigation area is located immediately below the newly-constructed concrete channel.

- EC-BR-8 Offsetting measures for permanent impacts to 0.64 acres to WOTUS include restoration of one acre of native habitat downstream of the project area.

5.3 Recreation

No environmental commitments are required for this resource.

5.4 Water Resources and Hydrology

The following water resources commitment measures were developed in the 2001 SEIS/EIR with additional clarifications *written in italics*.

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

5.5 Earth Resources

- **EC-ER-1** Design the dike in compliance with ER 1110-2-1806.
- **EC-ER-2** Construct the dike with highly compacted materials that would maintain strength and stability during seismic activities.

5.6 Cultural Resources

- **EC-CR-1** 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, are met. This would include coordination with the California State Historic Preservation Officer, the Advisory Council on Historic Preservation, and appropriate Indian Tribes and/or other interested parties. It may require additional measures such as test and data recovery excavations, archival research, avoidance measures, etc.

5.7 Land Use

No environmental commitments are required for this resource.

5.8 Aesthetics

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

5.9 Noise

- **EC-N-1** The construction contractor would be required to comply with the noise ordinances of the County of Riverside and the City of Eastvale. Activities requiring use of heavy equipment shall be limited to the hours of 7:00 a.m. to 6:00 p.m Monday through Saturday, except nationally recognized holidays. There shall be no construction permitted on Sunday or nationally recognized holidays unless approval is obtained from the city building official or city engineer.

5.10Socioeconomics and Environmental Justice

No environmental commitments are required for this resource.

5.11Transportation

- **EC-T-1** The Contractor shall develop a Traffic Management Plan and ensure that designated roads are used during construction, in particular at the ingress/egress to the project site. The Contractor shall coordinate in advance with the City of Eastvale and its emergency services to avoid roads restricting movements of emergency vehicles. At locations where access to nearby property is blocked, provision shall be ready at all times to accommodate emergency vehicles, such as plating over excavations, short detours, and alternate routes in conjunction with local agencies. The Traffic Management Plan shall include details regarding emergency services coordination and procedures. Additionally, the Traffic Management Plan shall clearly identify all affected roadways, bike paths, and pedestrian paths within the affected area. The plan shall identify measures to notify the public and divert automobile and pedestrian traffic safely around the construction area, including but not limited to a notice posted in the local publication, posted signage, and written notification to the City of Eastvale Public Works Department and Recreation and Parks Department, and California Department of Transportation.

5.12 Public Health and Safety

See Environmental Commitments WR-1 to WR-3 in Section 3.4.3.

5.13 Public Services and Utilities

No environmental commitments are required for this resource.

6 ENVIRONMENTAL COMPLIANCE

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

6.1 Federal Laws and Regulations

The National Environmental Policy Act and California Environmental Quality Act. This Supplemental Environmental Assessment (SEA) and Environmental Impact Report (EIR) Addendum has been prepared in accordance with both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The non-federal sponsor for the project, Orange County Flood Control District, is the CEQA lead and is responsible for compliance with that State law. Pursuant to Section 15164 of CEQA guidelines, an addendum to an approved EIR shall be prepared if "none of the conditions described in Section 15162 of the guidelines calling for preparation of a subsequent EIR have occurred," "only if minor technical changes or additions are necessary to make the EIR under consideration adequate under CEQA," and "the changes to the EIR made by the addendum do not raise important new issues about significant effects on the environment."

Based on the analyses in Chapter 3, the Proposed Action will not have a significant effect on the human environment. The construction and maintenance of River Road Dike embankment under the proposed action does not raise important new issues about significant effects on the environment. Preparation of a Supplemental Environmental Impact Statement (EIS)/EIR is, therefore, not required.

National Historic Preservation Act of 1966, as Amended (NHPA). In order to comply with Section 106 of the NHPA, the Corps, SHPO, and the Advisory Council on Historic Preservation executed a Programmatic Agreement (PA) for the Santa Ana River Project in 1992. The PA details the procedures to be followed for each feature of the project. The entire APE was surveyed for the presence of historic and prehistoric resources in 1985 by ECOS Management Criteria, Inc. (Langenwalter 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. As part of their survey, Langenwalter and Brock also completed a review of historical records and maps to identify where historic era archaeological sites may exist. Many of these "sites" identified via historic era maps were not field-verified and/or recorded. One of these possible sites, PB-44, is located within the River Road Dike construction footprint. While the data for the site was minimal, Langenwalter and Brock identified the site as the Martin Ranch, established sometime prior to 1933 on lands belonging to the Fuller Ranch. No standing structures were remaining in 1985.

The Corps contracted with Aspen Environmental Group in 2020 (Aspen 2020) to complete an assessment of any possible archaeological remains of the Martin Ranch. Aspen found that that there never was a formally designated Martin Ranch. Rather, the resources at PB-44 were part of the former Pioneer Ranch–Fuller Rancho from 1889 until it was acquired by the Corps in 1940. Their geographic analysis of historic imagery indicated that the former structures designated PB-44 were situated well outside the current limits of the River Road levee. The majority of structures associated with PB-44 were razed or relocated before 1940 and residential development around 2007 destroyed any remnant archaeological features where the structures once stood. Fieldwork identified no evidence of historic structural remains or archaeological features. There are no historic properties located within the River Road project area.

The Corps has found that the River Road Dike feature would result in no historic properties and is in the process of consulting with the SHPO about their finding.

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

Section 7 of the Endangered Species Act, as Amended. Section 7 of the ESA requires federal agencies, in consultation with, and with the assistance of the Secretary of the Interior or the Secretary of Commerce, as appropriate, to insure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. The Corps has determined the proposed action would not affect any Federally listed species or designated critical habitat. Therefore, section 7 consultation is not required.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act 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. The current list of species protected by the MBTA includes several hundred species and essentially includes all native birds. Environmental commitments identified in this document have been formulated to avoid or minimize impacts on migratory birds, and the project is in compliance with the MBTA.

Bald and Golden Eagle Protection Act, as Amended. The proposed project is in compliance. The Bald and Golden Eagle Protection Act of 1940, as amended, protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and nests without a permit 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 November 10, 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 Protection Act which has been the primary regulation protecting 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. For instance, the clearing or mowing of vegetation associated with proposed project construction is only allowed during periods when migratory birds are not nesting (August 16 through February 28).

Clean Air Act, as Amended. Under Section 176(c) of the Clean Air Act Amendments (CAAA) of 1990, the Lead Agency is required to make a determination of whether the Proposed Action "conforms" with the State Implementation Plan (SIP). Conformity is defined in Section 176(c) of the CAAA as compliance with the SIP's purpose of eliminating or reducing the severity and number of violations of the National

Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of such standards. If the total direct and indirect emissions of the criteria pollutant or precursor in a nonattainment or maintenance area caused by a federal action would equal or exceed the applicability rates at 40 CFR 93.153(b), a conformity determination is not required.

The proposed project is located in the central part of the South Coast Air Basin (SCAB) of California. Criteria pollutants that are in non-attainment are Reactive Organic Gases (ROG), Carbon Monoxide (CO), Nitrogen Dioxide (NO2), and Suspended Particulate Matter PM10 and PM2.5. The proposed project emissions considered heavy duty construction equipment and commuter vehicles for all phases of construction during the project duration. Daily (pounds per day) and yearly (tons per year) emissions for the proposed project were calculated for the air quality analysis determination. Implementation of best management practices (BMPs) and environmental commitments during construction would avoid, reduce, and minimize impacts to air quality. Emissions generated by the proposed project are expected to be temporary, and would be below the applicability rates. Thus, emissions from the proposed action would conform to the SIP. The Corps has determined that the proposed project is in compliance with the CAAA. For the proposed project, the Corps would implement environmental commitments (AQ-1 to AQ-22) to further minimize impacts to air quality.

Clean Water Act, as Amended. The proposed project is in compliance with 40 CFR Part 230, regulations promulgated by the U.S. Environmental Protection Agency (EPA) pursuant to Section 404(b)(1) of the Clean Water Act (CWA). The 2001 SEIS/EIR identified that the proposed project and other Prado Basin and vicinity features would affect jurisdictional waters (Waters of the U.S.). An updated 404(b)(1) evaluation for impacts to Waters of the U.S. from the proposed action can be found in Appendix D. Coordination to obtain 401 certification from the RWQCB is ongoing, and pursuant to the Corps Clean Water Act regulations (33CFR 336.1(a)(1)), a new 401 certification will be obtained prior to the award of the construction contract. The Corps' contractor will obtain a National Pollution Discharge Elimination System (NPDES) construction storm water permit (Section 402 of the CWA) prior to construction. A Stormwater Pollution Prevention Plan, including Best Management Practices (BMPs) and Erosion and Sedimentation Control Plan, would be developed and implemented by the Corps' contractor prior to and during construction to minimize site erosion.

Executive Order 11988, Floodplain Management. Under this Executive Order, the Corps must take action to avoid development in the base floodplain (100-year) unless it is the only practicable alternative to reduce hazards and risks associated with floods; to minimize the impact of floods on human safety, health and welfare; and to restore and preserve the natural and beneficial value of the base floodplain. The Proposed Action would avoid development in the flood basin to the extent practicable to reduce hazards and risks. The Proposed Action is in compliance with Executive Order 11988.

Executive Order 12898. Environmental Justice. Executive Order 12898, requires federal agencies to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income population." Section 1-101 of the Executive Order 12898 requires federal agencies to identify and address "disproportionately high and adverse human health or environmental effects" of programs on minority and low-income populations (Executive Order 1994). The proposed project is in compliance. There will be no impacts resulting from the proposed project that would result in disproportionately high and adverse impacts to minority and low income communities.

6.2 State Laws and Regulations

Porter-Cologne Water Quality Control Act

The potential effects of the proposed project on water quality have been evaluated and are discussed in Section 3.4. This project expects to achieve full compliance with the Water Quality Control Act by achieving compliance with Regional Water Quality Control Board certification mandates for Section 401.

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

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

California Endangered Species Act
The Proposed Project is, or would be, in compliance. The proposed project would not affect birds protected under this Act, beyond those affects that were addressed in the 2001 SEIS/EIR and CESA permit (2081-2001-023-06). Golden eagles may occasionally forage within the borrow site and other upland habitats within Prado Basin, as do other raptors. However, no nesting habitat would be affected and no nests are known to occur in the vicinity. Environmental commitments included in this document will be implemented as required to avoid or minimize impacts related to the proposed project. For instance, temporarily impacted areas will be revegetated following construction.

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

6.3 Local Laws and Regulations

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

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

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

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

Riverside County Municipal Code

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

City of Eastvale Municipal Code

Any construction within the city located within one-fourth of a mile from an occupied residence shall be permitted Monday through Saturday, except nationally recognized holidays, 7:00 a.m. to 7:00 p.m. There shall be no construction permitted on Sunday or nationally recognized holidays unless approval is obtained from the city building official or city engineer. (Ord. No. 2010-08, § 2, 1-12-2011)

7 AGENCY COORDINATION

As part of the SARMP and Prado Dam Separable Element, the Proposed Action was formally coordinated with numerous agencies, organizations, and individuals, including the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), State Historic Preservation Officer (SHPO), the Santa Ana Regional Water Quality Control Board (RWQCB), Caltrans, Riverside and San Bernardino Counties, and local cities. The SARMP has been fully coordinated with resource agencies and interested parties since the 1970’s. Summaries of past coordination, consultation and permitting are included in the 2001 SEIS/EIR. For the Proposed Action, the Corps coordinated with the USFWS to ensure no additional listed species or sensitive habitat impacts would occur and that appropriate avoidance and minimization measures and mitigation would be implemented. The Corps will obtain a 401 certification from RWQCB for the River Road feature prior to the award of the construction contract.

8 PREPARERS AND REVIEWERS

Name	Role
Hayley Lovan	Reviewer; Chief, Ecosystem Planning Section
Megan Wong	Environmental Coordinator, Ecosystem Planning Section
Naeem Siddiqui	Biologist, Ecosystem Planning Section
Danielle Storey	Archaeologist, Ecosystem Planning Section
Kirk Brus	Physical Scientist, Regional Planning Section

9 CONCLUSION

Based on the analysis and conclusions set forth in this draft SEA/EIR Addendum, environmental impacts from the proposed modifications to the River Road Dike Project are expected to be less than significant. Therefore, preparation of an Environmental Impact Statement is not required.

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11 ACRONYMS AND ABBREVIATIONS

ACS	US Census Bureau's American Community Survey
ARB	California Air Resources Board
APE	Area of Potential Effect
BMPs	Best Management Practices
CAAA	Clean Air Act Amendments
CEQA	California Environmental Quality Act
Cal EPA	California Environmental Protection Agency
CFS	Cubic Feet per Second
CO	Carbon Monoxide
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
GDM	General Design Memorandum
GHGs	Greenhouse Gases
LCA	Local Cooperation Agreement
LRR	Limited Reevaluation Report
NAAQS	National Ambient Air Quality Standard
NED	National Economic Development
NEPA	National Environmental Policy Act
NO2	Nitrogen Dioxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O3	Ozone
OCFCD	Orange County Flood Control District
OMRRR	Operation, Maintenance, Repair, Replacement and Rehabilitation

PB	Lead
PM	Particulate Matter
PM10	Particulates up to 10 Microns in Diameter
PM2.5	Particulates up to 2.5 Microns in Diameter
RCFC&WCD	Riverside County Flood Control and Water Conservation District
ROCs	Reactive Organic Compounds
RWQCB	Regional Water Quality Control Board
ROGs	Reactive Organic Gases
SAA	Streambed Alteration Agreement
SAR	Santa Ana River
SARMP	Santa Ana River Mainstem Flood Control Project
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SEA	Supplemental Environmental Assessment
SEIS	Supplemental Environmental Impact Statement
SHPO	California State Historic Preservation Officer
SO2	Sulfur Dioxide
SWPPP	Storm Water Pollution Prevention Plan
VOCs	Volatile Organic Compounds
WRDA	Water Resources Development Act

Appendix A

Construction Equipment List

The Proposed Action would require a variety of equipment for each construction activity. Estimated number of equipment for each construction activity is summarized in the table below.

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Construction Activity/Equipment Type	Power Rating (bhp) [3]	HP factor [2]	Number of Equipment on Project	BHP-HRS (hourly)	HRS/ DAY	Total Work Days [1]	Equipment BHP-HRS (Daily)	Equipment BHP-HRS (Total)
Dewatering and Diversion and Control of Water								
D7 Dozer	436	0.6	1	262	8	27	2,093	56,506
Water Pump	4	0.9	10	36	8	27	288	7,776
Clearing and Grubbing								
D7 Dozer	436	0.6	1	262	8	15	2,093	31,392
Loader	193	0.7	1	135	8	4	1,081	4,323
16 CY Dump Truck	400	0.12	4	192	8	8	1,536	12,288
Stripping of Topsoil								
D7 Dozer	436	0.6	1	262	8	26	2,093	54,413
Scrapers	407	0.65	2	529	8	25	4,233	105,820
Grader	259	0.08	1	21	8	22	166	3,647
Water Truck	310	0.12	2	74	8	18	595	10,714
Excavation								
D7 Dozer	436	0.6	1	262	8	26	2,093	54,413
Scrapers	407	0.65	2	529	8	18	4,233	76,190
Loader	193	0.7	1	135	8	8	1,081	8,646
Excavator	425	0.65	1	276	8	3	2,210	6,630
Water Truck	310	0.12	1	37	8	22	298	6,547
16 CY Belly Truck	400	0.12	2	96	8	15	768	11,520
Dike Fill								
D7 Dozer	436	0.6	1	262	8	28	2,093	58,598
Scrapers	407	0.65	2	529	8	4	4,233	16,931
Roller	205	0.14	1	29	8	18	230	4,133
Excavator	425	0.65	1	276	8	18	2,210	39,780
Loader	193	0.7	2	270	8	22	2,162	47,555
Grader	259	0.08	1	21	8	5	166	829
Water Truck	310	0.12	1	37	8	18	298	5,357
16 CY Belly Truck	400	0.12	4	192	8	18	1,536	27,648
General Fill								
D7 Dozer	436	0.6	2	523	8	23	4,186	96,269

Grader	259	0.08	1	21	8	4	166	663
Excavator	425	0.65	1	276	8	15	2,210	33,150
Roller	205	0.14	1	29	8	15	230	3,444
16 CY Belly Truck	400	0.12	4	192	8	15	1,536	23,040
Water Truck	310	0.12	1	37	8	15	298	4,464
Overflow Structure - Riprap, Grouted Stone, Concrete Slab								
Concrete Pump	210	0.7	1	147	8	18	1,176	21,168
Loader	193	0.7	3	405	8	2	3,242	6,485
Excavator	425	0.65	3	829	8	3	6,630	19,890
Roller	205	0.14	1	29	8	1	230	230
16 CY Dump Truck	400	0.12	3	144	8	4	1,152	4,608
Riprap								
Loader	193	0.7	3	405	8	3	3,242	9,727
Excavator	425	0.65	3	829	8	8	6,630	53,040
16 CY Dump Truck	400	0.12	3	144	8	9	1,152	10,368
Bedding Material								
Loader	193	0.7	3	405	8	10	3,242	32,424
Excavator	425	0.65	3	829	8	10	6,630	66,300
ABC Maintenance Road								
Grader	259	0.08	1	21	8	2	166	332
Roller	205	0.14	1	29	8	2	230	459
Water Truck	310	0.12	1	37	8	2	298	595
Filter Drain								
Loader	193	0.7	3	405	8	1	3,242	3,242
Roller	205	0.14	1	29	8	1	230	230
Skid Steer	74	0.7	1	52	8	43	414	17,819
Water Truck	310	0.12	1	37	8	1	298	298
16 CY Dump Truck	400	0.12	2	96	8	1	768	768
Culvert Inlet/Outlet - 48" Prestressed Concrete Pressure Pipe								
Loader	193	0.7	1	135	8	10	1,081	10,808
Concrete Pump	210	0.7	1	147	8	11	1,176	12,936
Crane	164	0.75	1	123	8	4	984	3,936

Loader/Backhoe	74	0.44	1	33	8	4	260	1,042
D7 Dozer	436	0.6	1	262	8	3	2,093	6,278
Excavator	425	0.65	1	276	8	5	2,210	11,050
Roller	205	0.14	1	29	8	3	230	689
Water Truck	310	0.12	1	37	8	3	298	893
16 CY Dump Truck	400	0.12	2	96	8	4	768	3,072
Concrete Swales								
Excavator	425	0.65	1	276	8	1	2,210	2,210
Grader	259	0.08	1	21	8	1	166	166
Settlement Base and Monuments								
D7 Dozer	436	0.6	1	262	8	2	2,093	4,186
Excavator	425	0.65	1	276	8	2	2,210	4,420
Drill, Rotary	450	0.8	1	360	8	2	2,880	5,760
Crane	164	0.75	1	123	8	1	984	984
Cable Fencing								
Post Driver	2	0.65	1	1	8	1	10	10
Pickup Trucks	385	0.1	1	39	8	1	308	308
Swing Gates								
Post Driver	2	0.65	1	1	8	3	10	31
Pickup Trucks	385	0.1	1	39	8	3	308	924
Sheet Piles								
Crane, Pile Driving	340	0.5	1	170	8	8	1,360	10,880
Pile Hammer, Vibratory	275	0.65	1	179	8	8	1,430	11,440
Pickup Trucks	385	0.1	1	39	8	8	308	2,464
Hydroseeding w/ Maintenance								
Tractor	90	0.65	1	59	8	2	468	936
Hydroseeding Truck	310	0.12	1	37	8	5	298	1,488
Pickup Trucks	385	0.1	3	116	8	30	924	27,720
Relocate Utilities								
D7 Dozer	436	0.6	1	262	8	20	2,093	41,856
Excavator	425	0.65	1	276	8	38	2,210	83,980
Loader	193	0.7	1	135	8	10	1,081	10,808

Crane	164	0.75	1	123	8	3	984	2,952
Roller	205	0.14	1	29	8	19	230	4,362
Water Truck	310	0.12	1	37	8	12	298	3,571
Concrete Pump	210	0.7	1	147	8	10	1,176	11,760
Truck Highway 6x4	400	0.12	1	48	8	14	384	5,376
For Duration of Project								
Pickup Trucks	385	0.1	3	116	3	515	347	178,448
Footnotes								
1. Total work days was based on 8 hr/day, 5 days/wk schedule of work.								
2. The HP Factor (HPF) represents an "average" percent of full-rated horsepower used by the engine. HPF is an estimate of the engine load under average working conditions. Values are obtained from CEDEP and Equipment Manual, EP 1110-1-8, Vol 7, 30 Nov 11, App D under column headings. Equipment Fuel Factors. The objective of the HP Factor (HPF) is to modify the equipment Rated Hp as engines in actual production do no work at their full-rated capacity at all times. Periods spent at idle, travelling empty, and close maneuvering at part throttle are examples of conditions that reduce the HPF. HP Factors were for average conditions.								
3. bhp = brake horse power								
4. Assume 15 daily work commute of pickup trucks for 440 days (~2 years).								

Appendix B

CalEEMod for Construction and O&M

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River Road Dike, Phase 1, Santa Ana River

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	0.00	User Defined Unit	98.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - River Road Dike, Phase 1, Santa Ana River, is a flood risk management (FRM) project. Land Use - Estimated project area acreage.

Construction Phase - Two dikes would be constructed. Construction phases timeline duration - Estimated project construction duration.

Off-road Equipment - Estimated construction equipment List.

Other Construction Equipment are Dump Trucks.
Off-road Equipment - Estimated construction equipment list.

Other Construcion Equipment are Dump Trucks.
Off-road Equipment - Estimated construction equipment list.

Other Construction Equiipment are Dump Trucks (15); Water Trucks (2); Hydroseeding Truck (1).

Tractor/Loaders/Backhoes are Loader (7); Backhoe (1).
Grading - Estimated project construction area acreage.

Trips and VMT - Rip rap construction material would come from a local quarry.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1,550.00	331.00
tblConstructionPhase	NumDays	60.00	55.00
tblConstructionPhase	PhaseEndDate	10/23/2026	9/27/2021
tblConstructionPhase	PhaseEndDate	11/13/2020	6/19/2020
tblConstructionPhase	PhaseEndDate	4/10/2020	11/15/2019
tblConstructionPhase	PhaseStartDate	11/14/2020	6/22/2020
tblConstructionPhase	PhaseStartDate	4/11/2020	11/18/2019
tblConstructionPhase	PhaseStartDate	1/18/2020	9/2/2019
tblGrading	AcresOfGrading	387.50	98.00
tblGrading	AcresOfGrading	0.00	98.00
tblLandUse	LotAcreage	0.00	98.00
tblOffRoadEquipment	HorsePower	221.00	260.00
tblOffRoadEquipment	HorsePower	172.00	400.00

tblOffRoadEquipment	HorsePower	158.00	262.00
tblOffRoadEquipment	HorsePower	85.00	130.00
tblOffRoadEquipment	HorsePower	158.00	262.00
tblOffRoadEquipment	HorsePower	97.00	128.00
tblOffRoadEquipment	HorsePower	158.00	262.00
tblOffRoadEquipment	HorsePower	172.00	400.00
tblOffRoadEquipment	HorsePower	97.00	128.00
tblOffRoadEquipment	HorsePower	172.00	400.00
tblOffRoadEquipment	HorsePower	80.00	205.00
tblOffRoadEquipment	HorsePower	187.00	259.00
tblOffRoadEquipment	HorsePower	97.00	310.00
tblOffRoadEquipment	HorsePower	172.00	310.00
tblOffRoadEquipment	LoadFactor	0.42	0.12
tblOffRoadEquipment	LoadFactor	0.42	0.12
tblOffRoadEquipment	LoadFactor	0.37	0.44
tblOffRoadEquipment	LoadFactor	0.42	0.45
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Crushing/Proc. Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rollers

tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	28.00	15.00

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					
2019	0.3160	3.3669	2.0860	4.9400e-003	0.5456	0.1467	0.6923	0.2500	0.1370	0.3870	0.0000	440.4743	440.4743	0.1176	0.0000	443.4136
2020	1.9333	20.5674	11.6788	0.0288	0.4341	0.8975	1.3316	0.2123	0.8273	1.0396	0.0000	2,526.5943	2,526.5943	0.8014	0.0000	2,546.6295
2021	1.9640	19.9593	11.8417	0.0296	2.1900e-003	0.8925	0.8947	5.8000e-004	0.8230	0.8236	0.0000	2,594.6400	2,594.6400	0.8203	0.0000	2,615.1481
Maximum	**1.9640**	**20.5674**	**11.8417**	**0.0296**	**0.5456**	**0.8975**	**1.3316**	**0.2500**	**0.8273**	**1.0396**	**0.0000**	**2,594.6400**	**2,594.6400**	**0.8203**	**0.0000**	**2,615.1481**

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					
2019	0.3160	3.3669	2.0860	4.9400e-003	0.5456	0.1467	0.6923	0.2500	0.1370	0.3870	0.0000	440.4738	440.4738	0.1176	0.0000	443.4131
2020	1.9333	20.5673	11.6788	0.0288	0.4341	0.8975	1.3316	0.2123	0.8273	1.0396	0.0000	2,526.5913	2,526.5913	0.8014	0.0000	2,546.6265
2021	1.9640	19.9593	11.8417	0.0296	2.1900e-003	0.8925	0.8947	5.8000e-004	0.8230	0.8236	0.0000	2,594.6370	2,594.6370	0.8203	0.0000	2,615.1450
Maximum	**1.9640**	**20.5673**	**11.8417**	**0.0296**	**0.5456**	**0.8975**	**1.3316**	**0.2500**	**0.8273**	**1.0396**	**0.0000**	**2,594.6370**	**2,594.6370**	**0.8203**	**0.0000**	**2,615.1450**

River Road Dike, Phase 1, Santa Ana River - Riverside-South Coast County, Annual

	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	9-1-2019	11-30-2019	2.5643	2.5643
2	12-1-2019	2-29-2020	2.8867	2.8867
3	3-1-2020	5-31-2020	2.8386	2.8386
4	6-1-2020	8-31-2020	6.8573	6.8573
5	9-1-2020	11-30-2020	8.0375	8.0375
6	12-1-2020	2-28-2021	7.5501	7.5501
7	3-1-2021	5-31-2021	7.5035	7.5035
8	6-1-2021	8-31-2021	7.5035	7.5035
9	9-1-2021	9-30-2021	2.2021	2.2021
		Highest	8.0375	8.0375

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	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

2.2 Overall Operational

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	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

	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

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/2/2019	11/15/2019	5	55	Site Preparation
2	Grading	Grading	11/18/2019	6/19/2020	5	155	Grading
3	Building Construction	Building Construction	6/22/2020	9/27/2021	5	331	Dikes Construction

Acres of Grading (Site Preparation Phase): 98

Acres of Grading (Grading Phase): 98

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
Site Preparation	Bore/Drill Rigs	1	8.00	260	0.50
Site Preparation	Cranes	1	8.00	231	0.29
Site Preparation	Other Construction Equipment	6	8.00	400	0.12
Grading	Excavators	1	8.00	262	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Site Preparation	Generator Sets	1	24.00	84	0.74
Site Preparation	Crushing/Proc. Equipment	1	8.00	130	0.78
Site Preparation	Excavators	1	8.00	262	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	7	8.00	128	0.37
Building Construction	Rubber Tired Dozers	9	8.00	247	0.40
Building Construction	Excavators	4	4.00	262	0.38
Grading	Other Construction Equipment	4	8.00	400	0.42
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	128	0.37
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Building Construction	Other Construction Equipment	15	8.00	400	0.12

Grading	Graders	1	8.00	187	0.41
Building Construction	Rollers	1	8.00	205	0.38
Building Construction	Other Construction Equipment	2	8.00	172	0.42
Building Construction	Graders	1	8.00	259	0.41
Building Construction	Tractors/Loaders/Backhoes	1	8.00	310	0.44
Building Construction	Other Construction Equipment	1	8.00	310	0.45
Building Construction	Off-Highway Trucks	4	8.00	402	0.38
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	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	51	2.00	0.00	10.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	11	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	15	38.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

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					
Fugitive Dust					0.3832	0.0000	0.3832	0.1877	0.0000	0.1877	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1933	1.9843	1.2602	2.9100e-003		0.0915	0.0915		0.0863	0.0863	0.0000	258.2157	258.2157	0.0634	0.0000	259.8016
Total	**0.1933**	**1.9843**	**1.2602**	**2.9100e-003**	**0.3832**	**0.0915**	**0.4747**	**0.1877**	**0.0863**	**0.2739**	**0.0000**	**258.2157**	**258.2157**	**0.0634**	**0.0000**	**259.8016**

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	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
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	5.1900e-003	3.7800e-003	0.0397	1.1000e-004	0.0115	7.0000e-005	0.0116	3.0500e-003	7.0000e-005	3.1200e-003	0.0000	9.9234	9.9234	2.7000e-004	0.0000	9.9302
Total	**5.1900e-003**	**3.7800e-003**	**0.0397**	**1.1000e-004**	**0.0115**	**7.0000e-005**	**0.0116**	**3.0500e-003**	**7.0000e-005**	**3.1200e-003**	**0.0000**	**9.9234**	**9.9234**	**2.7000e-004**	**0.0000**	**9.9302**

3.2 Site Preparation - 2019

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					
Fugitive Dust					0.3832	0.0000	0.3832	0.1877	0.0000	0.1877	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1933	1.9843	1.2602	2.9100e-003		0.0915	0.0915		0.0863	0.0863	0.0000	258.2154	258.2154	0.0634	0.0000	259.8013
Total	**0.1933**	**1.9843**	**1.2602**	**2.9100e-003**	**0.3832**	**0.0915**	**0.4747**	**0.1877**	**0.0863**	**0.2739**	**0.0000**	**258.2154**	**258.2154**	**0.0634**	**0.0000**	**259.8013**

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	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
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	5.1900e-003	3.7800e-003	0.0397	1.1000e-004	0.0115	7.0000e-005	0.0116	3.0500e-003	7.0000e-005	3.1200e-003	0.0000	9.9234	9.9234	2.7000e-004	0.0000	9.9302
Total	**5.1900e-003**	**3.7800e-003**	**0.0397**	**1.1000e-004**	**0.0115**	**7.0000e-005**	**0.0116**	**3.0500e-003**	**7.0000e-005**	**3.1200e-003**	**0.0000**	**9.9234**	**9.9234**	**2.7000e-004**	**0.0000**	**9.9302**

3.3 Grading - 2019

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					
Fugitive Dust					0.1483	0.0000	0.1483	0.0586	0.0000	0.0586	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1163	1.3780	0.7771	1.8900e-003		0.0551	0.0551		0.0507	0.0507	0.0000	170.0561	170.0561	0.0538	0.0000	171.4012
Total	**0.1163**	**1.3780**	**0.7771**	**1.8900e-003**	**0.1483**	**0.0551**	**0.2034**	**0.0586**	**0.0507**	**0.1092**	**0.0000**	**170.0561**	**170.0561**	**0.0538**	**0.0000**	**171.4012**

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	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
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	1.1900e-003	8.7000e-004	9.1100e-003	3.0000e-005	2.6400e-003	2.0000e-005	2.6500e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.2791	2.2791	6.0000e-005	0.0000	2.2806
Total	**1.1900e-003**	**8.7000e-004**	**9.1100e-003**	**3.0000e-005**	**2.6400e-003**	**2.0000e-005**	**2.6500e-003**	**7.0000e-004**	**2.0000e-005**	**7.2000e-004**	**0.0000**	**2.2791**	**2.2791**	**6.0000e-005**	**0.0000**	**2.2806**

3.3 Grading - 2019

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					
Fugitive Dust					0.1483	0.0000	0.1483	0.0586	0.0000	0.0586	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1163	1.3780	0.7771	1.8900e-003		0.0551	0.0551		0.0507	0.0507	0.0000	170.0559	170.0559	0.0538	0.0000	171.4010
Total	**0.1163**	**1.3780**	**0.7771**	**1.8900e-003**	**0.1483**	**0.0551**	**0.2034**	**0.0586**	**0.0507**	**0.1092**	**0.0000**	**170.0559**	**170.0559**	**0.0538**	**0.0000**	**171.4010**

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	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
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	1.1900e-003	8.7000e-004	9.1100e-003	3.0000e-005	2.6400e-003	2.0000e-005	2.6500e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.2791	2.2791	6.0000e-005	0.0000	2.2806
Total	**1.1900e-003**	**8.7000e-004**	**9.1100e-003**	**3.0000e-005**	**2.6400e-003**	**2.0000e-005**	**2.6500e-003**	**7.0000e-004**	**2.0000e-005**	**7.2000e-004**	**0.0000**	**2.2791**	**2.2791**	**6.0000e-005**	**0.0000**	**2.2806**

3.3 Grading - 2020

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					
Fugitive Dust					0.4223	0.0000	0.4223	0.2092	0.0000	0.2092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4235	4.8821	2.8733	7.2800e-003		0.1949	0.1949		0.1793	0.1793	0.0000	639.5934	639.5934	0.2069	0.0000	644.7649
Total	**0.4235**	**4.8821**	**2.8733**	**7.2800e-003**	**0.4223**	**0.1949**	**0.6172**	**0.2092**	**0.1793**	**0.3885**	**0.0000**	**639.5934**	**639.5934**	**0.2069**	**0.0000**	**644.7649**

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	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
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	4.2400e-003	2.9700e-003	0.0317	9.0000e-005	0.0101	6.0000e-005	0.0102	2.6900e-003	6.0000e-005	2.7500e-003	0.0000	8.4832	8.4832	2.1000e-004	0.0000	8.4886
Total	**4.2400e-003**	**2.9700e-003**	**0.0317**	**9.0000e-005**	**0.0101**	**6.0000e-005**	**0.0102**	**2.6900e-003**	**6.0000e-005**	**2.7500e-003**	**0.0000**	**8.4832**	**8.4832**	**2.1000e-004**	**0.0000**	**8.4886**

3.3 Grading - 2020

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					
Fugitive Dust					0.4223	0.0000	0.4223	0.2092	0.0000	0.2092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4235	4.8821	2.8733	7.2800e-003		0.1949	0.1949		0.1793	0.1793	0.0000	639.5927	639.5927	0.2069	0.0000	644.7641
Total	**0.4235**	**4.8821**	**2.8733**	**7.2800e-003**	**0.4223**	**0.1949**	**0.6172**	**0.2092**	**0.1793**	**0.3885**	**0.0000**	**639.5927**	**639.5927**	**0.2069**	**0.0000**	**644.7641**

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	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
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	4.2400e-003	2.9700e-003	0.0317	9.0000e-005	0.0101	6.0000e-005	0.0102	2.6900e-003	6.0000e-005	2.7500e-003	0.0000	8.4832	8.4832	2.1000e-004	0.0000	8.4886
Total	**4.2400e-003**	**2.9700e-003**	**0.0317**	**9.0000e-005**	**0.0101**	**6.0000e-005**	**0.0102**	**2.6900e-003**	**6.0000e-005**	**2.7500e-003**	**0.0000**	**8.4832**	**8.4832**	**2.1000e-004**	**0.0000**	**8.4886**

3.4 Building Construction - 2020

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	1.5049	15.6814	8.7689	0.0214		0.7026	0.7026		0.6479	0.6479	0.0000	1,877.087 1	1,877.087 1	0.5943	0.0000	1,891.944 6
Total	**1.5049**	**15.6814**	**8.7689**	**0.0214**		**0.7026**	**0.7026**		**0.6479**	**0.6479**	**0.0000**	**1,877.087 1**	**1,877.087 1**	**0.5943**	**0.0000**	**1,891.944 6**

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	5.1000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1523	0.1523	1.0000e-005	0.0000	0.1525
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	6.4000e-004	4.5000e-004	4.7800e-003	1.0000e-005	1.5300e-003	1.0000e-005	1.5400e-003	4.1000e-004	1.0000e-005	4.1000e-004	0.0000	1.2782	1.2782	3.0000e-005	0.0000	1.2790
Total	**6.5000e-004**	**9.6000e-004**	**4.8500e-003**	**1.0000e-005**	**1.6000e-003**	**1.0000e-005**	**1.6200e-003**	**4.3000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.4305**	**1.4305**	**4.0000e-005**	**0.0000**	**1.4315**

3.4 Building Construction - 2020

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	1.5049	15.6813	8.7689	0.0214		0.7026	0.7026		0.6479	0.6479	0.0000	1,877.0849	1,877.0849	0.5943	0.0000	1,891.9423
Total	**1.5049**	**15.6813**	**8.7689**	**0.0214**		**0.7026**	**0.7026**		**0.6479**	**0.6479**	**0.0000**	**1,877.0849**	**1,877.0849**	**0.5943**	**0.0000**	**1,891.9423**

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	5.1000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1523	0.1523	1.0000e-005	0.0000	0.1525
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	6.4000e-004	4.5000e-004	4.7800e-003	1.0000e-005	1.5300e-003	1.0000e-005	1.5400e-003	4.1000e-004	1.0000e-005	4.1000e-004	0.0000	1.2782	1.2782	3.0000e-005	0.0000	1.2790
Total	**6.5000e-004**	**9.6000e-004**	**4.8500e-003**	**1.0000e-005**	**1.6000e-003**	**1.0000e-005**	**1.6200e-003**	**4.3000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.4305**	**1.4305**	**4.0000e-005**	**0.0000**	**1.4315**

3.4 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	1.9632	19.9581	11.8355	0.0296		0.8925	0.8925		0.8230	0.8230	0.0000	2,592.7254	2,592.7254	0.8203	0.0000	2,613.2321
Total	**1.9632**	**19.9581**	**11.8355**	**0.0296**		**0.8925**	**0.8925**		**0.8230**	**0.8230**	**0.0000**	**2,592.7254**	**2,592.7254**	**0.8203**	**0.0000**	**2,613.2321**

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	6.4000e-004	9.0000e-005	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2081	0.2081	1.0000e-005	0.0000	0.2084
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	8.2000e-004	5.5000e-004	6.0400e-003	2.0000e-005	2.1100e-003	1.0000e-005	2.1200e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.7066	1.7066	4.0000e-005	0.0000	1.7076
Total	**8.3000e-004**	**1.1900e-003**	**6.1300e-003**	**2.0000e-005**	**2.1900e-003**	**1.0000e-005**	**2.2000e-003**	**5.8000e-004**	**1.0000e-005**	**5.9000e-004**	**0.0000**	**1.9147**	**1.9147**	**5.0000e-005**	**0.0000**	**1.9160**

3.4 Building Construction - 2021

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	1.9632	19.9581	11.8355	0.0296		0.8925	0.8925		0.8230	0.8230	0.0000	2,592.7223	2,592.7223	0.8203	0.0000	2,613.2290
Total	**1.9632**	**19.9581**	**11.8355**	**0.0296**		**0.8925**	**0.8925**		**0.8230**	**0.8230**	**0.0000**	**2,592.7223**	**2,592.7223**	**0.8203**	**0.0000**	**2,613.2290**

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	6.4000e-004	9.0000e-005	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2081	0.2081	1.0000e-005	0.0000	0.2084
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	8.2000e-004	5.5000e-004	6.0400e-003	2.0000e-005	2.1100e-003	1.0000e-005	2.1200e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.7066	1.7066	4.0000e-005	0.0000	1.7076
Total	**8.3000e-004**	**1.1900e-003**	**6.1300e-003**	**2.0000e-005**	**2.1900e-003**	**1.0000e-005**	**2.2000e-003**	**5.8000e-004**	**1.0000e-005**	**5.9000e-004**	**0.0000**	**1.9147**	**1.9147**	**5.0000e-005**	**0.0000**	**1.9160**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	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
Total		**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**

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	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
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	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

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	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

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	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

River Road Dike, Phase 1, Operations and Maintenance (O&M)

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	0.00	User Defined Unit	98.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Approximately two weeks of Operations and Maintenance (O&M). Activities closest to "site preparation" category.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	60.00	11.00
tblConstructionPhase	PhaseEndDate	3/26/2020	8/30/2019
tblConstructionPhase	PhaseStartDate	1/3/2020	8/16/2019
tblLandUse	LotAcreage	0.00	98.00

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					
2019	0.0243	0.2510	0.1251	2.2000e-004	0.1005	0.0132	0.1136	0.0549	0.0121	0.0670	0.0000	19.7329	19.7329	5.9700e-003	0.0000	19.8822
Maximum	**0.0243**	**0.2510**	**0.1251**	**2.2000e-004**	**0.1005**	**0.0132**	**0.1136**	**0.0549**	**0.0121**	**0.0670**	**0.0000**	**19.7329**	**19.7329**	**5.9700e-003**	**0.0000**	**19.8822**

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					
2019	0.0243	0.2510	0.1251	2.2000e-004	0.1005	0.0132	0.1136	0.0549	0.0121	0.0670	0.0000	19.7329	19.7329	5.9700e-003	0.0000	19.8822
Maximum	**0.0243**	**0.2510**	**0.1251**	**2.2000e-004**	**0.1005**	**0.0132**	**0.1136**	**0.0549**	**0.0121**	**0.0670**	**0.0000**	**19.7329**	**19.7329**	**5.9700e-003**	**0.0000**	**19.8822**

	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	**8-16-2019**	**9-30-2019**	0.2682	0.2682
		Highest	0.2682	0.2682

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	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

2.2 Overall Operational

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	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

	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

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/16/2019	8/30/2019	5	11	

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)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40

<u>Trips and VMT</u>

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
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
	tons/yr									
Fugitive Dust					0.0994	0.0000	0.0994	0.0546	0.0000	0.0546
Off-Road	0.0238	0.2507	0.1214	2.1000e-004		0.0132	0.0132		0.0121	0.0121
Total	**0.0238**	**0.2507**	**0.1214**	**2.1000e-004**	**0.0994**	**0.0132**	**0.1125**	**0.0546**	**0.0121**	**0.0667**

Category	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	18.7928	18.7928	5.9500e-003	0.0000	18.9414
Total	**0.0000**	**18.7928**	**18.7928**	**5.9500e-003**	**0.0000**	**18.9414**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
	tons/yr									
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.6000e-004	3.7600e-003	1.0000e-005	1.0900e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	3.0000e-004
Total	**4.9000e-004**	**3.6000e-004**	**3.7600e-003**	**1.0000e-005**	**1.0900e-003**	**1.0000e-005**	**1.0900e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**

Category	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.9401	0.9401	3.0000e-005	0.0000	0.9408
Total	**0.0000**	**0.9401**	**0.9401**	**3.0000e-005**	**0.0000**	**0.9408**

3.2 Site Preparation - 2019

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					
Fugitive Dust					0.0994	0.0000	0.0994	0.0546	0.0000	0.0546	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0238	0.2507	0.1214	2.1000e-004		0.0132	0.0132		0.0121	0.0121	0.0000	18.7928	18.7928	5.9500e-003	0.0000	18.9414
Total	**0.0238**	**0.2507**	**0.1214**	**2.1000e-004**	**0.0994**	**0.0132**	**0.1125**	**0.0546**	**0.0121**	**0.0667**	**0.0000**	**18.7928**	**18.7928**	**5.9500e-003**	**0.0000**	**18.9414**

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	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
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	4.9000e-004	3.6000e-004	3.7600e-003	1.0000e-005	1.0900e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9401	0.9401	3.0000e-005	0.0000	0.9408
Total	**4.9000e-004**	**3.6000e-004**	**3.7600e-003**	**1.0000e-005**	**1.0900e-003**	**1.0000e-005**	**1.0900e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9401**	**0.9401**	**3.0000e-005**	**0.0000**	**0.9408**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	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
Total		**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**

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	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
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	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

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	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

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	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

River Road Dike, Phase 1, Santa Ana River

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	0.00	User Defined Unit	98.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - River Road Dike, Phase 1, Santa Ana River, is a flood risk management (FRM) project. Land Use - Estimated project area acreage.

Construction Phase - Two dikes would be constructed. Construction phases timeline duration - Estimated project construction duration.

Off-road Equipment - Estimated construction equipment List.

Other Construction Equipment are Dump Trucks.
Off-road Equipment - Estimated construction equipment list.

Other Construcion Equipment are Dump Trucks.
Off-road Equipment - Estimated construction equipment list.

Other Construction Equiipment are Dump Trucks (15); Water Trucks (2); Hydroseeding Truck (1).

Tractor/Loaders/Backhoes are Loader (7); Backhoe (1).
Grading - Estimated project construction area acreage.

Trips and VMT - Rip rap construction material would come from a local quarry.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1,550.00	331.00
tblConstructionPhase	NumDays	60.00	55.00
tblConstructionPhase	PhaseEndDate	10/23/2026	9/27/2021
tblConstructionPhase	PhaseEndDate	11/13/2020	6/19/2020
tblConstructionPhase	PhaseEndDate	4/10/2020	11/15/2019
tblConstructionPhase	PhaseStartDate	11/14/2020	6/22/2020
tblConstructionPhase	PhaseStartDate	4/11/2020	11/18/2019
tblConstructionPhase	PhaseStartDate	1/18/2020	9/2/2019
tblGrading	AcresOfGrading	387.50	98.00
tblGrading	AcresOfGrading	0.00	98.00
tblLandUse	LotAcreage	0.00	98.00
tblOffRoadEquipment	HorsePower	221.00	260.00
tblOffRoadEquipment	HorsePower	172.00	400.00

tblOffRoadEquipment	HorsePower	158.00	262.00
tblOffRoadEquipment	HorsePower	85.00	130.00
tblOffRoadEquipment	HorsePower	158.00	262.00
tblOffRoadEquipment	HorsePower	97.00	128.00
tblOffRoadEquipment	HorsePower	158.00	262.00
tblOffRoadEquipment	HorsePower	172.00	400.00
tblOffRoadEquipment	HorsePower	97.00	128.00
tblOffRoadEquipment	HorsePower	172.00	400.00
tblOffRoadEquipment	HorsePower	80.00	205.00
tblOffRoadEquipment	HorsePower	187.00	259.00
tblOffRoadEquipment	HorsePower	97.00	310.00
tblOffRoadEquipment	HorsePower	172.00	310.00
tblOffRoadEquipment	LoadFactor	0.42	0.12
tblOffRoadEquipment	LoadFactor	0.42	0.12
tblOffRoadEquipment	LoadFactor	0.37	0.44
tblOffRoadEquipment	LoadFactor	0.42	0.45
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Crushing/Proc. Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rollers

tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	28.00	15.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2019	7.3521	86.1757	49.2339	0.1201	14.3585	3.4422	17.6893	6.9371	3.1668	10.0758	0.0000	11,886.5530	11,886.5530	3.7116	0.0000	11,979.3423
2020	21.6640	225.6443	126.2529	0.3082	6.8603	10.1090	10.1324	3.4271	9.3229	9.3291	0.0000	29,796.1900	29,796.1900	9.4266	0.0000	30,031.8558
2021	20.4593	207.9089	123.3615	0.3082	0.0232	9.2970	9.3201	6.1500e-003	8.5726	8.5787	0.0000	29,794.4443	29,794.4443	9.4193	0.0000	30,029.9270
Maximum	**21.6640**	**225.6443**	**126.2529**	**0.3082**	**14.3585**	**10.1090**	**17.6893**	**6.9371**	**9.3229**	**10.0758**	**0.0000**	**29,796.1900**	**29,796.1900**	**9.4266**	**0.0000**	**30,031.8558**

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	lb/day										lb/day					
2019	7.3521	86.1757	49.2339	0.1201	14.3585	3.4422	17.6893	6.9371	3.1668	10.0758	0.0000	11,886.5530	11,886.5530	3.7116	0.0000	11,979.3423
2020	21.6640	225.6443	126.2529	0.3082	6.8603	10.1090	10.1324	3.4271	9.3229	9.3291	0.0000	29,796.1900	29,796.1900	9.4266	0.0000	30,031.8558
2021	20.4593	207.9089	123.3615	0.3082	0.0232	9.2970	9.3201	6.1500e-003	8.5726	8.5787	0.0000	29,794.4442	29,794.4442	9.4193	0.0000	30,029.9270
Maximum	**21.6640**	**225.6443**	**126.2529**	**0.3082**	**14.3585**	**10.1090**	**17.6893**	**6.9371**	**9.3229**	**10.0758**	**0.0000**	**29,796.1900**	**29,796.1900**	**9.4266**	**0.0000**	**30,031.8558**

	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**

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	lb/day										lb/day					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	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
Mobile	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
Total	**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**

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	lb/day										lb/day					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	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
Mobile	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
Total	**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**

	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

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/2/2019	11/15/2019	5	55	Site Preparation
2	Grading	Grading	11/18/2019	6/19/2020	5	155	Grading
3	Building Construction	Building Construction	6/22/2020	9/27/2021	5	331	Dikes Construction

Acres of Grading (Site Preparation Phase): 98

Acres of Grading (Grading Phase): 98

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
Site Preparation	Bore/Drill Rigs	1	8.00	260	0.50
Site Preparation	Cranes	1	8.00	231	0.29
Site Preparation	Other Construction Equipment	6	8.00	400	0.12
Grading	Excavators	1	8.00	262	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74

Site Preparation	Generator Sets	1	24.00	84	0.74
Site Preparation	Crushing/Proc. Equipment	1	8.00	130	0.78
Site Preparation	Excavators	1	8.00	262	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	7	8.00	128	0.37
Building Construction	Rubber Tired Dozers	9	8.00	247	0.40
Building Construction	Excavators	4	4.00	262	0.38
Grading	Other Construction Equipment	4	8.00	400	0.42
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	128	0.37
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Building Construction	Other Construction Equipment	15	8.00	400	0.12
Grading	Graders	1	8.00	187	0.41
Building Construction	Rollers	1	8.00	205	0.38
Building Construction	Other Construction Equipment	2	8.00	172	0.42
Building Construction	Graders	1	8.00	259	0.41
Building Construction	Tractors/Loaders/Backhoes	1	8.00	310	0.44
Building Construction	Other Construction Equipment	1	8.00	310	0.45
Building Construction	Off-Highway Trucks	4	8.00	402	0.38
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	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	51	2.00	0.00	10.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	11	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	15	38.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

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	lb/day										lb/day					
Fugitive Dust					13.9338	0.0000	13.9338	6.8245	0.0000	6.8245			0.0000			0.0000
Off-Road	7.0285	72.1549	45.8237	0.1059		3.3281	3.3281		3.1363	3.1363		10,350.3296	10,350.3296	2.5428		10,413.8997
Total	**7.0285**	**72.1549**	**45.8237**	**0.1059**	**13.9338**	**3.3281**	**17.2619**	**6.8245**	**3.1363**	**9.9608**		**10,350.3296**	**10,350.3296**	**2.5428**		**10,413.8997**

3.2 Site Preparation - 2019

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	lb/day										lb/day					
Hauling	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
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
Worker	0.2092	0.1284	1.6882	4.3400e-003	0.4248	2.6200e-003	0.4274	0.1127	2.4100e-003	0.1151		432.2585	432.2585	0.0121		432.5610
Total	**0.2092**	**0.1284**	**1.6882**	**4.3400e-003**	**0.4248**	**2.6200e-003**	**0.4274**	**0.1127**	**2.4100e-003**	**0.1151**		**432.2585**	**432.2585**	**0.0121**		**432.5610**

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	lb/day										lb/day					
Fugitive Dust					13.9338	0.0000	13.9338	6.8245	0.0000	6.8245			0.0000			0.0000
Off-Road	7.0285	72.1549	45.8237	0.1059		3.3281	3.3281		3.1363	3.1363	0.0000	10,350.3296	10,350.3296	2.5428		10,413.8997
Total	**7.0285**	**72.1549**	**45.8237**	**0.1059**	**13.9338**	**3.3281**	**17.2619**	**6.8245**	**3.1363**	**9.9608**	**0.0000**	**10,350.3296**	**10,350.3296**	**2.5428**		**10,413.8997**

3.2 Site Preparation - 2019

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	lb/day										lb/day					
Hauling	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
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
Worker	0.2092	0.1284	1.6882	4.3400e-003	0.4248	2.6200e-003	0.4274	0.1127	2.4100e-003	0.1151		432.2585	432.2585	0.0121		432.5610
Total	**0.2092**	**0.1284**	**1.6882**	**4.3400e-003**	**0.4248**	**2.6200e-003**	**0.4274**	**0.1127**	**2.4100e-003**	**0.1151**		**432.2585**	**432.2585**	**0.0121**		**432.5610**

3.3 Grading - 2019

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	lb/day										lb/day					
Fugitive Dust					6.6926	0.0000	6.6926	3.3826	0.0000	3.3826			0.0000			0.0000
Off-Road	7.2695	86.1250	48.5676	0.1184		3.4412	3.4412		3.1659	3.1659		11,715.9246	11,715.9246	3.7068		11,808.5945
Total	**7.2695**	**86.1250**	**48.5676**	**0.1184**	**6.6926**	**3.4412**	**10.1338**	**3.3826**	**3.1659**	**6.5485**		**11,715.9246**	**11,715.9246**	**3.7068**		**11,808.5945**

3.3 Grading - 2019

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	lb/day										lb/day					
Hauling	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
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
Worker	0.0826	0.0507	0.6664	1.7100e-003	0.1677	1.0300e-003	0.1687	0.0445	9.5000e-004	0.0454		170.6284	170.6284	4.7800e-003		170.7478
Total	**0.0826**	**0.0507**	**0.6664**	**1.7100e-003**	**0.1677**	**1.0300e-003**	**0.1687**	**0.0445**	**9.5000e-004**	**0.0454**		**170.6284**	**170.6284**	**4.7800e-003**		**170.7478**

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	lb/day										lb/day					
Fugitive Dust					6.6926	0.0000	6.6926	3.3826	0.0000	3.3826			0.0000			0.0000
Off-Road	7.2695	86.1250	48.5676	0.1184		3.4412	3.4412		3.1659	3.1659	0.0000	11,715.9246	11,715.9246	3.7068		11,808.5945
Total	**7.2695**	**86.1250**	**48.5676**	**0.1184**	**6.6926**	**3.4412**	**10.1338**	**3.3826**	**3.1659**	**6.5485**	**0.0000**	**11,715.9246**	**11,715.9246**	**3.7068**		**11,808.5945**

3.3 Grading - 2019

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	lb/day										lb/day					
Hauling	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
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
Worker	0.0826	0.0507	0.6664	1.7100e-003	0.1677	1.0300e-003	0.1687	0.0445	9.5000e-004	0.0454		170.6284	170.6284	4.7800e-003		170.7478
Total	**0.0826**	**0.0507**	**0.6664**	**1.7100e-003**	**0.1677**	**1.0300e-003**	**0.1687**	**0.0445**	**9.5000e-004**	**0.0454**		**170.6284**	**170.6284**	**4.7800e-003**		**170.7478**

3.3 Grading - 2020

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	lb/day										lb/day					
Fugitive Dust					6.6926	0.0000	6.6926	3.3826	0.0000	3.3826			0.0000			0.0000
Off-Road	6.8864	79.3831	46.7209	0.1184		3.1685	3.1685		2.9151	2.9151		11,463.919 6	11,463.919 6	3.7077		11,556.611 2
Total	**6.8864**	**79.3831**	**46.7209**	**0.1184**	**6.6926**	**3.1685**	**9.8611**	**3.3826**	**2.9151**	**6.2977**		**11,463.91 96**	**11,463.91 96**	**3.7077**		**11,556.611 2**

3.3 Grading - 2020

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	lb/day										lb/day					
Hauling	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
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
Worker	0.0763	0.0451	0.6048	1.6600e-003	0.1677	1.0200e-003	0.1687	0.0445	9.3000e-004	0.0454		165.2392	165.2392	4.2400e-003		165.3451
Total	**0.0763**	**0.0451**	**0.6048**	**1.6600e-003**	**0.1677**	**1.0200e-003**	**0.1687**	**0.0445**	**9.3000e-004**	**0.0454**		**165.2392**	**165.2392**	**4.2400e-003**		**165.3451**

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	lb/day										lb/day					
Fugitive Dust					6.6926	0.0000	6.6926	3.3826	0.0000	3.3826			0.0000			0.0000
Off-Road	6.8864	79.3831	46.7209	0.1184		3.1685	3.1685		2.9151	2.9151	0.0000	11,463.9196	11,463.9196	3.7077		11,556.6112
Total	**6.8864**	**79.3831**	**46.7209**	**0.1184**	**6.6926**	**3.1685**	**9.8611**	**3.3826**	**2.9151**	**6.2977**	**0.0000**	**11,463.9196**	**11,463.9196**	**3.7077**		**11,556.6112**

3.3 Grading - 2020

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	lb/day										lb/day					
Hauling	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
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
Worker	0.0763	0.0451	0.6048	1.6600e-003	0.1677	1.0200e-003	0.1687	0.0445	9.3000e-004	0.0454		165.2392	165.2392	4.2400e-003		165.3451
Total	**0.0763**	**0.0451**	**0.6048**	**1.6600e-003**	**0.1677**	**1.0200e-003**	**0.1687**	**0.0445**	**9.3000e-004**	**0.0454**		**165.2392**	**165.2392**	**4.2400e-003**		**165.3451**

3.4 Building Construction - 2020

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	lb/day										lb/day					
Off-Road	21.6537	225.6311	126.1714	0.3079		10.1088	10.1088		9.3228	9.3228		29,771.71 78	29,771.71 78	9.4259		30,007.36 58
Total	**21.6537**	**225.6311**	**126.1714**	**0.3079**		**10.1088**	**10.1088**		**9.3228**	**9.3228**		**29,771.71 78**	**29,771.71 78**	**9.4259**		**30,007.36 58**

3.4 Building Construction - 2020

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	lb/day										lb/day					
Hauling	1.6000e-004	7.1500e-003	8.8000e-004	2.0000e-005	1.0800e-003	2.0000e-005	1.1000e-003	2.8000e-004	2.0000e-005	3.0000e-004		2.4404	2.4404	1.5000e-004		2.4440
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
Worker	0.0102	6.0200e-003	0.0806	2.2000e-004	0.0224	1.4000e-004	0.0225	5.9300e-003	1.2000e-004	6.0500e-003		22.0319	22.0319	5.6000e-004		22.0460
Total	**0.0103**	**0.0132**	**0.0815**	**2.4000e-004**	**0.0234**	**1.6000e-004**	**0.0236**	**6.2100e-003**	**1.4000e-004**	**6.3500e-003**		**24.4723**	**24.4723**	**7.1000e-004**		**24.4900**

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	lb/day										lb/day					
Off-Road	21.6537	225.6311	126.1714	0.3079		10.1088	10.1088		9.3228	9.3228	0.0000	29,771.7177	29,771.7177	9.4259		30,007.3658
Total	**21.6537**	**225.6311**	**126.1714**	**0.3079**		**10.1088**	**10.1088**		**9.3228**	**9.3228**	**0.0000**	**29,771.7177**	**29,771.7177**	**9.4259**		**30,007.3658**

3.4 Building Construction - 2020

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	lb/day										lb/day					
Hauling	1.6000e-004	7.1500e-003	8.8000e-004	2.0000e-005	1.0800e-003	2.0000e-005	1.1000e-003	2.8000e-004	2.0000e-005	3.0000e-004		2.4404	2.4404	1.5000e-004		2.4440
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
Worker	0.0102	6.0200e-003	0.0806	2.2000e-004	0.0224	1.4000e-004	0.0225	5.9300e-003	1.2000e-004	6.0500e-003		22.0319	22.0319	5.6000e-004		22.0460
Total	**0.0103**	**0.0132**	**0.0815**	**2.4000e-004**	**0.0234**	**1.6000e-004**	**0.0236**	**6.2100e-003**	**1.4000e-004**	**6.3500e-003**		**24.4723**	**24.4723**	**7.1000e-004**		**24.4900**

3.4 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	lb/day										lb/day					
Off-Road	20.4497	207.8969	123.2867	0.3079		9.2968	9.2968		8.5724	8.5724		29,770.7343	29,770.7343	9.4187		30,006.2009
Total	**20.4497**	**207.8969**	**123.2867**	**0.3079**		**9.2968**	**9.2968**		**8.5724**	**8.5724**		**29,770.7343**	**29,770.7343**	**9.4187**		**30,006.2009**

3.4 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	lb/day										lb/day					
Hauling	1.5000e-004	6.5700e-003	8.6000e-004	2.0000e-005	8.2000e-004	2.0000e-005	8.4000e-004	2.2000e-004	2.0000e-005	2.3000e-004		2.4149	2.4149	1.4000e-004		2.4184
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
Worker	9.4800e-003	5.4000e-003	0.0739	2.1000e-004	0.0224	1.3000e-004	0.0225	5.9300e-003	1.2000e-004	6.0500e-003		21.2950	21.2950	5.1000e-004		21.3077
Total	**9.6300e-003**	**0.0120**	**0.0748**	**2.3000e-004**	**0.0232**	**1.5000e-004**	**0.0233**	**6.1500e-003**	**1.4000e-004**	**6.2800e-003**		**23.7099**	**23.7099**	**6.5000e-004**		**23.7261**

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	lb/day										lb/day					
Off-Road	20.4497	207.8969	123.2867	0.3079		9.2968	9.2968		8.5724	8.5724	0.0000	29,770.7343	29,770.7343	9.4187		30,006.2009
Total	**20.4497**	**207.8969**	**123.2867**	**0.3079**		**9.2968**	**9.2968**		**8.5724**	**8.5724**	**0.0000**	**29,770.7343**	**29,770.7343**	**9.4187**		**30,006.2009**

3.4 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	lb/day										lb/day					
Hauling	1.5000e-004	6.5700e-003	8.6000e-004	2.0000e-005	8.2000e-004	2.0000e-005	8.4000e-004	2.2000e-004	2.0000e-005	2.3000e-004		2.4149	2.4149	1.4000e-004		2.4184
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
Worker	9.4800e-003	5.4000e-003	0.0739	2.1000e-004	0.0224	1.3000e-004	0.0225	5.9300e-003	1.2000e-004	6.0500e-003		21.2950	21.2950	5.1000e-004		21.3077
Total	**9.6300e-003**	**0.0120**	**0.0748**	**2.3000e-004**	**0.0232**	**1.5000e-004**	**0.0233**	**6.1500e-003**	**1.4000e-004**	**6.2800e-003**		**23.7099**	**23.7099**	**6.5000e-004**		**23.7261**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	lb/day										lb/day					
Mitigated	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	lb/day										lb/day					
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	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
Total		**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**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	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
Total		**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**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

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	lb/day										lb/day					
Architectural Coating	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
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	lb/day										lb/day					
Architectural Coating	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
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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

River Road Dike, Phase 1, Operations and Maintenance (O&M)

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	0.00	User Defined Unit	98.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Approximately two weeks of Operations and Maintenance (O&M). Activities closest to "site preparation" category.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	60.00	11.00
tblConstructionPhase	PhaseEndDate	3/26/2020	8/30/2019
tblConstructionPhase	PhaseStartDate	1/3/2020	8/16/2019
tblLandUse	LotAcreage	0.00	98.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2019	4.4341	45.6335	22.8627	0.0401	18.2675	2.3916	20.6591	9.9840	2.2003	12.1843	0.0000	3,971.2069	3,971.2069	1.1974	0.0000	4,001.1419
Maximum	**4.4341**	**45.6335**	**22.8627**	**0.0401**	**18.2675**	**2.3916**	**20.6591**	**9.9840**	**2.2003**	**12.1843**	**0.0000**	**3,971.2069**	**3,971.2069**	**1.1974**	**0.0000**	**4,001.1419**

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	lb/day										lb/day					
2019	4.4341	45.6335	22.8627	0.0401	18.2675	2.3916	20.6591	9.9840	2.2003	12.1843	0.0000	3,971.2069	3,971.2069	1.1974	0.0000	4,001.1419
Maximum	**4.4341**	**45.6335**	**22.8627**	**0.0401**	**18.2675**	**2.3916**	**20.6591**	**9.9840**	**2.2003**	**12.1843**	**0.0000**	**3,971.2069**	**3,971.2069**	**1.1974**	**0.0000**	**4,001.1419**

	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

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	lb/day										lb/day					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	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
Mobile	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
Total	**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**

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	lb/day										lb/day					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	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
Mobile	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
Total	**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**

	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

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/16/2019	8/30/2019	5	11	

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
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40

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
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

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	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.452 9	3,766.452 9	1.1917		3,796.244 5
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.452 9**	**3,766.452 9**	**1.1917**		**3,796.244 5**

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	lb/day										lb/day					
Hauling	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
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
Worker	0.0991	0.0608	0.7997	2.0600e-003	0.2012	1.2400e-003	0.2024	0.0534	1.1400e-003	0.0545		204.7540	204.7540	5.7300e-003		204.8973
Total	**0.0991**	**0.0608**	**0.7997**	**2.0600e-003**	**0.2012**	**1.2400e-003**	**0.2024**	**0.0534**	**1.1400e-003**	**0.0545**		**204.7540**	**204.7540**	**5.7300e-003**		**204.8973**

3.2 Site Preparation - 2019

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	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.452 9	3,766.452 9	1.1917		3,796.244 5
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**	**0.0000**	**3,766.452 9**	**3,766.452 9**	**1.1917**		**3,796.244 5**

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	lb/day										lb/day					
Hauling	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
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
Worker	0.0991	0.0608	0.7997	2.0600e-003	0.2012	1.2400e-003	0.2024	0.0534	1.1400e-003	0.0545		204.7540	204.7540	5.7300e-003		204.8973
Total	**0.0991**	**0.0608**	**0.7997**	**2.0600e-003**	**0.2012**	**1.2400e-003**	**0.2024**	**0.0534**	**1.1400e-003**	**0.0545**		**204.7540**	**204.7540**	**5.7300e-003**		**204.8973**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	lb/day										lb/day					
Mitigated	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	lb/day										lb/day					
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	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
Total		**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**

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	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
Total		**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**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

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	lb/day										lb/day					
Architectural Coating	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
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	lb/day										lb/day					
Architectural Coating	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
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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

River Road Dike, Phase 1, Santa Ana River

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	0.00	User Defined Unit	98.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - River Road Dike, Phase 1, Santa Ana River, is a flood risk management (FRM) project. Land Use - Estimated project area acreage.

Construction Phase - Two dikes would be constructed. Construction phases timeline duration - Estimated project construction duration.

Off-road Equipment - Estimated construction equipment List.

Other Construction Equipment are Dump Trucks.
Off-road Equipment - Estimated construction equipment list.

Other Construcion Equipment are Dump Trucks.
Off-road Equipment - Estimated construction equipment list.

Other Construction Equiipment are Dump Trucks (15); Water Trucks (2); Hydroseeding Truck (1).

Tractor/Loaders/Backhoes are Loader (7); Backhoe (1).
Grading - Estimated project construction area acreage.

Trips and VMT - Rip rap construction material would come from a local quarry.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1,550.00	331.00
tblConstructionPhase	NumDays	60.00	55.00
tblConstructionPhase	PhaseEndDate	10/23/2026	9/27/2021
tblConstructionPhase	PhaseEndDate	11/13/2020	6/19/2020
tblConstructionPhase	PhaseEndDate	4/10/2020	11/15/2019
tblConstructionPhase	PhaseStartDate	11/14/2020	6/22/2020
tblConstructionPhase	PhaseStartDate	4/11/2020	11/18/2019
tblConstructionPhase	PhaseStartDate	1/18/2020	9/2/2019
tblGrading	AcresOfGrading	387.50	98.00
tblGrading	AcresOfGrading	0.00	98.00
tblLandUse	LotAcreage	0.00	98.00
tblOffRoadEquipment	HorsePower	221.00	260.00
tblOffRoadEquipment	HorsePower	172.00	400.00

tblOffRoadEquipment	HorsePower	158.00	262.00
tblOffRoadEquipment	HorsePower	85.00	130.00
tblOffRoadEquipment	HorsePower	158.00	262.00
tblOffRoadEquipment	HorsePower	97.00	128.00
tblOffRoadEquipment	HorsePower	158.00	262.00
tblOffRoadEquipment	HorsePower	172.00	400.00
tblOffRoadEquipment	HorsePower	97.00	128.00
tblOffRoadEquipment	HorsePower	172.00	400.00
tblOffRoadEquipment	HorsePower	80.00	205.00
tblOffRoadEquipment	HorsePower	187.00	259.00
tblOffRoadEquipment	HorsePower	97.00	310.00
tblOffRoadEquipment	HorsePower	172.00	310.00
tblOffRoadEquipment	LoadFactor	0.42	0.12
tblOffRoadEquipment	LoadFactor	0.42	0.12
tblOffRoadEquipment	LoadFactor	0.37	0.44
tblOffRoadEquipment	LoadFactor	0.42	0.45
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Crushing/Proc. Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rollers

tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	28.00	15.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2019	7.3502	86.1774	49.1076	0.1199	14.3585	3.4422	17.6893	6.9371	3.1668	10.0758	0.0000	11,869.0022	11,869.0022	3.7109	0.0000	11,961.7759
2020	21.6638	225.6446	126.2377	0.3081	6.8603	10.1090	10.1324	3.4271	9.3229	9.3291	0.0000	29,793.8618	29,793.8618	9.4266	0.0000	30,029.5261
2021	20.4591	207.9091	123.3474	0.3081	0.0232	9.2970	9.3201	6.1500e-003	8.5726	8.5787	0.0000	29,792.1924	29,792.1924	9.4193	0.0000	30,027.6739
Maximum	**21.6638**	**225.6446**	**126.2377**	**0.3081**	**14.3585**	**10.1090**	**17.6893**	**6.9371**	**9.3229**	**10.0758**	**0.0000**	**29,793.8618**	**29,793.8618**	**9.4266**	**0.0000**	**30,029.5261**

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	lb/day										lb/day					
2019	7.3502	86.1774	49.1076	0.1199	14.3585	3.4422	17.6893	6.9371	3.1668	10.0758	0.0000	11,869.0022	11,869.0022	3.7109	0.0000	11,961.7759
2020	21.6638	225.6446	126.2377	0.3081	6.8603	10.1090	10.1324	3.4271	9.3229	9.3291	0.0000	29,793.8618	29,793.8618	9.4266	0.0000	30,029.5261
2021	20.4591	207.9091	123.3474	0.3081	0.0232	9.2970	9.3201	6.1500e-003	8.5726	8.5787	0.0000	29,792.1924	29,792.1924	9.4193	0.0000	30,027.6739
Maximum	**21.6638**	**225.6446**	**126.2377**	**0.3081**	**14.3585**	**10.1090**	**17.6893**	**6.9371**	**9.3229**	**10.0758**	**0.0000**	**29,793.8618**	**29,793.8618**	**9.4266**	**0.0000**	**30,029.5261**

	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**

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	lb/day										lb/day					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	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
Mobile	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
Total	**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**

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	lb/day										lb/day					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	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
Mobile	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
Total	**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**

	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

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/2/2019	11/15/2019	5	55	Site Preparation
2	Grading	Grading	11/18/2019	6/19/2020	5	155	Grading
3	Building Construction	Building Construction	6/22/2020	9/27/2021	5	331	Dikes Construction

Acres of Grading (Site Preparation Phase): 98

Acres of Grading (Grading Phase): 98

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
Site Preparation	Bore/Drill Rigs	1	8.00	260	0.50
Site Preparation	Cranes	1	8.00	231	0.29
Site Preparation	Other Construction Equipment	6	8.00	400	0.12
Grading	Excavators	1	8.00	262	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74

Site Preparation	Generator Sets	1	24.00	84	0.74
Site Preparation	Crushing/Proc. Equipment	1	8.00	130	0.78
Site Preparation	Excavators	1	8.00	262	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	7	8.00	128	0.37
Building Construction	Rubber Tired Dozers	9	8.00	247	0.40
Building Construction	Excavators	4	4.00	262	0.38
Grading	Other Construction Equipment	4	8.00	400	0.42
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	128	0.37
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Building Construction	Other Construction Equipment	15	8.00	400	0.12
Grading	Graders	1	8.00	187	0.41
Building Construction	Rollers	1	8.00	205	0.38
Building Construction	Other Construction Equipment	2	8.00	172	0.42
Building Construction	Graders	1	8.00	259	0.41
Building Construction	Tractors/Loaders/Backhoes	1	8.00	310	0.44
Building Construction	Other Construction Equipment	1	8.00	310	0.45
Building Construction	Off-Highway Trucks	4	8.00	402	0.38
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	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	51	2.00	0.00	10.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	11	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	15	38.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

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	lb/day										lb/day					
Fugitive Dust					13.9338	0.0000	13.9338	6.8245	0.0000	6.8245			0.0000			0.0000
Off-Road	7.0285	72.1549	45.8237	0.1059		3.3281	3.3281		3.1363	3.1363		10,350.3296	10,350.3296	2.5428		10,413.8997
Total	**7.0285**	**72.1549**	**45.8237**	**0.1059**	**13.9338**	**3.3281**	**17.2619**	**6.8245**	**3.1363**	**9.9608**		**10,350.3296**	**10,350.3296**	**2.5428**		**10,413.8997**

3.2 Site Preparation - 2019

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	lb/day										lb/day					
Hauling	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
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
Worker	0.2044	0.1329	1.3682	3.8900e-003	0.4248	2.6200e-003	0.4274	0.1127	2.4100e-003	0.1151		387.7965	387.7965	0.0105		388.0596
Total	**0.2044**	**0.1329**	**1.3682**	**3.8900e-003**	**0.4248**	**2.6200e-003**	**0.4274**	**0.1127**	**2.4100e-003**	**0.1151**		**387.7965**	**387.7965**	**0.0105**		**388.0596**

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	lb/day										lb/day					
Fugitive Dust					13.9338	0.0000	13.9338	6.8245	0.0000	6.8245			0.0000			0.0000
Off-Road	7.0285	72.1549	45.8237	0.1059		3.3281	3.3281		3.1363	3.1363	0.0000	10,350.3296	10,350.3296	2.5428		10,413.8997
Total	**7.0285**	**72.1549**	**45.8237**	**0.1059**	**13.9338**	**3.3281**	**17.2619**	**6.8245**	**3.1363**	**9.9608**	**0.0000**	**10,350.3296**	**10,350.3296**	**2.5428**		**10,413.8997**

3.2 Site Preparation - 2019

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	lb/day										lb/day					
Hauling	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
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
Worker	0.2044	0.1329	1.3682	3.8900e-003	0.4248	2.6200e-003	0.4274	0.1127	2.4100e-003	0.1151		387.7965	387.7965	0.0105		388.0596
Total	**0.2044**	**0.1329**	**1.3682**	**3.8900e-003**	**0.4248**	**2.6200e-003**	**0.4274**	**0.1127**	**2.4100e-003**	**0.1151**		**387.7965**	**387.7965**	**0.0105**		**388.0596**

3.3 Grading - 2019

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	lb/day										lb/day					
Fugitive Dust					6.6926	0.0000	6.6926	3.3826	0.0000	3.3826			0.0000			0.0000
Off-Road	7.2695	86.1250	48.5676	0.1184		3.4412	3.4412		3.1659	3.1659		11,715.9246	11,715.9246	3.7068		11,808.5945
Total	**7.2695**	**86.1250**	**48.5676**	**0.1184**	**6.6926**	**3.4412**	**10.1338**	**3.3826**	**3.1659**	**6.5485**		**11,715.9246**	**11,715.9246**	**3.7068**		**11,808.5945**

3.3 Grading - 2019

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	lb/day										lb/day					
Hauling	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
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
Worker	0.0807	0.0525	0.5401	1.5400e-003	0.1677	1.0300e-003	0.1687	0.0445	9.5000e-004	0.0454		153.0776	153.0776	4.1500e-003		153.1814
Total	**0.0807**	**0.0525**	**0.5401**	**1.5400e-003**	**0.1677**	**1.0300e-003**	**0.1687**	**0.0445**	**9.5000e-004**	**0.0454**		**153.0776**	**153.0776**	**4.1500e-003**		**153.1814**

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	lb/day										lb/day					
Fugitive Dust					6.6926	0.0000	6.6926	3.3826	0.0000	3.3826			0.0000			0.0000
Off-Road	7.2695	86.1250	48.5676	0.1184		3.4412	3.4412		3.1659	3.1659	0.0000	11,715.924 6	11,715.924 6	3.7068		11,808.594 5
Total	**7.2695**	**86.1250**	**48.5676**	**0.1184**	**6.6926**	**3.4412**	**10.1338**	**3.3826**	**3.1659**	**6.5485**	**0.0000**	**11,715.92 46**	**11,715.92 46**	**3.7068**		**11,808.59 45**

3.3 Grading - 2019

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	lb/day										lb/day					
Hauling	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
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
Worker	0.0807	0.0525	0.5401	1.5400e-003	0.1677	1.0300e-003	0.1687	0.0445	9.5000e-004	0.0454		153.0776	153.0776	4.1500e-003		153.1814
Total	**0.0807**	**0.0525**	**0.5401**	**1.5400e-003**	**0.1677**	**1.0300e-003**	**0.1687**	**0.0445**	**9.5000e-004**	**0.0454**		**153.0776**	**153.0776**	**4.1500e-003**		**153.1814**

3.3 Grading - 2020

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	lb/day										lb/day					
Fugitive Dust					6.6926	0.0000	6.6926	3.3826	0.0000	3.3826			0.0000			0.0000
Off-Road	6.8864	79.3831	46.7209	0.1184		3.1685	3.1685		2.9151	2.9151		11,463.9196	11,463.9196	3.7077		11,556.6112
Total	**6.8864**	**79.3831**	**46.7209**	**0.1184**	**6.6926**	**3.1685**	**9.8611**	**3.3826**	**2.9151**	**6.2977**		**11,463.9196**	**11,463.9196**	**3.7077**		**11,556.6112**

3.3 Grading - 2020

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	lb/day										lb/day					
Hauling	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
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
Worker	0.0748	0.0467	0.4893	1.4900e-003	0.1677	1.0200e-003	0.1687	0.0445	9.3000e-004	0.0454		148.2354	148.2354	3.6800e-003		148.3274
Total	**0.0748**	**0.0467**	**0.4893**	**1.4900e-003**	**0.1677**	**1.0200e-003**	**0.1687**	**0.0445**	**9.3000e-004**	**0.0454**		**148.2354**	**148.2354**	**3.6800e-003**		**148.3274**

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	lb/day										lb/day					
Fugitive Dust					6.6926	0.0000	6.6926	3.3826	0.0000	3.3826			0.0000			0.0000
Off-Road	6.8864	79.3831	46.7209	0.1184		3.1685	3.1685		2.9151	2.9151	0.0000	11,463.9196	11,463.9196	3.7077		11,556.6112
Total	**6.8864**	**79.3831**	**46.7209**	**0.1184**	**6.6926**	**3.1685**	**9.8611**	**3.3826**	**2.9151**	**6.2977**	**0.0000**	**11,463.9196**	**11,463.9196**	**3.7077**		**11,556.6112**

3.3 Grading - 2020

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	lb/day										lb/day					
Hauling	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
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
Worker	0.0748	0.0467	0.4893	1.4900e-003	0.1677	1.0200e-003	0.1687	0.0445	9.3000e-004	0.0454		148.2354	148.2354	3.6800e-003		148.3274
Total	**0.0748**	**0.0467**	**0.4893**	**1.4900e-003**	**0.1677**	**1.0200e-003**	**0.1687**	**0.0445**	**9.3000e-004**	**0.0454**		**148.2354**	**148.2354**	**3.6800e-003**		**148.3274**

3.4 Building Construction - 2020

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	lb/day										lb/day					
Off-Road	21.6537	225.6311	126.1714	0.3079		10.1088	10.1088		9.3228	9.3228		29,771.7178	29,771.7178	9.4259		30,007.3658
Total	**21.6537**	**225.6311**	**126.1714**	**0.3079**		**10.1088**	**10.1088**		**9.3228**	**9.3228**		**29,771.7178**	**29,771.7178**	**9.4259**		**30,007.3658**

3.4 Building Construction - 2020

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	lb/day										lb/day					
Hauling	1.6000e-004	7.2200e-003	1.0300e-003	2.0000e-005	1.0800e-003	2.0000e-005	1.1000e-003	2.8000e-004	2.0000e-005	3.0000e-004		2.3793	2.3793	1.6000e-004		2.3833
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
Worker	9.9700e-003	6.2300e-003	0.0652	2.0000e-004	0.0224	1.4000e-004	0.0225	5.9300e-003	1.2000e-004	6.0500e-003		19.7647	19.7647	4.9000e-004		19.7770
Total	**0.0101**	**0.0135**	**0.0663**	**2.2000e-004**	**0.0234**	**1.6000e-004**	**0.0236**	**6.2100e-003**	**1.4000e-004**	**6.3500e-003**		**22.1441**	**22.1441**	**6.5000e-004**		**22.1603**

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	lb/day										lb/day					
Off-Road	21.6537	225.6311	126.1714	0.3079		10.1088	10.1088		9.3228	9.3228	0.0000	29,771.7177	29,771.7177	9.4259		30,007.3658
Total	**21.6537**	**225.6311**	**126.1714**	**0.3079**		**10.1088**	**10.1088**		**9.3228**	**9.3228**	**0.0000**	**29,771.7177**	**29,771.7177**	**9.4259**		**30,007.3658**

3.4 Building Construction - 2020

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	lb/day										lb/day					
Hauling	1.6000e-004	7.2200e-003	1.0300e-003	2.0000e-005	1.0800e-003	2.0000e-005	1.1000e-003	2.8000e-004	2.0000e-005	3.0000e-004		2.3793	2.3793	1.6000e-004		2.3833
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
Worker	9.9700e-003	6.2300e-003	0.0652	2.0000e-004	0.0224	1.4000e-004	0.0225	5.9300e-003	1.2000e-004	6.0500e-003		19.7647	19.7647	4.9000e-004		19.7770
Total	**0.0101**	**0.0135**	**0.0663**	**2.2000e-004**	**0.0234**	**1.6000e-004**	**0.0236**	**6.2100e-003**	**1.4000e-004**	**6.3500e-003**		**22.1441**	**22.1441**	**6.5000e-004**		**22.1603**

3.4 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	lb/day										lb/day					
Off-Road	20.4497	207.8969	123.2867	0.3079		9.2968	9.2968		8.5724	8.5724		29,770.7343	29,770.7343	9.4187		30,006.2009
Total	**20.4497**	**207.8969**	**123.2867**	**0.3079**		**9.2968**	**9.2968**		**8.5724**	**8.5724**		**29,770.7343**	**29,770.7343**	**9.4187**		**30,006.2009**

3.4 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	lb/day										lb/day					
Hauling	1.5000e-004	6.6100e-003	1.0100e-003	2.0000e-005	8.2000e-004	2.0000e-005	8.4000e-004	2.2000e-004	2.0000e-005	2.4000e-004		2.3542	2.3542	1.5000e-004		2.3581
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
Worker	9.3100e-003	5.5900e-003	0.0597	1.9000e-004	0.0224	1.3000e-004	0.0225	5.9300e-003	1.2000e-004	6.0500e-003		19.1039	19.1039	4.4000e-004		19.1149
Total	**9.4600e-003**	**0.0122**	**0.0607**	**2.1000e-004**	**0.0232**	**1.5000e-004**	**0.0233**	**6.1500e-003**	**1.4000e-004**	**6.2900e-003**		**21.4581**	**21.4581**	**5.9000e-004**		**21.4730**

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	lb/day										lb/day					
Off-Road	20.4497	207.8969	123.2867	0.3079		9.2968	9.2968		8.5724	8.5724	0.0000	29,770.7343	29,770.7343	9.4187		30,006.2009
Total	**20.4497**	**207.8969**	**123.2867**	**0.3079**		**9.2968**	**9.2968**		**8.5724**	**8.5724**	**0.0000**	**29,770.7343**	**29,770.7343**	**9.4187**		**30,006.2009**

3.4 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	lb/day										lb/day					
Hauling	1.5000e-004	6.6100e-003	1.0100e-003	2.0000e-005	8.2000e-004	2.0000e-005	8.4000e-004	2.2000e-004	2.0000e-005	2.4000e-004		2.3542	2.3542	1.5000e-004		2.3581
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
Worker	9.3100e-003	5.5900e-003	0.0597	1.9000e-004	0.0224	1.3000e-004	0.0225	5.9300e-003	1.2000e-004	6.0500e-003		19.1039	19.1039	4.4000e-004		19.1149
Total	**9.4600e-003**	**0.0122**	**0.0607**	**2.1000e-004**	**0.0232**	**1.5000e-004**	**0.0233**	**6.1500e-003**	**1.4000e-004**	**6.2900e-003**		**21.4581**	**21.4581**	**5.9000e-004**		**21.4730**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	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
	lb/day										lb/day					
Mitigated	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	lb/day										lb/day					
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	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
Total		**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**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	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
Total		**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**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

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	lb/day										lb/day					
Architectural Coating	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
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	lb/day										lb/day					
Architectural Coating	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
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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

River Road Dike, Phase 1, Operations and Maintenance (O&M)

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	0.00	User Defined Unit	98.00	0.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.4 **Precipitation Freq (Days)** 28

Climate Zone 10 **Operational Year** 2022

Utility Company Southern California Edison

CO2 Intensity (lb/MWhr) 702.44 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Approximately two weeks of Operations and Maintenance (O&M). Activities closest to "site preparation" category.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	60.00	11.00
tblConstructionPhase	PhaseEndDate	3/26/2020	8/30/2019
tblConstructionPhase	PhaseStartDate	1/3/2020	8/16/2019
tblLandUse	LotAcreage	0.00	98.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2019	4.4319	45.6357	22.7111	0.0398	18.2675	2.3916	20.6591	9.9840	2.2003	12.1843	0.0000	3,950.1460	3,950.1460	1.1967	0.0000	3,980.0622
Maximum	**4.4319**	**45.6357**	**22.7111**	**0.0398**	**18.2675**	**2.3916**	**20.6591**	**9.9840**	**2.2003**	**12.1843**	**0.0000**	**3,950.1460**	**3,950.1460**	**1.1967**	**0.0000**	**3,980.0622**

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	lb/day										lb/day					
2019	4.4319	45.6357	22.7111	0.0398	18.2675	2.3916	20.6591	9.9840	2.2003	12.1843	0.0000	3,950.1460	3,950.1460	1.1967	0.0000	3,980.0622
Maximum	**4.4319**	**45.6357**	**22.7111**	**0.0398**	**18.2675**	**2.3916**	**20.6591**	**9.9840**	**2.2003**	**12.1843**	**0.0000**	**3,950.1460**	**3,950.1460**	**1.1967**	**0.0000**	**3,980.0622**

	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**

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	lb/day										lb/day					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	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
Mobile	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
Total	**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**

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	lb/day										lb/day					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	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
Mobile	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
Total	**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**

	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

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/16/2019	8/30/2019	5	11	

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
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40

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
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

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	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

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	lb/day										lb/day					
Hauling	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
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
Worker	0.0968	0.0630	0.6481	1.8400e-003	0.2012	1.2400e-003	0.2024	0.0534	1.1400e-003	0.0545		183.6931	183.6931	4.9800e-003		183.8177
Total	**0.0968**	**0.0630**	**0.6481**	**1.8400e-003**	**0.2012**	**1.2400e-003**	**0.2024**	**0.0534**	**1.1400e-003**	**0.0545**		**183.6931**	**183.6931**	**4.9800e-003**		**183.8177**

3.2 Site Preparation - 2019

Mitigated Construction On-Site

Category	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
	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

Mitigated Construction Off-Site

Category	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
	lb/day										lb/day					
Hauling	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
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
Worker	0.0968	0.0630	0.6481	1.8400e-003	0.2012	1.2400e-003	0.2024	0.0534	1.1400e-003	0.0545		183.6931	183.6931	4.9800e-003		183.8177
Total	**0.0968**	**0.0630**	**0.6481**	**1.8400e-003**	**0.2012**	**1.2400e-003**	**0.2024**	**0.0534**	**1.1400e-003**	**0.0545**		**183.6931**	**183.6931**	**4.9800e-003**		**183.8177**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	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
	lb/day										lb/day					
Mitigated	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	lb/day										lb/day					
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	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
Total		**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**

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	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
Total		**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**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

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	lb/day										lb/day					
Architectural Coating	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
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	lb/day										lb/day					
Architectural Coating	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
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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 C

Geotechnical - HTRW Survey Report

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US Army Corps of Engineers®

Los Angeles District
Geotechnical Branch

Hazardous Toxic Radioactive Waste (HTRW) Executive Summary

River Road Dike
Prado Dam Flood Control Basin
Eastvale, Riverside County, California
Chino, San Bernardino County, California

Prepared By:

U.S. Army Corps of Engineers
Engineering Division, Geotechnical Branch
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Geology and Investigations Section, Los Angeles District

FEBRUARY, 2020

Executive Summary

A Hazardous Toxic Radioactive Waste (HTRW, also known as a Phase I Environmental Site Assessment, Phase I ESA) evaluation of three conceptual River Road Dike alignments was performed in 2017 by US Army Corps of Engineers Los Angeles District (Corps) before a final dike alignment had been selected. The three dike alignments and adjoining properties at that time were assessed in order to identify Recognized Environmental Conditions (RECs) that may impact the River Road Dike project. The alignments were identified as "A", "B", and "C" and are the bases for the HTRW assessment described in this report. The final Dike alignment is shown in Section 6.0. The dike alignment has been changed substantially from what was presented in 2017. The alignment is smaller and is only in the southwest portion of the area away from from much of the RECs noted in the 2017 HTRW report. However the report remains with the information acquired in 2017. Based on the final alignment, there are two potential RECs that may impact the current project alignment, (sites 2 and 7, shown on **fig. 1** and in Section 6.0). These sites are the Former Jongsma Dairy and the former truck trailer parking/staging areas that are within the proposed alignment and construction limits of the dike.

<u>Former Jongsma Dairy</u>

The former Jongsma Dairy property (site 2) was a dairy with two residences, barns, hay storage sheds, milking machines, grazing land, generator, pole-mounted transformers, water wells, surface runoff settling ponds, three hydrocarbon fuel underground storage tanks (USTs), two hydrocarbon fuel aboveground storage tanks (ASTs), and a few abandoned vehicles. By 2017, the site structures and surface infrastructure were razed. Field observations indicated that some concrete pavement, building foundations, settling ponds and several inches of manure remain on site. Whether all foundations, water wells, irrigation lines and other subsurface developments, such as septic tanks, have been removed is not known. If present, some may be encountered along the dike alignment and borrow areas.

The hydrocarbon fuel underground (USTs) and aboveground storage Tanks (ASTs) located on the property have been removed according to Geotracker (2017) and Envirostor (2017). These are located outside and to the northwest of the River Road Dike construction easements. These have a very low potential to be a REC for hydrocarbon releases in context of the borrow area.

<u>Former truck trailer parking/staging area</u>

Historical aerial photographs revealed that more than 300, 53-foot long truck trailers, were stored on the property (site 7) in the area were grading and construction are to be completed. The trailers were seen in a 1994 aerial photograph but not in older or newer photographs. No details of the site usage were found and the site operation is unknown. The 1994 aerial photograph suggests that the site was limited for storage. The site was searched on multiple traverses and no sign of hydrocarbon release could be seen at the time of the inspection. Settling ponds and several inches of manure remain on site. A large capacity sewer line runs down the center of the property, traversing from north to south, located several hundred feet east of the dike alignment. The site is assigned a low potential to be a REC for possible spilled hydrocarbon fuels or lubricants.

Conclusion

The environmental risks as expressed by the Recognized Environmental Conditions of the sites along the Dike alignment reported in 2017 have lessened substantially since this report was prepared in 2017 because of the final dike alignment which is located much farther to the southeast. However, the project alignment and borrow area overlies two RECs (sites 2 and 7, shown on **fig. 1,** and the figure in Section 6.0). Sites 2 and 7 require monitoring during foundation preparation and where borrow excavations encroaches on sites 5 and 6 to assure that no hydrocarbon-contaminated soil is present. If stained soil is found, it should be excavated, segregated, tested by a qualified firm to remove and properly dispose of the unsuitable material.

With that said, these sites pose a low threat of HTRW contamination to the final River Road dike footprint and surrounding work project areas.

US Army Corps
of Engineers®

Los Angeles District®
Geotechnical Branch

HTRW Survey Report

River Road Dike PED
Corona, California

Report Written in December 2017 By:
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Geologist
Geology and Investigations Section, Los Angeles District

Report Updated in December 2019 By:
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Civil/Geotechnical Engineer
Soils Design and Materials Section, Los Angeles District

December 2019

TABLE OF CONTENTS

Acronyms and abbreviations used in this report:

AAI: All Appropriate Inquiry

ADEQ: Arizona Department of Environmental Quality

APP: Aquifer Protection Permit (ADEQ)

ASTM: American Society for Testing and Materials

CAA: Clean Air Act

CERCLA: Comprehensive Environmental Response Cleanup and Liability Act

CFR: Code of Federal Regulations

CWA: Clean Water Act

EA: Environmental Assessment

EIR: Environmental Impact Report

EIS: Environmental Impact Statement

ER: Engineering Regulation

ERA: Ecological Risk Assessment

ESA: Environmental Site Assessment

ESASs: Environmental Site Assessment Standards

FS: Feasibility Study

HHRA: Human Health Risk Assessment

HTRW: Hazardous, Toxic and/or Radioactive Waste

ICIS: Compliance Information System (USEPA database)

IRA: Interim Removal Action

IRAP: Interim Removal Action Plan

LUST: Leaking Underground Storage Tank

NEPA: National Environmental Policy Act

NPL: National Priority List (list of USEPA Superfund sites)

NPDES: National Pollutant Discharge Elimination System

OSHA: Occupational Safety and Health Act (federal safety law)

PAH: Poly Aromatic Hydrocarbon

PCE: Tetrachloroethylene

PCS: Permit Compliance System

PED: Planning Engineering Design

PPA: Project Partnership Agreement

PRP: Potential Responsible Party

RAP: Remedial Action Plan

RCRA: Resource Conservation and Recovery Act

REC: Recognized Environmental Condition

RI: Remedial Investigation

RP: Responsible Party

SARA: Superfund Amendments and Reauthorization Act

SI: Site Investigation

TCE: Trichloroethylene

TSCA: Toxic Substances Control Act

USACE: United States Army Corps of Engineers

USDOT: United States Department of Transportation

USEPA: United States Environmental Protection Agency

UST: Underground Storage Tank

VOC: Volatile Organic Compound

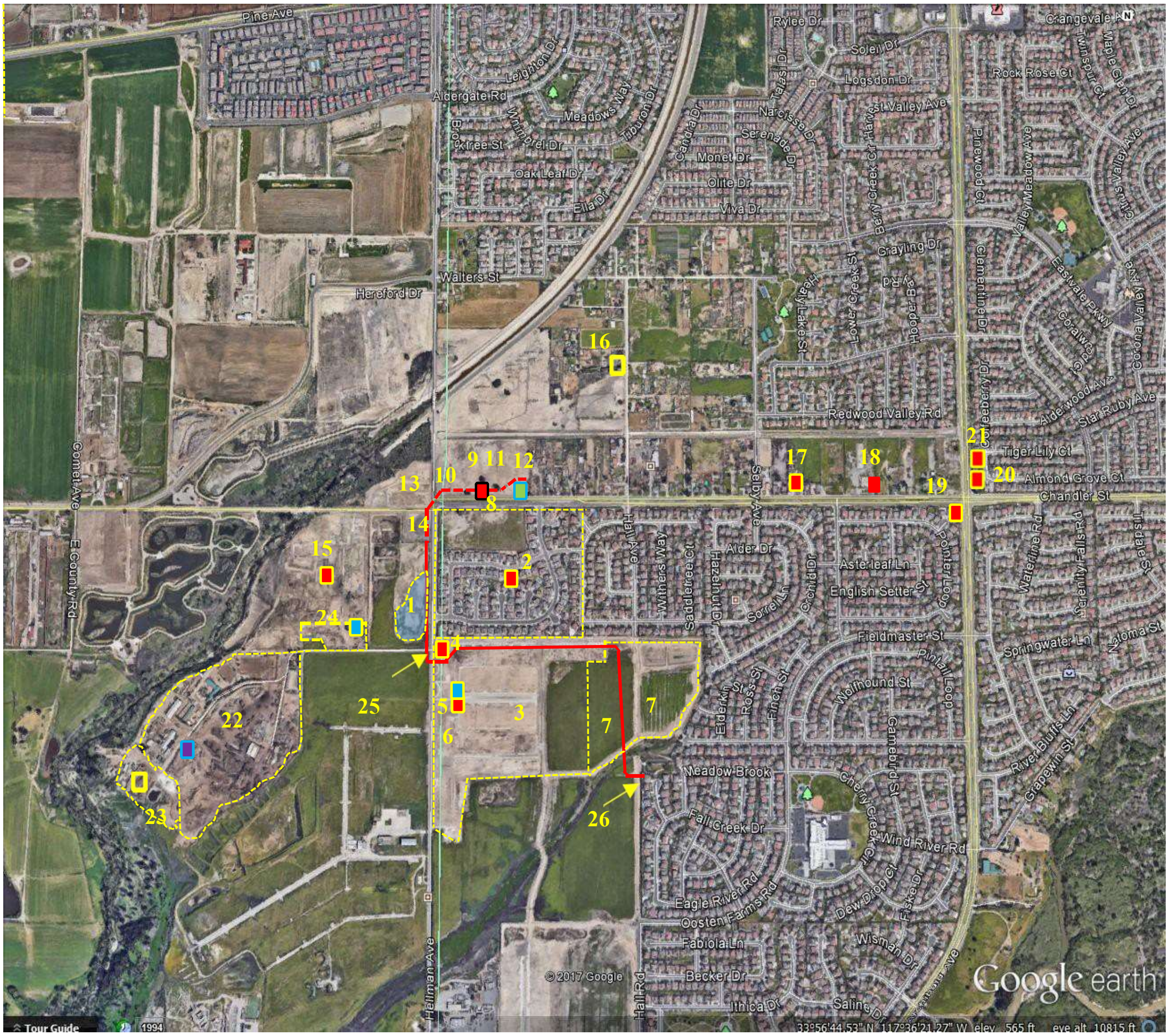
1.0 PURPOSE

This is a HTRW Survey Report with the intent to identify and inform U.S. Army Corps of Engineers (Corps) design and geotechnical team members of any HTRW concerns (RECs) Recognized Environmental Conditions) that may impact conceptual River Road Dike alignments currently under consideration. The project is so named because at one time in the past, conceptual alignments of this flood control feature in part followed River Road, which is about ¾ mile south of the alignments currently under consideration. The proposed alignments under consideration at the time of this assessment are shown on **fig. 1**, along with locations of properties and potential environmental conditions that have been assessed. River Road Dike is on the eastern periphery of Prado Dam basin. Prado Dam crest was raised to higher elevation in recent years, and consequently it has potential to impound more water and the maximum upstream extent of a Prado Dam reservoir pool is correspondingly increased. The purpose of River Road Dike is to prevent these higher-elevation Prado Dam basin impoundments from breaking out to the east, into and through residential and commercial tracts along Chandler Street, Hellman Avenue, Gannett Street, and other adjoining Chino, Eastvale, and Corona, California locations.

2.0 SCOPE OF WORK

This environmental HTRW survey/assessment was performed by the Corps' Geology and Investigations Section, Los Angeles. Previous dike alignments of 2017 are shown on **figs. 1, 2, 3** and **4**. The current and final alignment is shown at back of this report and is an update as of December 2019. It is expected that Orange County will continue operating under its established protocols as its land-acquisition process continues, so as to obtain land for a complete project footprint, including doing Orange-County-funded, additional, independent Phase I ESAs, limited Phase II ESAs and other independent environmental conditions assessments, on specific parcels, as warranted. The Geology and Investigations Section scope was to complete a Phase I ESA on an immediate basis, in October 2017, before a final dike alignment had been selected. Subsequently this assessment was revisited and revised multiple times after initial completion, to evaluate additional alignment changes and their impacts. This was done one final time in December 2019 to ensure that the final alignment did not have any HTRW impacts (RECs). As of 2017 the three most likely dike alignments and adjoining lands at that time were assessed and are named
alignments "A", "B", and "C", shown on **figs. 2, 3,** and **4**. This is the only location where the designations "A", "B", and "C" are used for these alignments. Concise reporting herein demanded some manner of a naming or identification system to distinguish the different alignments.

The data review and assessment and survey report preparation were conducted in accordance with Corps of Engineers Regulation ER 1165-2-132, Hazardous, Toxic and Radioactive Waste (HTRW) Guidance for Civil Works Projects, dated June 26, 1992. The procedures used to prepare this report were generally conducted in accordance to guidance found in ASTM E-1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. The exception to this scope, is that a full Phase I ESA was not performed because additional historical records were not reviewed and a site interviews were not conducted. Much of the conclusions within this report rely on data obtained from review of the online State of California Geotracker web-based environmental regulatory database. Hazardous substance and petroleum hydrocarbon contaminant related files from this database were reviewed. No property land interviews, historic aerial photos, Sanborn Maps, etc. were searched or reviewed, thus this report does not follow the full ASTM Phase I ESA process.



Red line is composited conceptual River Road Dike alignments (refer to figs. 2, 3, and 4).

1 McCune property (pit outlined) **REC**
2 Former Flamingo Dairy (dashed outline) **REC**
3 Former Jongsma Dairy (dashed outline)
4 Jongsma, site of removed fuel UST
5 Jongsma, site of 2 removed fuel ASTs **REC**
6 Jongsma, site of 2 removed fuel USTs **REC**
7 Former truck trailer parking area (outlined) **REC**
8 Hydrocarbon fuel UST likely in place; **REC**
9 Former Hawley property
10 Former slaughterhouse (Vieira)
11 Former Simones & and Carlos properties
12 Former Paz property **REC** (septic tank)
13 Vander Laan Dairy lot 1
14 Vander Laan Dairy lot 2
15 Vander Laan Dairy lot 3 (& remediated LUST)
16 Hall Avenue wildcat dump
17 Brazil (*Eastvalle*) Market fuel LUST, case closed
18 Golden Coach fuel LUST (groundwater), open case
19 Leaking fuel UST (groundwater), case closed
20 Leaking fuel UST (soil only), case closed
21 Leaking oil UST (soil only), case closed
22 Viramontes Express green waste landfill, dashed outline
23 Red Star Fertilizer Co., dashed outline
24 Martin Feed (animal feed mfg; dashed outline)
25 San Bernardino County parcel APN 1057-212-017
26 Southern River Road Dike abutment

Legend:
- UST or LUST, removed or remediated
- LUST open case
- septic tank
- landfill (green waste)
- AST
- Fuel UST, status undocumented

Fig. 1.—General alignment, River Road Dike, identification of RECs, potential RECs, and properties assessed in this Phase I ESA. Composited potential dike alignments "A", "B", and "C". See also figs. 2, 3, and 4.

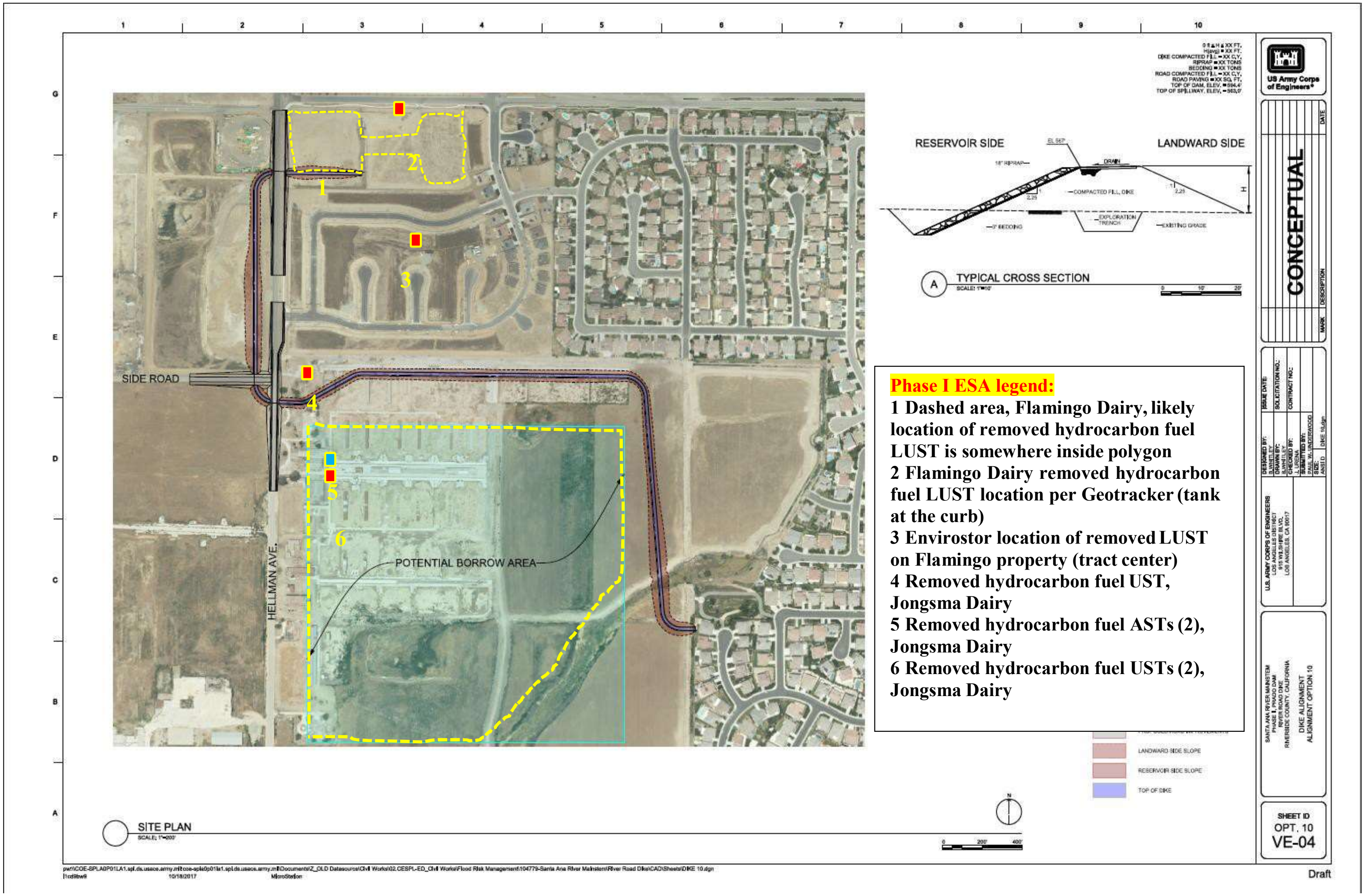


Fig. 2.--ALIGNMENT "A". Most current and preferred conceptual alignment of River Road Dike fully south of Chandler Road, screened for RECs. Presented to the team on 1 November 2017. From project files. See also figs. 3 and 4. Note potential borrow site, dashed where more likely to be excavated.

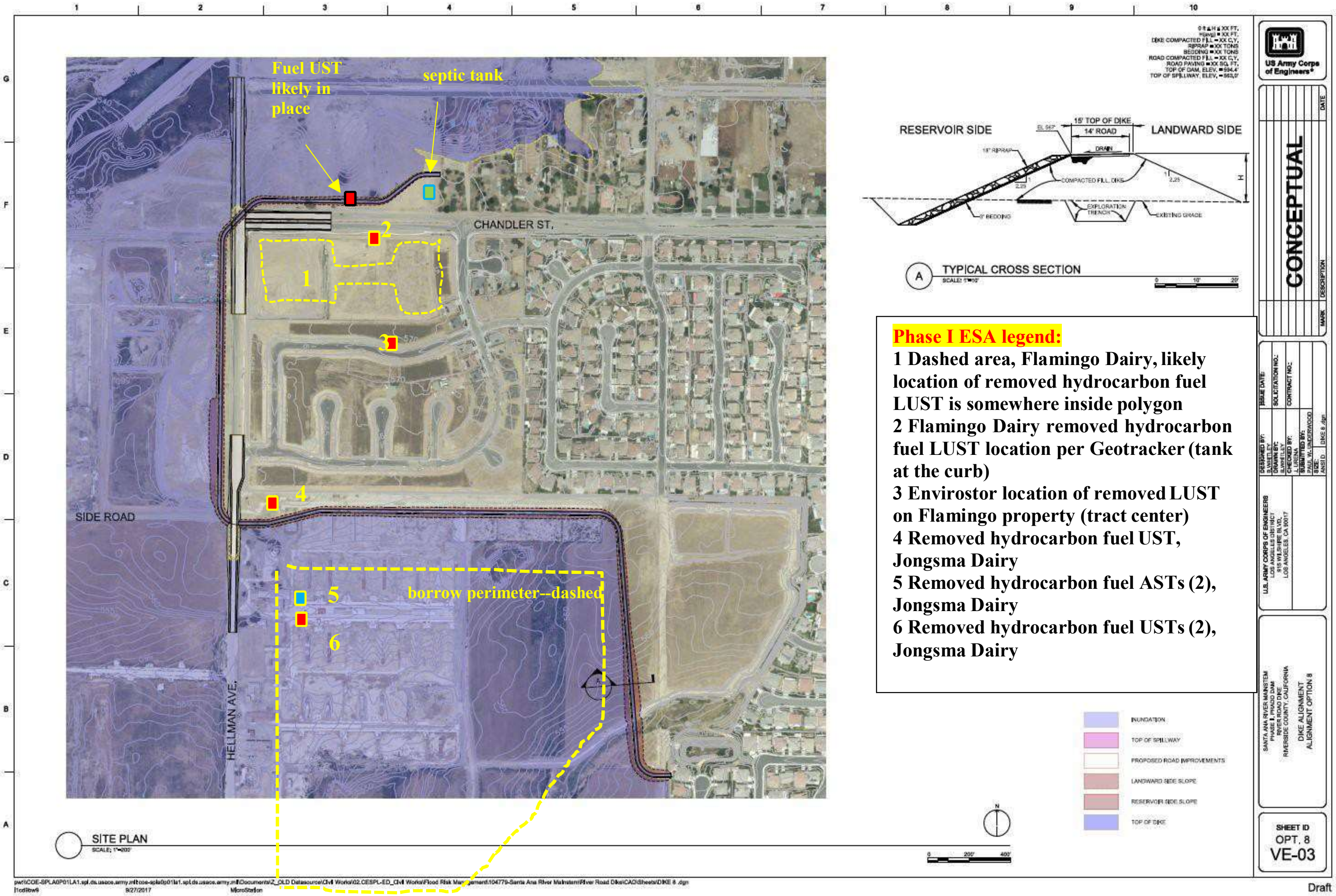


Fig. 3.--ALIGNMENT "B". Another potential alignment of River Road Dike, screened for RECs. Dike footprint is north of Chandler Road and this footprint has the maximum northern extent. Older alignment as of mid-October 2017, from project files. See also figs. 2 and 4.

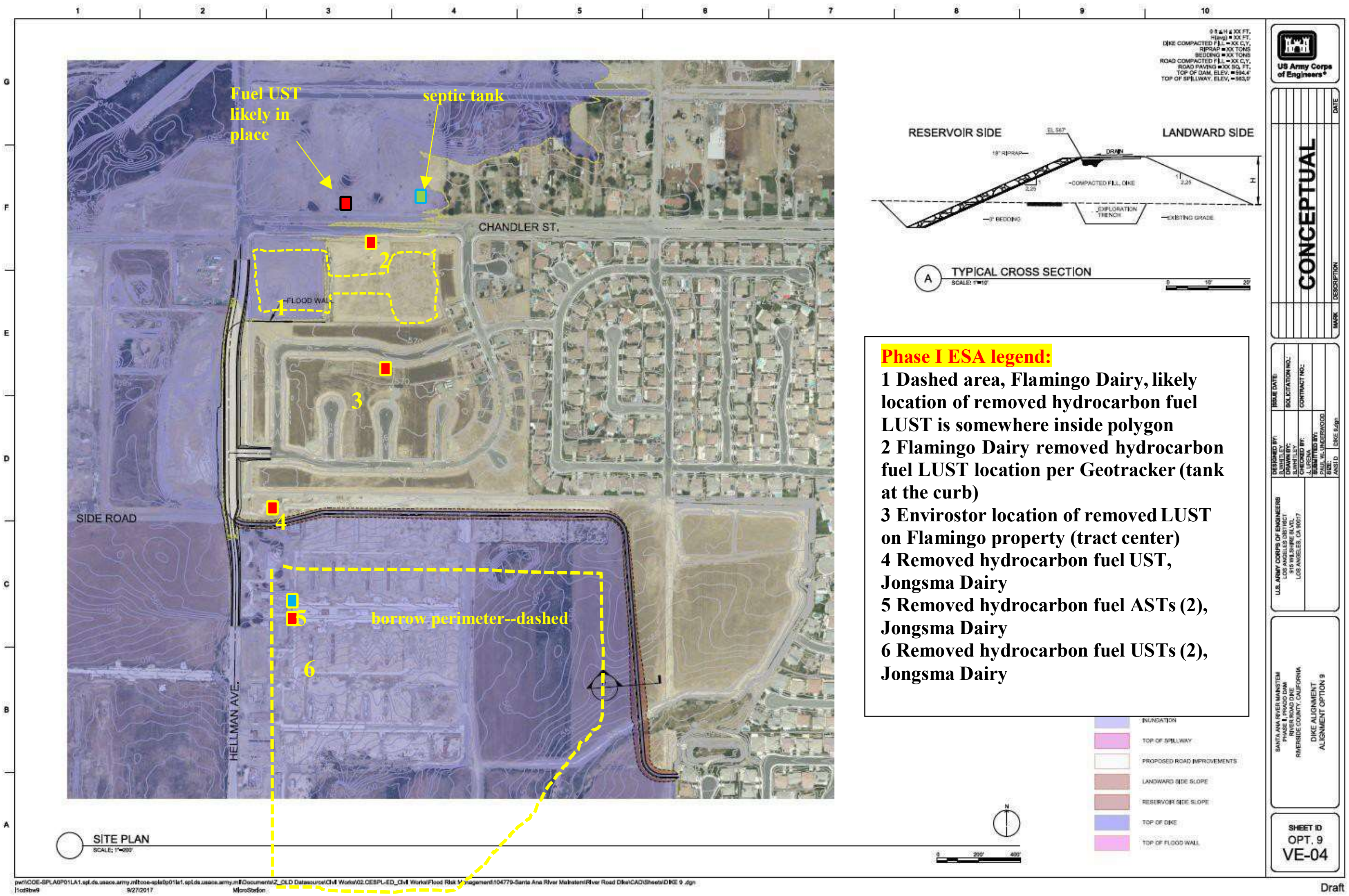


Fig. 4.--ALIGNMENT "C". Another alignment of River Road Dike, screened for RECs. Dike footprint is entirely south of Chandler Road and also fully west of Hellman Avenue and this footprint has the *minimum* northern extent. Older alignment as of mid-October 2017, from project files. See also figs. 2 and 3.

The regulatory database search and conditions determinations that were undertaken by the Corps included these publicly accessible, internet-posted databases and sources, which were searched in October 2017:

1. State of California Geotracker Database on-line databases and documents index. This was searched and reviewed in October 2017 and then again in December 2019.
2. Ten site specific Phase I ESAs and Phase II ESAs prepared by various environmental firms on behalf of Orange County, or by Orange County staff.
3. Notes, photographs and reports on periodic site visits of the sites by Orange County staff;
4. Historical and current aerial photographs review.
5. Google Earth street view photo access of the sites to better characterize current condition.
6. A sie walk that was conducted 8 November 2017.

Current contaminated property site interviews and additional standard historical records search and review activities that can be a part of a full Phase I ESA, but that were not conducted here include: (These additional records are considered standard records that are supposed to be searched as part of a full Phase I ESA effort. They do not have to be included in the ESA if they are not ascertainable and they may not have any relevance even if they are ascertained and reviewed.)

7. Resident interviews of past and present property owners and/or operators.
8. Historical telephone and street directory review and search.
9. Sanborn Fire Insurance maps review and search.
10. Historical USGS Topographic maps review and search.
11. Land title search and review.
12. Property tax records review and search.
13. Land use and zoning records review and search.
14. Building department records review and search.

The interview, and map and directory search activities were performed and documented as part of the above- described Orange-County-initiated Phase I ESAs. The interviews from these previously Phase I ESA reports were reviewed again in October 2017 and relied upon in place of current updated interviews because previous property owners/operators were no longer available to interview in 2017. The sites, properties, and conditions assessed, including those considered Recognized Environmental Conditions (RECs) and potential RECs, are listed on **fig. 1**.

2.1 Determining relevance of an environmental condition to this Corps project

The Phase I ESA evaluator's data search and screening process had the objective of either eliminating sites with environmental wastes issues from further consideration or classifying them as Recognized Environmental Conditions (RECs), Controlled Recognized Environmental Conditions (CRECs), or Historical Recognized Environmental Conditions (HRECs), in context of the conceptual River Road Dike footprint.

Sites with known or suspected hazardous substances and petroleum hydrocarbon contaminants were screened for relevance as RECs, considering:

1. The fate and transport mechanisms for known soil and groundwater contaminant areas/sites. Groundwater contaminants were considered higher potential threat to

the footprint if the contaminant was a floating or heavy sinking hydrocarbon product and was of large extent and close to within 1,000 feet of the footprint. Soil contaminants were considered lower potential threat to the footprint since they are less mobile within soil medium and tend not to travel unless diluted/leached into groundwater.

2. Surface runoff for the general project area was reviewed to ascertain the areas of potential accumulation of hazardous substances or petroleum products. Low potential threat was considered for the overall area, unless a known large amount of consistent release of such materials existed in the area, e.g. large spills and associated residual contaminants or follow up remediation and monitoring that may have occurred in association with the spill. Non point sources of storm water contaminant runoff areas were considered as a low potential, since the amount and type of contamination form such activities is usually unknown.
3. The proximity of any known hazardous substance or petroleum hydrocarbon contaminant sites to the footprint was reviewed and ascertained as to the potential severity of risk. Contaminate sites located farther than approximately 1,000 feet were considered a low potential threat to the footprint.
4. Current regulatory compliance status was reviewed for sites close to the footprint. A low potential threat was considered for sites that were noted as closed cases in the regulatory database files. Case closed sites are typically no longer a threat to the environment and much of the primary contamination has been remediated or the risk to the environment has been reduced such that it is a low threat. A higher potential threat was considered for open case file sites, since these sites are either actively undergoing ongoing remediation or being studied/monitored until they become a low threat case and move to closure.

2.2 Corps policy on released environmental wastes in project areas

It should be understood by the users of this Phase I ESA that Corps of Engineers regulation ER 1165-2-132 requires avoidance of known hazardous substance and petroleum hydrocarbon contamination when designing and constructing a Corps Civil Works project. If such contamination cannot be avoided then the cost for plans and remediation of contamination is 100% sponsor cost and is not a part of project costs. The sponsor must remedy the extent of contamination such that is not a threat or no longer causes impacts to the human and ecological health of the environment for the Corps project. The remedy must site must also satisfy contamination rules and laws of any applicable federal, local and/or state regulatory agency and must also be reviewed and gain concurrence from the Corps of Engineers. Documentation of known contamination and remedy should be recorded in the project cost sharing agreement.

2.3 Assessing the pre-existing Phase I and Phase II ESAs provided by Orange County

The previous Phase I and Phase II ESAs and similar site visits and reports initiated by Orange County environmental staff and its contractors were done as a precursor to deciding which parcels of private land that Orange County would acquire for this project, beginning in the early 1990s. Importantly, they include follow-on assessment work in later years (2008-2017) and thus have been kept current in the context of developing and / or remediated environmental issues. Consequently that previous work has been accepted and was drawn upon extensively in this current Corps Phase I ESA.

3.0 PROPERTIES AND CONDITIONS EVALUATED AS POTENTIAL RECs

Pertinent project-wide geological and geotechnical site characteristics are as follows and are important to comprehend so as to fully understand the potential environmental risks associated with nearby properties. The 'project site', that is, the River Road Dike foundation and adjoining land, is within the Santa Ana River Valley and on the periphery of Prado Dam basin. The project site will be inundated by higher dam impoundment levels, and control of that inundation is the purpose of River Road Dike, which is being designed currently. The conceptual dike footprint falls in both San Bernardino and Riversides Counties. North-south aligned Hellman Avenue marks the county line, with San Bernardino County to the west of the road and Riverside County to the east.

Geologic and geotechnical background. The project site is on the lowest-elevation part of the Perris structural block but does not contain any known fault traces. Pre development, the project site was covered with several hundred feet of sandy, silty, and clayey river-deposited Pleistocene-age alluvium with an average surface elevation typically at 560 feet above mean sea level. For most of the project area, surface slope was to the south and surface drainage to the south and southwest, as seen in pre-project older topographic maps of the US Geological Survey. There is some variance. Runoff was westward and in a few instances northward in the northernmost part of the project area. A ¼-mile-square raised pad housing tract built just east of the center third of the project alignment changed surface drainage, turning some westward.

Nearly all of the described geologic materials remain but are now buried under thin cover (inches to a few feet) comprised of either disturbed alluvium or undocumented fills, changes imparted onto the surface by land uses put into place mostly after 1939. Most of the land has been used as dairy farm infrastructure, dairy farm pasture, and agricultural fields for row crops, while a much lesser acreage has been utilized as single family residences. Those buildings have been demolished and removed, although extensive areas of old pavements and foundation slabs remain.

An unconfined groundwater surface is 25 feet to 27 feet deep below existing ground along Hellman Avenue, as determined by piezometer readings dating from 2005 (CHJ, 2005, p. 11). Water-well levels in the 1970s suggested deeper groundwater (30 feet to 35 feet) and well readings in the 1930s indicated 15 foot water depths. This is taken to mean that groundwater levels can fluctuate within those ranges (CHJ, 2005, p. 11). It should be remembered that 1930s readings likely are highs and possibly abnormal highs due to record storm events that occurred in that era. Groundwater flow is anticipated to be south to southwest in most of the area and westward in the northernmost part of the area.

Environmental conditions were assessed at properties within and adjoining three proposed River Road Dike alignments ("A", "B", and "C'), as were conditions upgradient that could impact the project. Potential environmental conditions as understood on 8 November 2017 at each of those properties are described below. The alignment was finalized in 2019 and has substantially changed from what has been describe in the November version of this report. The entire alignment has moved southwest of the much of the contaminated sites as noted in this report. This current alignment is shown in the last map figure in section 7.0 Update and Final Conclusions, at the back of this report.

3.1 EPA Superfund sites, WWTPs, SWLs and RCRA sites

There are no EPA Superfund sites, WWTPs, SWLs, or RCRA sites within or near the project.

3.2 McCune "A" property

Location 1 is shown on **fig. 1** and shown in more detail on **fig. 5**. Assessor's parcel number (APN) 1057-212-15. This property is in San Bernardino County and is considered part of Chino, California. As of October 2017, this land has not been obtained by Orange County for the project. It is fenced, locked, and inaccessible.

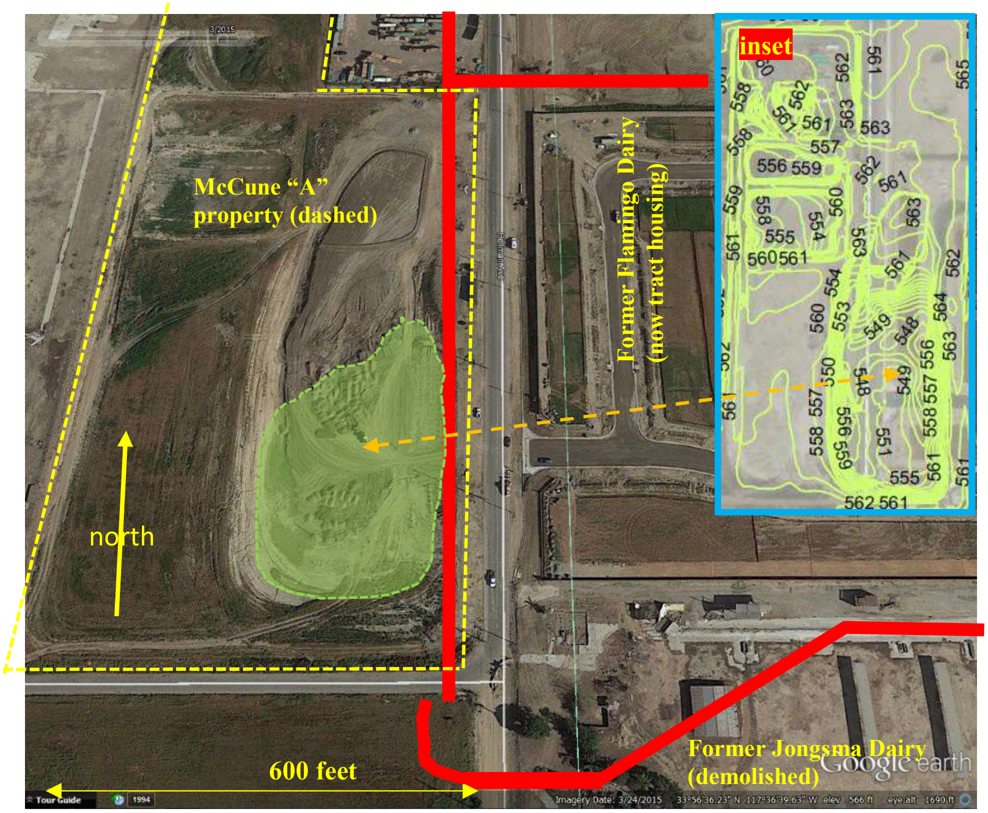


Fig. 5.--River Road Dike alignments (red line) overlain on McCune "A" property, 2015 aerial. Disturbed area is apparent; excavated pit confines within disturbed area approximated by green polygon. Compare to pit bottom surveyed topography (inset map) which suggests a maximum 10-foot-deep pit was formed.

This site has some potential to be a REC. All potential alignments ("A", "B", and "C") are the same in the context of alignment and footprint across this property. The site also is a geotechnical engineering issue related to dike foundation stability.

The McCune "A" tract was agricultural land, mostly plowed fields, and later grazing land, with four runoff settling ponds in its northwestern part. The property fronts mostly along Hellman Avenue, and also has a shorter frontage line along Chino-Corona Road to the north. Surface runoff is west-northwest into Mill Creek. The conceptual River Road Dike foundation overlies approximately 900 linear feet of the McCune "A" property along Hellman Avenue. A significantly large segment of this foundation, referred to as the *Lennar* pit, was excavated as much as 10 feet deep in 2014 to supply borrow material for fill to the Lennar College Park housing tract then under construction on the opposite side of Hellman Avenue. That housing tract was a fill-import undertaking, as the approximately ¼-mile-square tract was raised as much as seven feet to put the new homes there at an elevation generally above the maximum, revised Prado basin impoundment elevation. The fill to raise the tract was excavated from the borrow pit into the McCune "A" property (Leighton, 2015, p. 3). The configuration of the excavation is shown via the inset to **fig. 5**. The pit occupies a 600-foot-long zone under the River Road Dike alignment in the north-to-south direction. The pit was backfilled to near grade but content and compaction of the backfilling are undocumented and anecdotal reports are that construction debris was used as backfill, that trash is exposed and shallowly buried in the fill, and that no engineering or compaction was done to backfill the site. The lack of verification that only inert materials were placed in the pit is the concern and the reason this site is a REC.

Noting that additional material was stockpiled on the site by the housing developer, raising some of the McCune property surface above pre-borrow grades, Orange County had that stockpiled material sampled in January 2017 and tested for Title 22 metals and organochloride pesticides, determining that all organochloride pesticide and metals concentrations are below CHHSLs (California Human Health Screening Levels) except for arsenic, and that arsenic levels are no higher than the housing construction project background range determined in 2005, pre construction (natural arsenic concentration is above the CHHSL) (Orange County, 2017). All this is favorable but it does not characterize what has been buried in the pit, which remains an unknown and potential REC for undiscovered contaminants that may have been buried during undocumented filling of the pit. The potential for such contamination to exist is considered low.

Observation of pit backfill as it is removed will be necessary and essential, in conjunction with use of field instrumentation such as a FID (flame Ionization detector) or PID (photoionization detector) to identify volatile organic compounds (VOCs), as field screening tools. The objective will be to assure no contaminants have been mixed in with the backfill. Some segregation, isolation, and testing of certain parts of the fill may become necessary, as determined via the visual and instrumentational screening. It is expected that Orange County will continue operating under its established protocols as its land-acquisition process for this parcel continues, including doing Orange-County-funded, additional, independent, Phase I ESAs, limited Phase II ESAs, or other independent environmental conditions assessments, as warranted.

The site also is a geotechnical engineering concern (foundation stability for the future overlying dike) because the undocumented pit backfill is thought to be probably uncompacted and possibly intermixed with inert construction debris, and possibly also trash, and also because it may be non-homogeneous. It is anticipated that most likely all the fill will have to be excavated to a suitably sound, undisturbed subgrade for dike foundation. In addition to the necessity of deep replacement backfilling with suitable compacted fill, it also appears likely that the dike footprint will be on a westward sloping former pitwall, which probably will have to be reconfigured to form a stable subgrade.

3.3 Former Flamingo Dairy

Location 2 (dashed yellow square) on **fig. 1**. Formerly addressed as 14970 Chandler Street, Corona, California, according to project records. This is in Riverside County and now falls within the jurisdiction of Eastvale, California, not Corona.

This property has not been obtained by Orange County for the project. The site is has a low potential to be a REC in the context of the River Road Dike project and potential dike alignments if alignment “A” (shown on **fig. 2**) is chosen as the final dike alignment. If alignments “B” or

"C" (shown on **figs. 3** and **4**) are chosen as the final alignment, the site is not a REC in context of the project.

The dairy was demolished in the spring of 2014 and subsequently about ¾ of the parcel was turned into tract housing on raised fill pads, leaving only the northwesternmost part as vacant land. It is on that vacant land that a 400-foot length of east-west-trending River Road Dike would be placed (see red line on **figs. 6** and **7**), which is the dike footprint within the former dairy parcel under alignment "A" only (see **fig. 2**). Alignments "B" and "C" do not encroach upon this land. The dike would daylight at the far eastern extent under alignment "A" (point "a" on **fig. 7**).

The potential REC issue is the exact location of a LUST (leaking underground fuel storage tank) that was discovered and removed from this dairy in 1996, and the absence of the affiliated tank closure report and two environmental site assessments. Overall, the site condition is quite favorable in terms of hydrocarbon fuel release. The leak was discovered to have occurred during an already planned and underway 1996 tank remove. Investigation revealed the contamination had impacted soil only, not groundwater, and an unspecified amount of petroleum fuel contaminated soil was removed with oversight from San Bernardino County Fire Department. The Department subsequently granted site closure in 1996. The tank closure report is not available to the Corps and the site Phase I and Phase II ESAs conducted by Leighton in 2013 in preparation for converting the dairy site into a housing tract, also are not available to the Corps or partners in this project as of November 2017. This necessitates reliance on regulatory database information to determine the LUST location. Those records conflict.

According to Geotracker (2017) and Envirostor (2017), the UST was at location 1 shown on **fig. 6**. According to a Phase I site assessment for an adjoining property (EDR, 2003), the UST was at location 2 shown on **fig. 6**. Both are dubious locations. Potential LUST location 1 on **fig. 6** is in the middle of a feed lot, a muddy, unpaved surface. It also appears to be in the precise middle of the former dairy. It is thought that the tank location wasn't known to regulators preparing the database and the middle of the tract was chosen for a generalization of the REC location. Expecting successful fuel re-supply deliveries with the supply truck driving into the middle of a muddy field is not plausible. Potential LUST location 2 on **fig. 6** is at the curb on Chandler Street. It appears to be in the precise postal address location within the expansive former dairy site. It is thought that the tank location wasn't known to regulators and the postal address location of the tract was chosen to represent the site. Expecting a UST to have been placed at a street curb is not plausible. A tank would be placed somewhere on the property that is paved and accessible but not at a street curb, where street maintenance and underground utilities would conflict with tank operations. All the pavement and former permanent structures of the dairy are encompassed within the dashed blue polygon shown on **fig. 6**. The UST is thought to have been someplace within that polygon. Considering the alignment of the dike and the potential area in which the UST was located, the former tank pit could be adjacent the River Road Dike footprint, or anywhere from 0 feet to 400 feet away from the dike footprint, or even beneath the dike footprint (the final dike width has not be determined as of this writing). The databases also conflict regarding type of hydrocarbon fuel present, with one reporting gasoline and the other

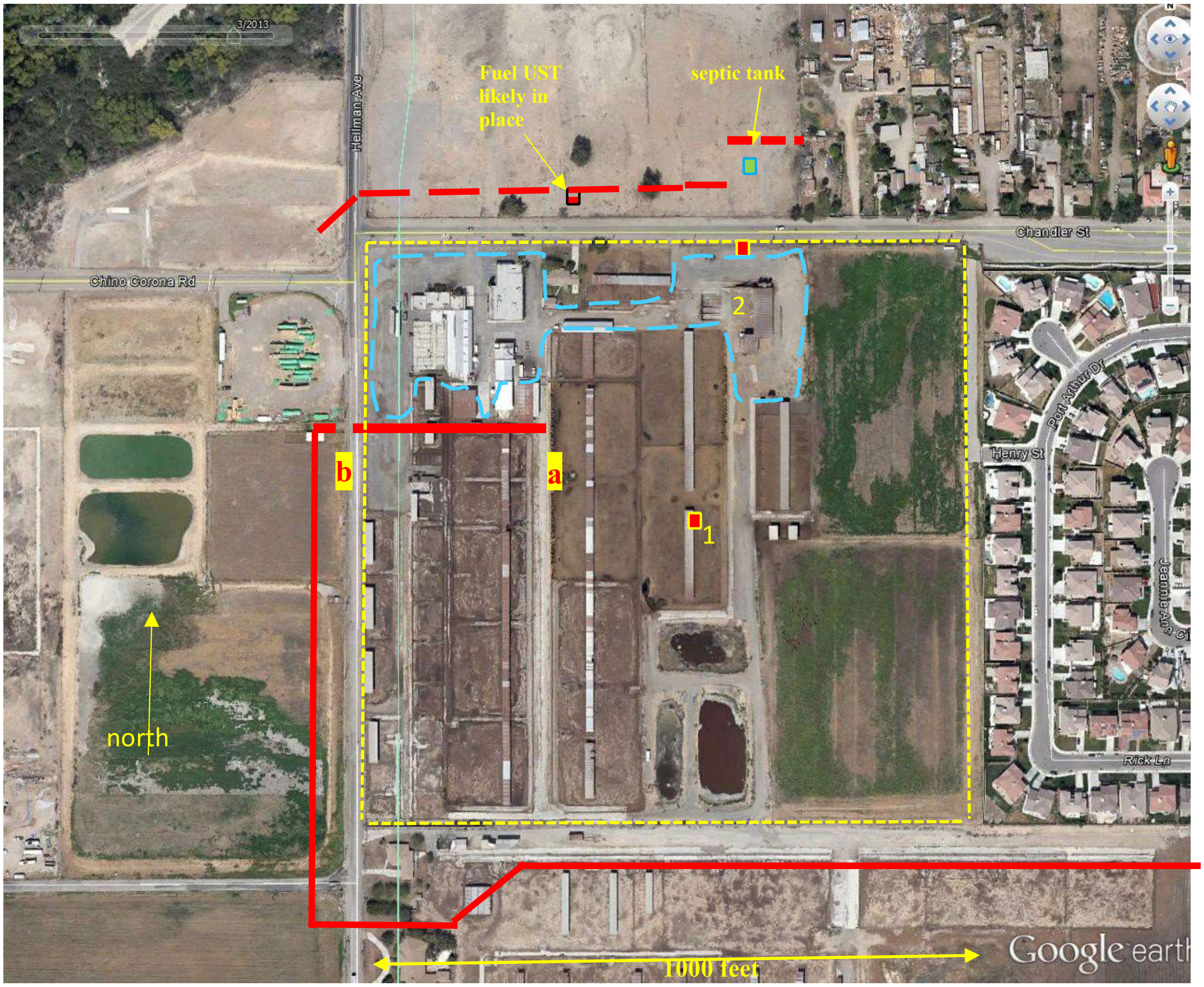


Fig. 6.--River Road Dike alignment "A" (red line a to b) where it overlies the former Flamingo Dairy property (within dashed yellow lines) and the composited remaining alignments ("A" plus "B" plus "C"); consult figs. 1, 2, 3, 4.for the individual, full alignments. Conflicting, reported removed UST locations are 1 and 2. There was one tank, not two. The actual UST location more likely was within the dashed blue polygon shown above. Actual dike width is not determined as of the time of this writing. Base is 2013 aerial from Google Earth.

reporting that diesel fuel was stored in the tank. This isn't considered a detail that is essential to resolve at this time.

No documentation of site clearing is available to the Corps. Whether all foundations and other subsurface developments, such as septic tanks, have been removed is not known.

Also at issue is the undocumented fill being dumped on the northwesternmost extent of the property (**figs. 8** and **9**). It is composed of differing materials types, all from unknown sources. As of 8 November 2017, this fill was confined to a low elevation area of the property and was

Fig. 7.--River Road Dike alignment (red line) overlain on former Flamingo Dairy property. The UST was somewhere to the right of the red line. Looking west-southwest from the easternmost point on the dike (at "a"). The dike under alignment "A" (refer to fig. 2) would cross Hellman Avenue at "b". Photograph of 8 November 2017.

not spread onto the conceptual alignment "A" dike surface. The fill is 100 feet farther to the northwest, at its closest point. While no staining or discoloration or debris was seen in the fill, no systematic checking was observed to be undertaken nor was any sampling or site control person present. Site conditions should be monitored in the future, regarding what is done with this dumped fill. If the dumped fill is spread onto the dike footprint, all would have to be removed as part of dike foundation testing. In addition, sampling for contaminants would be warranted, prior to the onset of construction. It is expected that Orange County will continue operating under its established protocols as its land-acquisition process for this parcel continues, including doing Orange-County-funded, additional, independent Phase I ESAs, limited Phase II ESAs and other independent environmental conditions assessments, as warranted.

Fig. 8.—Discrete piles of undocumented loose-dumped fill on northwesternmost part of former Flamingo Dairy property, all 100 feet and more northwest of the River Road Dike Alignment "A". Looking east-southeast. Photograph of 8 November 2017.

Fig. 9.—Discrete piles of undocumented loose-dumped fill on northwesternmost part of former Flamingo Dairy property, all 100 feet and more northwest of the River Road Dike Alignment "A". Looking west. Note the varying materials types present (at least 4 different fill types). Photograph of 8 November 2017.

3.4 Former Jongsma Dairy

Location 3 on **fig. 1**, formerly addressed as 8050 Hellman Avenue. Affiliated hydrocarbon fuel USTs and ASTs are nos. "4", "5", and "6" on **fig. 1**. An associated residence in the northwesternmost corner of the property was addressed as 7998 Hellman Avenue. The APN of this property is not listed in the project files. This land has been obtained for the project. It is in Riverside County, within the jurisdiction of Eastvale, CA.

The site not a REC in context of the River Road Dike footprint (alignments “A”, “B”, or “C”). It has a very low potential to be a REC for hydrocarbon releases in context of the conceptual project borrow site, as configured on 1 November 2017 and shown on **fig. 4**.

The footprint of River Road Dike foundation crosses approximately 1,745 feet of this site, in a west-to-east direction, near and along the dairy property northern perimeter (refer to **fig. 1**). The tract formerly was a developed dairy with two modern, brick residences, barns, hay storage sheds, milking machines, grazing land, generator, pole-mounted transformers, water wells, surface runoff settling ponds, three hydrocarbon fuel USTs, two hydrocarbon fuel ASTs, and a few abandoned vehicles. Chemical storage included bagged, dry-crystal copper sulfate, 5% iodine in drums, acid detergent in drums, bleach, an unidentified dry-form corrosive stored in cardboard barrels, chlorohexidine in plastic drums (animal teat dip, for disinfecting milking machines), another corrosive in plastic barrels, and bagged chemical animal foot bath (**fig. 10**). The vast majority of this infrastructure fronted on Hellman Avenue, extending southward along Hellman Avenue from the northwesternmost corner of the property, and thus most of the infrastructure was south and downgradient of the River Road Dike footprint. Surface runoff is south (away from the River Road Dike footprint) into a southwest-flowing tributary stream that feeds Mill Creek.

By 2017 all the site surface infrastructure was razed, including all that was along the River Road Dike alignment. Aerial photographs suggest demolition began in 2016. Some remnant concrete pavement remains as of November 2017. No building foundations were observed at that time but it was not ascertained that the site is free of all buried foundations. There is no documentation in the project files or in the regulatory oversight agency records of the removals of chemical supplies and electrical transformers, or site clearance. No documentation of site clearing is available to the Corps. Whether all foundations and other subsurface developments, such as septic tanks, have been removed is not known. If present, some may be encountered during borrow excavation (see **fig. 2** for borrow site perimeter).

Three hazard assessments have been done for this property in the past by Orange County or Orange County contractors, all performed as pre-acquisition assessments of the parcel to determine if untoward hazards exist to the degree that acquisition should be avoided. A regulatory database records search done in 2003 (EDR, 2003) did not identify any on-site hazards. Annotated photographs taken during an associated 2003 site visit noted two hydrocarbon fuel ASTs (**fig. 10**). A previous assessment of May 2000 (Orange County, 2000) included a site visit and documentation of all the conditions and infrastructure listed above. The County concluded that undue hazardous conditions do not exist, stating, “Based on field investigations and a review of regulatory agency documents, ER has determined that further investigations are not required and recommends that acquisition of the property proceed.”

Most importantly for the current objective is that the May 2000 assessment (Orange County, 2000) includes annotated photographs of cut out and removed rectangles of asphalt and slumped soil backfill coinciding with the three hydrocarbon fuel USTs locations (**fig. 11**) (location

Fig. 10.—*four frames, above,* **Typical site conditions at Jongsma Dairy in 2003.**

numbers “4” and “6”on **fig. 1**), specifically stating these USTs were removed in 1996 and that the County possesses and has received the tank closure reports; that the tank closure was overseen by Riverside County Department of Public Health, and there was no contamination indicated. Specifically, “The three USTs, one 500 gallon and two 300 gallon, were removed from the site in 1996 and local oversight was provided by the Riverside County Health Department. No contamination was found associated with the tanks. The property owner provided ER with the tank closure documents … ” The missing documentation is the actual tank closure reports; they were not included in the abridged, scanned reports provided for the Corps project file.

A 1993 hazardous assessment of the site (Orange County, 1993) also included a visit to the property and noted at that time the three USTs, two co-located. There is a discrepancy in reported sizes of the tanks, not their locations. The 1993 report listed the most pertinent of the USTs (location 3 on **fig. 1**) as ‘200-gallon, abandoned’. That tank is listed as 500-gallon in the year 2000 work (see **fig. 11**). Its location is the same in both the 1993 and 2000 work and is

Former location of a 500-gallon, underground fuel storage tank, removed in 1996.

Former location of two 300-gallon underground fuel tanks removed in 1996.

Fig. 11.—*three frames, above and right,* 2000 UST tank removal sites at Jongsma Dairy (Orange County, 2000); tanks were at "x's". Upper left frame is the place near the River Road Dike footprint (location "3" on figs. 1 and 12). Upper right frame is co-located USTs location far south of the dike footprint (location "5" on figs. 1 and 12); lower right verifies that location at the former metal barns far south of the dike footprint.

Asphalt driveway near the workshop area, adjacent to the former underground fuel tank locations.

verified by a photograph in the 2000 report (the 7998 Hellman Avenue house is clearly visible in **fig. 11**).

The environmental contamination concern over this tank location is alleviated; it is not a REC based on County-possessed and evaluated closure reporting.

Even though the tank has been removed, the site remains a potential geotechnical issue, should the dike footprint be shifted once more to encompass the tank location. If that occurs, probing the tank pit location with an excavator, pre-dike-construction, may encounter disturbed subgrade which subsequently may be determined as requiring over excavation and replacement, or this could be addressed during construction by removing undocumented fills as they are encountered. It is expected that the issue should be readily resolved. The 7998 Hellman Avenue UST coordinates cannot be refined any further than the estimated location shown on **fig. 12** with available information because the 1993 site map is not to scale and is the only map provided in the record.

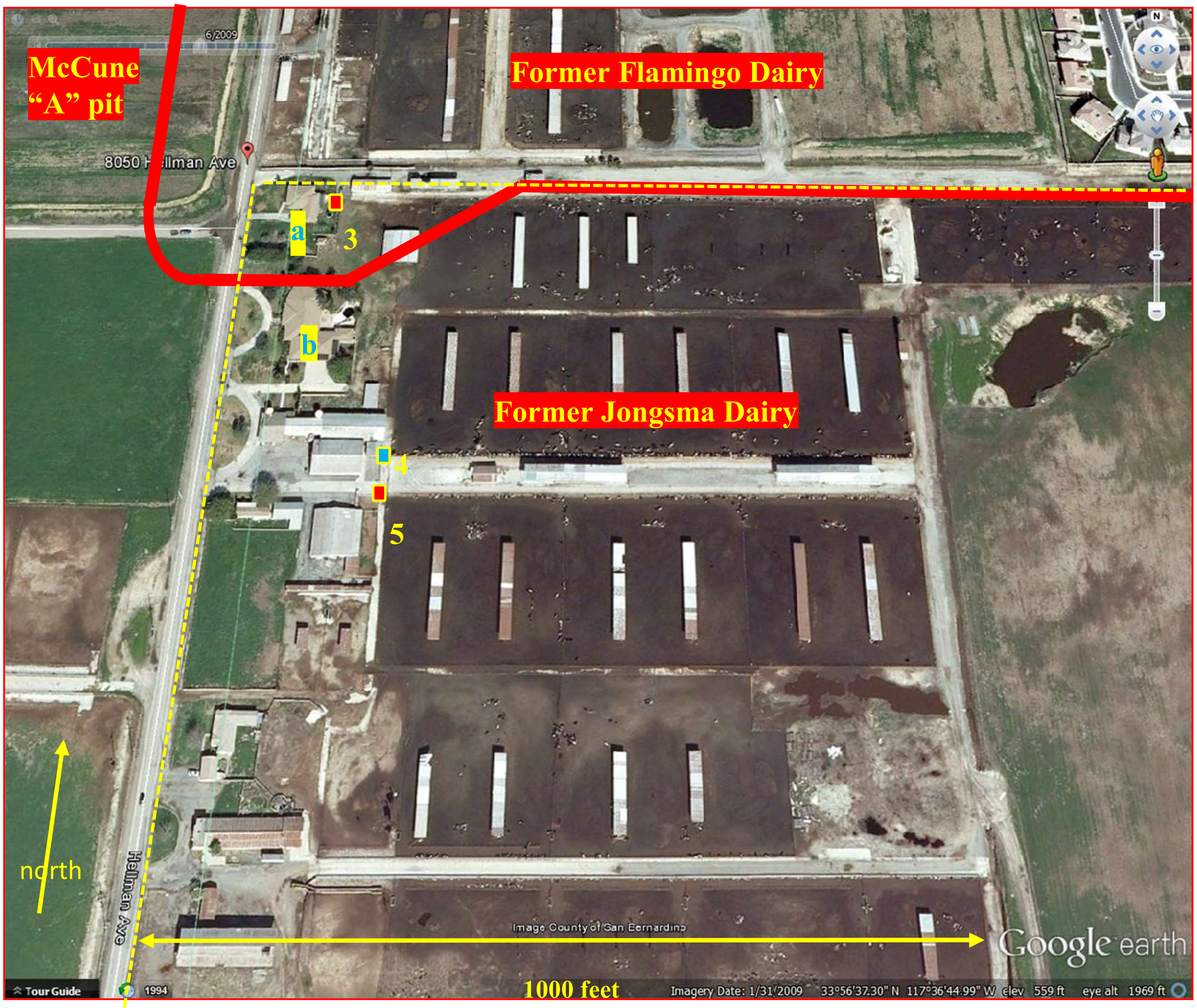


Fig. 12.—Detail showing former hydrocarbon fuel tank locations, as currently understood, at former Jongsma Dairy. Red line is approximated River Road Dike alignment; width not determined at the time of this writing. Locations of interest: a: Residence of 7999 Hellman Avenue address. 3. Fuel UST near dike footprint (removed 1996 per Orange Co.). Refer to figs. 1, 11. b: Residence of 8050 Hellman Ave address. 4. Former site of two hydrocarbon fuel ASTs (removed approximately 2017 per aerial photographs showing the site stripped and scraped off). Nov. 29017 site visit confirms the tanks are gone. 5. Former site two hydrocarbon fuel USTs (removed 1996 per Orange Co.). Refer to fig. 11.

The other co-located hydrocarbon fuel USTs on the property (location 5 on **fig. 1**) and the co-located hydrocarbon fuel ASTs (location 4 on **fig. 1**) are not issues in the context of the River Road Dike footprint due to their distance from the dike footprint and their location downgradient of the dike in terms of both surface flow and groundwater gradient, as well as the fact that all have been removed from the site. There are no records of releases from any of the five tanks in the regulatory oversight files, but they are on private property, and their existence is only intermittently captured in regulatory oversight databases. The ASTs have been removed, per the 8 November 2017 site visit.

Borrow area. Perimeter of a conceptual borrow site for River Road Dike embankment fill was provided to the team on 1 November 2017; 75% of the planned borrow area is within the former confines of the Jongsma Dairy (see areas shaded as "potential borrow" on **fig. 1**) and includes tank sites 4 and 5. The alignment was finalized in 2019 and is now shown as a map figure in Section 7.0 at the back of this report. This report has been updated as to the impacts of contamination to this final alignment and this discussion is also found in Section 7.0 at the back of this report.

The conceptual borrow area perimeter of 1 November 2017 encompasses two co-located hydrocarbon fuel UST footprints (site 5 on **fig. 1** and **fig. 12**) and two, co-located hydrocarbon fuel ASTs (site 4 on **fig. 1** and **fig. 12**). All the tanks have been removed, according to Geotracker (2017) and Envirostor (2017), and no leaks were reported, but no closure reports are available to the Corps. Those reports have been seen by the local sponsor, who summarized the findings in internal memos, as the tank removals were completed properly and without issue (i.e., no leaks). Available data suggest no reason to avoid the former tank pit perimeters with the borrow operation, but if they are excavated through for borrow, but it would be judicious to inspect the soils being excavated for borrow in those locations to assure there are no hydrocarbon-stained soils beneath where the tanks once were located. If stained soils are seen, they should be segregated, covered, and tested, then disposed of properly according to hydrocarbon concentration. The borrow area perimeter could be changed slightly in the northwesternmost corner to completely avoid the UST tank pit and AST footprint locations.

Manure deposits. Field observations indicate several inches of manure under the dike alignment but this is not considered a REC. Photographs of the site, post demolition, and the 8 November walk through suggest the surface may have been stripped of most organic matter, although some material may be buried by demolition surface disturbance. Regardless, the disturbed material on this foundation alignment will be identified, stripped, and removed to reach suitable undisturbed subgrade for compaction, regardless of whether animal wastes are or are not part of the disturbed surface and subsurface.

3.5 Former truck trailer parking/staging area

Location 7 on **fig. 1** (approximate perimeter shown by dashed yellow polygon). There is no address for this site. This land has been obtained by Orange County for the project. The development on it is limited to a large capacity sewer line runs down the center of the parcel, from north to south, a location several hundred feet east of the dike footprint.

This site has a low potential to be a REC for hydrocarbon fuel or lubricant releases under all conceptual alignments (alignments "A", "B", or "C").

A study of historical aerial photographs reveals that in the past more than 300, 53-foot truck trailers were stored at the same time on a property that will be crossed by 1,000 feet of the River Road Dike (**fig. 13**). The trailers were seen in a 1994 aerial photograph but not in older or newer photographs. No details of the operation area known. What can be gleaned from the 1994 aerial photograph suggests the following: a) the use is limited to trailers; no intermodal/staging activity is apparent and no tractors are seen; b) no buildings are seen; c) the use was transient, as there is

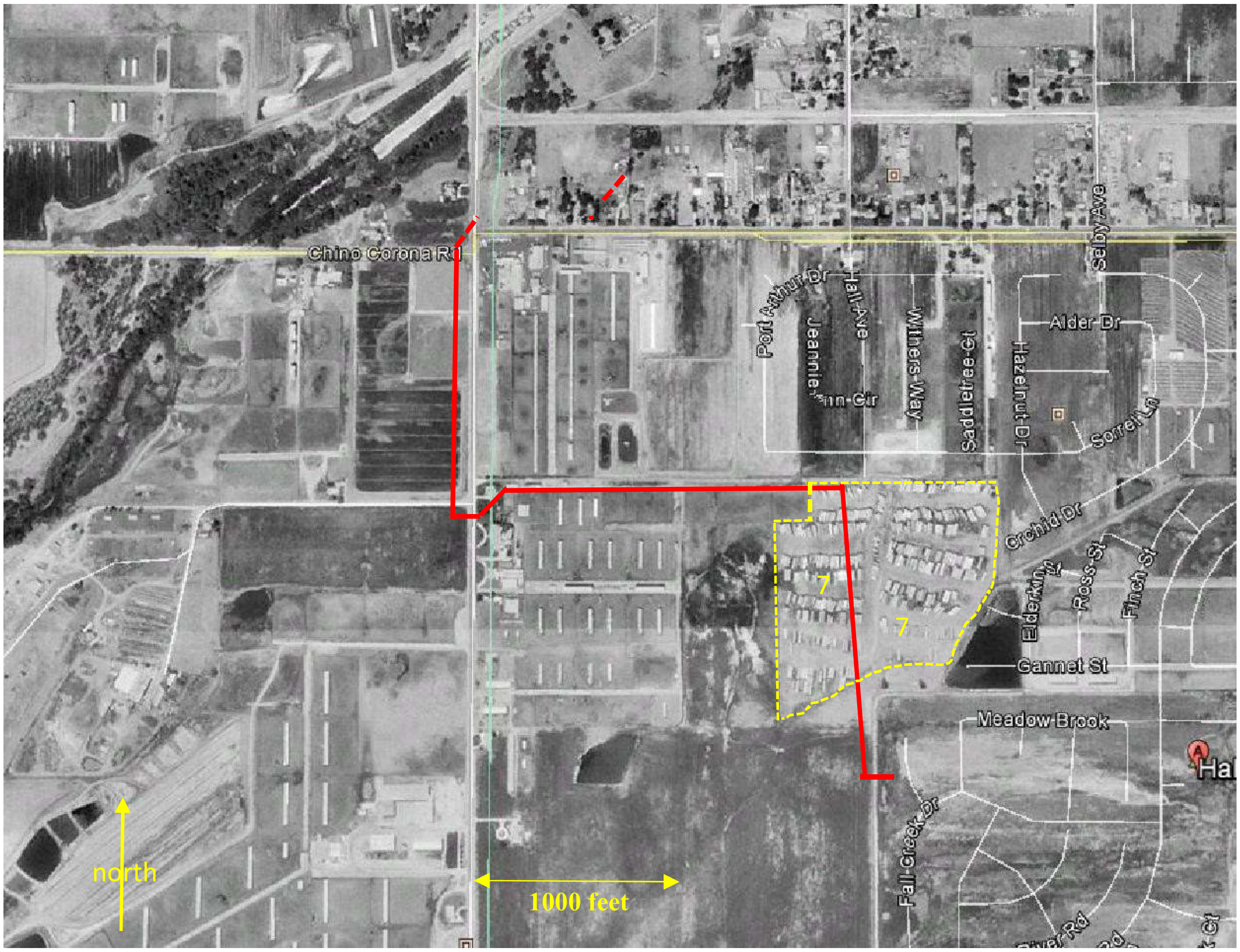


Fig. 13.—Area formerly used for truck trailer parking (inside dashed yellow polygon). Red line is approximated general maximum River Road Dike alignment (composited elements of Alignments "A", "B", and "C". Dike width not determined at the time of this writing. Base from 1994 historical aerial photograph posted on Google Earth, accessed October 2017

no paving or buildings apparent; d) transient usage precludes potentially problematic infrastructure, such as fuel and oil USTs or ASTs; e) no trailer tanks are apparent; all appears to be box type trailers; f) no ASTs are apparent. The site was reconnoitered on multiple traverses and no sign of hydrocarbon release could be seen on the vegetation-free bare ground that characterizes the location during the site walkthrough of 8 November 2017 (**fig. 14**).

The site is assigned a low potential to be a REC for possible spilled hydrocarbon fuels or lubricants. Inspection of soil for staining during dike construction site stripping should be sufficient to account for this potential.

3.6 Former gasoline dispensing facility and hydrocarbon fuel UST.

Location 8 on **fig. 1**, an unnamed property, approximately an 80 feet by 80 feet square, with no known address that fronts on the north side of Chandler Street. There is no APN for this

Fig. 14.—Part of River Road Dike alignment (red line, applicable equally to alignments "A", "B", and "C") across area formerly used for truck trailer parking. Truck trailer area is right of (east of) the dashed yellow line. Looking northwest, 8 November 2017. Dike width not determined at the time of this writing.

property in the project files. The site has been stripped of infrastructure and, according to Corps project personnel, this land has been obtained by Orange County for the project.

The site is a REC due to possible presence of an unremoved hydrocarbon fuel UST and is a geotechnical dike foundation stability issue for the same reason, but only for conceptual dike alignment "B". If dike alignments "A" or "C" are adopted as the footprint of this project, this UST ceases to be an issue for any environmental or geotechnical reason.

A store/bar and adjoining small gasoline dispensing facility once occupied this small tract that adjoins the Hawley tract immediately to the east. No property or owner name or address is noted in the sparse site documentation, which is almost exclusively anecdotal in nature. The anecdotal story for this site states the property burned and the structure debris and fueling apparatus subsequently were removed. The structures on this site can be seen in 1947 aerial photographs, but not on those dated 1939 and 1960. Aerial photographs dated 2006 show an empty lot. The aerials are not reproduced here because they are of scale and resolution that will not be an informative image after scanning for inclusion in this report.

There is no regulatory record of this site and its UST, and no record of a tank removal. Based on the aerial photograph and array of the structures seen there, it is presumed the gasoline UST was at the front of the property by Chandler Street, because the store can be seen offset from the street to the north and occupying the very narrow property full width from west to east; the only remaining readily accessible area of this small lot is between the front of the store and the street curb. Any initial physical search for the UST should be undertaken there within the first 50 to 100 feet north from the curb. The property condition as of 8 November 2017 is shown on **fig. 15**.

The location is on gradient to slightly upgradient with the River Road Dike footprint in terms of both surface runoff and anticipated groundwater flow direction. This is based on an assumption that the River Road Dike will be placed adjacent and slightly north of this UST location. Local groundwater flow likely is from the approximately UST site toward the direction of the dike (toward the north or northwest). Surface flow is to the north. This is an atypical gradient considering the project area as a whole.

Hazard assessment of the immediately adjoining property to the west (Hawley property, location 9 on **fig. 1**) recognized the potential for this UST site, if there was an associated product release, to impact the Hawley property. In response, in June 1997, Orange County contracted CH2MHill to conduct a limited Phase II ESA on the Hawley side of the property line, work that consisted of advancing an unspecified number of borings (drill holes) into the Hawley property. Reported findings are there was no evidence of petroleum products in the groundwater beneath the Hawley property and no evidence of petroleum products in the soil cuttings from the boring(s), which were screened for hydrocarbons as the boring(s) was advanced. According to the scope of work, all that is available as documentation, contaminant screening testing was to be done for TPH (total petroleum hydrocarbons), BTEX (benzene, toluene, ethyl-benzene, and xylenes), and MTBE (methyl tert-butyl ether) (Orange County, 1997). While this is favorable information, it does not determine whether a UST remains on the subject property, whether the UST is empty, and whether there has been a release from the UST. The site remains a REC in terms of a potentially unremoved UST, potential for product and product release to remain on site. Even though the testing done does *not* equate to verification of no release within the property, the testing *does* provide sufficient assurance that a release did not break out from the property. If found during construction of design level site exploration, the UST would need to be removed, with confirmation soil testing for hydrocarbons done around the tank pit.

The site additionally is of interest because the dike construction may cut directly through the UST if the tank still is in place, or may be adjacent the dike footprint and slightly to the north. Both scenarios constitute potential geotechnical engineering issues and could create dike foundation stability problems. The solution would be to excavate the tank/tank pit backfill and replace it with suitably compacted material.

Fig. 15.—*top and bottom frames*, Area formerly including gasoline dispensing site (inside dashed yellow polygon). Red line is approximated general River Road Dike alignment (alignment “B” only. Dike width not determined at the time of this writing. Top frame, looking SE; bottom frame looking east. 8 Nov. 2017. Chandler Street is visible in both frames.

3.7 Former Hawley residential property

Location 9 on **fig. 1**, is addressed as 14963 Chandler Street, in unincorporated Riverside County; APN 134-160-011, of about 0.7 acre. This land has been obtained by Orange County for the project. It has been stripped of infrastructure.

The property is not a REC in the context of the River Road Dike project and any of its conceptual alignments. The River Road Dike, under conceptual alignment "B" only, would cross the full width of this property from west to east. Alignments "A" and "C" do not encroach upon this land. Refer to **figs. 1, 2, 3** and **4**.

The property contained a single family home with a detached garage as of 1993. The house and garage were demolished and removed before October 2003, based on available aerial photographs. The land was assessed in 1993 by a contracted Phase I ESA. As a check for any changes to the 1993 conditions, a regulatory oversight agency database search was conducted in 1997 (Orange County 1997). No RECs that could be pertinent to the River Road Dike were identified in that work. It was mentioned in 1997 that the home, built in the 1950s, probably has asbestos-containing materials (ACMs) and lead-based paint and that some steel drums were present. The drums were noted through resident interviews to contain trash and other inert debris. The structures and drums since have been removed. No documentation report of the removals is available to the Corps. Miscellaneous demolition debris, such as fragmented concrete slabs, can be seen shallowly buried in places. Whether all foundations and other subsurface developments, such as septic tanks, have been removed is unknown. There likely was a septic tank on the property, but it more likely would have been located at the northern extent of the property, which is downgradient and away from this project footprint. As of 8 November 2017, the site was stripped bare and had no visible indicators suggestive of RECs.

3.8 Former Vieira property and slaughterhouse

Location 10 on **fig. 1**, is addressed as 14971 Chandler Street, Corona, CA; APN 134-160-017, of 1.554 acres. This land has been obtained by Orange County for the project. It has been stripped of infrastructure.

The property is not a REC in the context of the River Road Dike project and any of its conceptual alignments. The River Road Dike, under conceptual alignment "B" only, would cross the full width of this property from west to east, but will be sufficiently far south on this property to fully avoid any potential issues (described below). Alignments "A" and "C" do not encroach upon this land. Refer to **figs. 1, 2, 3 and 4**.

The property included a slaughterhouse and associated barns in the northern half of the parcel, and a single family home with detached garage and another barn on the southern half, nearest Chandler Street, as of 1993 (**figs. 16 and 17**). All were removed prior to October 2017.

The land was assessed in both 2007 and 2008 by a contracted Phase I ESAs to Miller Brooks, Inc. (Miller Brooks, 2008). No RECs that could be pertinent to the River Road Dike were identified in either ESA. Manure piles mixed with slaughterhouse debris (animal bones), septic

Fig. 16.—Infrastructure, prior to demolition and removal, on the Vieira Area property. Red line is approximated River Road Dike alignment "B"; width not determined at the time of this writing. Slaughterhouse is location 1, septic tanks are location 2. Refer to fig. 17. Photograph from Miller Brooks (2008).

tanks (some overflowing), slaughterhouse washdown runoff, and the slaughterhouse footprint all were concerns but all are north of and downgradient of any potential River Road Dike alignment (see **figs. 16 and 17**). Site clearing removed much if not all of this material. No documentation report of the removals is available to the Corps.

As of 8 November 2017, the site has intermixed broken concrete and masonry demolition debris and animal bones exposed on the surface and intermixed in the shallow upper site soils (**fig. 18**). These are most common to the north end of the property, and thus away from the dike footprint. All disturbed material and contained debris would be removed from any dike footprint. The potential exists for concrete and masonry foundation and other developments to remain buried under the surface and they would be removed if encountered when preparing the dike foundation. No RECs or protracted demolition efforts are suggested.

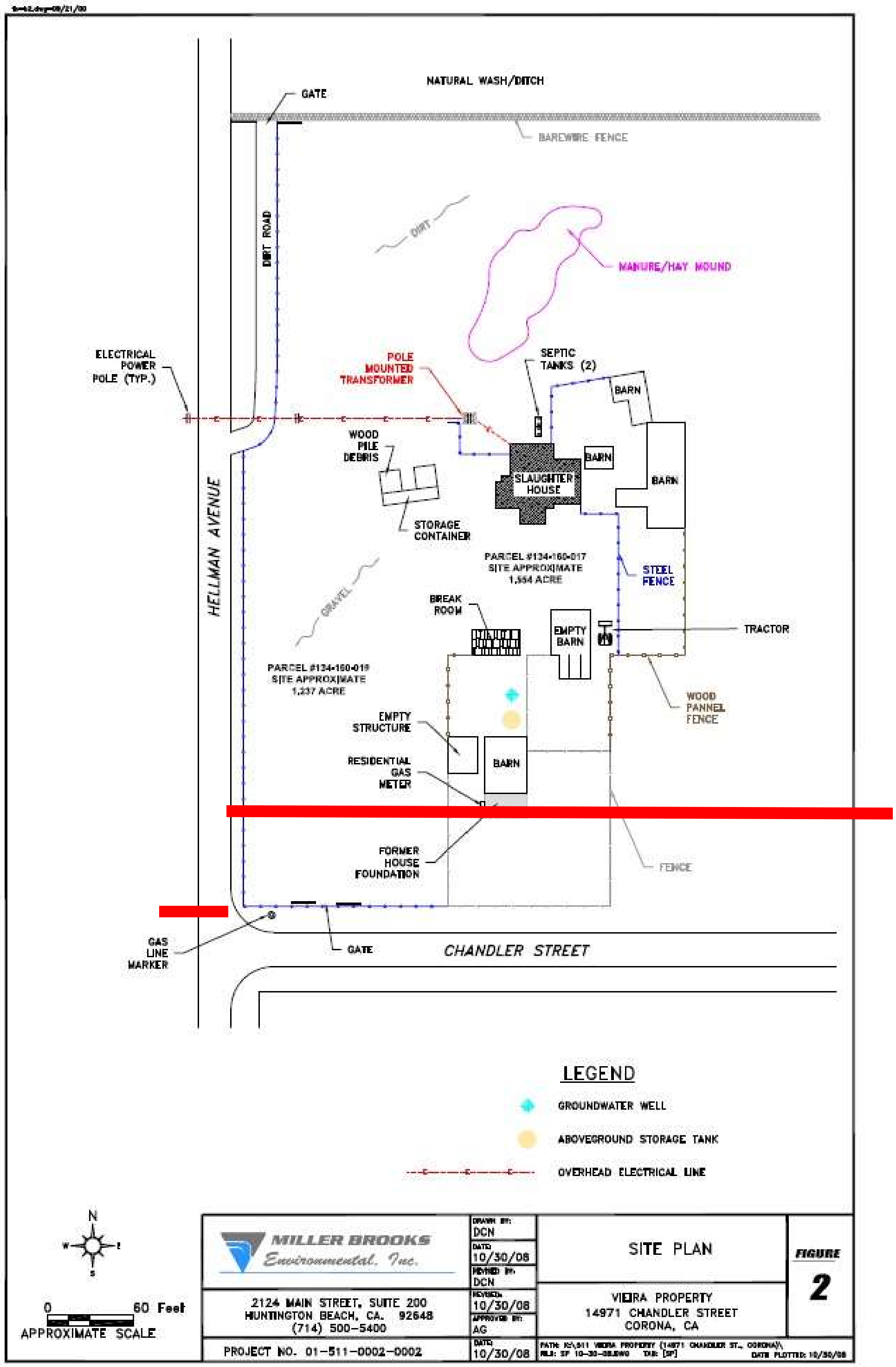


Fig. 17.—Map of infrastructure, prior to demolition and removal, on the Vieira Area property (from Miller Brooks (2008)). Red line is approximated general maximum River Road Dike alignment; width not determined at the time of this writing.

Fig. 18.—Slaughterhouse animal bones, scattered broken concrete and masonry construction demolition debris, Vieira property. Red line is approximated River Road Dike alignment "B"; width not determined at the time of this writing. Looking southwest, 8 November 2017. All the bare ground in the field of view is the Vieira property. Street utility poles in the distance mark its southern and western periphery. Probable septic tank location marked with "x".

3.9 Former Simones and Carlos residential properties

Location 11 on **fig. 1**, addressed as Chandler Street, in Riverside County. The assessor's parcel numbers of these properties were not encountered in the project files. The area currently falls in the jurisdiction of Eastvale, CA. The Carlos property is approximately 1.4 acres in size; Simones approximately 0.7 acres. This land has been obtained by Orange County for the project. It has been stripped of infrastructure.

The property is not a REC in the context of the River Road Dike project and any of its conceptual alignments. The River Road Dike, under conceptual alignment "B" only, would cross the full width of the property from west to east, but will be sufficiently far south to fully avoid any potential issues (described below). Alignments "A" and "C" do not encroach upon this land. Refer to **figs. 1, 2, 3 and 4**.

Based on examination from aerial photographs the land was vacant as of 1939 but as of 1947, the properties each housed at least one structure that appears to have been a single family home, and the northern two-thirds of the properties appeared to be open, vacant land. All the structures had been demolished and removed before October 2003, based on available aerial photographs. No documentation report of the removals is available to the Corps. The potential exists for concrete or masonry foundations and other constructed features to remain buried under the surface. There is no record of environmental conditions assessment on these properties in the project files, and Orange County reports as of late 2017 that the assessments done for these parcels have not been located, and continues to seek them from among County records. The 2002 Phase I ESA of the adjoining Paz property to the east states there was no evidence of issues on adjoining properties to the west (which are the Simones and Carlos properties).

One pile of concrete and masonry demolition debris and about a half dozen waste tires were strewn on the north end of the property at the time of the 8 November 2017 site visit (**fig. 19**). All are far north of the conceptual River Road Dike alignment "B" and have no relevance to this project.

Central and west part, looking west across the lots

North part of property looking south.

North end of property looking west (note debris)

Detail of 20 by 40 foot concrete &masonry debris pile

Fig. 19.—Multiple views of Carlos and Simones properties, 8 November 2017.

3.10 Former Paz residential property

Location 12 on **fig. 1** is addressed as 14855 Chandler Street, in Riverside County; assessor's parcel no. 134-160-011, of 0.65 acre. The area currently falls in the jurisdiction of Eastvale, CA. This land has been obtained by Orange County for the project. It has been stripped of infrastructure. The land has been fenced off contiguously with adjoining cleared sites to the west, described previously (Hawley, Simones and Carlos, Vieira).

The property is not a REC in the context of the River Road Dike project and any of its conceptual alignments. The River Road Dike, under conceptual alignment "B" only, would cross the full width of this property from west to northeast, but will be sufficiently far north to fully avoid any potential issues (described below). Alignments "A" and "C" do not encroach upon this land. Refer to **figs. 1, 2, 3 and 4**.

The property, as of 2002, contained a single family home with a detached garage and had several inoperable motor vehicles stored on it. Based on available aerial photographs, the structures were built after 1939 and before 1947; the house and garage demolition and removal were done after 1994 and before October 2003. No documentation report of the removals is available to the Corps. The potential exists for concrete and masonry foundation and for other developments to remain buried under the surface.

The land was assessed in 2002 by a Phase I ESA (EEI, 2002). No RECs were identified, but a septic tank that served the residence was identified (see map, **fig. 20**). It is 60 feet north from the Chandler Street curb and near the centerline of the property. Since site closure documentation is lacking for this property, the possibility exists that the septic tank was not removed or backfilled, or possibly not pumped to empty it. But the north-trending curve in alignment "B", as can be seen on **fig. 3** allows that the tank area will be fully avoided by the dike footprint.

If the dike alignment in this area is changed, an assessment should be made once more to determine if the septic tank footprint will be under or near the dike footprint. The septic tank, if still present, will not represent stable dike foundation subgrade and may need to be located and removed prior to dike construction, depending on dike realignments, if any. **Figure 21** shows before and after site demolition conditions and will aid in searching for the septic tank.

About 20 waste tires and miscellaneous trash and broken concrete and masonry construction debris are scattered on the surface of the northern half of the property or shallowly buried under the surface (**fig. 22**). Constructing alignment "B" in its current conceptual footprint would require gathering and removing much of this waste. This is not considered a significant issue.

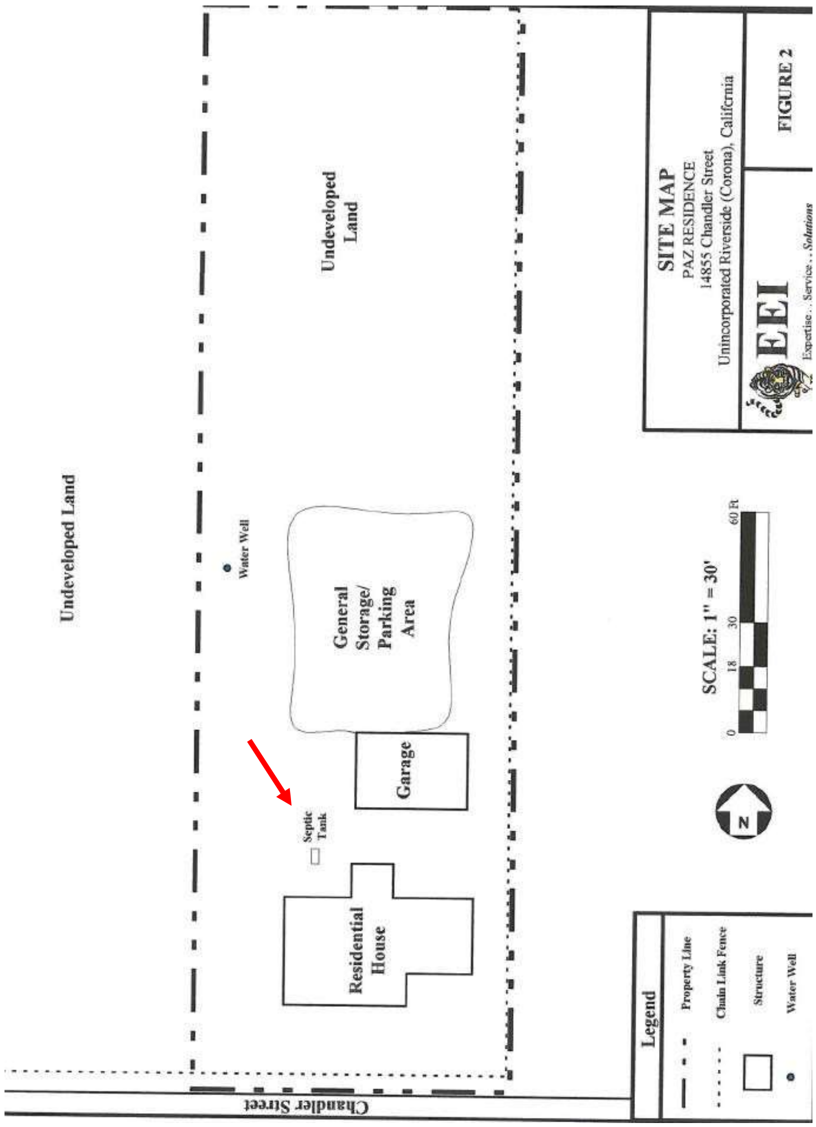


Fig. 20.—Map of former Paz residential property prior to its developments being cleared. Note the septic tank location (red arrow). Map from EEI (2002).

Fig. 21.—Former Paz property residence looking NE from Chandler Street (upper left), looking south from behind the house (upper right) (both from EEUI, 2002), and current scrape-off condition (bottom frame) looking north (from 8 November 2017 site visit). Probable septic tank location approximated by arrows on each frame. Dike footprint of alignment "B" approximately by red line.

Fig. 22.—Scattered waste tires and trash on the surface and shallowly buried in the northern end of the former Paz property, looking north from the center of the property. 8 November 2017.

3.11 Vander Laan Dairy properties

Locations 13, 14, and 15 on **fig. 1**. APNs and addresses are not in the project files. All the sites are in San Bernardino County. Vander Laan lot 2 has been acquired for this project. Vander Laan lot 1 has not. Acquistion status of Vander Laan lot 3 is not known.

There is no indication that any RECs exist that have relevance to the project.

The Vander Laan Dairy and associated properties are on three non-contiguous lots, identified in the record as lots 1, 2, and 3. Lot 1 (location 13 on **fig. 1**) once contained a residence, but it does not any longer. No record of site clearing is available to the Corps. Concrete or masonry foundations and other subsurface development could remain buried under the site but it is unlikely such items will be encountered in the corner of the property potentially to be used for the project. Only the southeasternmost point on lot 1 would be crossed by conceptual River Road Dike alignment "B". Conceptual alignments "A" and "C" do not encroach on this property. The site assessment record offers no suggestions of any RECs associated with this property that are relevant to the project. No indications of RECs were observed during the 8 November 2017 site visit (**fig. 23**). The land is graded approximately level. Small pieces of broken concrete and masonry construction demolition debris are visible partially buried and scattered over the ground surface. It is expected that Orange County will continue operating

Fig. 23.—Vander Laan lot 1, looking northeast across the length and width of the property from the southern property line. 8 November 2017. The utility poles are along Hellman Avenue. Dike footprint of alignment "B" approximated by red line.

under its established protocols as its land-acquisition process for this parcel continues, including doing Orange-County-funded, additional, independent Phase I ESAs, limited Phase II ESAs and other independent environmental conditions assessments, as warranted.

Lot 2 (location 14 on **fig. 1**) once contained a hay barn, but it does not any longer. It is not expected that it had a substantial concrete or masonry foundation. No record of site clearing is available to the Corps. Only the southeasternmost point on lot 1 would be crossed in the north-to-south direction by conceptual River Road Dike alignments "A", "B", and "C". The site assessment record offers no suggestions of any RECs associated with this property that are relevant to the project and no indications of RECs were observed during the 8 November 2017 site visit (**fig. 24**). Most of the land is graded approximately level. Small pices of broken concrete and masonry construction demolition debris and trash are visisble partially buried and scattered over the ground surface. Small accumulations of cut vegetation and small soil piles have been dumped in various places on the lot. Constructing River Road Dike on any of its

Fig. 24.—Vander Laan lot 2, looking due east across the southern half of the property (top frame) and across the northern half of the property (bottom frame). 8 November 2017. Composite, conceptual dike alignments approximated by red lines. The utility poles are along Hellman Avenue.

current conceptual footprints would require gathering and removing this material as waste. This is not considered a significant issue. No RECs are indicated.

Vander Laan lot 3 (location 15 on **fig. 1**) formerly contained a hydrocarbon fuels LUST, which was situated downgradient and more than ¾ mile distant from any potential River Road Dike footprint. The release contaminated soil only, not groundwater, was remediated, and has been classified as case-closed since 1999 (Geotracker and Envirostor, 2017). As such, it has no potential to impact the project. No conceptual River Road Dike alignment encroaches on any part of lot 3.

The project record is focused on and contains extensive documentation of dairy manure from the various Vander Lann lots 1 and 3 contaminating surface runoff, which in turn degrades water qualtiy in Mill Creek and Prado Basin. Citations and other legal actions were made against the property owners, large-sum fines or settlements were paid, etc. (Miller Brooks Environmental, 2007). These issues are not relevant to the River Road Dike project as both lots 1 and 3, the only ones with cattle on them, drain away from the project to the northwest and west, respectively. Groundwater gradient also is anticipated to be away from the project.

3.12 Hall Avenue dump

Location 16 on **fig. 1** is addressed as on or near 7675 Hall Avenue, which currently is under the jurisdiction of Eastvale, CA, in Riverside County.

The site is not a REC in context of any of the conceptual River Road Dike alignments.

The approximately ½ acre undeveloped site is assessed here because it is upgradient from the northernmost part of the project by about ¼ mile, and is a wildcat dump that included release of liquid chemicals, including solvents. There is no documentation of releases other than brief field notes. No photographs exist. No soil samples were collected or tested.

Regulatory database (RWQCB) entries describe a 1980 complaint by the resident living on the other side of Hall Avenue concerning illegal dumping at the location, and subsequent inspections that noted illegal dumping, debris piles, soil discoloration, and dumping undetermined quantities of solvents on the ground. RWQCB deemed the site "NFA" ("no further action" [required]) in 1990 after it was referred to the US EPA and, "EPA recommended NFA because: potential for release to air or [groundwater] is moderate, [groundwater] supplies a small population (mainly dairy farms and grazing for goats) and surface water is not used for drinking." RWQCB referred the site to the County Health Department. No further record was encountered.

The property is not a REC in the context of the River Road Dike project mainly due to the direction of surface and groundwater flow away from the dump: surface and groundwater flow moves eastward, entering Mill Creek upstream of the project. Therefore, any migrating contaminant plume, should one exist, will fully bypass the project area. The east-to-west drainage ditch that runs parallel to Chandler Street and marks the northern extent of properties obtained for this project (Hawley, Vieira, Carlos, Simones, Paz properties) also would intercept and divert any contaminated surface runoff prior to it reaching the project area. The 8 November

2017 site visit indicates the dump area has been graded recently (**fig. 25**) and un-used piles of clean-appearing fill remain. Whether removals of materials also took place is not documented. No wastes or releases are visible from Hall Avenue. The site is fenced off and inaccessible.

Fig. 25.—Hall Avenue wildcat dump site, looking due west across the length of the area from Hall Avenue, 8 November 2017. Note the recent grading.

3.13 **Hydrocarbon fuel LUST sites upgradient of the project**
Locations 17, 18, 19, 20, and 21 on **fig. 1**. All are in Riverside County.

Five hydrocarbon fuel LUST sites are upgradient and outside of the project footprint to the east of the project, at distances of ¾ mile to 1.5 miles. All but one are case closed. They do not represent RECs in the context of the River Road Dike project. Corps assessment of each site is presented in **table 1**.

Table 1.---Other hydrocarbon fuel LUSTs upgradient of the River Road Dike alignment (see fig. 1)
[Data from Geotracker (2107) and Envirostor (2017)]

Name, address	Type	Location	Status	Assessment
Site 17 Brazil Market 14449 Chandler St, Corona, California (T0606500322)	LUST, diesel fuel in soil only (does not impact groundwater).	¾ mile east and upgradient of project.	Case closed as of 5-2007. Possibly called Eastvalle Market in older databases.	With reliance on the case-closed status, and considering distance and fate and transport, not a REC in context of this project.
Site 18 Golden Coach Moving 14325 Chandler St, Norco, California (T0606500170)	LUST, gasoline contaminating groundwater	1 mile east and upgradient of project.	Open case, eligible for closure since 2014; still undergoing confirmational groundwater monitoring.	With reliance on the eligibility for case-closure status, and considering distance, not a REC in context of this project. Monitoring wells present on site, 8 Nov. 2017
Site 19 Private residence Address concealed, at or near intersection of Chandler Street and Archibald Avenue, Norco, California (T0606540855)	LUST, gasoline and diesel fuel contaminating groundwater	1 ½ mile east and upgradient of project.	Case closed as of 1-2007.	With reliance on the case-closed status, and considering distance and fate and transport, not a REC in context of this project.
Site 20 Truck Plaza 7500½ Archibald Avenue, Norco, California (T0606500373)	LUST, diesel fuel in soil only (does not impact groundwater).	1 ½ mile east and upgradient of project.	Case closed as of 8-1994.	With reliance on the case-closed status, and considering distance and fate and transport, not a REC in context of this project.
Site 21 Joe & Bob's Service 7500½ Archibald Avenue, Norco, California (T0606500411)	LUST, waste oil and hydraulic oil in soil only (does not impact groundwater).	1 ½ mile east and upgradient of project.	Case closed as of 7-1995.	With reliance on the case-closed status, and considering distance and fate and transport, not a REC in context of this project.

3.14 Green waste recycling and landfilling activities downgradient of the project

Locations 22 and 23 on **fig. 1**. The properties are in San Bernardino County. No conceptual alignments of River Road Dike cross any part of these properties.

No RECs are indicated that have any relevance to the project.

The business known as Viramontes Express (location 22 on **fig. 1**) is addressed as 17130 Hellman Avenue, Corona (also listed as being in Chino, CA, in some databases), but the business operation does not front on Hellman Avenue. Refer to **fig. 1** and the operations outline shown there. Operations on the site consists of plant-waste composting. Trucked-in vegetation waste is ground into a commercial compost product. In conjunction with this activity, the facility is noted as a *green waste landfill* under the jurisdiction of San Bernardino Department of Public Health and is facility ID 708 / SWIS ID no. 36-AA-0441, which has been permitted since December 2009 (ERS, 2017). The location of the visible debris pile of vegetation waste is marked with a small square symbol on **fig. 1**. Operations are less than a ¼ mile from the project. Importantly, Viramontes Express is downgradient from the project in terms of both surface runoff and expected groundwater gradient, which is sharply to the south and southwestward into the Prado Dam drainage basin. This green waste activity is considered innocuous in the context of this project.

Adjoining the Viramontes Express property to the southwest is site 23 (**fig. 1**), known as the Red Star Fertilizer Co., addressed at 17132 Hellman Avenue, Corona. The business operation does not front on Hellman Avenue (refer to **fig. 1** and the operations outline shown there). Aerial photographs and operations descriptions in on-line business directory listings suggest stockpile fertilizer mixing occurs on the site at the location marked with a small square symbol on **fig. 1**. The site is approximately ½ mile from the project. Importantly, it is downgradient from the project in terms of both surface runoff and expected groundwater gradient, which should be sharply to the south and southwestward into the Prado Dam drainage basin. Red Star Fertilizer Co. is not listed as a landfill or as any other type of potential REC under Envirostor (2017) or Geotracker (2017). There is no public information on this operation to indicate that this green waste activity is anything other than innocuous in the context of the project.

Two other plant composting / green waste landfilling sites are co-located at 8100 Chino Corona Road, Corona California (Geotracker 2017), a location ¾ mile northwest from the project. They likely are the same facility recorded under former and more recent names and appear to be under the same ownership as the Viramontes Express facility. Their location, on the opposite side of Cucamonga Creek from the project, removes them from consideration as a potential REC because the creek would intercept and divert away from the project any waste plume or contaminated surface runoff, if any were to exist. The location is west of the western extent of **fig. 1** and out of the field of view.

3.15 Martin Feed

Location 24 on **fig. 1**, in San Bernardino County. The business is on a former dairy, since demolished, and is land currently owned by Orange County and leased by the County to Martin

Feed. The property is not encroached upon by any of the conceptual alignments of River Road Dike. Martin Feed is not a REC in the context of this project. The business adjoins the west boundary line of the McCune property, discussed above, but is approximately 330 feet west of the borrow pit boundary on the McCune site and approximately 460 feet west of the conceptual dike footprint (a distance measurement number that may change after the dike design and width are finalized).

Martin Feed manufactures a specific type of high-calorie cattle feed on site, using deliveries of packaged, expired bread, cereal, cookie, and noodle products, which are trucked in from various locations, dumped, then ground in their packages (packaging removed in the sorting system). The ground mixed food product is sun dried by spreading it on the ground, and when sufficiently dry is fine ground and mixed with flour to form the feed product that is shipped to various cattle producers, some as far away as Mexicali, Mexico. The ground packaging is baled for recycling.

There is a frequency of arriving and departing of trucks that may appear to be rubbish collection trucks, but they are delivering the expired food products. Also readily visible are piles of baled, waste packaging, such that the overall area can appear to be a solid waste collection company's staging and consolidation yard (**figs. 26, 27**), but it is not.

Fig. 26.—Martin Feed, looking northwest across the width of the site from its un-named access road, 8 November 2017. Weedy area right of the chain-link fence is south end of the McCune property.

Fig. 27.—Martin Feed, looking due north at the operations. Note sun-drying rough ground feed (a); final, fine-ground feed (b), flour additive (c). 8 November 2017.

The site uses diesel fuel from a 2000-gallon on-site AST and 'clear diesel'[2] from a 200-gallon on-site AST on site (**fig. 28**) and has hydraulic oil and other hydrocarbon lubricants stored in trailers on site (**fig. 29**). These are located on or near the eastern property perimeter, which is also on or very near the McCune property's western perimeter. There was no evidence of any leakage from these hydrocarbon sources during the 8 November 2017 site visit. The business is not listed on any regulatory oversight databases that track tanks, releases, TSD, or infractions (Geotracker, 2017; Envirostor, 2017).

Fig. 28.—Hydrocarbon fuel ASTs (a, b) on the Martin Feed site, looking northwest from the southeastern corner of the operations. 8 November 2017.

Fig. 29.—One of several trailers on the Martin Feed site used to store, among tools and other things, hydrocarbon lubricants. Looking due east. Immediately on the opposite side of the chain link fence in the background is the west perimeter of the McCune property. 8 November 2017.

[2] An advanced formulation that burns cleaner and isolates water and other impurities.

The operation is nearly 500 feet west of and downslope of all conceptual River Road Dike alignments, and is downgradient from the project with regard to anticipated groundwater flow, which is to the west-southwest here. Any unknown / unobserved releases of contaminants would flow away from the project area. The raw material foods used here and the manufactured product do not equate to contaminants. As such this site has no relevance to the project and is deemed not a REC.

3.16 San Bernardino County tract is 1057-212-017 (former agricultural fields)

Location 25 on **fig. 1**, in San Bernardino County, is vacant, undeveloped land fronting on Hellman Avenue. No street address is known. The APN of this unnamed tract is 1057-212-017. It has not been obtained by Orange County for this project. The impact by River Road Dike alignment is the same for conceptual alignments "A", "B", and "C" (refer to **figs. 1, 2, 3, and 4**).

The part of the parcel that is of interest for use in River Road Dike construction is not a REC in the context of this project.

River Road Dike conceptual alignments "A", "B", and "C" all encompass the same, small, approximately 100-ft-long (north to south) by 70-ft-wide (east to west) area of this parcel, a location on the parcel's far northeasternmost corner (**fig. 30**). Historical aerial photographs show a dairy farm was developed south of this area approximately in the 1960s, then largely demolished after 2012 but prior to the end of 2013.

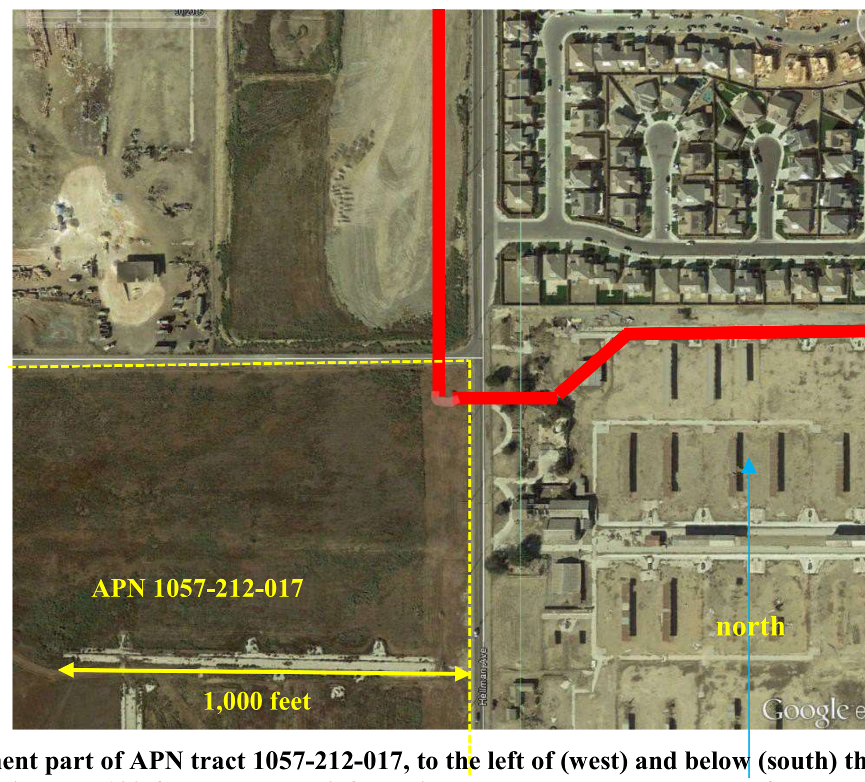


Fig. 30.— Pertinent part of APN tract 1057-212-017, to the left of (west) and below (south) the dashed yellow lines. The approximately 100-foot-long and 70-foot-wide northeasternmost corner of the parcel that is encompassed by conceptual River Road Dike alignments can be seen under the red line. Base from Google Earth Pro 2017. Dike width not determined as of the time of this report preparation.

The historical aerial photograph record also indicates that the part of this parcel encompassed by the project was used as hay fields or left as fallow, which is the current condition as of the 8 November site visit (**fig. 31**).

Fig. 31.— Current condition of APN tract 1057-212-017, as of 8 November 2017, looking southeast towards Hellman Avenue. The approximately 100-foot-long and 70-foot-wide northeasternmost corner of the parcel that is encompassed by conceptual River Road Dike alignments occupies most of the frame. River Road Dike conceptual alignment is beneath the red line. Dike width not determined as of the time of this report preparation.

The only past land disturbance in the historical aerial photograph record is an earthen berm approximately 10 feet in width that was built after 2009 and prior to the spring of 2011 along the northeasternmost corner of the parcel (**fig. 32**). That berm was fully removed by late 2013. It is thought the berm may have served to control agricultural runoff when the dairy was operational.

No RECs are indicated by the current condition or past use of this parcel. Surface runoff and groundwater gradient on this parcel are to the south, southwest and west, away from project. It is expected that Orange County will continue operating under its established protocols as their land-acquisition process for this parcel continues, including doing Orange-County-funded, additional, independent Phase I ESAs, or limited Phase II ESAs, or other independent environmental conditions assessments, as warranted.

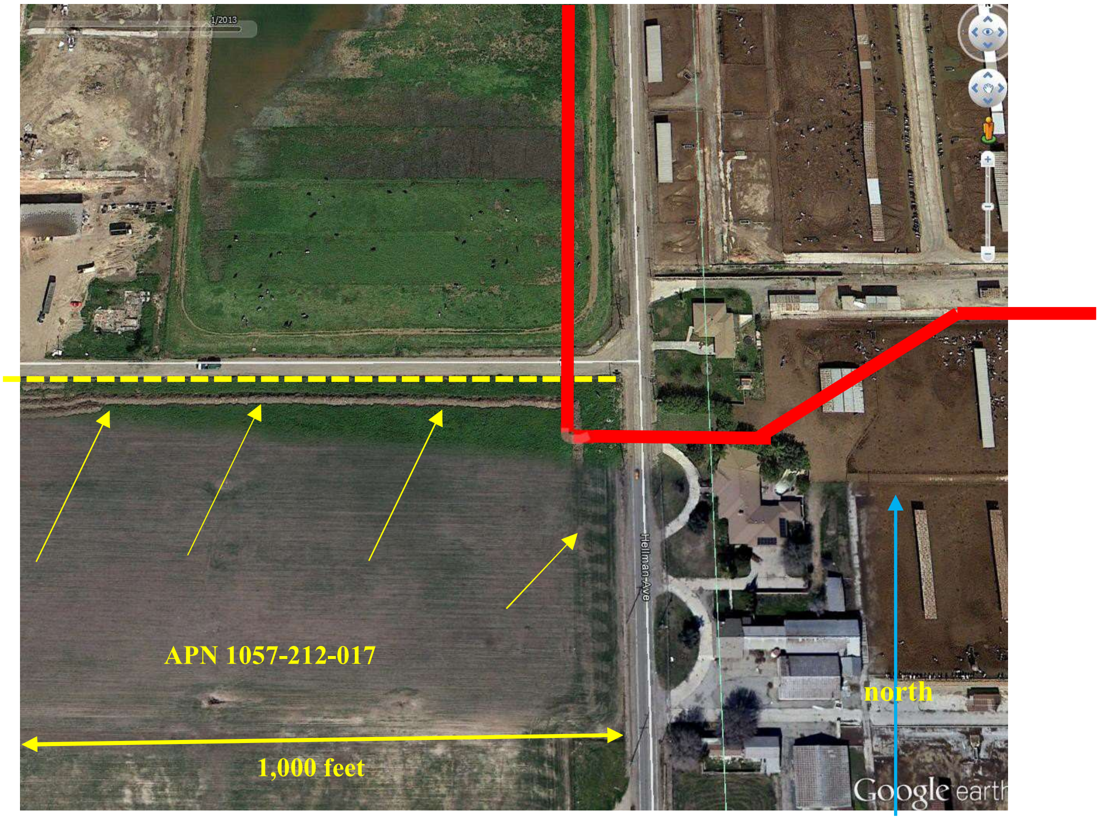


Fig. 32.—Yellow arrows indicate the former constructed earthen berm on APN tract 1057-212-017, to the left of (west) and below (south of) the dashed yellow lines. The approximately 100-foot-long and 70-foot-wide northeasternmost corner of the parcel that is encompassed by conceptual River Road Dike alignments can be seen under the red line. Base from Google Earth 2017. Dike width not determined as of the time of this report preparation.

3.17 Southern abutment of River Road Dike

Location 26 on **fig. 1**, in Riverside County, is a developed housing tract pad, raised approximately 8 ft above existing ground. River Road Dike conceptual alignments "A", "B", and "C" (refer to **figs. 1, 2, 3,** and **4**) all abut against the west face of this housing tract raised pad, shown in detail on **fig. 33**. No APN number for this land is available in the project file. It has not been obtained by Orange County for this project. The impact by River Road Dike alignment is the same for conceptual alignments "A", "B", and "C".

No RECs are indicated for this area.

Study of historical aerial photographs (**figs. 34, 35, 36, 37**) indicates a 15-foot-tall, north-south aligned earthen levee was built prior to 1994 on previously undeveloped land along what is now the westernmost edge of the housing tract pad. In addition, those aerial photographs indicate that an existing, north-south trending sewer line interceptor was built immediately west of that levee in 2006, and that the housing tract pads were built over the period of 2007-2009.

Fig. 33.—Looking due north at the southern abutment of River Road Dike conceptual alignments against the west face of a raised housing tract pad. Dike alignment represented by red line. Neither dike design width nor height determined as of the time of this writing. Note the sewer line manhole in the distance (red arrow) which represents a major sewer inceptor line; the dike crosses that sewer-line alignment approximately on perpendicular. 8 November 2017. Note the visible landscaping irrigation piping (white PVC) in the photograph at the bottom of the housing tract slope.

The photographs further suggest the original levee may remain in place and the housing tract pad may have been graded into it from the east side, i.e., there may be an older levee under the housing tract pad's west edge. That edge includes the River Road Dike southern abutment.

Due to lack of development, no RECs are suggested here, even though surface runoff and anticipated groundwater gradient are both into the project area from the housing pad area. No RECs were indicated in the 8 November 2017 site visit. It is expected that Orange County will continue operating under its established protocols as its access acquisition or land-acquisition process for this area continues, including doing Orange-County-funded, additional, independent Phase I ESAs, or limited Phase II ESAs, or other independent environmental conditions assessments, as warranted.

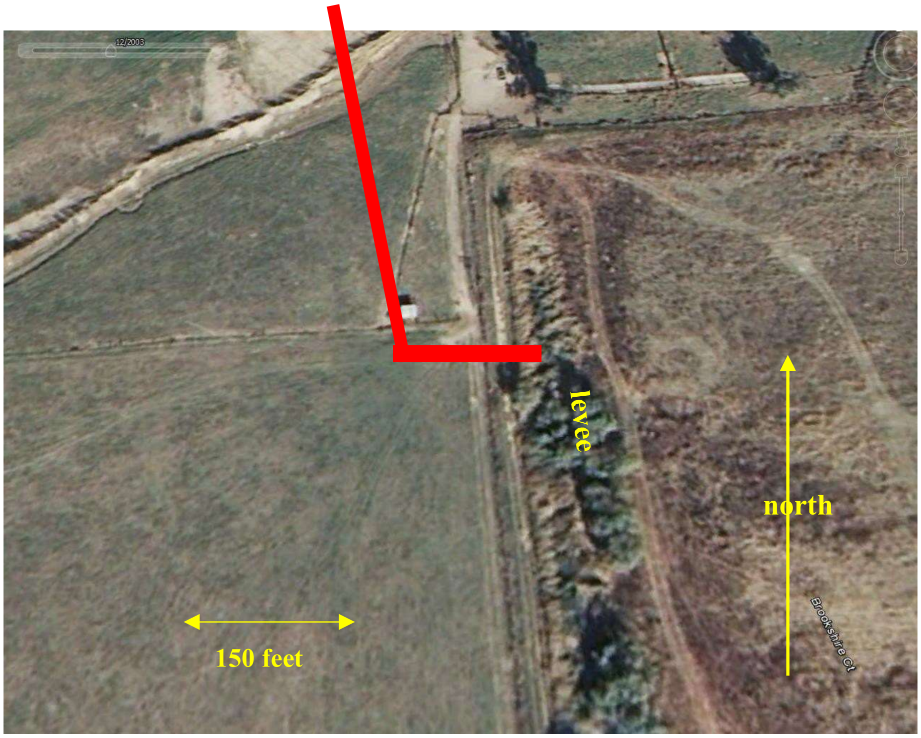


Fig. 34.—2003 view of pre-1994 levee at south end, conceptual River Road Dike alignment (approximated by red line). Photo from Google Earth Pro.

Fig. 35.—2006 view of pre-1994 levee at south end, conceptual River Road Dike alignment (approximated by red line). Note construction of sewer line interceptor is underway, parallel to and west of the levee. Photo from Google Earth Pro.

Fig. 36.—2007 view of south end, conceptual River Road Dike alignment (approximated by red line). Note housing pad grades up and into the pre-existing levee slope. Photo from Google Earth Pro.

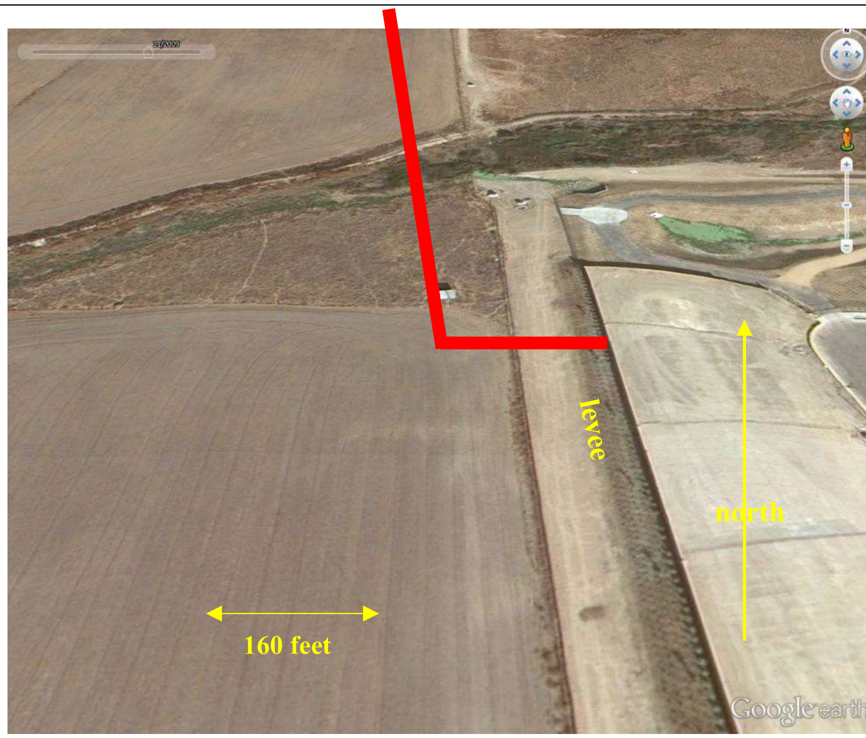


Fig. 37.—2009 view of south end, conceptual River Road Dike alignment (approximated by red line). Note housing pad grades up and into the pre-existing levee slope. Photo from Google Earth Pro.

The location does pose a number of access, ownership, and geotechnical foundation issues. While the housing pad surely was an engineered fill, no documentation of it is in the project file, and it will have to be investigated, including sampling, in order to assess the project abutment. In addition, there is the issue of the housing tract pad possibly being graded into and incorporating the old levee. That equates to two separate undocumented fills beneath the River Road Dike abutment.

Right of entry to explore the area is not in hand. Exploration will conflict with existing infrastructure including:

- landscaping development;
- in place irrigation lines for the landscaping; they are aligned perpendicular to the dike alignment;
- other possible utilities, as yet unknown, such as gas lines or electric lines in the yards behind the houses;
- the privacy block wall at the top of the landscaping development.

These features can be seen in **fig. 33**. No design levee height has as yet been determined. A lower levee may not impact the block wall. Regardless, stability of the wall and its foundation will be one element of the geotechnical assessment.

A potentially large geotechnical issue exists due to the need to build the dike on top of the sewer line interceptor. Geotechnical investigation and stability analyses will have to be done to verify that the mass of the dike will not deflect or otherwise damage the sewer line and that the dike foundation can be fully excavated without impacting the sewer line. It probably is deep enough to allow the excavation but this needs to be verified.

A small detention basin was built in conjunction with and at the north end of the housing tract in the period of 2007-2009, as can be seen in **figs. 36, 37**. The associated issue is the basin outlet's close proximity to the River Road Dike alignment. This outlet is about 100 feet north of the alignment. It was undeveloped land prior to being a basin. No RECs are suggested from the 8 November 2017 site visit (**fig. 38**), although the basin reservoir was fenced off and locked at that time. The related issues are assuring that outlet flows from basin do not scour the River Road Dike embankment toe or unsuitably alter the foundation by excessive saturation or other means.

4.0 **CONCLUSIONS 2017**

The composite of three conceptual River Road Dike project footprint alignments ("A", "B", and "C", as shown on **figs. 1, 2, 3, 4**) overlies four RECs (sites 1, 2, 7, and 8 as shown on **fig. 1**), none of which are thought to be highly problematic. Sites 1, 2, and 7 require monitoring during foundation preparation to assure no hydrocarbon-contaminated soil is present. Site 8 should be anticipated to include removal of a gasoline UST. The potential borrow site for dike construction fill, as defined in early November 2017 (see **figs. 2, 3, 4**) encompasses two locations that are RECs because they were the sites of two USTs and two ASTs for hydrocarbon fuels, all since removed (sites 5 and 6 on **fig. 1**). They require monitoring during borrow excavation to assure no undiscovered spills exist.

Fig. 38.—Spillway outlet of small detention basin 100 ft north of the River Road Dike conceptual alignment. 8 November 2017.

The River Road Dike project footprint overlies four areas anticipated to be geotechnical foundation stability issues (sites 1, 2, 8, and 26 as shown on **fig. 1**), including a deep undocumented fill (site 1), potential UST tank pit backfill (site 2), and a left-in-place UST (site 8), all of which will have to be removed from the dike foundation. In addition, the southern dike abutment into undocumented fills (site 26) will have to be sampled and assessed. Potential conflict exists with an underlying sewer line at this same location. If the River Road Dike project footprint at its far northeastern extent is changed to equate to its former due east alignment, it will encompass site 12's issue (**fig. 1**), which, due to the presumed remaining presence of a septic tank, is both a REC and a geotechnical foundation stability concern.

Offsite operations and conditions such as LUSTs, a wildcat dump, and green waste landfills, have negligible potential to impact the project due to various combinations of distance, substance, media impacted, groundwater and surface water gradient, and intervening drainage channels.

5.0 **RECOMMENDATIONS**

Be prepared to over-excavate and remove deep undocumented fill at site 1 and possibly re-contour the subgrade there. Afterward, required backfill quantities will be large at site 1 (**fig. 1**).

Anticipate the need to search for and remove a hydrocarbon fuel UST at site 8. UST tank pit fill may be encountered at site 2 (**fig. 1**).

Monitor foundation soils for signs of hydrocarbon-stained soil where the project overlies site 7, and where borrow encroaches on sites 5 and 6 (**fig. 1**). If stained soil is found, excavate, segregate, test and remove with proper disposal.

Assure that the project alignment does not change in the future to encompass site 4 (a hydrocarbon fuel UST tank pit) or site 12 (a septic tank location) (**fig. 1**). Both were beneath the dike alignment in older, since discarded conceptual alignments. Both would require over excavation and replacement with suitable fills. Site 12 (**fig. 1**) additionally may require a residential septic tank removal. As of the date of this report and the understanding of the dike footprint, neither issue is under the project construction footprint or sufficiently close to require action under alignments "A", "B", or "C".

6.0 **UPDATE AND FINAL CONCLUSIONS** December 2019

The Envirostor website was searched again and reviewed in December 2019 to ascertain the status of the 2017 previous known contaminated sites and to discover any new known sites. The results of this review indicate that known site status has not changed and no new known sites were found. The contamination threat and resulting Recognized Environmental Condition of the sites reported in 2017 has lessened substantially since this report was prepared in 2017. There are no RECs for the majority of the previous know sites at this time because the final alignment of the dike footprint is located much farther to the southeast. As seen on the last map figure at end of this section are three petroleum USTs and a truck parking area. The USTs were removed in 1990s are shown approximately 1,600 feet to the west of the dike footprint. These sites are now considered closed and all petroleum related hydrocarbon contamination has been remediated. The former truck parking area surrounds the final alignment footprint and no record of release of hazardous substances or petroleum contamination has been reported. All four of these sites pose a very low threat of HTRW contamination to the final River Road dike footprint and surrounding work project areas.

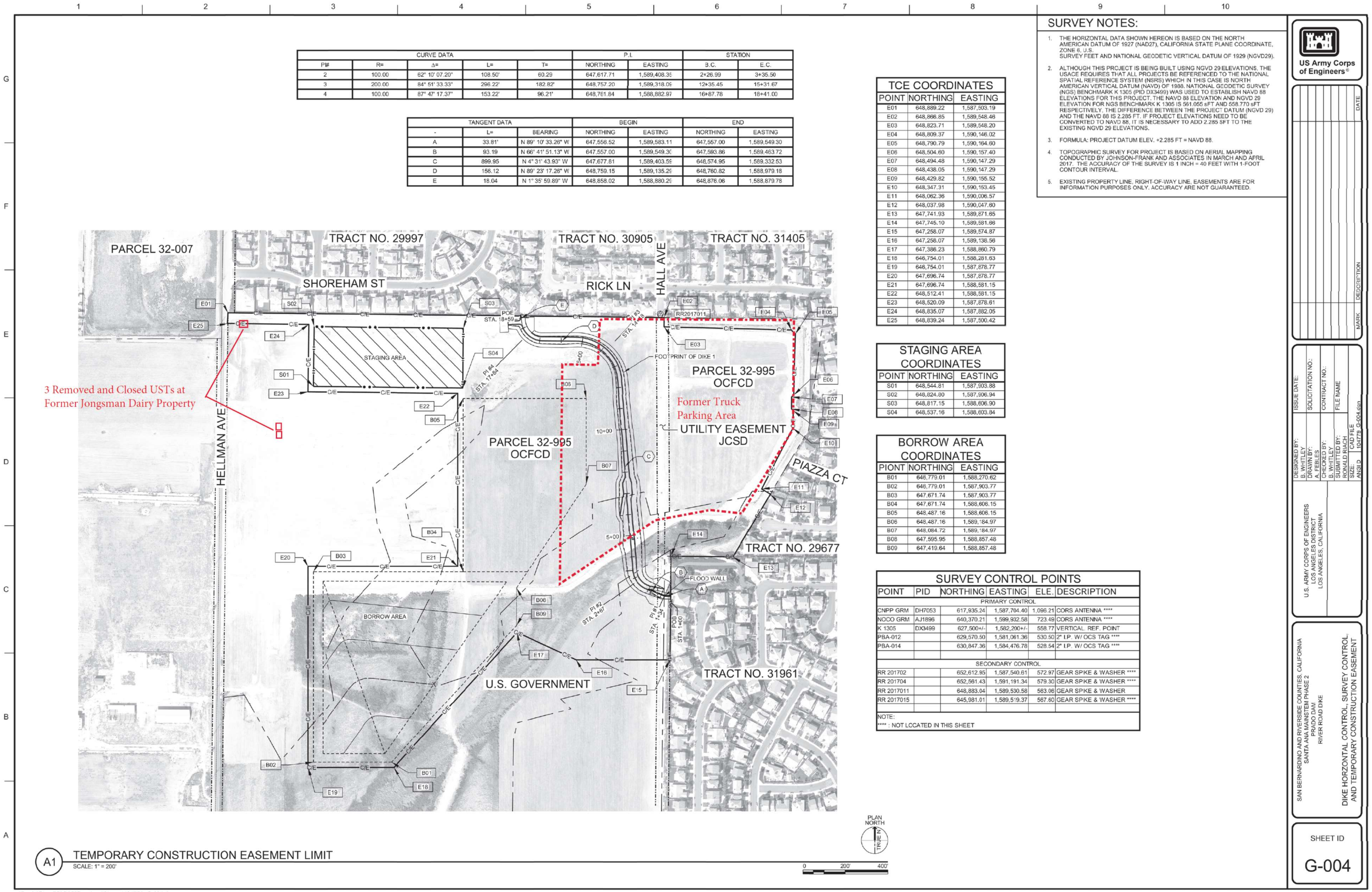


Figure Map of final dike alignment and closest known HTRW (hazardous substances and/or petroleum hydrocarbon contaminated sites). Three removed and now closed UST sites on former Jongsma Dairy property. Approximate limits of the former truck parking area also shown.

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Appendix D

404(b)1 Evaluation

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US Army Corps of Engineers
Los Angeles District

SANTA ANA RIVER MAINSTEM PROJECT, PRADO DAM
SEPARABLE ELEMENT: RIVER ROAD DIKE
RIVERSIDE COUNTY, CALIFORNIA

Draft Clean Water Section 404(B)(1) Evaluation

December 2020

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1.0 REGULATORY BACKGROUND

Section 404 of the Clean Water Act (CWA) governs the discharge of dredged or fill material into waters of the U.S. (WOTUS). Although the Corps does not process and issue permits for its own activities, the Corps authorizes its own discharges of dredged or fill material by applying all applicable substantive legal requirements, including application of the Section 404(b)(1) Guidelines, 33 C.F.R. 336.1(a).

Under the Section 404(b)(1) Guidelines, an analysis of practicable alternatives is the primary tool used to determine whether a proposed discharge is prohibited. The Section 404(b)(1) Guidelines prohibit discharges of dredged or fill material into WOTUS if a practicable alternative to the proposed discharge exists that would have less adverse impacts on the aquatic ecosystem, including wetlands, as long as the alternative does not have other significant adverse environmental impacts (40 C.F.R. 230.10(a)). An alternative is considered practicable if it is available and capable of being implemented after considering cost, existing technology, and logistics in light of overall project purpose (40 C.F.R. 230.10(a)(2)). The Section 404(b)(1) Guidelines follow a sequential approach to project planning that considers mitigation measures only after the project proponent shows no practicable alternatives are available to achieve the overall project purpose with less environmental impacts. Once it is determined that no practicable alternatives are available, the guidelines then require that appropriate and practicable steps be taken to minimize potential adverse effects on the aquatic ecosystem (40 C.F.R. 230.10(d)). Such steps may include actions controlling discharge location, material to be discharged, the fate of material after discharge or method of dispersion, and actions related to technology, plant and animal populations, or human use (40 C.F.R. 230.70-230.77).

Beyond the requirement for demonstrating that no practicable alternatives to the proposed discharge exist, the Section 404(b)(1) Guidelines also require the Corps to compile findings related to the environmental impacts of discharge of dredged or fill material. The Corps must make findings concerning the anticipated changes caused by the discharge to the physical and chemical substrate and to the biological and human use characteristics of the discharge site.

These guidelines also indicate that the level of effort associated with the preparation of the alternatives analysis be commensurate with the significance of the impact and/or discharge activity (40 C.F.R. 230.6(b)).

2.0 PROJECT PURPOSE

Basic Project Purpose

The basic project purpose comprises the fundamental, essential, or irreducible purpose of the proposed project, and is used by the Corps to determine whether a project is water dependent requires access or proximity to, or siting within, the special aquatic site to fulfill its basic purpose). The basic project purpose is flood risk management. The Section 404(b)(1) Guidelines at 40 CFR § 230.10(a)(3) set forth two rebuttable presumptions when the activity associated with a discharge is proposed in a special aquatic site, as defined at 40 CFR Part 230, subpart E. The project area does not contain any special aquatic sites. As such, the activity does not require access or proximity to, or siting within, a special aquatic site to fulfill its basic purpose. Therefore, the activity is not water dependent. Because there are no special aquatic sites present within the project area, the rebuttable presumptions in the Section 404(b)(1) Guidelines do not apply.

Overall Project Purpose

The overall project purpose serves as the basis for the Corps' section 404(b)(1) alternatives analysis and is determined by further defining the basic project purpose in a manner that more specifically describes the goals and accounts for logistical considerations for the project, and which allows a reasonable range of alternatives to be analyzed. It is critical that the overall project purpose be defined to provide for a meaningful evaluation of alternatives. It should not be so narrowly defined as to give undue deference to the preferred alternative, thereby unreasonably limiting the consideration of alternatives. Conversely, it should not be so broadly defined as to render the evaluation unreasonable and meaningless.

As indicated in the River Road Dike SEA/EIR Addendum, the overall project purpose of this feature is to provide flood risk minimization to nearby residential developments, businesses and infrastructure. River Road Dike is one of a number of protective dikes and embankments in the Prado Basin Reservoir that have been deemed necessary to accommodate water levels that would result from the expansion of the reservoir.

Project Area

The proposed River Road Dike project would be located in western Riverside County, California. The project alternatives include work in the city of Eastvale and/or the city of Norco. The proposed project area is south of Chandler Street between Hellman Avenue and Archibald Avenue/River Road (Figure 1).

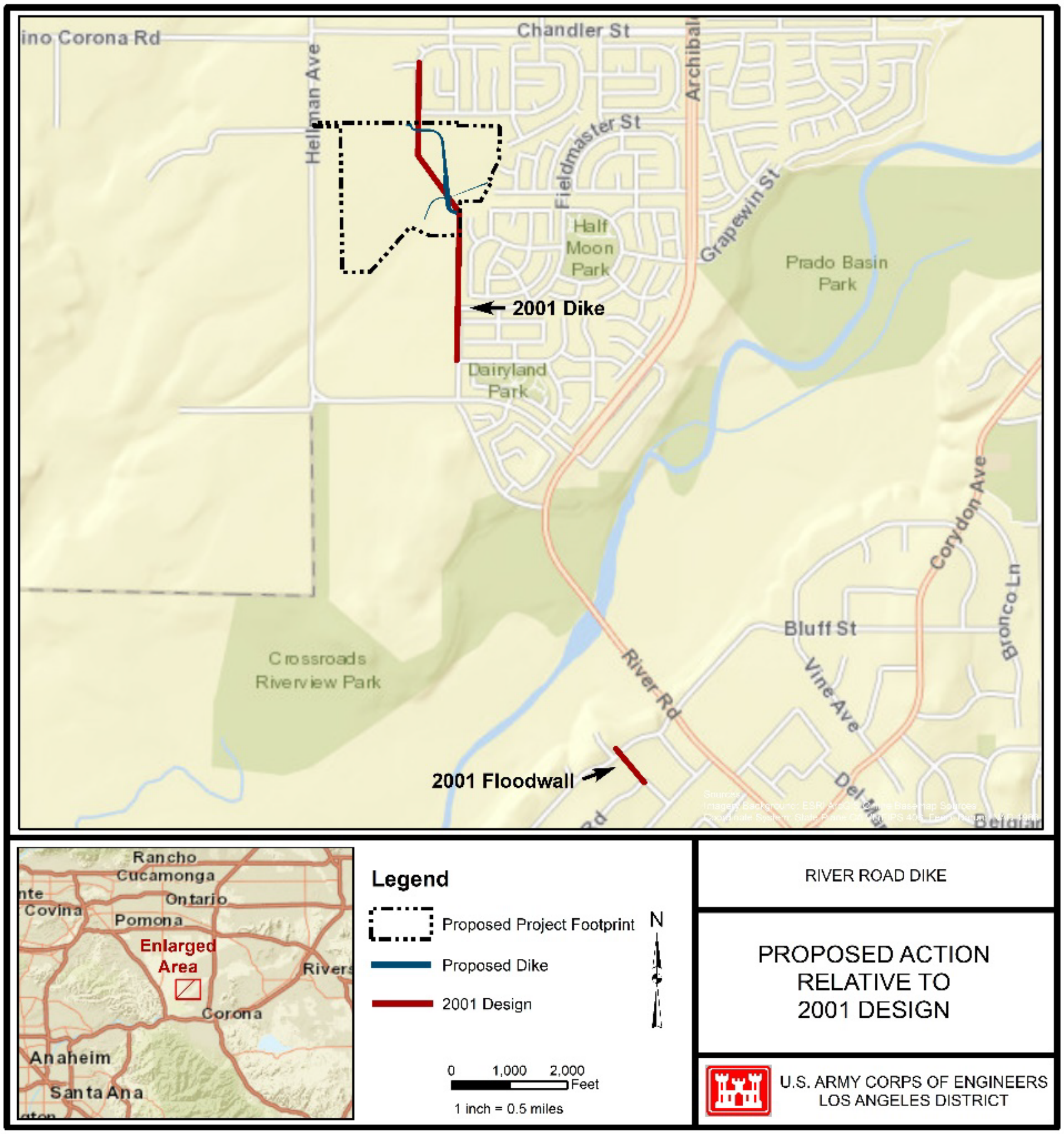

Figure 1. Locations of features to be constructed under Alternatives 1 and 2.

Jurisdictional Determination of Waters of the U.S.

Jurisdictional determination of WOTUS is based on the 2019 Rule (the recodified 1986 Regulations as informed by the 2003 *SWANCC* and 2008 *Rapanos* guidance documents). On February 19, 2020, the

Corps conducted a formal jurisdictional delineation of the proposed project area to identify the geographic extent of jurisdictional WOTUS, including wetlands, within the proposed project area.

Per the 2008 joint U.S. Environmental Protection Agency-Department of the Army guidance implementing the Supreme Court's decision in the consolidated cases Rapanos v. United States and Carabell v. United States which address the jurisdiction over WOTUS under the CWA, the agencies will assert jurisdiction over relatively permanent non-navigable tributaries of traditional navigable waters (TNW). A non-navigable tributary of a TNW is a non-navigable water body whose waters flow into a TNW either directly or indirectly by means of other tributaries. Non-navigable tributaries of TNWs are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months). Relatively permanent waters do not include ephemeral tributaries which flow only in response to precipitation and intermittent streams which do not typically flow year-round or have continuous flow at least seasonally.

This unnamed drainage by the proposed River Road Dike project is a tributary to Mill Creek and is a relatively permanent non-navigable tributary to the Santa Ana River, a TNW pursuant to 33 CFR 328.3(a)(1). The flow regime of this un-named drainage is potentially intermittently dry (fed by local runoffs). Based on a field visit with Regulatory Division staff in February 2020 to perform formal jurisdictional delineation, this unnamed drainage is determined to be waters of the U.S. pursuant to 33 C.F.R. 328.3(a)(5).

In the absence of adjacent wetlands, jurisdictional limits in non-tidal WOTUS extend to the ordinary high water mark (OHWM). When adjacent wetlands are present, jurisdiction extends beyond the OHWM to the limit of the adjacent wetlands. The jurisdictional delineation analyzed hydric soils, hydrophytic vegetation and wetland hydrology. Vegetation and hydrology indicated wetland waters; however, soil test pits did not support hydric soils. Therefore, wetlands do not occur within the project site. Non-wetland WOTUS were delineated following the limits of the OHWM as determined by changes in physical and biological features such as bank erosion, deposited vegetation or debris, and vegetative characteristics. OHWM extends approximately a foot to two feet in depth and twenty feet in width.

Figure 2 shows the geographic extent of WOTUS on the project site.

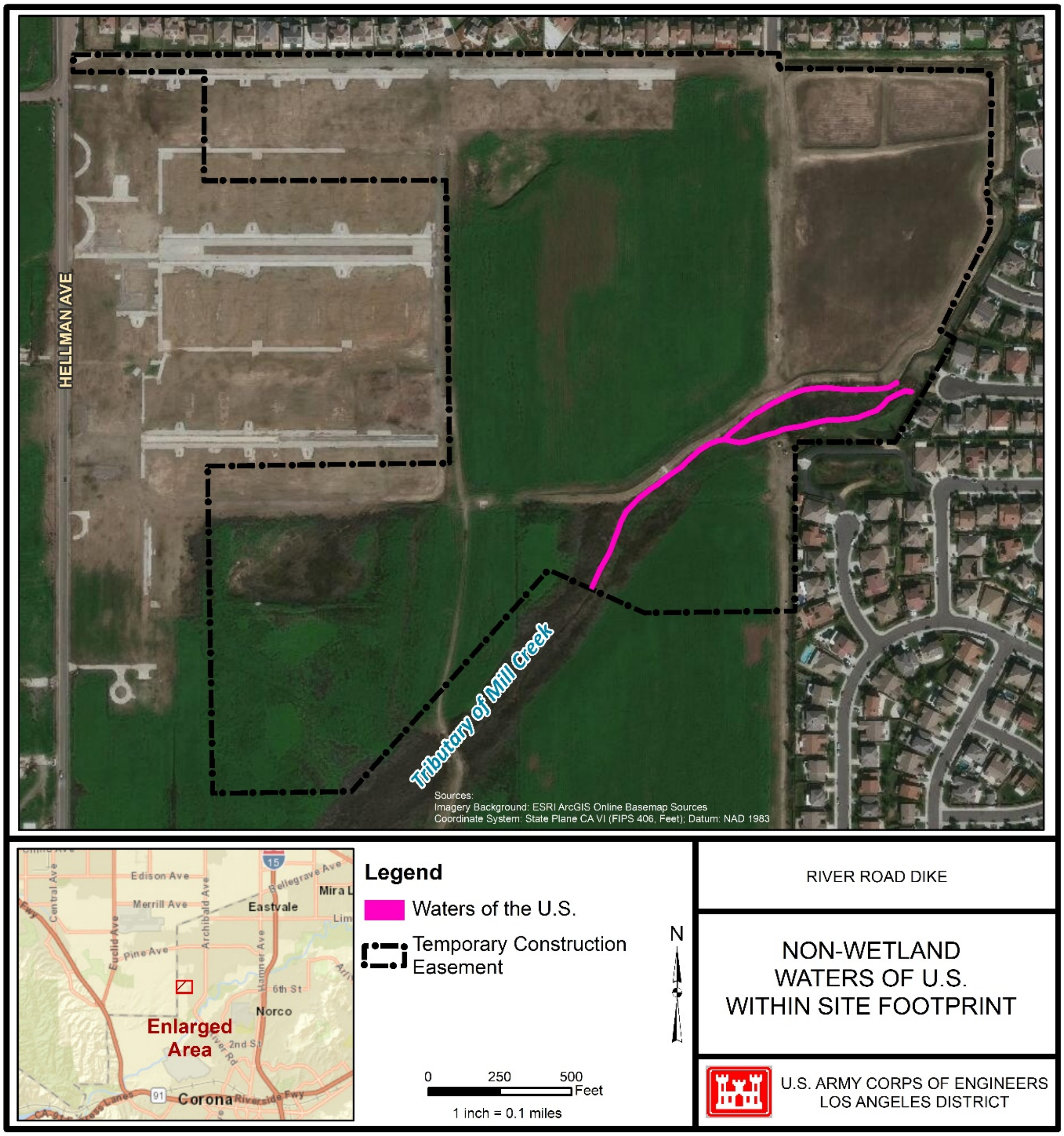

Figure 2. Riverine waters of the U.S., as delineated according to the OHWM (0.64 acres).

3.0 PROJECT ALTERNATIVES

Two alternatives were considered for environmental analysis in the SEA/EIR Addendum (see chapter 2 of the SEA/EIR Addendum for additional information). This section describes the management measures and qualitatively characterizes the anticipated discharges of fill material associated with each management measure.

1. Proposed Action
2. 2001 Design Alternative, which is defined as constructing the River Road Dike embankment and floodwall according to the plan adopted on the basis of the 2001 SEIS/EIR. Note that the exact location as well as design details differ from the Proposed Action (Figure 1). The 2001 Design Alternative is the No Action alternative in the EA this 404b1 analysis supports.

The No Construction Alternative characterizes the conditions likely to prevail in the project area if no construction occurs. Under the No Construction Alternative, there would be no temporary adverse impacts in WOTUS to physical substrate, sediment type, fill material movement, physical effects on benthos, water circulation and fluctuation, current patterns, suspended particulate and turbidity levels and effects on biota. The No Construction Alternative would not meet the overall project purpose and is not evaluated in this document.

3.1 Alternative 1 (Proposed Action)

Alternative 1 would occur in the city of Eastvale just southeast of the intersection of Hellman Avenue and Shoreham Street in Riverside County, California (Figure 3). The proposed Alternative 1 design consists of a compacted earth fill dike, approximately 1,750 feet in length. The dike would have a maximum height of 18 feet with an average height of approximately 8 feet above existing grade. The dike would consist of approximately 30,000 cubic yards of compacted fill. The crest width at the top of the dike would be 21 feet wide and sides would slope at 2.25 horizontal feet to one vertical foot on each side of the dike (2.25H:1V). Both the landward-facing and reservoir sides of the dike would be armored with 18 inch thick riprap with a 12 inch thick layer of bedding.

The dike would also be equipped with 15 foot wide asphalt paved road at the crest, and aggregate base course access roads along the landward and reservoir facing toes of the dike. There will be extensive site grading, a culvert and open concrete channels to ensure positive drainage off-site.

At the south end, the dike would abut the existing raised ground of the residential tract (Tract No. 31961) in a nearly east-west direction. The dike would then turn north across an unnamed drainage, a tributary to Mill Creek and former dairy land and then turn west and parallel the southern edge of residential tracts (Tract No. 30905 and Tract 29997), ending just west of Port Arthur Drive (Figure 3).

Construction is expected to take approximately 20 months to complete. It is anticipated that River Road Dike would be constructed in three major phases: 1) site preparation (clearing and grubbing, surface stripping, and dike foundation excavation), 2) construction of the dike (placing suitable compacted fill and riprap) and 3) site restoration (topographic grading for interior drainage, building roads for site access, hydroseeding of temporarily disturbed construction areas with native vegetation, and establishing native vegetation within an adjacent area to offset permanent impacts to riparian habitat). Operations and maintenance (O&M) of Alternative 1 includes routine inspections and minor repairs of the embankment and its associated project features after construction is completed, including:

- Routine and special inspection and patrol with pickup trucks and sport utility vehicles weekly to daily during flood season, and weekly to monthly during the non-flood season;
- Mobilizing dump trucks to haul stones and using hydraulic excavators to place stones along eroded areas of the embankment to protect and reinforce the dike as necessary during floods;
- Periodic weeding and patching stone and aggregate base course maintenance roads;
- Rodent control;
- Periodic mending of fencing and painting metal gates.
- Maintenance of hydroseeded and restored areas.

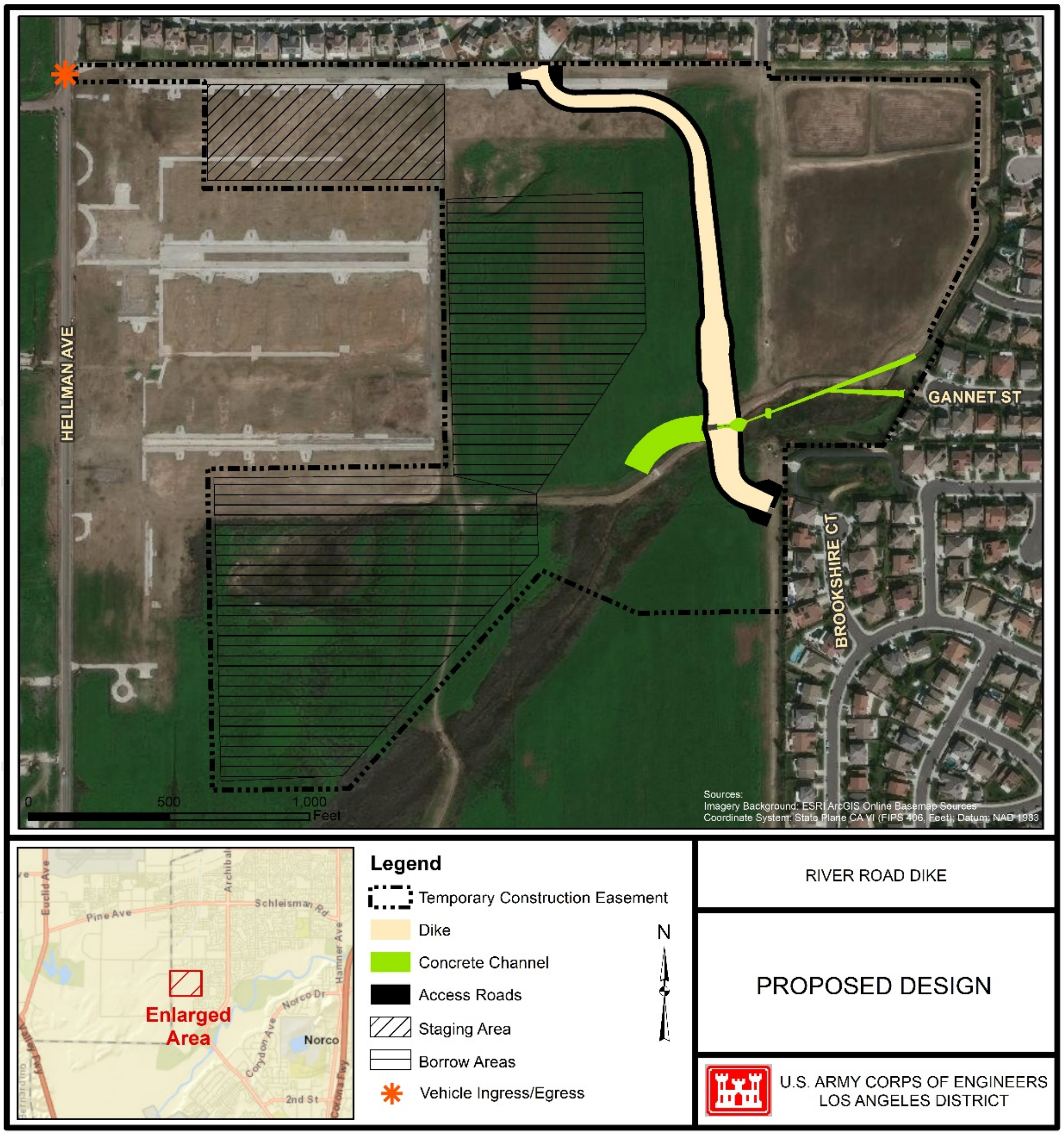

Figure 3. Proposed footprint and design of River Road Dike Alternative 1.

3.2 Alternative 2 (2001 Design)

The previously approved dike would occur in the same general area of Eastvale, California, as Alternative 1 (Figure 1). The dike to be constructed under Alternative 2 would range in height from 7 to 14 feet and would be approximately 4,500 feet in length, as compared to a dike length of 1,750 feet in Alternative 1. Alternative 2 would also construct a floodwall within the city of Norco's public road right-of-way, along the westerly side of River Road. Alternative 2 would therefore have a much larger footprint than Alternative 1 and would require construction to be done at two distinct sites.

4.0 ALTERNATIVES ANALYSIS

Per the 404(b)(1) Guidelines (Guidelines), alternatives analysis required by the National Environmental Policy Act (NEPA) will generally suffice as the alternatives analysis under the Guidelines. On occasion, these NEPA documents may address a broader range of alternatives than required to be considered under Guidelines or may not have considered the alternatives in sufficient detail to respond to the requirements of these Guidelines. In the latter case, it may be necessary to supplement these NEPA documents with this additional information.

In this section, we evaluate the two action alternatives. The nature of the proposed action would require work within waters of the US. Furthermore, the range of alternatives carried forward under NEPA overlap with the range of alternatives to be considered under the Guidelines. Thus, the range of NEPA alternatives are sufficient for evaluation under the Guidelines.

4.1 Alternative 1 (Proposed Action)

Under Alternative 1, to minimize water accumulating behind the dike during storm events, a pipe culvert and open concrete channel drainage system would be constructed at the southeast corner of the site direct runoff towards towards the tributary to Mill Creek downstream. This is the only location within the proposed project area where impacts to WOTUS will occur. Additionally, following completion of construction, the borrow site area (located outside of the WOTUS, adjacent to the dike to the west as shown on Figure 3) would be graded to prevent ponding of water.

Operations and maintenance (O&M) of Alternative 1 includes routine inspections and minor repairs of the embankment and its associated project features after construction is completed and would not have impacts to the WOTUS.

4.2 Alternative 2 (2001 Design)

Same as Alternative 1, this alternative would cross the unnamed drainage towards the tributary to Mill Creek downstream at the same location and the same methods as Alternative 1 would be used to address local runoff. O&M activities under Alternative 2 would be the same as those identified in Alternative 1 above, but O&M activities would occur over a much larger area and may require more frequent maintenance due to dike size. However, same as Alternative 1, there would be no impacts to WOTUS.

Restrictions on Discharge

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

Overall Project Purpose

Both alternatives meet the overall project purpose.

Practicability (Technology)

Both action alternatives can be constructed with existing technology. Both alternatives would utilize conventional construction techniques and conventional construction equipment.

Practicability (Logistics)

The footprint of Alternative 1 would be located within areas owned by the United States and managed by the Corps. Thus, all discharges of fill material are practicable with respect to logistics.

Alternative 2 would not be logistically practicable due to housing developments that have been built since the 2001 SEIS was written. The 2001 River Road Dike footprint would overlap with and run along many new residential communities in the cities of Eastvale and Norco.

Practicability (Cost)

Costs associated with Alternative 1 are practicable. Onsite soil fill is the most economical alternative as long as it meets the soil gradation requirements for Alternative 1 as opposed to Alternative 2 where importing of fill is very expensive due to the requirement of having to source the material and haul it to the project site.

Costs associated with Alternative 2 are not considered practicable. The funds necessary to acquire each home that is adjacent to or within the 2001 design footprint would be in the billions of dollars and therefore is not practicable.

Table 2. Comparison of Project Alternatives

Alternative	**Practicability Test** **Cost**	**Logistics**	**Technology**	**Significant Environmental Impacts to Non-Aquatic Resources?**	**Permanent Impacts within Waters of the US (in acres)**		**Meets Overall Project Purpose?**
Alternative 1	Yes	Yes	Yes	No	*0.64		Yes
Alternative 2	No	No	Yes	No	*0.64		Yes
* Construction of the project would result in the permanent impacts of 0.64 acre of WOTUS due to the change in hydrology post construction.							

Based on the evaluation above, Alternative 2 is not considered practicable and therefore eliminated from further consideration.

5.0 ENVIRONMENTAL EFFECTS

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

The following discussion evaluates impacts of Alternative 1 on environmental resources identified in Subpart C through Subpart G of the Guidelines.

Subpart C: Potential Effects on Physical/Chemical Characteristics of the Aquatic Ecosystem

Substrate

Alternative 1 would result in excavation or disturbance of substrate during the construction process. Native substrates that are supportive of riparian vegetation will be left in place to the degree possible.

Construction (Direct): Construction would disturb compacted native fill, resulting in loose and unconsolidated soils within the project area. Unconsolidated substrate could be subject to wind and water erosion during construction. Upon completion of construction, disturbed areas would be graded and revegetated with appropriate native species. With sufficient inundation and with establishment of vegetation, potential for wind and water erosion would be attenuated post construction. Repeated inundation from water impoundment over time would further re-compact soils.

Under Alternative 1, the borrow site would be located within the project footprint; therefore, there would be no export or import of fill and no permanent loss of native substrate.

Construction (Indirect): There would be no indirect impacts to channel substrate during construction.

Operation (Direct): Alternative 1 may require like-for-like structural repair periodically. Most repairs would occur atop the dike or concrete culvert, outside of WOTUS, so no additional impacts to WOTUS are expected.

Operation (Indirect): There would be no indirect impacts to channel substrate during project operations.

Suspended Particulates and Turbidity

Construction, operation, and maintenance of the Proposed Action would include soil-disturbing activities that, if unchecked, could result in erosion and sedimentation that may substantially cause and/or contribute to turbidity in Mill Creek during a storm event. However, Best Management Practices (BMPs) would be employed and the construction contractor would prepare and implement a Stormwater Pollution Protection Plan to minimize the potential for surface water to transport sediment and potentially hazardous materials downstream as per environmental commitment **WR-1,** identified in Section 6.0 Subpart H of this document.

Construction (Direct): Alternatives 1 and 2 would require construction activities within WOTUS. Alternative 2, with the largest area of disturbance, has the highest potential to increase turbidity in WOTUS. Alternative 1, with the smallest area of disturbance, has the least potential to increase turbidity.

During construction, soils naturally compacted from periodic inundation would be disturbed. The increase in vehicle traffic as well as ground disturbing activities such as soil excavation would result in temporary re-suspension of loose soils within the water column. Turbidity would be temporarily increased and would be minor in nature. The rate of re-suspension is expected to decrease over time as repeated inundations would result in reconsolidation and re-compaction of loose soils.

As part of compliance with NPDES regulations, a Storm Water Pollution Prevention Plan (SWPPP) would be developed and implemented prior to and during construction. The SWPPP would include an Erosion and Sedimentation Control Plan and BMPs to minimize the potential for surface water to transport sediment and potentially hazardous materials downstream.

Fill material required for construction of the dike under both action alternatives would be compacted and reinforced with soil cement and would not be subject to erosion once constructed.

Construction (Indirect): There would be no indirect impacts to turbidity during construction.

Operation (Direct): Alternative 1 requires routine operations and maintenance activities. Most operations and maintenance activities would likely entail like-for-like structural repair resulting in discharges of fill within WOTUS. Discharges, if any, are expected to be minor. Since routine operations and maintenance activities are performed in the dry season, potential discharges of fill would not affect turbidity.

Operation (Indirect): There would be no indirect impacts to turbidity during project operations.

Contaminants

The waterway that would be filled under the Alternative 1 conveys nuisance flows from surrounding urban neighborhoods. Flows associated with the urban environment typically contain several pollutants in the water column such as fecal coliform bacteria, pesticides, metals (e.g., copper, chromium, lead), nutrients (nitrogenous and phosphorus compounds), petroleum based oils and solves and trash. Pursuant to Section 303(d) of the Clean Water Act, Mill Creek is designated as impaired waters due to nutrient, pathogen and turbidity loads. The Santa Ana River is also designated impaired due to levels of metals (copper and lead) and pathogens.

Construction (Direct): Alternative 1 would result in discharges of fill associated with earthmoving activities such as bulldozing and temporary stockpiles of earthen fill or biomass. Work within WOTUS would disturb naturally compacted soils. Upon contact with the water column, contaminants that could potentially be present within the soils could migrate into the water column. However, since the disturbed soils are native to the basin, the majority of the work within WOTUS would not introduce additional contaminants not already present within the native substrate.

Futher, a concrete culvert would be constructed to drain flows towards Mill Creek. The outer face of the culvert that interfaces with water would be armored with riprap, which is chemically inert and would not leach contaminants into the water column. Use of construction vehicles increases the potential for accidental release of fuels, solvents, or other petroleum-based products such as hydraulic fluid. A spill prevention plan would be developed to identify proper storage locations and provide clean-up measures to prevent accidental spills and leaks of hazardous materials.

Construction (Indirect): No indirect impacts to water contamination levels are expected during construction.

Operation (Direct): Alternative 1 entails routine operations and maintenance activities. Most operations and maintenance activities would entail like-for-like structural repair, resulting in no additional impacts to WOTUS. Some activities may result in minor discharges of fill as needed. Once the project is constructed, the hydrology would permanently change in this drainage within WOTUS. No repairs below the plane of the OHWM are expected following construction. Maintenance activities may introduce potential water quality impacts associated with the use of motorized vehicles and equipment. However, most repairs would likely be undertaken during the dry season atop the structure. Thus, there would be little to no potential for release of contaminants into the water column.

Operation (Indirect): No indirect impacts to water contamination levels are expected during project operations.

Water Flow

There is no perennial surface water within the project footprint. An ephemeral urban runoff drainage that flows southwest into upper Mill Creek lies in the southeast corner of the project site (Figure 3). Typically, local surface runoff drains towards Mill Creek below ground and onward into Prado Basin via this drainage.

Construction (Direct): Construction of Alternative 1 would not directly cause or contribute to water fluctuations in Mill Creek or in the Santa Ana River. Water may accumulate behind the dike during storms, but this effect would be temporary, and drainage would be facilitated by the proposed concrete channel. The surface of the proposed project site currently contains several concrete slabs and footings from previous agricultural activities. These slabs would be removed during construction and would be replaced with soils seeded with native vegetation. Therefore, construction of the dike would not result in significantly more impervious surfaces. Further, a concrete culvert and open channel drainage system would be built to continue directing runoff towards Mill Creek. Minimization measures discussed in the SEA/EIR Addendum and in Section 6.0 Subpart H of this document would ensure existing drainage patterns and downstream flow into the Santa Ana River would be maintained.

Construction (Indirect): Indirect effects to water flow are not anticipated.

Operation (Direct): Most operations and maintenance activities would entail like-for-like structural repair resulting in no additional impacts within WOTUS for either action alternative. Further disturbance to water flow is not anticipated.

Operation (Indirect): There would be no indirect impacts during project operations.

Subpart D: Potential Effects on Biological Characteristics of the Aquatic Ecosystem

Threatened and Endangered Wildlife

Construction (Direct): No special status species or critical habitat occur within WOTUS. There would be no direct impacts to threatened or endangered species during construction of Alternative 1.

Construction (Indirect): Indirect impacts to threatened or endangered wildlife are not anticipated during construction of Alternative 1 on WOTUS.

Operation (Direct): No direct impacts to special status species are expected during operation of Alternative 1 on WOTUS.

Operation (Indirect): There would be no indirect impacts during project operation of Alternative 1 on WOTUS.

Other Wildlife

The most commonly observed wildlife species at this site are highly urban adapted species including Western and California gulls, American crows, California ground squirrels and coyotes.

Construction (Direct): Construction of either action alternative could potentially affect wildlife and wildlife habitat, including construction-related noise disturbance, disruption of movement, and potential wildlife mortality. Short-term effects of construction, including noise and other disturbances caused by heavy equipment and construction crews, may cause wildlife to move away from the construction zone. Vegetation clearing and soil grading to assemble and install the dike could result in the mortality of small mammals, such as ground squirrels. Species with limited mobility or that occupy burrows within the construction zones could be crushed during clearing and grading activities. Under Alternative 1, noise and activity associated with construction and use of access roads adjacent to the WOTUS could disturb birds and other wildlife that may be using this habitat. To minimize these impacts, several minimization measures will be implemented including having an environmental monitor on-site during construction, restricting vegetation removal activities to the non-nesting season and installing a temporary sound wall.

Construction (Indirect): Under Alternative 1, noise, vibrations, and presence of visual forms associated with an active construction site may discourage use of areas within the vicinity of the construction footprint and WOTUS.

Operation (Direct): Future operation and maintenance activities associated with Alternative 1 may include routine inspections and monitoring of structures using access roads constructed for this project, periodic weeding, patching grouted stone, vegetation free road maintenance, periodic clearing of debris around drainage structures; and, periodic repairs to fencing and gates. Most inspections and minor repairs are of short duration (usually one day up to a week) and would be confined to paved maintenance and access roads, away from WOTUS. Therefore, effects to other wildlife species would be minimal and short-term. If repairs are required, potential effects to nesting birds and wildlife would likely be similar to those described for construction of the Alternative 1but would be of a smaller magnitude. Maintenance work would avoid nesting season to the extent practicable.

Operation (Indirect): During operations and maintenance activities associated with Alternative 1, noise, vibrations, and presence of heavy equipment may discourage wildlife use of areas adjacent to the flood control feature as well as WOTUS.

Aquatic Organisms

Construction (Direct): Because there are no perennial surface waters within the site, aquatic organisms are not expected to be present within WOTUS.

Construction (Indirect): Indirect impacts to aquatic organisms within WOTUS are not expected during construction of Alternative 1.

Operation (Direct): Project operations are not likely to affect aquatic organisms since there is no perennial water on site.

Operation (Indirect): Indirect impacts to aquatic organisms are not expected during project operations of Alternative 1.

Vegetation

Construction activities associated with Alternative 1 would remove or disturb two vegetation types that are associated with aquatic systems: disturbed riparian (1.2 acres; dominated by cattails, pepperweed, cocklebur with scattered mulefat and black willows) and non-native riparian habitats (1.7 acres; pepperweed monoculture within WOTUS drainage). The loss of this vegetation, both temporary and permanent, would be minor given that these vegetation types generally contain low species diversity and therefore provide low habitat quality. In addition, potential impacts to vegetation would be minimized by implementing measures such as erosion control, weed control, hydroseeding with native vegetation and restoring an adjacent area to offset the permanent loss of riparian habitat. As shown in

Figure 1, Alternative 1 would have impacts to this drainage and associated vegetation and that there are no practicable alternatives that would provide adequate drainage through the dike that would have less impact to WOTUS.

Construction (Direct): Under Alternative 1, direct impacts would occur as a result of the removal of vegetation during construction activities. These ground-disturbing construction activities include clearing and grading, soil excavations and increased vehicle traffic. There would be no permanent loss or impact to existing native vegetation. The site is currently dominated by invasive weeds such as pepperweed and cheeseweed. After construction is complete, new acres of native riparian and upland habitat would be created within the study area. Removal of invasive species would result in a more natural and functional plant community. The addition of riparian acres would also provide additional filtration of storm water entering the system.

Construction (Indirect): Indirect impacts to existing vegetation communities from either alternative could include alterations in existing topography and hydrology regimes, the accumulation of fugitive dust, disruptions to native seed banks from ground disturbance, and the colonization of nonnative and invasive plant species. Riparian habitats are closely associated with water. Therefore, although the entire 2.9 acres of riparian habitat would not be removed during construction, this vegetation would likely be indirectly affected by changes to water flow which would result in water no longer draining into or through this area. Construction of the concrete culvert would redirect water approximately 30 to 175 feet northwest of its current flow route (Figure 3). Therefore, the existing riparian habitat would not persist in the long term but would likely transition into an upland community. Figure 4 shows the disturbed riparian vegetation that would indirectly be affected by the construction of the concrete channel. This loss would be offset by establishing native habitat downstream of the proposed concrete channel.

Operation (Direct): Most inspections and minor repairs would be confined to the dike, the concrete culvert and access roads. Potential effects of operations from either alternative on site vegetation would be similar to those described for construction, but would be of a smaller magnitude because repair activities would not generally include ground disturbance and would typically only require one day to one week of activity. Impacts to native vegetation, therefore, would be minimal and short-term.

Operation (Indirect): There are no anticipated indirect impacts during project operations from either alternative.

Cumulative Impacts

The cumulative scenario relevant to the Proposed Action is largely characterized by other flood control and infrastructure projects in and downstream of the Prado Basin. Each of those projects or project features has been evaluated in individual NEPA/CEQA documents, and appropriate mitigation has been proposed or constructed. As described in the River Road SEA/EIR Addendum and the 2001 SEIS/EIR, no significant cumulative impacts are anticipated. Implementation of the proposed action would include full compliance with applicable laws and regulations, as well as environmental commitments identified in the SEA/EIR Addendum. As such, potential environmental impacts would be site-specific and not substantial.

In conclusion, the Corps has determined that Alternatives 1 and 2 would result in no significant adverse impacts to biological resources. Through vegetative restoration and implementation of offsetting measures, which would be similar for both alternatives, no net loss of native wetland habitat would occur. Sensitive biological habitats and wildlife corridors do not currently exist within these site footprints; therefore, they will not be impacted. The project would have no effect on the least Bell's vireo or other Federally–listed threatened or endangered species.

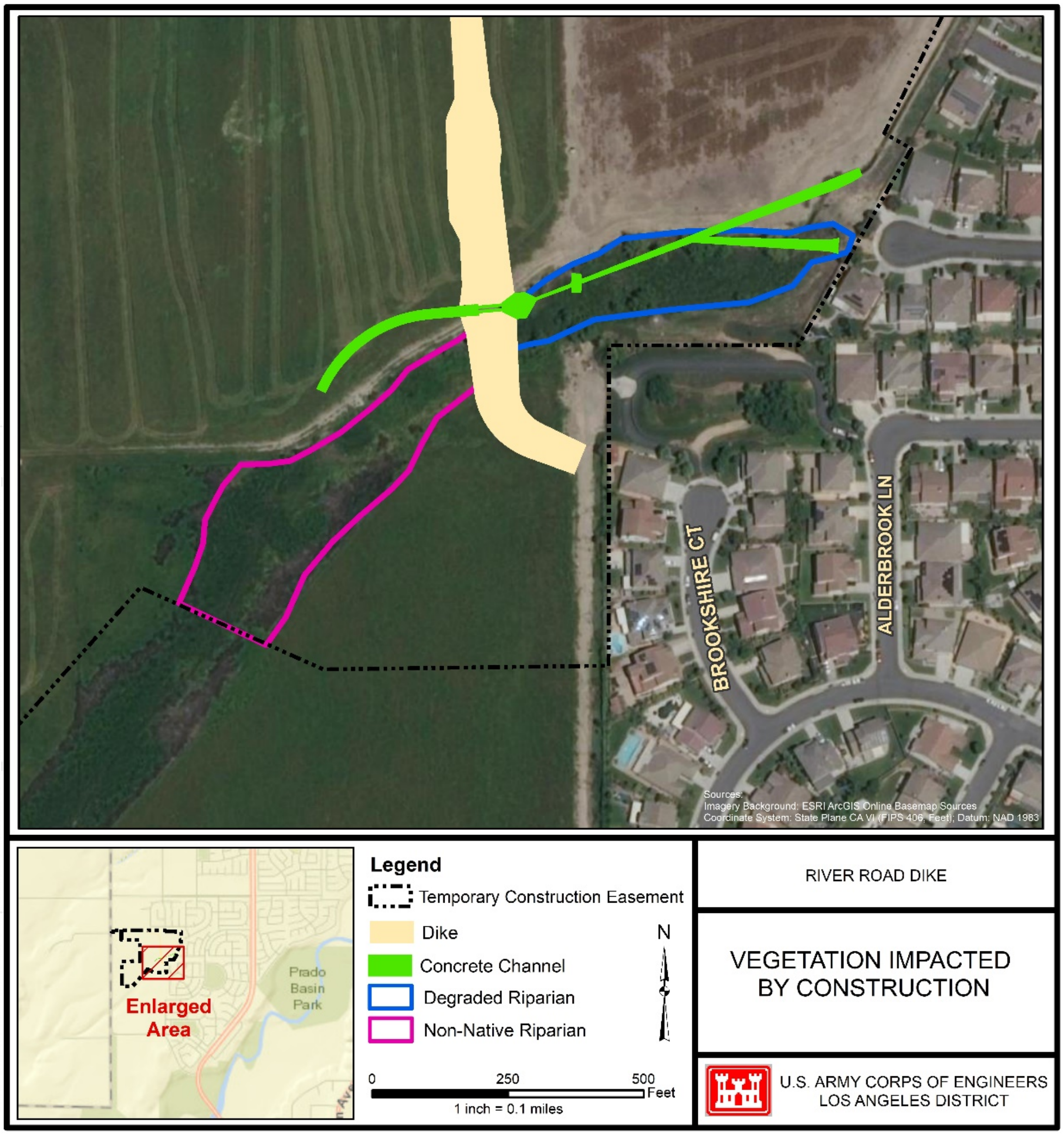

Figure 4. Vegetation Impacts Due to Construction of the Concrete Channel.

Subpart E: Potential Effects on Special Aquatic Sites

Sanctuaries and Refuges

Construction/Operation: There are no sanctuaries or refuges designated under state or federal laws within the footprint of either of the action alternatives. Therefore, no alternative would directly or indirectly impact sanctuaries or refuges.

Wetlands

Construction/Operation: There are no jurisdictional wetlands designated under state or federal laws within the footprint of either of the action alternatives.

Mudflats

Construction/Operation: Mudflats are generally found in intertidal, estuarine or near-shore habitats, in deltas, or at river mouths. None of these conditions occur in the study area.

Vegetated Shallows

Construction/Operation: Vegetated shallows are areas that are permanently inundated and have rooted aquatic vegetation, such as sea grasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems. Vegetated shallows are not present in the study area.

Coral Reefs

Construction/Operation: Coral reefs consist of skeletal deposits, usually of calcareous or silicaceous materials, and occur in marine environments, which do not exist in the study area.

Riffle and Pool Complexes

Construction/Operation: Steep gradient sections of streams are sometimes characterized by riffle and pool complexes. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. No riffle pool complexes are present or will result from construction of flood control features.

Subpart F: Potential Effects on Human Use

Municipal and Private Water Supplies

Construction/Operation: The project site is not a source for municipal or private water supplies. It conveys storm flows and discharge from surrounding streets and residences, which are not suitable for potable use. Furthermore, construction of the project would not alter flows through the system as a whole. Therefore, there would be no direct or indirect effects on municipal or private water supplies under Alternative 1.

Aesthetics

Construction: As noted in the SEA/EIR Addendum, minor, short-term adverse impacts to aesthetic resources are likely to occur during construction under Alternative 1, which require large equipment to be present to conduct extensive earthwork and construction. All aesthetic impacts would be temporary and there would be no significant adverse impacts from project construction.

Operation: Future maintenance of the proposed dike would include routine inspections and minor repairs of the embankment and its associated features after construction is completed. This maintenance would result in temporary changes in the height and density of restored vegetation and occasional presence of heavy equipment. Since work would likely be localized, impacts to aesthetics during maintenance activities would be minimal and temporary.

Recreational and Commercial Fisheries

Construction/Operation: The project area is an ephemeral drainage and is not subject to commercial or recreational fishing. Impact to recreational and commercial fisheries would not occur.

Water-Related Recreation

Construction/Operation: The project area is an ephemeral drainage and does not contain waters appropriate for water-related recreation. Furthermore, recreation is not permitted at the project site. Therefore, no impact to water-related recreation would occur.

Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves

Construction/Operation: The project area does not contain national and historic monuments, national seashores, wild and scenic rivers, wilderness areas or research sites. Therefore, no effect on preserved lands would occur.

Subpart G: Evaluation and Testing

Permanent fills would be chemically inert and would not leach contaminants into the water column. Onsite soil fill would be used as long as it meets the soil gradation requirements. Riprap would be imported from the nearest quarry site. Topsoil would be acquired from a certified contaminant-free source to ensure that fill material is most likely to be free from chemical, biological, or other pollutants. Thus, topsoil would be suitable for discharge into the aquatic environment. Per 40 C.F.R. 230.60(a), additional chemical, biological, and physical evaluation testing would not be required.

6.0 SUBPART H: MEASURES TO MINIMIZE ADVERSE IMPACTS

The following measures (referred to as environmental commitments) will be taken to minimize potential impacts to WOTUS due to project construction. Environmental commitments adopted from the 2001 SEIS/EIR are prefaced with either “BR-“ or “WR-“, with additional notes *written in italics*. Additional measures developed after the 2001 SEIS/EIR are prefaced with “EC-“.

Biological Resources

- **BR-12** Construction activities shall be monitored by the Corps to assure that vegetation is removed only in the designated areas. Riparian areas not to be disturbed shall be flagged *(staked, or otherwise demarcated)*.
- **BR-13** The construction contractor shall install a noise barrier prior to March 1 *(anywhere the TCE is adjacent to riparian habitat)* to shield nesting vireos *(and other birds)* from excessive noise generated by construction vehicles and equipment.
- **BR-14C** The Corps has agreed to mow (*or clear vegetation from*) all areas that will be excavated prior to March 1 to preclude nesting of and impacts to grasshopper sparrows and other species of concern (*and all nesting birds).*

The following environmental commitments with “EC” added as a prefix designation for this project are in addition to those described in the 2001 SEIS/EIR:

- **EC-BR-1** Prior to construction activities and throughout the construction period, a Corps qualified biologist (or the environmental monitor) shall continue to inspect the construction site and adjacent areas to determine if any raptors are nesting within 200 feet of the construction site. If active nests are found, the Corps biologist will coordinate with CDFW to determine appropriate avoidance or minimization measures.
- **EC-BR-2** Prior to any ground-disturbing activities (e.g. mechanized clearing or rough grading) for all project related construction activities, a Corps qualified biologist (or environmental monitor) shall conduct a pre-construction surveys of the project site for terrestrial special-status, including MSHCP covered, wildlife species. During these surveys the biologist will:
    - Inspect the project area for any sensitive wildlife species;
    - Ensure that potential habitats within the construction zone are not occupied by sensitive species (e.g., potential burrows/nests are inspected); and

    - In the event of the discovery of a non-listed, special-status ground-dwelling animal, recover and relocate the animal to adjacent suitable habitat within the project site at least 200 feet from the limits of construction activities.

- **EC-BR-3** Prior to construction activities, a Corps qualified biologist (or the environmental monitor) shall conduct pre-construction environmental training for all construction crew members. The training shall focus on required mitigation measures and conditions of regulatory agency permits and approvals (if required). The training shall also include a summary of sensitive species and habitats potentially present within and adjacent to the project site.
- **EC-BR-4** The Corps' construction contractor will prepare a Spill Prevention and Contingency Plan. The Plan shall be implemented prior to and during site disturbance and construction activities. The plan will include measures to prevent or avoid an incidental leak or spill, including identification of materials necessary for containment and clean-up and contact information for management and agency staff. The plan and necessary containment and clean-up materials shall be kept within the construction area during all construction activities. Workers shall be educated on measures included in the plan at the pre-construction meeting or prior to beginning work on the project.
- **EC-BR-5** The Corps biologist (or the environmental monitor) will monitor construction activities to ensure compliance with environmental commitments.
- **EC-BR-6** Upon development of final construction plans and prior to site disturbance, the Corps shall clearly delineate the limits of construction on project plans. All construction, site disturbance, and vegetation removal shall be located within the delineated construction boundaries. The storage of equipment and materials, and temporary stockpiling of soil shall be located within designated areas only, and outside of natural habitat areas/channel. The limits of construction shall be delineated in the field with temporary construction fencing, staking, or flagging.
- EC-BR-8 Offsetting measures for permanent impacts to 0.64 acres to WOTUS include restoration of one acre of native habitat downstream of the project area.

Water Resources and Hydrology

- **WR-1 Construction Stormwater Pollution Prevention Plan (SWPPP)**. A SWPPP shall be developed for the project by the construction contractor, and filed with the Santa Ana Regional Water Quality Control Board (RWQCB) prior to construction. The SWPPP shall be stored at the construction site for reference or inspection review. Implementation of the SWPPP would help stabilize graded areas and waterways, and reduce erosion and sedimentation. The plan would designate BMPs that would be adhered to during construction activities. Erosion minimizing efforts such as straw wattles, water bars, covers, silt fences, and sensitive area access restrictions (for example, flagging) would be installed before clearing and grading begins. Mulching, seeding, or other suitable stabilization measures would be used to protect exposed areas during construction activities. During construction activities, measures would be in place to ensure that contaminates are not discharged from the construction sites. The SWPPP would define areas where hazardous materials would be stored, where trash would be placed, where rolling equipment would be parked, fueled and serviced, and where construction materials such as reinforcing bars and structural steel members would be stored. Erosion control during grading of the construction sites and during subsequent construction would be in place and monitored as specified by the SWPPP. *Construction contractors shall implement BMPs to prevent erosion and sedimentation to avoid potential release of contaminants into surface waters and groundwater. These shall be incorporated into a SWPPP.* A silting basin(s) would be established, as necessary, to capture silt and other materials, which might otherwise be carried from the site by rainwater surface runoff.

- **WR-2 Hazardous Materials Management Plan and Emergency Response Plan.** A project-specific hazardous materials management and hazardous waste management plan would be developed prior to initiation of construction. The plan would identify types of hazardous materials to be used during construction and the types of wastes that would be generated. All project personnel would be provided with project-specific training to ensure that all hazardous materials and wastes are handled in a safe and environmentally sound manner. This plan shall include an emergency response program to ensure quick and safe cleanup of accidental spills.
- **WR-3 Water quality permits**. Prior to engaging in any soil-disturbing activities, the construction contractor shall document compliance with the Clean Water Act (CWA) Section 402 NPDES General Permit for Storm Water Discharges Associated with Construction Activities, and shall also receive any necessary permits for dewatering activities, as applicable.

7.0 CONCLUSION

Alternative 1 meets the overall project purpose and is practicable with respect to cost, technology, and logistics (See Section 4). Construction of the project would result in permanent impacts to 0.64 acre of WOTUS due to the change in hydrology in the unnamed drainage, a tributary to Mill Creek.

Alternative 1 would require implementation of measures (environmental commitments) to avoid and/or minimize effects to the aquatic environment.

Based on the preliminary analysis above, Alternative 1 is in compliance with the Guidelines. The final 404(b)(1) evaluation and Findings of Compliance will be included with the Final evaluation.

Appendix E

Environmental Justice Screen Report

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EJSCREEN Report (Version 2019)

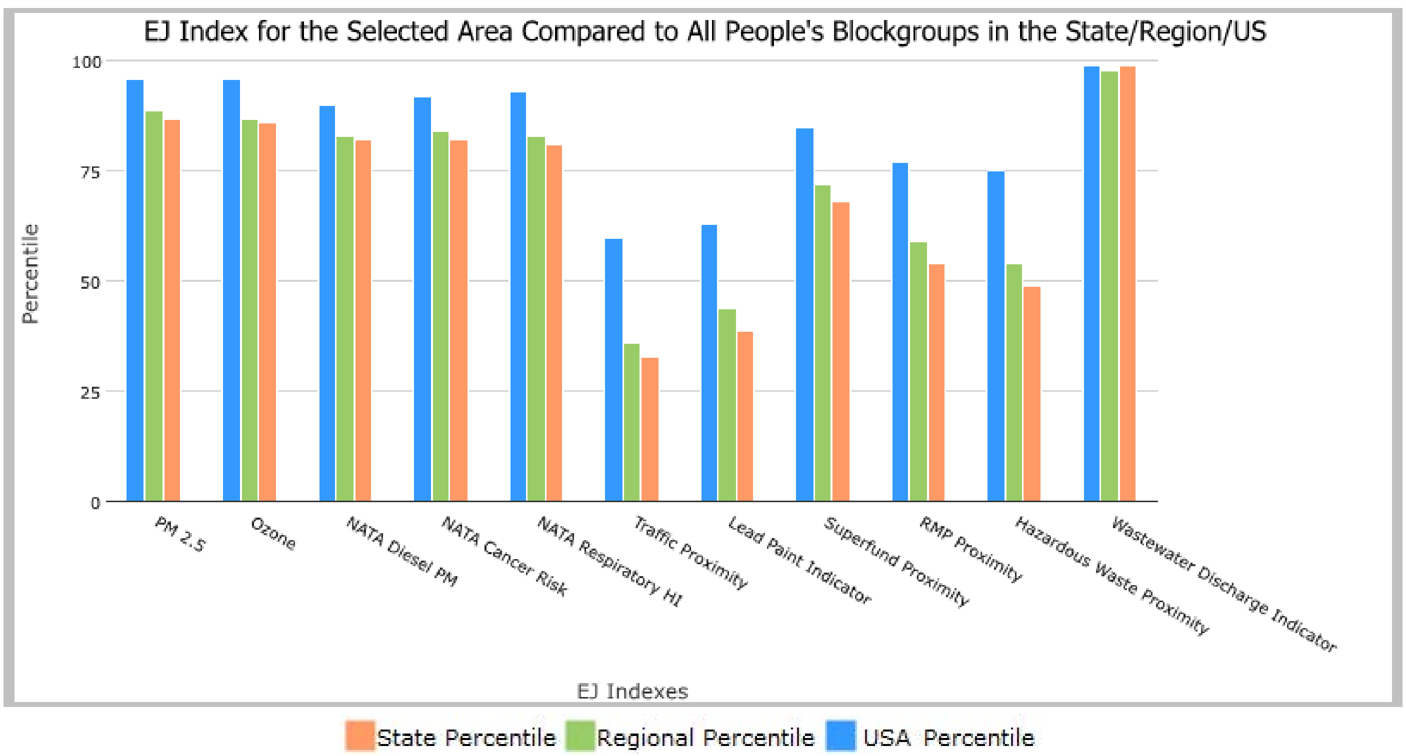
1 miles Ring around the Area, CALIFORNIA, EPA Region 9

Approximate Population: 12,170

Input Area (sq. miles): 4.85

River Road Dike

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	87	89	96
EJ Index for Ozone	86	87	96
EJ Index for NATA* Diesel PM	82	83	90
EJ Index for NATA* Air Toxics Cancer Risk	82	84	92
EJ Index for NATA* Respiratory Hazard Index	81	83	93
EJ Index for Traffic Proximity and Volume	33	36	60
EJ Index for Lead Paint Indicator	39	44	63
EJ Index for Superfund Proximity	68	72	85
EJ Index for RMP Proximity	54	59	77
EJ Index for Hazardous Waste Proximity	49	54	75
EJ Index for Wastewater Discharge Indicator	99	98	99



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

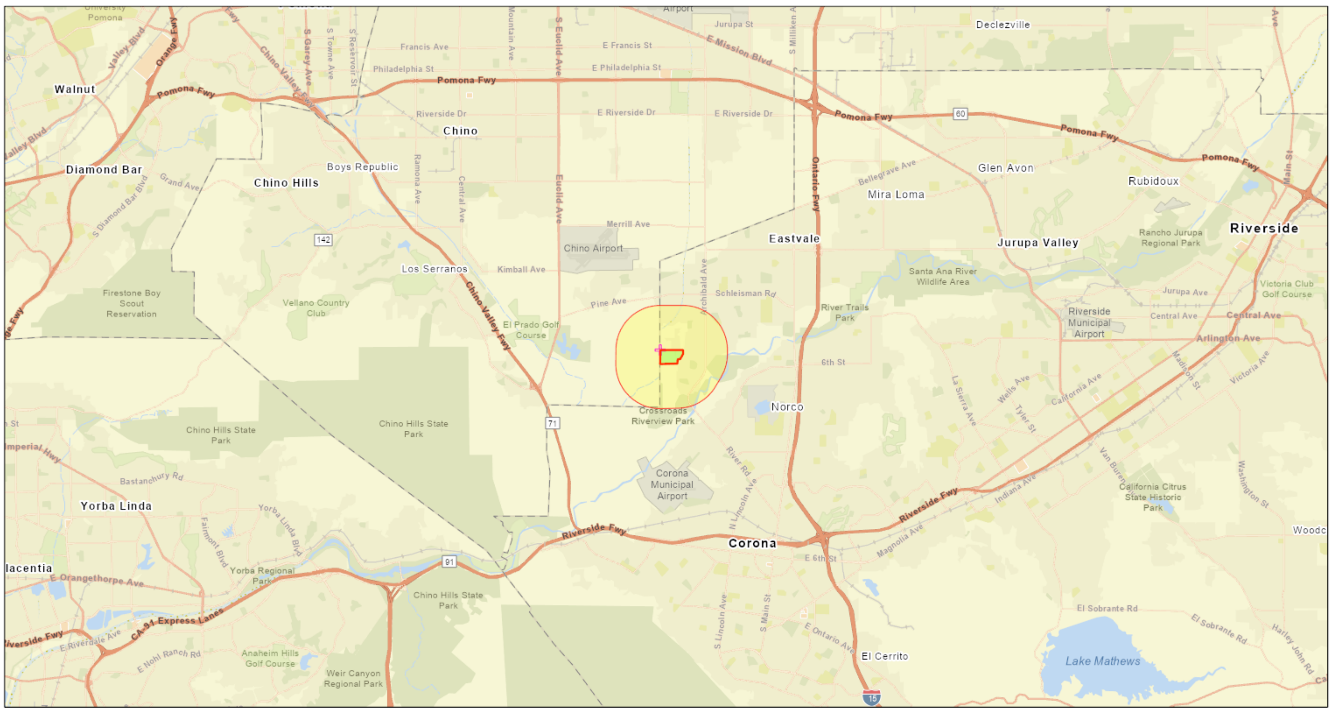
EJSCREEN Report (Version 2019)

1 miles Ring around the Area, CALIFORNIA, EPA Region 9

Approximate Population: 12,170

Input Area (sq. miles): 4.85

River Road Dike



July 14, 2020

River Road Dike

River Road Dike

1:144,448

0 1.5 3 6 mi

0 2.25 4.5 9 km

Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

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

EJSCREEN Report (Version 2019)

1 miles Ring around the Area, CALIFORNIA, EPA Region 9

Approximate Population: 12,170

Input Area (sq. miles): 4.85

River Road Dike

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	13.1	9.78	97	9.21	97	8.3	99
Ozone (ppb)	61.1	48.2	84	48.9	87	43	98
NATA* Diesel PM (µg/m^3)	0.55	0.468	67	0.479	60-70th	0.479	60-70th
NATA* Cancer Risk (lifetime risk per million)	38	36	62	35	60-70th	32	70-80th
NATA* Respiratory Hazard Index	0.57	0.55	57	0.53	50-60th	0.44	80-90th
Traffic Proximity and Volume (daily traffic count/distance to road)	1.5	2000	1	1700	2	750	6
Lead Paint Indicator (% Pre-1960 Housing)	0.0011	0.29	10	0.24	17	0.28	10
Superfund Proximity (site count/km distance)	0.065	0.18	40	0.15	46	0.13	51
RMP Proximity (facility count/km distance)	0.18	1.1	18	0.99	24	0.74	34
Hazardous Waste Proximity (facility count/km distance)	0.22	3.4	17	2.9	22	4	37
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	32	17	98	31	98	14	99
Demographic Indicators							
Demographic Index	49%	48%	52	47%	54	36%	72
Minority Population	80%	62%	66	59%	69	39%	84
Low Income Population	17%	34%	27	34%	27	33%	27
Linguistically Isolated Population	9%	9%	60	8%	64	4%	82
Population With Less Than High School Education	10%	18%	41	17%	43	13%	52
Population Under 5 years of age	11%	6%	90	6%	90	6%	90
Population over 64 years of age	6%	13%	16	14%	16	15%	12

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

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

EJSCREEN Report (Version 2019)

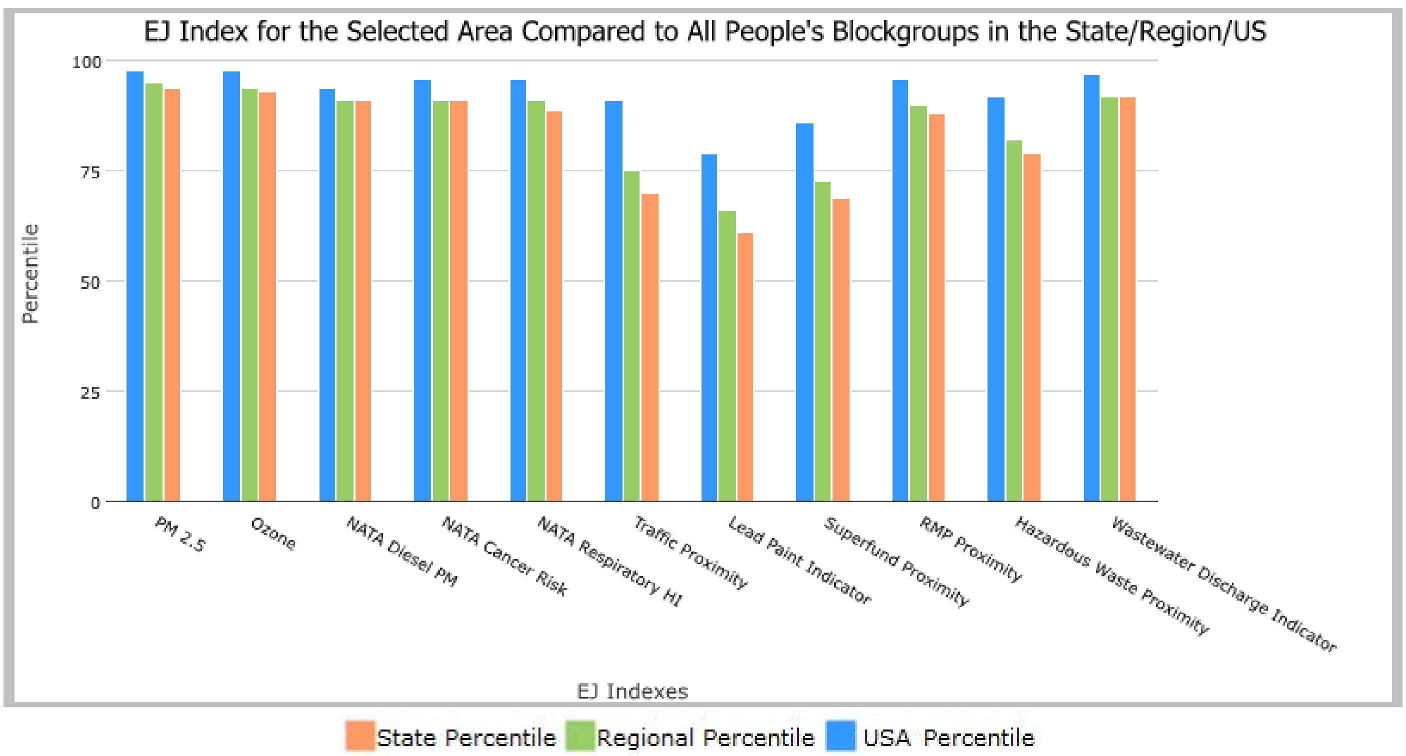
the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 83,200

Input Area (sq. miles): 32.83

City of Chino

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	94	95	98
EJ Index for Ozone	93	94	98
EJ Index for NATA* Diesel PM	91	91	94
EJ Index for NATA* Air Toxics Cancer Risk	91	91	96
EJ Index for NATA* Respiratory Hazard Index	89	91	96
EJ Index for Traffic Proximity and Volume	70	75	91
EJ Index for Lead Paint Indicator	61	66	79
EJ Index for Superfund Proximity	69	73	86
EJ Index for RMP Proximity	88	90	96
EJ Index for Hazardous Waste Proximity	79	82	92
EJ Index for Wastewater Discharge Indicator	92	92	97



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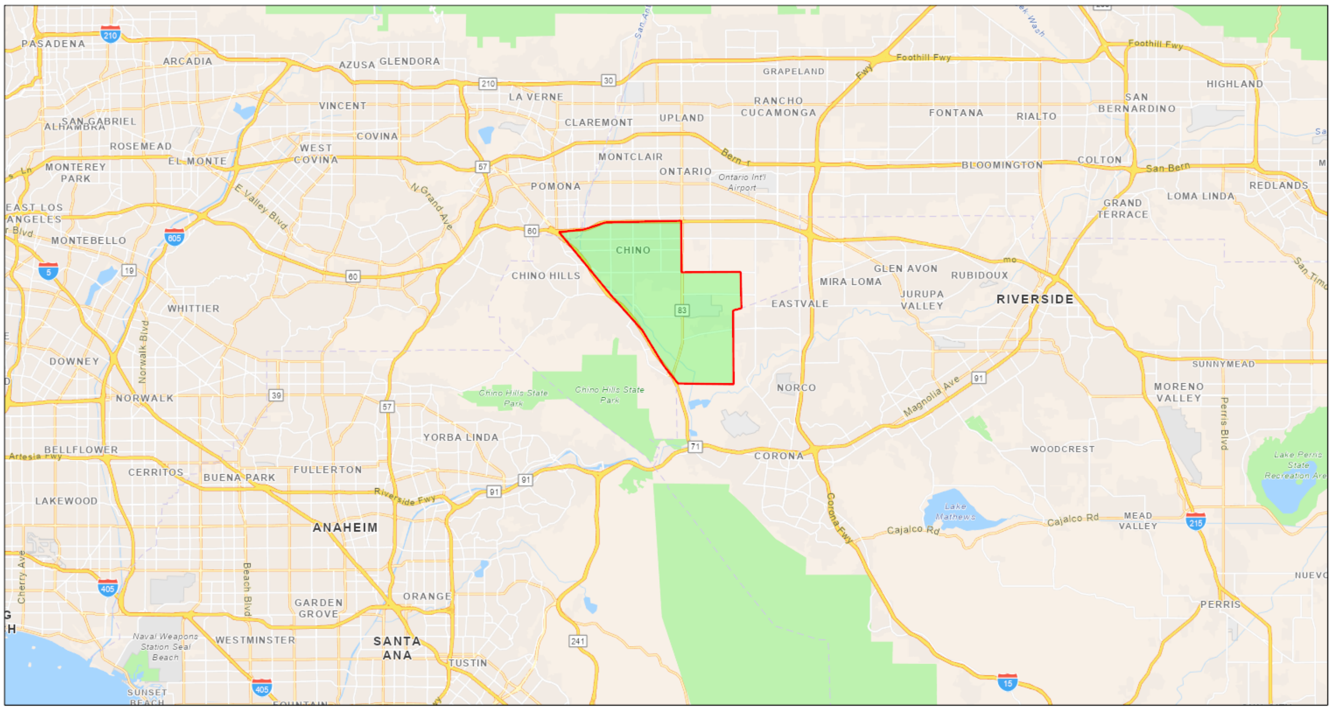
EJSCREEN Report (Version 2019)

the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 83,200

Input Area (sq. miles): 32.83

City of Chino



July 14, 2020

City of Chino

1:288,895

0 3 6 12 mi

0 4.75 9.5 19 km

Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	5

EJSCREEN Report (Version 2019)

the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 83,200

Input Area (sq. miles): 32.83

City of Chino

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	13.2	9.78	97	9.21	98	8.3	99
Ozone (ppb)	61.7	48.2	85	48.9	88	43	98
NATA* Diesel PM (µg/m^3)	0.725	0.468	82	0.479	80-90th	0.479	80-90th
NATA* Cancer Risk (lifetime risk per million)	41	36	78	35	70-80th	32	80-90th
NATA* Respiratory Hazard Index	0.62	0.55	70	0.53	70-80th	0.44	80-90th
Traffic Proximity and Volume (daily traffic count/distance to road)	1400	2000	60	1700	67	750	87
Lead Paint Indicator (% Pre-1960 Housing)	0.11	0.29	39	0.24	47	0.28	40
Superfund Proximity (site count/km distance)	0.051	0.18	30	0.15	36	0.13	42
RMP Proximity (facility count/km distance)	1.2	1.1	69	0.99	73	0.74	80
Hazardous Waste Proximity (facility count/km distance)	2.8	3.4	60	2.9	67	4	83
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.24	17	85	31	85	14	92
Demographic Indicators							
Demographic Index	51%	48%	55	47%	57	36%	74
Minority Population	75%	62%	61	59%	64	39%	81
Low Income Population	26%	34%	44	34%	43	33%	44
Linguistically Isolated Population	9%	9%	59	8%	63	4%	82
Population With Less Than High School Education	23%	18%	67	17%	70	13%	82
Population Under 5 years of age	6%	6%	48	6%	48	6%	52
Population over 64 years of age	10%	13%	39	14%	39	15%	30

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

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

EJSCREEN Report (Version 2019)

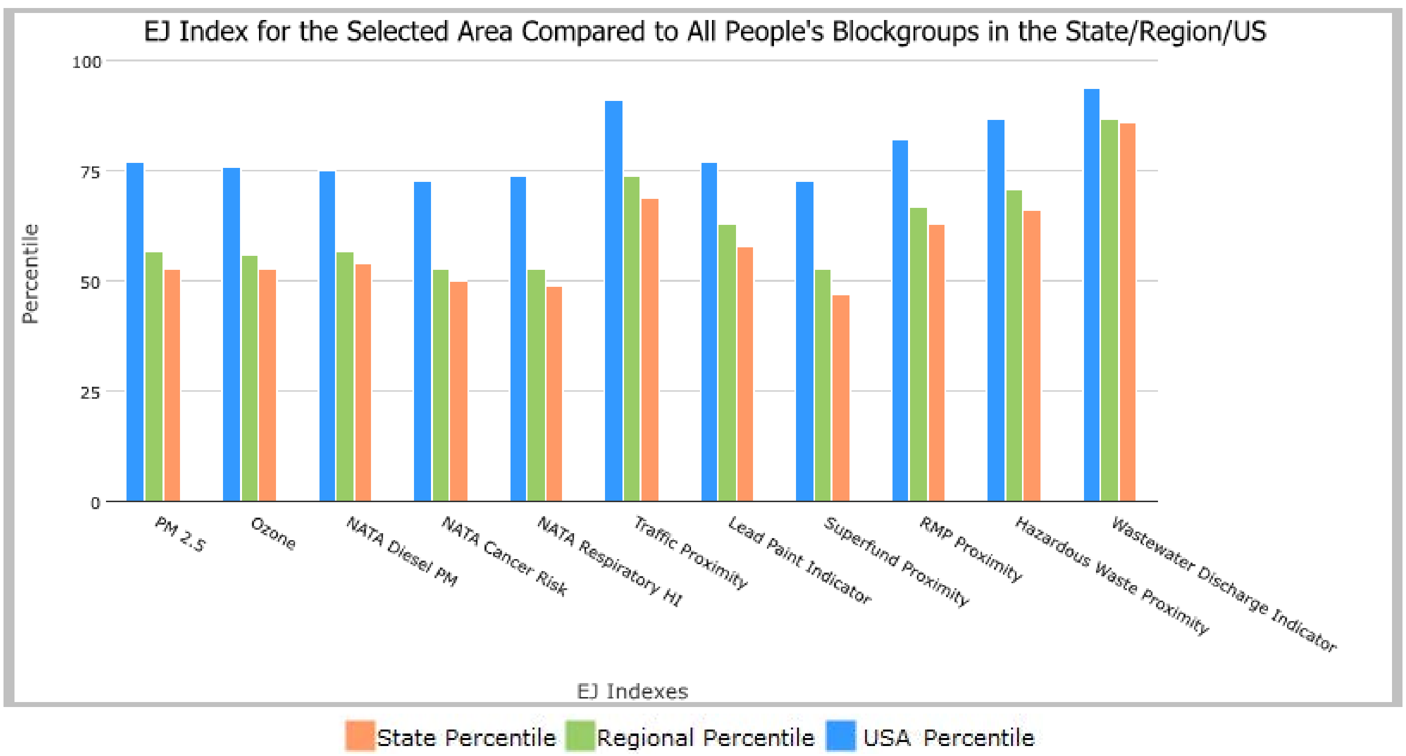
the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 168,876

Input Area (sq. miles): 45.00

City of Corona

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	53	57	77
EJ Index for Ozone	53	56	76
EJ Index for NATA* Diesel PM	54	57	75
EJ Index for NATA* Air Toxics Cancer Risk	50	53	73
EJ Index for NATA* Respiratory Hazard Index	49	53	74
EJ Index for Traffic Proximity and Volume	69	74	91
EJ Index for Lead Paint Indicator	58	63	77
EJ Index for Superfund Proximity	47	53	73
EJ Index for RMP Proximity	63	67	82
EJ Index for Hazardous Waste Proximity	66	71	87
EJ Index for Wastewater Discharge Indicator	86	87	94



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

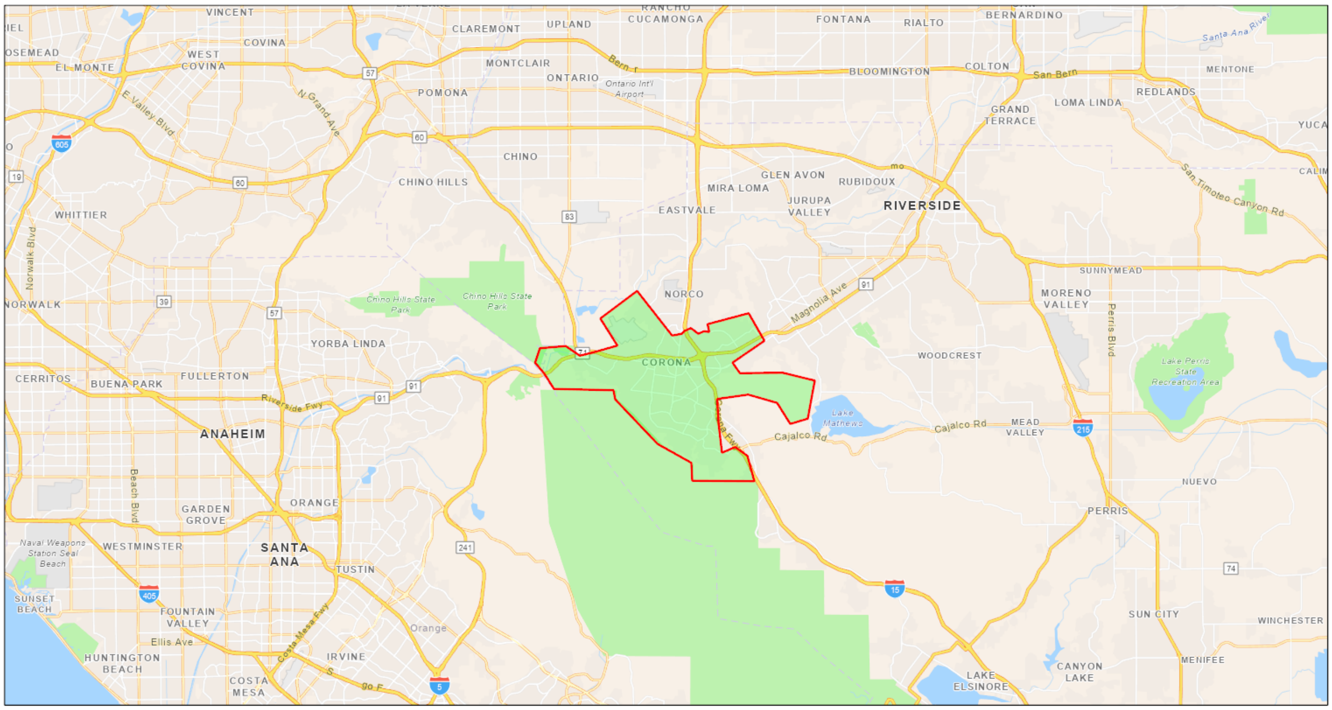
EJSCREEN Report (Version 2019)

the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 168,876

Input Area (sq. miles): 45.00

City of Corona



July 14, 2020

City of Corona

1:288,895

0 3 6 12 mi

0 4.75 9.5 19 km

Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	10

EJSCREEN Report (Version 2019)

the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 168,876

Input Area (sq. miles): 45.00

City of Corona

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	12.5	9.78	91	9.21	93	8.3	98
Ozone (ppb)	59.9	48.2	82	48.9	86	43	97
NATA* Diesel PM (µg/m^3)	0.435	0.468	54	0.479	50-60th	0.479	50-60th
NATA* Cancer Risk (lifetime risk per million)	35	36	45	35	<50th	32	60-70th
NATA* Respiratory Hazard Index	0.5	0.55	39	0.53	<50th	0.44	60-70th
Traffic Proximity and Volume (daily traffic count/distance to road)	1300	2000	57	1700	64	750	85
Lead Paint Indicator (% Pre-1960 Housing)	0.081	0.29	34	0.24	43	0.28	34
Superfund Proximity (site count/km distance)	0.051	0.18	30	0.15	36	0.13	42
RMP Proximity (facility count/km distance)	0.69	1.1	54	0.99	59	0.74	67
Hazardous Waste Proximity (facility count/km distance)	2.5	3.4	56	2.9	64	4	81
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.3	17	85	31	86	14	92
Demographic Indicators							
Demographic Index	46%	48%	48	47%	50	36%	70
Minority Population	63%	62%	48	59%	52	39%	75
Low Income Population	28%	34%	47	34%	47	33%	48
Linguistically Isolated Population	6%	9%	47	8%	52	4%	75
Population With Less Than High School Education	16%	18%	54	17%	57	13%	69
Population Under 5 years of age	7%	6%	55	6%	55	6%	58
Population over 64 years of age	9%	13%	38	14%	38	15%	29

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

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

EJSCREEN Report (Version 2019)

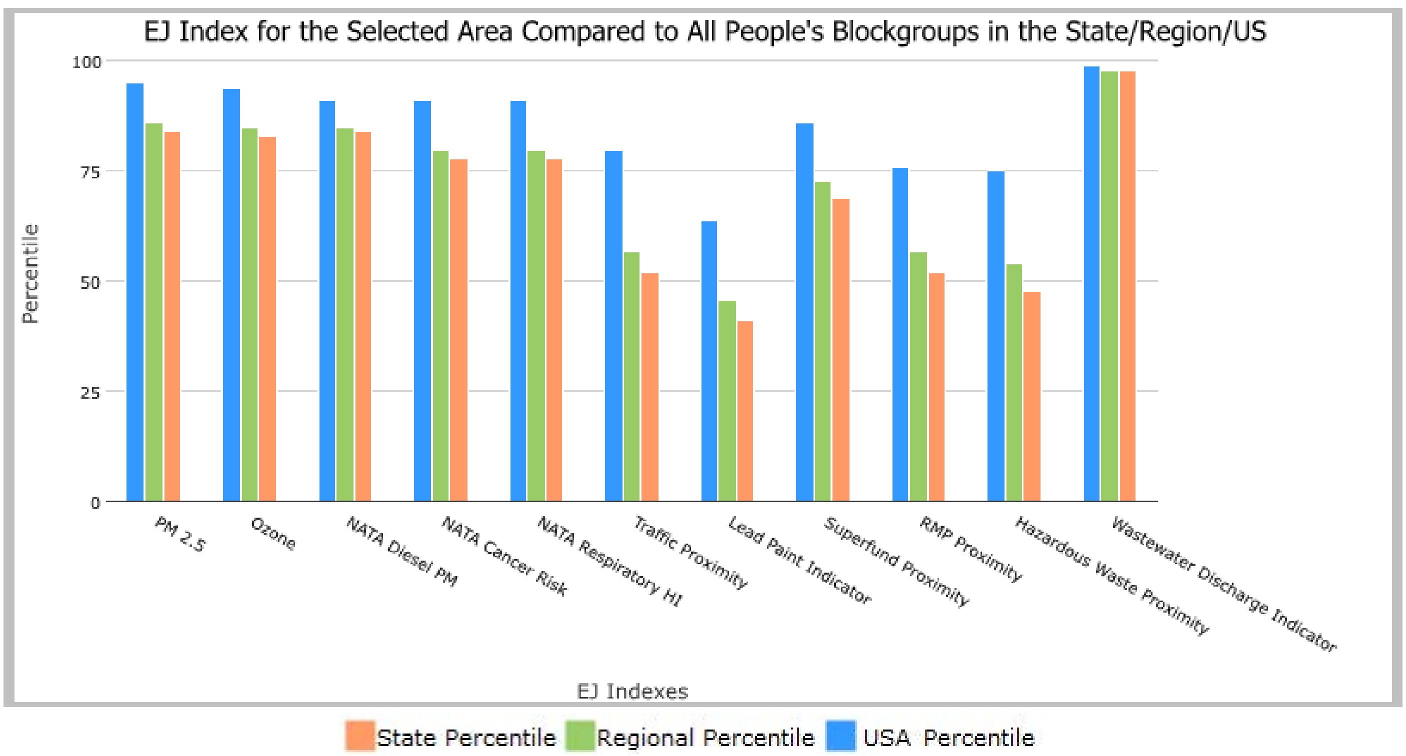
the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 60,217

Input Area (sq. miles): 12.93

City of Eastvale

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	84	86	95
EJ Index for Ozone	83	85	94
EJ Index for NATA* Diesel PM	84	85	91
EJ Index for NATA* Air Toxics Cancer Risk	78	80	91
EJ Index for NATA* Respiratory Hazard Index	78	80	91
EJ Index for Traffic Proximity and Volume	52	57	80
EJ Index for Lead Paint Indicator	41	46	64
EJ Index for Superfund Proximity	69	73	86
EJ Index for RMP Proximity	52	57	76
EJ Index for Hazardous Waste Proximity	48	54	75
EJ Index for Wastewater Discharge Indicator	98	98	99



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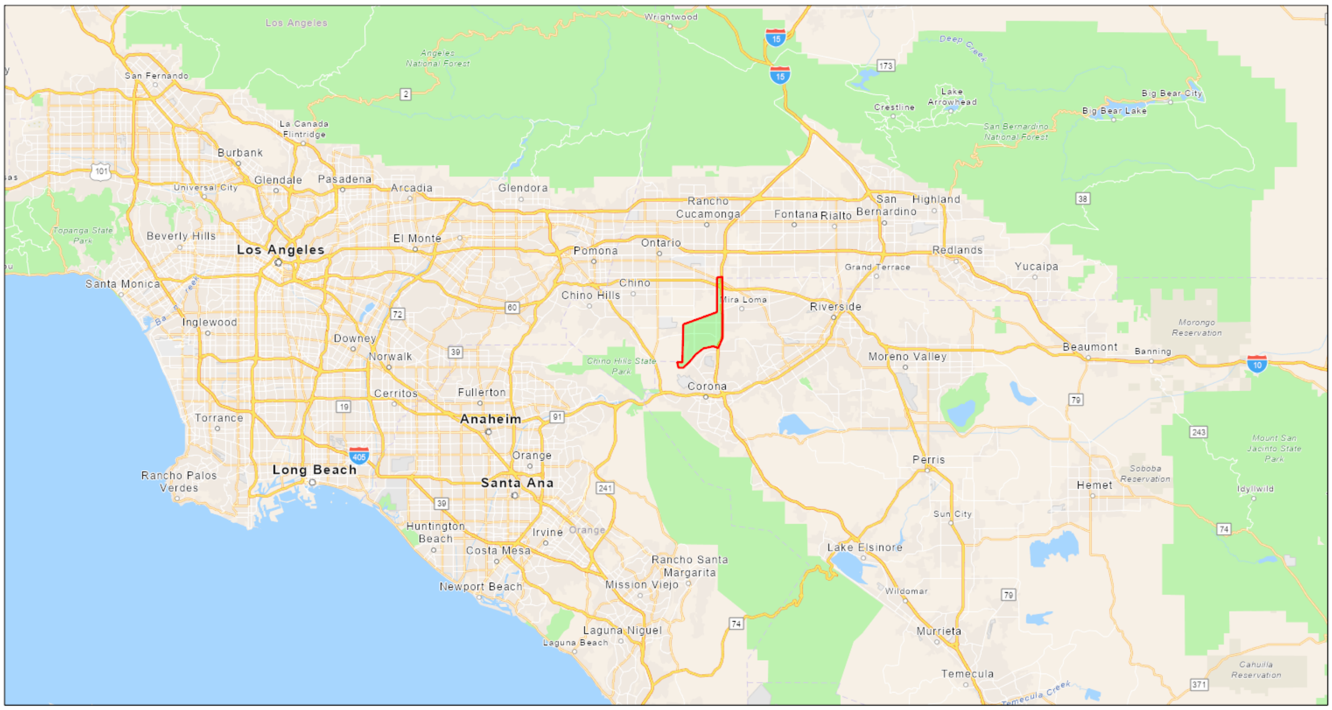
EJSCREEN Report (Version 2019)

the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 60,217

Input Area (sq. miles): 12.93

City of Eastvale



July 14, 2020

City of Eastvale

1:577,791

0 5 10 20 mi

0 5 10 20 km

Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

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

EJSCREEN Report (Version 2019)

the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 60,217

Input Area (sq. miles): 12.93

City of Eastvale

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	13.3	9.78	98	9.21	98	8.3	99
Ozone (ppb)	62.9	48.2	87	48.9	89	43	98
NATA* Diesel PM (µg/m^3)	0.68	0.468	79	0.479	70-80th	0.479	80-90th
NATA* Cancer Risk (lifetime risk per million)	39	36	66	35	60-70th	32	80-90th
NATA* Respiratory Hazard Index	0.6	0.55	64	0.53	60-70th	0.44	80-90th
Traffic Proximity and Volume (daily traffic count/distance to road)	300	2000	24	1700	32	750	56
Lead Paint Indicator (% Pre-1960 Housing)	0.0062	0.29	11	0.24	18	0.28	11
Superfund Proximity (site count/km distance)	0.079	0.18	47	0.15	54	0.13	58
RMP Proximity (facility count/km distance)	0.17	1.1	17	0.99	23	0.74	32
Hazardous Waste Proximity (facility count/km distance)	0.24	3.4	18	2.9	24	4	39
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	7.6	17	96	31	96	14	98
Demographic Indicators							
Demographic Index	49%	48%	52	47%	54	36%	72
Minority Population	81%	62%	67	59%	70	39%	84
Low Income Population	16%	34%	26	34%	25	33%	25
Linguistically Isolated Population	9%	9%	58	8%	63	4%	81
Population With Less Than High School Education	12%	18%	45	17%	48	13%	58
Population Under 5 years of age	8%	6%	71	6%	71	6%	74
Population over 64 years of age	7%	13%	25	14%	25	15%	19

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

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

EJSCREEN Report (Version 2019)

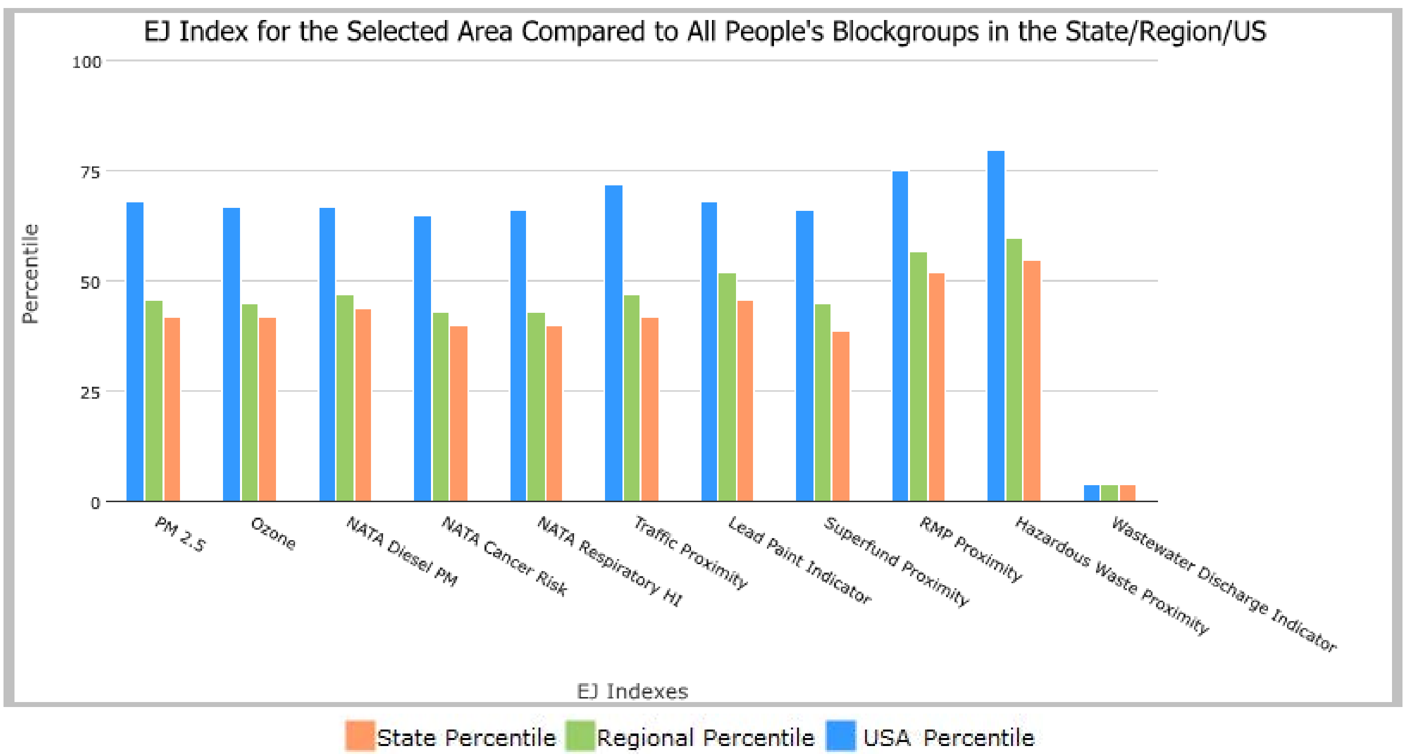
the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 30,696

Input Area (sq. miles): 15.23

City of Norco

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	42	46	68
EJ Index for Ozone	42	45	67
EJ Index for NATA* Diesel PM	44	47	67
EJ Index for NATA* Air Toxics Cancer Risk	40	43	65
EJ Index for NATA* Respiratory Hazard Index	40	43	66
EJ Index for Traffic Proximity and Volume	42	47	72
EJ Index for Lead Paint Indicator	46	52	68
EJ Index for Superfund Proximity	39	45	66
EJ Index for RMP Proximity	52	57	75
EJ Index for Hazardous Waste Proximity	55	60	80
EJ Index for Wastewater Discharge Indicator	4	4	4



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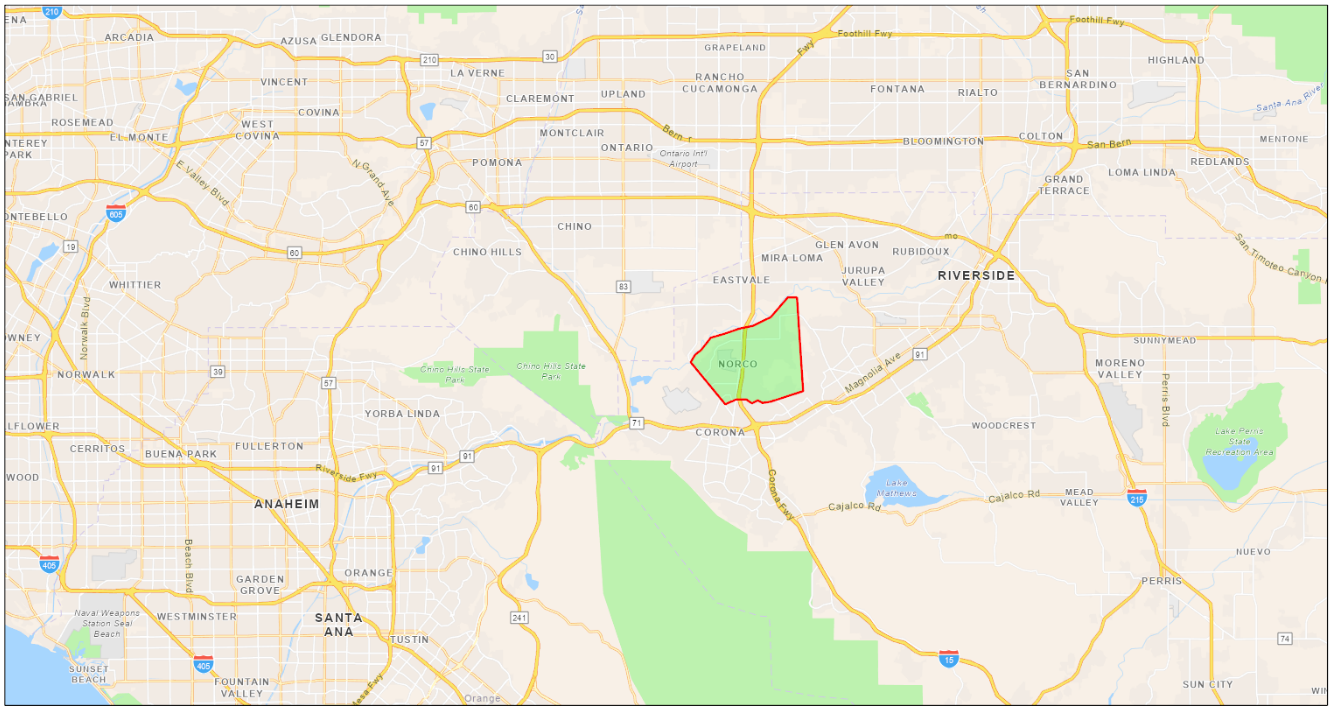
EJSCREEN Report (Version 2019)

the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 30,696

Input Area (sq. miles): 15.23

City of Norco



July 14, 2020

City of Norco

1:288,895

0 3 6 12 mi

0 4.75 9.5 19 km

Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

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

EJSCREEN Report (Version 2019)

the User Specified Area, CALIFORNIA, EPA Region 9

Approximate Population: 30,696

Input Area (sq. miles): 15.23

City of Norco

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	13	9.78	96	9.21	97	8.3	99
Ozone (ppb)	62.2	48.2	86	48.9	88	43	98
NATA* Diesel PM (µg/m^3)	0.529	0.468	65	0.479	60-70th	0.479	60-70th
NATA* Cancer Risk (lifetime risk per million)	37	36	56	35	50-60th	32	70-80th
NATA* Respiratory Hazard Index	0.54	0.55	49	0.53	50-60th	0.44	70-80th
Traffic Proximity and Volume (daily traffic count/distance to road)	610	2000	38	1700	47	750	72
Lead Paint Indicator (% Pre-1960 Housing)	0.18	0.29	47	0.24	55	0.28	49
Superfund Proximity (site count/km distance)	0.071	0.18	43	0.15	49	0.13	54
RMP Proximity (facility count/km distance)	0.4	1.1	40	0.99	46	0.74	55
Hazardous Waste Proximity (facility count/km distance)	1.2	3.4	40	2.9	49	4	68
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.9	17	89	31	90	14	95
Demographic Indicators							
Demographic Index	37%	48%	34	47%	36	36%	59
Minority Population	50%	62%	34	59%	38	39%	66
Low Income Population	24%	34%	40	34%	40	33%	40
Linguistically Isolated Population	3%	9%	30	8%	35	4%	61
Population With Less Than High School Education	17%	18%	58	17%	61	13%	73
Population Under 5 years of age	5%	6%	34	6%	34	6%	37
Population over 64 years of age	13%	13%	58	14%	57	15%	47

* 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 F

Mail Distribution List

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Federal Agencies

U.S. Environmental Protection Agency
Deanna W. Wieman, Deputy Director
Cross Media Division
Mail Code CMD-2
75 Hawthorne Street
San Francisco, CA 94105

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Rebecca Christensen
U.S. Fish and Wildlife Service
Palm Springs Office
777 E. Tahquitz Canyon Way, Suite 208
Palm Springs, California 92262

Robert Fisher, Supervisory Ecologist
U.S. Geological Survey
Western Ecological Research Center
777 E. Tahquitz Canyon Way
Palm Springs, California 92262

State Agencies

State Clearinghouse
Office of Planning and Research
P.O. Box 3044
Sacramento, CA 95812-3044

Kathleen Andrews
CA. Dept. of Conservation District 1,
Division of Oil, Gas, and Geothermal Resources
5816 Corporate Avenue, Suite 200
Cypress, CA 90630-4731

Kim Freeburn
California Department of Fish and Wildlife
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Julianne Polanco
State Historic Preservation Officer
Office of Historic Preservation
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Sacramento, CA 95816

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Regional Water Quality Control Board Region 8
Attn: Marc Brown
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Riverside, CA 92501-3339

Native American Heritage Commission
1515 Harbor Boulevard, Suite 100
West Sacramento, CA 95691

State Water Resources Control Board
Environmental Services Unit
1001 I Street
Sacramento, CA 95814

Enrique Arroyo, District Planner
Department of Parks and Recreation
Inland Empire District
17801 Lake Perris Dr.
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Caltrans District 12
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Santa Ana, CA 92705

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464 W. 4th St. San Bernardino, CA 92402

Jacob Mathew
Caltrans Office of Encroachment Permits 464
West 4th Street, Basement, MS 619 San
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CA Dept. of Toxic Substances Control
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5796 Corporate Avenue
Cypress, CA 90630

CA Dept. of Public Health
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Mr. James Tyler
Orange County Public Works Flood Control Div./
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Mr. Ariel Corpuz
Orange County Public Works Flood Control Div./
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Santa Ana, CA 92703

Mr. Joe Nguyen
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Joanna Chang
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South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

General Manager Metropolitan Water District
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Orange County Transportation Authority
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Orange, CA 92863

Riverside County, County Recorder
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Director of Planning
4080 Lemon Street
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Riverside, CA 92509

Marc Brewer
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Hugh Nguyen
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Jimmy Chung, City Engineer
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Steve King, Planning Director
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Organizations/Groups

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Riverside-Corona Resource Conservation District
Attn: Kerwin Russell
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Riverside, CA 92501

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5370 Riverview Drive
Rubidoux, CA 92509

Audubon Society
San Bernardino Valley Chapter
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San Bernardino, CA 92423-0973

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Chair: Prado Basin Group Sierra Club San Gorgonio Chapter
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Glenn Parker Wildlife Corridor Conservation Authority
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Megan Brousseau
Associate Director Inland Empire Waterkeeper
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Dan Silver, Executive Director
Endangered Habitats League
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Greg Rousseau, Project Engineer
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Libraries

Corona Public Library
Attn: Nora Jacob
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Corona, CA 91720

Norco Public Library
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Norco, CA 91760

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

Chino Branch Library
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Native American Contacts

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Juaneno Band of Mission Indians
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Juaneno Band of Mission Indians Acjachemen Nation - Romero
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Soboba Band of Luiseno Indians
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