

DRAFT

Initial Study/Mitigated Negative Declaration

Smith Reservoir Replacement Project

December 2023

194-0200-0033

Prepared for



Serrano Water District

18021 Lincoln Street
Villa Park, CA 92861

Prepared by



TETRA TECH

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SMITH RESERVOIR REPLACEMENT PROJECT

PROPOSED MITIGATED NEGATIVE DECLARATION AND NOTICE OF INTENT TO ADOPT THE PROPOSED MITIGATED NEGATIVE DECLARATION

This serves as the Notice of Intent by the Serrano Water District to adopt a Mitigated Negative Declaration for the Smith Reservoir Replacement Project; prepared in accordance with the California Environmental Quality Act (CEQA) and its guidelines.

Name of Project: Smith Reservoir Replacement Project (“Project”).

Project Location: The approximately 1.7-acre Project site is located approximately southwest of the intersection of Taft Avenue and Sycamore Street in the City of Villa Park.

Lead Agency: Serrano Water District
18021 Lincoln Street
Villa Park, California 92861

Project

Description: The Project consists of replacing the existing 6-million-gallon (MG) Smith Reservoir and Pump Station which has reached the end of its useful life. The replacement reservoir will include: two below grade cast-in-place concrete tanks of the same size as the existing below grade tanks; a replacement pump station with increased maximum pumping capacity from 7,400 gallons per minute (gpm) to 8,400 gpm and with modernized with instrumentation and controls as well as improvements to facilitate maintenance; and construction of a valve vault and connection into existing City of Orange system in Cannon Street, at intersection of Taft Avenue and Cannon Street. . The Project will provide storage capacity to meet operational, fire, and emergency water demands for the District.

The Project site is not designated a hazardous waste property, nor is it a hazardous waste disposal site as defined under Section 65962.5 of the California Government Code.

NOTICE IS HEREBY GIVEN THAT the Serrano Water District proposes to adopt a Mitigated Negative Declaration for the above-cited Project. This Mitigated Negative Declaration is based on the finding that, by implementing the identified mitigation measures, the Project’s potential impacts will be maintained at a less than significant level. The reasons to support such a finding are documented by the Initial Study prepared by Tetra Tech, Inc. The proposed Mitigated Negative Declaration and supporting materials are available for review at the Serrano Water District located at 18021 Lincoln Street, Villa Park, California, 92861 and on the Serrano Water District website at <https://serranowater.org/>.

For questions regarding the Mitigated Negative Declaration, please contact:

NAME:	Jerry Vilander	PHONE:	714.538.0079
TITLE:	General Manager	EMAIL:	info@serranowater.org
ADDRESS:	Serrano Water District 18021 Lincoln Street Villa Park, California 92861		

Public Review Period: 30 days **Begins:** 12/12/2023 **Ends:** 1/10/2024

Public Meeting: Adoption of the Mitigated Negative Declaration will be considered at a public hearing by the District which is scheduled to take place on January 23, 2024 at 8:30 a.m. at the Serrano Water District located at 18021 Lincoln Street, Villa Park, CA 92861.

In accordance with CEQA Guidelines, any comments concerning the findings of the proposed Initial Study/Mitigated Negative Declaration must be submitted in writing and **received by the Serrano Water District no later than 5:00 p.m. on January 10, 2024**, in order to be considered prior to the final determination on the Project by the District. Please submit your written comments to Jerry Vilander, General Manager, Serrano Water District, 18021 Lincoln Street, Villa Park, CA 92861. or via email to info@serranowater.org.

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Acronyms and Abbreviations

§	section
AB	Assembly Bill
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
Basin	South Coast Air Basin
BMP	best management practice
BP	before present
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CH ₄	methane
CLSM	controlled low-strength material
CNEL	Community Noise Equivalent Level
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CRHR	California Register of Historical Resources
dBA	A-weighted sound level
DDW	California State Water Resources Control Board, Division of Drinking Water
District	Serrano Water District
FEMA	Federal Emergency Management Agency
FTA	Federal Transit Administration
GHG	greenhouse gas
gpm	gallon per minute
HWL	high water level
L _{eq}	equivalent sound level
MG	million gallon
mgd	million gallons per day
MLD	most likely descendant
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
N ₂ O	nitrous oxide

NPDES	National Pollutant Discharge Elimination System
O ₃	ozone
OCFA	Orange County Fire Authority
PM ₁₀	inhalable particulate matter
PM _{2.5}	fine particulate matter
PRC	Public Resources Code
Project	Smith Reservoir Replacement Project
RCPG	Regional Comprehensive Plan and Guide
REL	Reference Exposure Level
SCAB	South Coast Air Basin
SCADA	supervisory control and data acquisition
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SR	State Route
TAC	toxic air contaminant
Tetra Tech	Tetra Tech, Inc.
VCP	vitrified clay pipe
VdB	vibration decibels
VFD	variable frequency drive
WHWFP	Walter E. Howiler, Jr. Water Filtration Plant

1.0 INTRODUCTION

The Serrano Water District (District) proposes to replace the existing 6-million-gallon (MG) Smith Reservoir and Pump Station (Project) in Orange County, California. The replacement will include a below grade cast-in-place concrete reservoir that will provide storage capacity to meet operational, fire, and emergency water demands for the District.

Following an initial review of the proposed Project, the District has determined that it is subject to the guidelines and regulations of the California Environmental Quality Act (CEQA). This Initial Study addresses the environmental effects of the Project, as proposed.

1.1 Statutory Authority and Requirements

This Mitigated Negative Declaration has been prepared by the District with technical assistance from Tetra Tech, Inc. (Tetra Tech) to evaluate if implementation of the Project would have a significant effect on the environment. Pursuant to Section 15070 of the *Guidelines for Implementation of the California Environmental Quality Act* (14 California Code of Regulations Sections [§§] 15070-15075), a public agency shall prepare or have prepared a proposed negative declaration or mitigated negative declaration for a project subject to CEQA when:

- (a) *The initial study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or*
- (b) *The initial study identifies potentially significant effects, but:*
 - (1) *Revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and*
 - (2) *There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.*

1.2 Required Content

CEQA Guidelines Section 15071 indicate that a Negative Declaration circulated for public review shall include:

- (a) *A brief description of the project, including a commonly used name for the project, if any;*
- (b) *The location of the project, preferably shown on a map, and the name of the project proponent;*
- (c) *A proposed finding that the project will not have a significant effect on the environment;*
- (d) *An attached copy of the Initial Study documenting reasons to support the finding; and*
- (e) *Mitigation measures, if any, included in the project to avoid potentially significant effects.*

2.0 PROJECT INFORMATION

Project title:	Smith Reservoir Replacement Project
Lead agency name and address:	Serrano Water District 18021 Lincoln Street Villa Park, California 92861
Contact person and phone number:	Jerry Vilander, General Manager 714-538-0079
Project location:	The Project is located approximately southwest of the intersection of Taft Avenue and Sycamore Street in the City of Villa Park in Orange County. See Figure 2-1, Project Vicinity Map for more details.
Project sponsor's name and address:	Serrano Water District 18021 Lincoln Street Villa Park, California 92861
General Plan Designation:	Estate Low Density Residential 1.75 DU/AC
Zoning Designation:	Public Institution
Surrounding land uses:	The surrounding land uses consist of residential uses. State Route 55 is located approximately 1.7 miles to the west, and State Route 91 is located approximately 2.4 miles to the north.

2.1 Environmental Setting

The District's Smith Reservoir and Pump Station is located approximately southwest of the intersection of Taft Avenue and Sycamore Street, in the City of Villa Park in north Orange County (see Figure 2-1, Project Vicinity Map; Figure 2-2 Project Location).

2.1.1 Regional

Orange County, situated on the California south coastal plain, covers an area of approximately 782 square miles. It is bounded by Los Angeles and San Bernardino Counties to the north, Riverside County to the East, San Diego County to the south, and the Pacific Ocean to the west.

The city of Villa Park encompasses 2.1 square miles and is completely encircled by the city of Orange with the exception of a small area controlled by the County of Orange along Santiago Creek. The city of Villa Park is located in the low foothills on the west flank of the Santa Ana Mountains and is southeast of the Santa Ana River. Along its southeastern boundary runs a portion of Santiago Creek. North of the City of Villa Park are the Peralta Hills, exceeding a height of 1,500 feet. To the south is the Lomas de Santiago ridgeline with elevations as high as 1,700 feet (City of Villa Park 2019a). Land uses in Villa Park include single-family residential parcels ranging from 6,000 to over 20,000 square feet, a planned community district, a multiple family district, a sand and gravel extraction district, water reclamation and flood control facilities, and a small amount for professional use (City of Villa Park 2019b). Regional access to Villa Park is provided by State Route 55, which is approximately 0.5 mile west of the city. Villa Park is also accessible from adjacent communities via major arterial surface streets.

2.1.2 Project Site

The Project site is in the east-central side of Villa Park, with site access from Taft Avenue on the northern end of the site or Sycamore Street on the eastern end of the site. The site is surrounded by small estate residential zoning, with four large houses directly adjacent to the site on the west and south sides. In addition, a valve vault and connection into existing City of Orange system will be constructed in Cannon Street at the intersection of Taft Avenue and Cannon Street. The valve vault site is also surrounded by small estate residential zoning.

2.2 Project Description

2.2.1 Background

The District was established in 1876 and provides potable water to the city of Villa Park and a small portion of the city of Orange. The District receives its water supply from local surface water that is stored in Irvine Lake and groundwater from three wells located within the city of Villa Park. The District provides water for a population of 6,500 covering approximately 4.7 square miles, serving primarily large lot single family homes and one shopping center. The District has 43 miles of pipeline, three wells, a treatment plant, and two reservoirs. All of the District's water is treated at the Walter E. Howiler, Jr. Water Filtration Plant (WHWFP), which has an average production rate of 2.2 million gallons per day (mgd) (Serrano Water District 2023).

Half of the existing Smith Reservoir and the Pump Station were built in 1970. The reservoir comprises two below grade concrete tanks (east and west) having a total capacity of 6.0 MG, see Figure 2-3, Existing Site Plan. The 3.0 MG west tank was built first in 1970 and the east tank was built 15 years later in 1985 to provide an additional 3.0 MG of capacity to the reservoir. The east and west tanks have an approximate finished floor elevation of 371 feet and high-water level (HWL) of 390 feet. The pump station consists of three 1,000 gallons per minute (gpm) vertical turbine pumps, each equipped with 125 horsepower (HP) motors for the upper zone and three 1,650 gpm vertical turbine pumps with two 100 HP motors and one 125 HP motor for the lower zone.

In 2015 and 2016, the District evaluated the Smith Reservoir through two studies—the Smith Reservoir Structural Evaluation (Carollo Engineers 2015) and the Smith Reservoir Bypass Preliminary Design – East Tank Operation Report (Carollo Engineers 2016). The structural evaluation identified numerous seismic vulnerabilities and deficient conditions that would warrant either a retrofit/rehabilitation or complete replacement of the reservoir. The west tank has concrete spalling, cracking, and corroded columns, while the east tank has some cracks in the walls. Through these studies, it was determined that the structural deficiencies observed in the east tank are relatively minor compared to those in the west tank.

In 2021, an evaluation (Brown and Caldwell 2021) concluded that the Smith Reservoir is reaching the end of its useful life and that the pump station experienced damage from a recent surge event causing yard piping to rupture at the reservoir site. The site is essential to the supply of reliable water through the District system. Therefore, replacement of the reservoir and pump station is required to be done in a timely manner while continuing to stay in operation to supply this need.

2.2.2 General Description

The proposed Project includes the following primary components:

- Construction will occur in two phases: Phase 1 involves the East Tank and pump station; Phase 2 involves the West Tank. See Section 2.2.3.
- Demolition of portions of the existing below ground reservoir tanks and foundation. Existing west reservoir walls will be left in place to provide shoring.
- Two belowground (2.0 MG and 3.0 MG) cast-in-place concrete reservoirs with an HWL of 390 feet and associated pipelines including separate inlet and outlet pipelines, an overflow, a drain pipeline, bypass piping and associated valving.
- A replacement pump station equipped with four vertical-turbine, constant speed pumps for the Upper Zone and three vertical-turbine variable-frequency drive (VFD) pumps for the Lower Zone.
- Construction of a valve vault and connection into existing City of Orange system in Cannon Street, at intersection of Taft Avenue and Cannon Street.
- An emergency diesel generator.
- Site electrical service, controls, and telemetry improvements.

The 1.7-acre site will be completely enclosed by the existing 8-foot-high block wall on the east and north side and the proposed 10-foot-high block wall on the west and south sides. Secure access points to the site consist of the existing rolling gates along Sycamore Street, in addition to the proposed manual rolling gate at the northwest corner of the site on Taft Avenue. Although security cameras will

not be installed as part of this project, conduits will be supplied at critical surveillance points for future installation.

2.2.3 Construction Details

Construction will occur in two phases. Phase 1 will include construction of the East Tank and pump station and the valve vault and connection into existing City of Orange system. Phase 2 will include construction of the West Tank. Construction of Phase 1 is anticipated to begin in the fourth quarter 2024 and last approximately 14 months. Construction of Phase 2 is anticipated to begin in the fourth quarter of 2025 and last approximately 12 months.

Construction of the Project will include approximately 560 working days of construction during normal working days and hours (Monday through Friday, except federal holidays). The construction labor force will vary from 6 to 12 workers for the duration.

Staging and stockpiling will occur on-site within the Project site work zones for project construction. The Project contractor will be responsible for obtaining any additional staging and/or storage area if necessary.

Waste and excess debris will be hauled away for disposal. A traffic control plan will be prepared to accommodate any lane closures necessary along Taft Avenue, Sycamore Street, and/or Cannon Street.

The expected haul routes for equipment and material are as follows:

Inbound:

- State Route (SR)-55, exit on Katella Avenue, east on Katella Avenue to Wanda Road, north on Wanda Road to Taft Avenue, East on Taft Avenue to Sycamore Street
- Alternate route: SR-55, exit on Katella Avenue, east on Katella Avenue to Cannon Street, north on Cannon Street to Taft Avenue, west on Taft Avenue to Sycamore Street, south on Sycamore Street

Outbound:

- North on Sycamore Street to Taft Avenue, west on Taft Avenue to Wanda Road, south on Wanda Road to Katella Avenue, west on Katella Avenue to SR-55
- Alternate route: North on Sycamore Street to Taft Avenue, east on Taft Avenue to Cannon Street, south on Cannon Street to Villa Park Road/Katella Avenue, west on Katella Avenue to SR-55

Construction best management practices (BMPs) will be used including those for stormwater, erosion/sediment control, and spill prevention.

2.2.3.1 Project Phasing

The existing west reservoir and pump station must remain in service during construction of the new facilities, which will require the construction to be phased. This will allow the maximum amount of space available for construction while providing access and maintenance to the existing facilities. The demolition of the existing reservoir and pump station and construction of replacement reservoir and pump station will be completed in two phases.

Phase 1 will include the following tasks as shown on Figure 2-4, Phase 1 Demolition Site Plan and Figure 2-5, Phase 1 Site Plan:

- Remove and dispose of or abandon cap-interfering portions of existing yard piping in the area north of the existing east reservoir.
- Remove and dispose of:
 - existing Upper and Lower Zone pressure relief valve vaults north of the existing East Reservoir
 - portion of existing block wall by the northeast rolling gate (this will expand temporary construction access to the site along Sycamore Street)
 - existing block wall by the northwest corner of the site (this will provide temporary construction access to the site along Taft Avenue)
 - north wall and portions of foundation, and all of the roof slab and columns of the existing east reservoir
 - existing 4-inch perforated vitrified clay pipe (VCP) subdrain beneath the existing East Reservoir
- Cap existing slide gate between the East and West tanks.
- Construct:
 - 2.0 MG cast-in-place concrete reservoir, using the remaining existing east reservoir walls as shoring
 - pump, electrical and generator building
 - new yard piping for the new east reservoir with connections to existing filtration plant main, Lockett transmission main, and Upper and Lower Zone pipelines
 - valve vaults
 - surge tanks
 - supervisory control and data acquisition (SCADA) antenna
 - new SCE transformer
- Place structural fill within north end of the east reservoir prepare sub-grade for proposed building.
- Install new emergency standby generator in generator room.
- Place new east reservoir and pump station into service.
- Construct valve vault and connection into existing City of Orange system at intersection of Taft Avenue and Cannon St.

Phase 2 will include the following tasks as shown on Figure 2-6, Phase 2 Demolition Site Plan and Figure 2-7, Phase 2 Site Plan:

- Remove and dispose of:
 - roof slab and all existing columns within the west reservoir
 - existing pump station
 - existing valve vaults
 - interfering portions of existing yard piping
 - existing generator, generator building, and diesel fuel storage tank
 - existing Southern California Edison (SCE) transformer

- existing aboveground portions of block wall along the west and south sides of the site. Only the aboveground portions of block wall will be removed to avoid encroaching too far within residential property and minimize the impact to residents' improvements.
- Acquire residential access to regrade and clear and grub any vegetation in preparation for new 10-foot-high block wall.
- Construct:
 - 3.0 MG cast-in-place concrete reservoir, using the existing west reservoir walls as shoring
 - new yard piping to connect new west reservoir to Phase 1 yard piping
 - new 10-foot-high block wall along the west and south sides of the site
- Install:
 - new manually operated rolling gate at the temporary site access point at the northwest corner of the site
 - new SCE transformer
- Place new west reservoir into service.
- Replace and finish site paving.

Additional Project information for both phases is shown in Figure 2-8, Reservoir Sections; Figure 2-9, Yard Piping Plan; Figure 2-10, Drain Piping Plan; Figure 2-11, Pump Building Overall Plan; Figure 2-12, Pump Room Mechanical Plan; and Figure 2-13, Orange Flow Control Valve Vault Site Location. Under both phases, asbestos-containing materials will be removed as part of the demolition of existing reservoir tanks and pump station building. The project manual will include an asbestos abatement specification including requirements for obtaining an Air Quality Management District (AQMD) permit.

2.2.3.2 Project Grading

The Project will involve interim and final grading. Interim grading will be performed once portions of the existing north wall and footing of the East tank are demolished in Phase 1. Subgrade preparation for the proposed pump building will consist of new controlled low-strength material (CLSM) fill. During both Phases 1 and 2, interim grading will include temporary construction access ramps at a 2:1 slope to construct the proposed East and West tanks, respectively. The proposed interim grading and construction access is shown on Figure 2-14, Phase 1 Interim Grading and Construction Access Plan and Figure 2-15, Phase 2 Interim Grading and Construction Access Plan.

Under final grading, the site will have three points of vehicle access: the existing 27-foot-wide entrance in the northeast corner of the site, the existing 30-foot-wide to the southeast, and the proposed 30-foot-wide entrance to the northwest. The high point will be located at the northeast corner with the low point, grate inlets, catch basins, and sumps towards the southwest corner. The final grading is shown on Figure 2-16.

2.2.4 Mitigation Measures

The following mitigation measures have been incorporated into the scope of work for the proposed Project and will be fully implemented by the District to avoid or minimize adverse environmental impacts identified in this Initial Study/Mitigated Negative Declaration. These mitigation measures will

be included in the Mitigation Monitoring and Reporting Plan prepared for this Project (see Appendix A).

Mitigation Measures:

CUL-1: Environmental Training – Prior to construction of the Project, a qualified archaeologist will provide a cultural resource briefing that includes all applicable laws and penalties pertaining to disturbing cultural resources, a brief discussion of the prehistoric and historic regional context and archaeological sensitivity of the area, types of cultural resources found in the area, instruction that Project workers will halt construction if a cultural resource is inadvertently discovered during construction. If requested, a local tribal representative(s) shall be invited to participate in the environmental training to discuss or provide text from a tribal cultural perspective regarding the cultural resources within the region.

CUL-2: Native American Consultation/Coordination: The Native American Heritage Commission (NAHC) Sacred Lands Search results was positive. The NAHC recommended coordinating with the Juaneño Band of Mission Indians Acjachemen Nation – Belardes tribe and the NAHC listed tribes as they may have information regarding known and recorded tribal cultural resource sites within or near the Project. Prior to determining that an application for a project is complete or a decision by the District to undertake the Project, the District shall consult or coordinate with the NAHC listed tribes to ensure tribal cultural resources are considered. Native American government to government consultation is part of the lead CEQA agency’s responsibilities under Assembly Bill (AB) 52.

CUL-3: Inadvertent Discovery of Archaeological Resources During Construction – During Project-level construction, should subsurface archaeological resources be discovered, all activity within 50 feet of a “find” shall stop and a qualified archaeologist shall be contacted to assess the significance of the find according to CEQA Guidelines Section 15064.5 and/or NRHP criteria (as applicable). The archaeologist (shall have the authority to halt any Project-related construction activities that could impact potentially significant resources. If any find is determined to be significant, the archaeologist shall determine, in consultation with the implementing agencies and any local Native American groups expressing interest, appropriate avoidance measures or other appropriate mitigation. Ground-disturbing activities shall not continue until the discovery has been assessed by the archaeologist. The archaeologist shall be afforded the necessary time to assess the find. With monitoring, construction activities may continue on other areas of the Project site during evaluation and treatment of historic or unique archaeological resources. Under CEQA Guidelines Section 15126.4(b)(3), preservation in place is the preferred means to avoid impacts to archaeological resources qualifying as historical resources. Methods of avoidance may include, but shall not be limited to, (i) Project re-route or re-design, (ii) Project cancellation, or (iii) identification of protection measures such as capping or fencing. Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures, such as data recovery or other appropriate measures, in consultation with the implementing agency and any local Native American representatives expressing interest in prehistoric or tribal resources. If an archaeological site does not qualify as an historical resource but meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site shall be treated in accordance with the provisions of Section 21083.2.

GEO-1: Inadvertent Discoveries of Paleontological Resources — If the construction staff or others observe previously unidentified paleontological resources during ground disturbing activities, they will halt work within a 200-foot radius of the find(s), delineate the area of the find with flagging tape or rope (may also include dirt spoils from the find area), and immediately notify a qualified Paleontologist. Construction will halt within the flagged or roped-off area. The Paleontologist will assess the resource as soon as possible and determine appropriate next steps in coordination with the District. Such finds will be formally recorded and evaluated. The resource will be protected from further disturbance or looting pending evaluation.

2.3 Other Public Agencies Whose Approval Is Required

Other public agencies whose approval is expected to be required in the form of permits, financing approval, or participation agreements are as follows:

- South Coast Air Quality Management District (SCAQMD) – construction permit
- California State Water Resources Control Board, Division of Drinking Water (DDW) – design plans
- Santa Ana Regional Water Quality Control Board – Stormwater Pollution Prevention Plan for construction activities and development discharge
- Orange County Fire Authority (OCFA) – Fire Master Plan
- City of Villa Park – encroachment permit, grading permit
- City of Orange – encroachment permit

3.0 ENVIRONMENTAL CHECKLIST

3.1 Environmental Factors Potentially Affected

The environmental factors checked would be potentially affected by this Project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture & Forestry Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input type="checkbox"/> Geology/Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials |
| <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Wildfire | <input type="checkbox"/> Mandatory Findings of Significance |

3.2 Determination: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT (EIR) is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

Jerry Vilander

Date

12/11/23

Print Name

Jerry Vilander

3.3 Evaluation of Environmental Impacts

- (1) A brief explanation is required for all answers except “no impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “no impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “no impact” answer should be explained if it is based on project-specific factors as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- (2) All answers must take account of the whole action involved, including off-site as well as on site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- (3) Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially significant impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “potentially significant impact” entries when the determination is made, an EIR is required.
- (4) “Negative declaration: less than significant with mitigation incorporated” applies when the incorporation of mitigation measures has reduced an effect from a “potentially significant impact” to a “less than significant impact.” The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level.
- (5) Earlier analyses may be used if, pursuant to tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063[c][3][D]). In this case, a brief discussion should identify the following:
 - a. Earlier analysis used. Identify and state where earlier analyses are available for review.
 - b. Impacts adequately addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c. Mitigation measures. For effects that are “less than significant with mitigation incorporated,” describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- (6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, when appropriate, include a reference to the page or pages where the statement is substantiated.
- (7) Supporting information sources. A source list should be attached and other sources used or individuals contacted should be cited in the discussion.
- (8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project’s environmental effects in whatever format is selected.

- (9) The explanation of each issue should identify:
- a. The significance criteria or threshold, if any, used to evaluate each question, and
 - b. The mitigation measure identified, if any, to reduce the impact to a less than significant level.

3.4 Environmental Impact Analysis

3.4.1 Aesthetics

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:					
a.	Have a substantial adverse effect on a scenic vista?				X
b.	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within along a state scenic highway?				X
c.	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d.	Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?			X	

Existing Conditions

The Project site is located in an urban setting characterized by views of single-family residential, municipal, and commercial uses.

The nearest state-designated scenic highway is a 4.2-mile segment of SR-91 from STR-55 east to the city limits of Anaheim (Caltrans 2023). The Project site is located approximately 2.5 miles southeast.

The Project site contains the existing reservoir facility surrounded by a five to six foot high cement block perimeter wall with gated entrance on the east side. Street trees (pines and palm trees) and ground covering line the northern and eastern boundaries of the Project site. The existing reservoir pump station is visible through the security gate and slightly visible above the wall.

Discussion

a. Would the project have a substantial adverse effect on a scenic vista?

No Impact. Direct views of the Project site are from surrounding residential uses and adjacent roadways. No scenic vistas are identified in the Project vicinity; therefore, implementation of the proposed Project would not block any scenic vistas and no impact would occur.

Mitigation Measures: No mitigation is required.

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. The Project site is not in the viewshed of any designated or eligible state scenic highway. No impact to a scenic highway will occur.

Mitigation Measures: No mitigation is required.

- c. Would the project in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?**

Less Than Significant Impact. The proposed Project would involve both temporary and permanent changes to the visual character of the site. Temporary changes are associated with construction activities, including construction equipment, staging, and Project construction. These visual impacts would be short-term in nature and are not considered to be significant.

Implementation of the proposed Project would result in long-term/permanent changes to the visual character of the site due to the replacement of the existing reservoir facilities and perimeter wall. Most of the perimeter landscaping will remain. Where landscaping is removed to facilitate construction, it will be replaced with vegetation similar to existing conditions. Most of the replacement facilities will only be visible through the security entrance gate and will not be visible from most of the surrounding area due to the new cement block perimeter wall. This wall will vary from approximately 7 to feet in height above ground surface on the west and south sides and 6 to 7 feet above ground surface on the north and east sides of the Project site. The roofs of the new reservoir tanks will be the same height or slightly lower than the east and south walls and will be the same height or slightly higher than the west and north walls.

While these buildings will be more prominent than existing facilities, the proposed Project improvements would be visually consistent with the existing Project site. The vault and connection into existing City of Orange system in Cannon Street will be mostly underground and will not be visible post construction. Vault air vents and a small electrical control cabinet will be above ground will be similar to other utility equipment in the area and not demand attention. The proposed Project would not result in the removal or degradation of any significant visual resources and would be consistent in character to the existing site. For this reason, impacts are considered to be less than significant.

Mitigation Measures: No mitigation is required.

- d. Would the project create a new source of substantial light or glare would adversely affect day or nighttime views in the area?**

Less Than Significant Impact. There are two primary sources of light: light emanating from building interiors that pass through windows, and light from exterior sources (e.g., street lighting, parking lot lighting, building illumination, security lighting, and landscape lighting). Light introduction can be a nuisance to adjacent uses and diminish the view of the clear night sky. Currently, light and glare in the Project vicinity is produced by vehicle headlights, street lighting, and lighting from the adjacent residential uses.

The Project lighting would be similar to existing conditions. The amount of light produced at the site would be the minimum required for safety and security purposes. The lights on the site would be designed to direct the light toward the site to reduce spillage into the surrounding streets and buildings. Furthermore, since the structures would not include shiny finishes, the Project is not

expected to create any daytime glare. Therefore, a less than significant impact from the standpoint of light and glare would occur.

Mitigation Measures: No mitigation is required.

3.4.2 Agriculture and Forest Resources

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<p>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:</p>					
a.	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b.	Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?				X
c.	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC Section 12220(g)) or timberland (as defined in PRC Section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d.	Result in the loss of forest land or conversion of forest land to non-forest use?				X
e.	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?				X

Existing Conditions

The City of Villa Park is predominately built out. On the Farmland Mapping and Monitoring Program Map for California (California Department of Conservation 2023), the Project site and the surrounding area is designated as Urban and Built-Up Land, which is generally described as land occupied by structures that has a variety of uses including residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

Discussion

- a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?**

No Impact. According to the Farmland Mapping and Monitoring Program Map for California, the Project site is an area designated as Urban and Built-Up Land. No Prime or Unique Farmland, or Farmland of Statewide importance exists within the Project site or vicinity; therefore, no impact would occur.

Mitigation Measures: No mitigation is required.

b. Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?

No Impact. The Project site has a zoning designation of Public Institution (City of Villa Park 2015), and there are no agricultural zoning designations or agricultural uses within the Project limits or adjacent areas. The Project would not convert farmland or conflict with any land zoned for agriculture. No Williamson Act contracts apply to the Project site. Therefore, no impact would occur.

Mitigation Measures: No mitigation is required.

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC Section 12220(g)) or timberland (as defined in PRC Section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. The Project site is zoned as Public Institution. It is surrounded by land zoned as for residential. There are no forest land or timberland resources designations or forest land, or timberland resources uses within the Project limits or adjacent areas. Therefore, no impact would occur.

Mitigation Measures: No mitigation is required.

d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. There is no forest land in the vicinity of the Project site. Therefore, the proposed Project would not result in the loss of forest land or conversion of forest land to non-forest use. No impact would occur.

Mitigation Measures: No mitigation is required.

e. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

No Impact. There is no farmland or forest land located within or near the Project site. Therefore, the Project would not involve any changes that could result in the loss or conversion of farmland or forest land to other uses. No impact would occur.

Mitigation Measures: No mitigation is required.

3.4.3 Air Quality

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:					
a.	Conflict with or obstruct implementation of the applicable air quality plan?				X
b.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			X	
c.	Expose sensitive receptors to substantial pollutant concentrations?			X	
d.	Result in other emissions (such as those leading to odors) affecting a substantial number of people?			X	

Existing Conditions

The Project site is located within the South Coast Air Basin (SCAB or “Basin”), which is under the jurisdiction of the SCAQMD. The Basin is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, San Bernardino, and Riverside Counties.

The California Air Resources Board (CARB) tracks attainment of air quality standards (established by both U.S. Environmental Protection Agency and SCAQMD) for basins throughout the State. The SCAB has been designated as a non-attainment area for ozone (O₃), fine particulate matter (PM_{2.5}), and inhalable particulate matter (PM₁₀) as it does not meet California Ambient Air Quality Standards (CAAQS) for certain pollutants regulated under the federal Clean Air Act. Conditions within the SCAB also fail to meet National Ambient Air Quality Standards (NAAQS) for O₃ and PM_{2.5} and therefore the SCAB is considered to be a federal nonattainment area for these pollutants. Table 3-1 lists criteria air pollutants and their current attainment status in the SCAB.

Table 3-1. Criteria Pollutants Attainment Status in the South Coast Air Basin (Orange County)

Air Pollutants	State	Federal
O ₃ (1-hour)	Nonattainment	No Federal Standard
O ₃ (8-hour)	Nonattainment	Extreme Nonattainment
PM _{2.5}	Nonattainment	Serious Nonattainment
PM ₁₀	Nonattainment	Attainment/Maintenance
NO ₂	Attainment	Attainment/Maintenance
CO	Attainment	Attainment/Maintenance
SO ₂	Attainment	Attainment
Lead	Not applicable	Attainment

Air Pollutants	State	Federal
Sulfates	Attainment	Not applicable
Hydrogen Sulfide	Attainment	Not applicable
Vinyl Chloride	Attainment	Not applicable

CO – carbon monoxide; NO₂ – nitrogen dioxide; O₃ – ozone; PM₁₀ – inhalable particulate matter; PM_{2.5} – fine particulate matter; SO₂ – sulfur dioxide.
Source: CARB 2022.

Table 3-2 lists criteria air pollutant *de minimis* levels based on federal attainment status.

Table 3-2. Federal Attainment Status/De Minimis Emissions Thresholds

Pollutant	Area Type	Tons/Year
O ₃ (VOC or NO _x)	Serious nonattainment	50
	Severe nonattainment	25
	Extreme nonattainment	10
	Other areas outside an ozone transport region	100
O ₃ (NO _x)	Marginal and moderate nonattainment inside an ozone transport region	100
	Maintenance	100
O ₃ (VOC)	Marginal and moderate nonattainment inside an ozone transport region	50
	Maintenance within an ozone transport region	50
	Maintenance outside an ozone transport region	100
CO, SO ₂ and NO ₂	All nonattainment & maintenance	100
PM ₁₀ and PM _{2.5}	Serious nonattainment	70
	Moderate nonattainment and maintenance	100
Lead	All nonattainment & maintenance	25

CO – carbon monoxide; NO₂ – nitrogen dioxide; NO_x – nitrogen oxide; O₃ – ozone; PM₁₀ – inhalable particulate matter; PM_{2.5} – fine particulate matter; SO₂ – sulfur dioxide; VOC – volatile organic compounds.

Source: EPA 2023.

Discussion

a. Would the project conflict with or obstruct implementation of the applicable air quality plans?

No Impact. The applicable plans considered here are (1) the Air Quality Management Plan (AQMP 2022) prepared by the SCAQMD, and (2) the Regional Comprehensive Plan and Guide (RCPG) prepared by the Southern California Association of Governments (SCAG 2008). The former directly affects air quality through specific management strategies for pollutant emissions, while the latter indirectly affects air quality by providing recommendations for the management of land development and transportation.

The federal Clean Air Act requires the SCAQMD to reduce emissions of certain pollutants for which the basin is in non-attainment (i.e., ozone, PM₁₀, and PM_{2.5}). The Project would be subject to the SCAQMD's AQMP. The AQMP contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving ambient air quality standards. These strategies are developed, in part, based on regional population, housing, and employment projections prepared by SCAG.

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and serves as a forum for regional issues relating to transportation, the economy, community development and the environment. SCAG serves as the federally designated metropolitan planning organization for the southern California region. With regard to air quality planning, the RCPG includes Growth Management and Regional Mobility chapters that form the basis for the land use and transportation control portions of the AQMP. RCPG projections are used in the preparation of air quality forecasts and consistency analysis included in the AQMP. Both the RCPG and AQMP strategy incorporate projections from local planning documents.

The Project will be consistent with the AQMP, which is primarily concerned with long-term influence on air quality in the Basin. Neither the implementation of the Project nor its operation would result in long-term regional impacts. The Project will comply with SCAQMD Rules 402 (Nuisance) and 403 (fugitive dust), which would implement all feasible best available dust control measures required controls for PM₁₀ and PM_{2.5}. In addition, because the proposed Project would not result in a change in dwelling units or occupants or activities (and therefore not alter RCPG projections), it is not in conflict with the AQMP restrictions relative to land use and transportation. The Project's long-term influence would also be consistent with the goals and policies of the AQMP and the RCPG and is, therefore, considered consistent with the SCAQMD's and SCAG's plans.

Mitigation Measures: No mitigation is required.

b. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact. The Project site is located in a region that is in non-attainment for O₃, PM₁₀, and PM_{2.5}. The cumulative emissions associated with the Project would not be considerable because the emissions fall below SCAQMD thresholds. Under this condition, the Project would not make a cumulatively considerable contribution during construction and operation. Therefore, impacts would be less than significant.

Construction and operational emissions for the proposed Project are presented in Table 3-3. As stated previously in Section 2.2.3, Project construction would occur in two phases for a total duration of 28 months. Construction emissions include operation of on-site construction equipment, fugitive dust from site disturbance activities, and vehicle travel by construction workers, deliveries, and hauling during construction. Operational emissions would result from workers visiting the site for maintenance, outdoor water usage, energy consumption for lighting, HVAC, operational equipment, and stationary sources. However, this is a replacement project and operational emissions from the proposed design would largely remain the same as existing operations. Therefore, operational emissions from the Project were considered negligible. The CalEEMod model runs, which estimate the construction and operational emissions in detail, are presented in Appendix A.

Table 3-3. Regional Significance Analysis^{1/}

	ROG	NO _x	CO	SO _x	PM ₁₀ ^{2/}	PM _{2.5} ^{2/}
	Maximum Daily Regional Emissions (lbs/day)					
<i>Construction</i>						
Phase 1	1.96	17.04	23.67	0.06	3.28	0.95

	ROG	NO _x	CO	SO _x	PM ₁₀ ^{2/}	PM _{2.5} ^{2/}
	Maximum Daily Regional Emissions (lbs/day)					
<i>Phase 2</i>	1.61	14.20	19.82	0.04	3.38	0.92
SCAQMD Regional Significance Threshold (lbs/day)	75	100	550	150	150	55
Exceeds Regional Significance Threshold?	No	No	No	No	No	No
<i>Operation</i>						
<i>Area, Energy, Offroad, Stationary and Mobile</i>	0	0	0	0	0	0
SCAQMD Regional Significance Threshold (lbs/day)	55	55	550	150	150	55
Exceeds Regional Significance Threshold?	No	No	No	No	No	No

1/ Compiled using the CalEEMod emissions inventory model, provided in Appendix A.

2/ PM₁₀ emissions estimates are based on compliance with SCAQMD Rule 403 requirements for fugitive dust suppression.

The emissions from Project activities would fall below SCAQMD significance thresholds. Therefore, the Project will not result in the violation of air quality standards or contribute substantially to an existing or projected air quality violation. A less than significant impact is anticipated.

Mitigation Measures: No mitigation is required.

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. The Project site shares property lines with surrounding residents. The nearest residential houses are within 5 feet from the southern and western property lines. Construction activities occurring near sensitive receptors receive a higher level of preventive planning for controlling emissions and fugitive dust. The greatest potential for exposure to air pollutants would occur during construction, when the ground would be disturbed from grading and delivery of materials. In addition to the regional significance thresholds shown in the preceding section, SCAQMD has Localized Significance Thresholds (LSTs) for NO_x, PM₁₀, PM_{2.5}, and CO that are a function of Project acreage and distance from the nearest sensitive receptor. The LSTs for this project were determined based on SCAQMD LST look-up tables for Source Receptor Area 17 (Central Orange County/Villa Park), a 1-acre development, and a minimum source-to-receptor distance of 25 meters (applicable to source-to-receptor distances less than 25 meters). Maximum daily on-site emissions are presented in Table 3-4 with a comparison to the applicable LSTs. As described in the previous section, construction and operation of the Project would not result in emissions of criteria pollutants in excess of established thresholds.

SCAQMD also identifies significance thresholds for toxic air contaminants (TAC) that are based on localized impacts. These include a maximum incremental lifetime cancer risk of 10 in a million or more, a cancer burden (i.e., estimated potential increase in cancer diagnoses) of 0.5 or more, and a chronic and acute hazard index (i.e., ratio of concentrations to Reference Exposure Levels [RELs]) of one or more. The primary TAC emitted from construction activities is diesel PM; however, because emissions of TACs from diesel-powered construction equipment are expected to be minimal, intermittent, in compliance with all CARB heavy-duty construction equipment rules and of short duration, the Project is not expected to substantially increase ambient concentrations of TACs regionally or locally. Therefore, the Project would not expose sensitive receptors to substantial pollutant concentrations. As such, localized impacts to off-site sensitive receptors would be less than significant.

Table 3-4. Localized Significance Analysis¹

	ROG	NO _x	CO	SO _x	PM ₁₀ ^{2/}	PM _{2.5} ^{2/}
	Maximum Daily Localized Emissions (lbs/day)					
Construction (<i>On-site Emissions</i>)						
Phase 1	2.37	19.66	27.11	0.05	2.98	0.32
Phase 2	2.23	17.94	27.01	0.05	3.00	0.34
SCAQMD Localized Significance Threshold (lbs/day)^{3/}	--	81	485	--	4	3
Exceeds Localized Significance Threshold?	No	No	No	No	No	No
Operation						
<i>Area, Energy, Offroad, Stationary and Mobile</i>	0	0	0	0	0	0
SCAQMD Localized Significance Threshold (lbs/day)^{3/}	--	81	485	--	1	1
Exceeds Regional Significance Threshold?	No	No	No	No	No	No

1/ Compiled using the CalEEMod emissions inventory model, provided in Appendix A.

2/ PM₁₀ and PM_{2.5} emissions estimates are based on compliance with SCAQMD Rule 403 requirements for fugitive dust suppression.

3/ Source: SCAQMD 2008

Mitigation Measures: No mitigation is required.

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact. During Project-related construction activities, various diesel-powered vehicles and equipment could create minor odors. These odors are not likely to be noticeable beyond the immediate vicinity and would be temporary and short-lived due to rapid dissipation. Construction odor impacts would be less than significant. Long-term odors are associated typically with industrial projects involving use of chemicals, solvents, petroleum products, and other strong-smelling elements used in manufacturing processes. Odors also are associated with such uses as sewage treatment facilities and landfills. The Project involves no elements related to these types of uses. Therefore, long-term odor impacts would occur with Project implementation.

Mitigation Measures: No mitigation is required.

3.4.4 Biological Resources

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?				X
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?				X
c.	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marshes, vernal pools, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
d.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?		X		
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f.	Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?				X

Existing Conditions:

The Project area is highly urbanized and is an area that has been heavily modified by humans, including roadways, existing buildings, and landscaping with ornamental vegetation. Because of the high degree of disturbance in these areas, they generally have low habitat value for wildlife; wildlife found here are adapted to living in heavily urbanized areas. The Project site is not located within or near a Habitat Conservation Plan area or a Natural Community Conservation Plan area (County of Orange 2012).

City of Villa Park Tree Ordinance

Sec. 16-1.12. - Destruction.

It shall be unlawful for any person to cut down, girdle, remove, injure, deface or destroy any tree or shrub or any ornament or improvement on any public parkway, planting easement or right-of-way within the City without first obtaining a written consent therefore from the City.

In the case any tree is removed or destroyed, the City shall be reimbursed as determined by the appropriate City Council committee, or if there is none, the City Manager, subject to the following guidelines:

- a. Newly planted trees shall be a minimum thirty-six (36) inch box tree with a minimum trunk diameter of two (2) inches;*
- b. The City shall inspect all trees at the purchase location prior to delivery to the planting site;*
- c. The number of trees required for replacement shall be determined by the committee or City Manager based on available space, planting guidelines, and aesthetics;*
- d. The adjacent property owner shall be required to irrigate the newly planted vegetation through an appropriate irrigation system; and*
- e. If the City participates in the removal of the trees or the planting of replacement trees, at the request of a property owner, the City shall be reimbursed for operating and overhead costs incurred in removal and/or replacement.*

If the City determines that it is in its best interest to remove and/or replace trees at any particular location, it may do so subject to standards as determined by the appropriate City Council committee, or if there is none, the City Manager. If appropriate based on the origination of the request, cost may be shared with the abutting property owner.

Wetlands/Riparian Habitat

The U.S. Fish and Wildlife Service National Wetlands Inventory (USFWS 2023) was reviewed for potential wetlands and riparian habitat in the vicinity of the Project site. No wetlands or riparian areas are mapped in or near the Project site. The closest resource is Santiago Creek, located approximately 0.3 mile to the south of the Project site.

Discussion

- a. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?**

No Impact. The Project site is already developed for an existing reservoir facility and surrounded by residential uses. The Project site does not contain any sensitive habitat or wildlife resources. Therefore, the Project will result in no impact to biological resources.

Mitigation Measures: No mitigation is required.

- b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?**

No Impact. There are no riparian habitats or sensitive natural communities present on or near the Project site. No impacts would occur to riparian habitats or sensitive natural communities.

Mitigation Measures: No mitigation is required.

c. Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marshes, vernal pools, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact. There are no wetlands, marshes, or vernal pools within or in the vicinity of the Project Site. Therefore, no impact would occur to any federally protected wetlands under the Clean Water Act.

Mitigation Measures: No mitigation is required.

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?

Less Than Significant Impact With Mitigation Incorporated. With no native habitat, and no wildlife corridors that traverse the Project site, implementation of the proposed Project is not anticipated to interfere with the movement of native animals of any kind, or to impede the use of any native wildlife nursery sites. The closest resource is the Santiago Creek, located approximately 0.3 mile to the south of the Project site. This is separated from the site by urban development.

The Project site is adjacent to trees that could potentially provide cover, forage, and nesting habitats for bird species that have adapted to urban areas, such as rock pigeons (*Columba livia*) or mourning doves (*Zenaida macroura*). Mourning doves are protected by the Migratory Bird Treaty Act and certain Fish and Game Codes. The statutes make it unlawful to take native breeding birds, and their nests, eggs, and young. Implementation of mitigation measure BIO-1, provided in the event that any nesting birds are found at the Project site location during construction, will reduce impacts to less than significant.

Mitigation Measures: BIO-1.

BIO-1: Nesting Birds – Project activities that will remove or disturb potential nest sites will be scheduled outside the breeding bird season. The breeding bird nesting season typically extends from February 15 through September 15.

If Project activities cannot be avoided during February 15 through September 15, a qualified biologist will conduct a pre-construction breeding bird survey for breeding birds and active nests or potential nesting sites within the limits of Project disturbance. The survey will be conducted at least seven days prior to the onset of scheduled activities, such as mobilization and staging. It will end no more than three days prior to vegetation, substrate, and structure removal and/or disturbance.

If no breeding birds or active nests are observed during the pre-construction survey or they are observed and will not be impacted, Project activities may begin and no further mitigation will be required.

If a breeding bird territory or an active bird nest is located during the pre-construction survey and will potentially be impacted, the site will be mapped on engineering drawings and a no-activity buffer zone will be marked (fencing, stakes, flagging, orange snow fencing, etc.) a minimum of 100 feet in all directions or 500 feet in all directions for listed bird species and all raptors. The biologist will determine the appropriate buffer size based on the type of activities planned near the nest and the type of bird that created the nest. Some bird species are more tolerant than others of noise and activities occurring near their nest. This no-activity buffer zone will not be disturbed until a qualified

biologist has determined that the nest is inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area, or the young will no longer be impacted by Project activities. Periodic monitoring by a biologist will be performed to determine when nesting is complete. Once the nesting cycle has finished, Project activities may begin within the buffer zone.

If listed bird species are observed within the Project site during the pre-construction survey, the biologist will immediately map the area and notify the appropriate resource agency in order to consult with them on suitable protection measures and/or mitigation measures and to determine if additional surveys or focused protocol surveys are necessary. Project activities may begin within the area only when concurrence is received from the appropriate resource agency.

Birds or their active nests will not be disturbed, captured, handled or moved. Active nests cannot be removed or disturbed; however, nests can be removed or disturbed if determined inactive by a qualified biologist.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The Project does not involve removal of any City street trees. No impact would occur.

Mitigation Measures: No mitigation is required.

f. Would the project conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The Project site is not located within a Habitat Conservation Plan area, a Natural Community Conservation Plan area, or in any other local, regional, or State habitat conservation plan areas. Therefore, no impact would occur.

Mitigation Measures: No mitigation is required.

3.4.5 Cultural Resources

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Cause a substantial adverse change in the significance of a historical resource pursuant to in Section 15064.5?			X	
b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		X		
c.	Disturb any human remains, including those interred outside of formal cemeteries?			X	

A cultural resources evaluation and records search was conducted by Tetra Tech and is provided as Appendix C. The following summarizes the results and conclusions.

Existing Conditions

The prehistory of the southern California region has been summarized within four major horizons or cultural periods: Horizon I – Early Period (12,000 to 7,500 years before present [BP]), Horizon II – Millingstone Horizon (7,500 to 3,000 BP), Horizon III – Intermediate Cultures (3,000 to 1,000 BP), and Horizon IV – Late Prehistoric (1,000 BP to European historic contact).

The Project is within the ethnographic territory traditionally inhabited by the Gabrieliño (Tongva) people. The Gabrieliño occupied most of Los Angeles and Orange counties, as well as the southern Channel Islands—San Clemente, Santa Catalina, San Nicolas, and Santa Barbara islands.

European settlement began in 1771, when Spanish missionaries began to settle along the California coast and adjacent inland areas. The missionaries grazed cattle within the present-day Santa Ana/Costa Mesa area. Following the Mexican American War and secularization of the nearby missions in 1834, the region was transferred to private landowners (ranchos) who established a primary economy of cattle ranching.

After the fall of the rancho system, European settlers purchased substantial land holdings in the area. Santa Ana was listed as a township of Los Angeles County in the 1860 and 1870 census, with an area encompassing most of what is now northern and central Orange County. In 1878, the Southern Pacific Railroad arrived, and the Santa Fe Railroad followed in 1886. This encouraged development of the City. The town of Mountain View (later known as Villa Park) was known for ranching and agricultural farms and was established in the 1800s. The city of Villa Park was incorporated in 1962.

The Serrano Water District was established in 1876 from a consolidation of several water companies and associations. Most of the irrigation organizations were privately owned by ranchers and farmers in the area. In 1927, the Serrano Water Association, the John T. Carpenter Water Company, and the Irvine Company incorporated the Serrano Irrigation District as a public corporation under the State of California's Irrigation Act. Once formed, the Serrano Water Association was able to establish and sell bonds to finance their portion of the construction of the Santiago Dam, constructed in 1931. At this

time, the first domestic water system of Villa Park was funded through the sale of bonds to provide water service. In 1928, the Villa Park Mutual Water Company absorbed three other water companies: the Gray Tract Well Company, Cerro Villa Mutual Water Company, and Santiago Well Company. In 1956, Serrano Irrigation District carried out all functions of the Villa Park Mutual Water Company, which was dissolved by 1963. The Serrano Irrigation District then provided water to the Villa Park Mutual Water Company shareholders. The Serrano Irrigation District became the Serrano Water District (District).

Based on modern aerial google imagery, the Project area and surrounding area is built up with commercial residential subdivision, and vegetation consists primarily of nonnative species and landscaping. Prior to water diversions in the nineteenth century for agricultural use and the introduction of nonnative species, the region was characterized by vegetation communities such as coastal scrub, marshland, riparian forest along rivers and drainages, uplands areas, and littoral zones. Wildlife in the region included aquatic resources (ocean resources from the nearby Pacific coastline, anadromous fish, and mussels), upland resources, and mammals such as deer, rabbits, foxes, small rodents, various birds, reptiles, and insects.

Regionally, the Project lies within the western end of the Peninsular Ranges Geomorphic Province. The Project is within the southern end of the broad Coastal Plain of Orange County. Specifically, the Project is east of the foothills of the Santa Ana Mountains. Sediments within the Project area consist of Quaternary aged deposits: Holocene (recent to 10,000 years old, 10 to 20 feet in depth) and Pleistocene (10,000 to 2 million years old, over 20 feet in depth) alluvium deposits derived from the erosion of bedrock out of the Santa Ana Mountains and the San Joaquin Hills.

The surficial and subsurface deposits within the Project area have been subjected to previous ground disturbance and fill due to historic and modern development (the reservoir). The Project is within an entirely built environment with paved areas and the existing reservoir that is 20 feet below ground surface. Half of the existing Smith Reservoir and the Pump Station were built in 1970. The reservoir is comprised of two below grade concrete tanks (east and west) having a total capacity of 6.0 million gallons (MG). The 3.0 MG west tank was built first in 1970 and later the east tank was built in 1980 to provide an additional 3.0 MG of capacity to the reservoir.

Regulatory Compliance

Various state and local laws, ordinances, and regulations pertain to the protection of cultural resources. These are summarized briefly below.

- **California Environmental Quality Act.** CEQA (Section 21084.1) requires a lead agency determine whether a project could have a significant effect on historical resources or tribal cultural resources (under Public Resources Code [PRC] Section 21074 [a][1][A]-[B]). Under the CEQA (Section 15064.5), a historic resource (e.g. buildings, structures, or archaeological resources) is a resource listed in, or determined to be eligible for listing in the California Register of Historical Resources (CRHR) or a local register or landmark, identified as significant in a historical resource survey (meeting the requirements of Section 5024.1(g) of the PRC), or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (Section 15064.5[a][3]). Under the California Code of

Regulations, Title 14, Chapter 11.5, properties listed on or formally determined to be eligible for listing in the National Register of Historic Places are automatically eligible for listing in the CRHR. A resource is generally considered to be historically significant under CEQA if it meets the criteria for listing in the CRHR (see PRC Section 5024.1, Title 14 California Code of Regulations, Section 5024.1).

- **California Health and Safety Code, Section 7050.5.** Section 7050.5 (a) states that it is a misdemeanor (except as provided in Section 5097.99, see below) to knowingly mutilate or disinter, wantonly disturb, or willfully remove any human remains in or from any location other than a dedicated cemetery without the authority of law. The provisions of this subdivision shall not apply to any person carrying out an agreement developed pursuant to subdivision (l) of Section 5097.94 of the PRC or to any person authorized to implement Section 5097.98 of the PRC. Section 7050.5 (b) requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If determined to be Native American, the coroner must contact the California NAHC.
- **California Native American Historical, Cultural, and Sacred Sites Act.** The California Native American Historical, Cultural, and Sacred Sites Act requires that upon discovery of human remains, construction or excavation activity cease and that the county coroner be notified. If the remains are Native American, the coroner must notify the NAHC. The NAHC will then identify and notify a most likely descendant (MLD). The Sacred Sites Act stipulates the procedures the MLD may follow for treating or disposing of the remains and associated grave goods.
- **California Public Resource Code, Section 5097.** PRC Section 5097 specifies the procedures to be followed in the event of an unexpected discovery of human remains on non-federal land. The disposition of Native American remains falls within the jurisdiction of the NAHC.
- **AB 52.** Under CEQA, AB 52 requires a lead agency to consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project.
- **California State Senate Bill 18.** California State Senate Bill 18 requires cities and counties to notify and consult with California-recognized Native American Tribes about proposed local land use planning decisions for the purpose of protecting Traditional Tribal Cultural Places. The Governor's Office of Planning and Research was mandated to amend its General Plan Guidelines to include the stipulations of Senate Bill 18 and to add advice for consulting with California Native American Tribes.

Record Search Results

Tetra Tech staff conducted a record search of the cultural resources site and Project file collection at the South Central Coast Information Center (SCCIC), California State University at Fullerton, of the California Historical Resources Information System, was conducted on March 30, 2023 (Record Search File No. 24649.10795). The records search focused specifically on the proposed Project and a 0.50-mile buffer centered on the Project. The SCCIC records search did not identify any previously conducted

reports within the Project. No previously recorded cultural resources were identified within the Project area.

Native American Heritage Commission Sacred Lands Files Search

Tetra Tech contacted the NAHC on February 17, 2023 and requested that the NAHC review its Sacred Land File Search. The NAHC replied on February 24, 2023, that the Sacred Land File results were positive (see Appendix C). The NAHC recommends contacting the Juaneño Band of Mission Indians Acjachemen Nation – Belardes for more information regarding tribal cultural resources. The NAHC also provided a list of local Native American contacts with knowledge of the region (see Appendix C). The NAHC recommends conducting outreach to the listed tribes or individuals as they may have knowledge of the positive results and tribal cultural resources within or near the Project. Native American government to government consultation is part of the lead CEQA agency’s responsibilities under AB 52.

Discussion

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to in Section 15064.5?

Less than Significant Impact. Section 15064.5 of the CEQA Guidelines specifically defines a “historical resource” as a resource that meets one or more of the following criteria:

- Listed in, or determined eligible for listing in, the California Register of Historical Resources; or
- A resource listed in a local register of historical resources, as defined in Section 5020.1(k) of the PRC; or
- Identified as significant in an historical resource survey meeting the requirements of Section 5024.1(g) of the PRC; or
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California that may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the CRHR (PRC, Section 5024.1, Title 14 California Code of Regulation, Section 4852) including the following:

- An association with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
- An association with the lives of persons important to local, California, or national history.
- An embodiment of the distinctive characteristics of a type, period, region, or method of construction, or a representation of the work of a master, or possesses high artistic values.
- A resource that has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

The Project site contains the pump station and reservoir. There are two below grade rectangular cast in place concrete tanks (east and west) having a total capacity of 6.0 MG. The 3.0 MG west tank was

built in 1970, is 250 feet long by 81 feet wide. A second tank, constructed directly adjacent to the east c.1980, provides an additional 3.0 MG of capacity to the reservoir and is 15 feet long by 81 feet wide. Both tanks have an approximate finished floor elevation of 371 feet and HWL of 390 feet.

Historic maps indicate the parcel on which the Smith Pump Station and reservoir are now located contained orchards until 1972, when the western tank of the reservoir was constructed. By 1980, the facility is in its current configuration with both the east and west tanks in place and the facility is surrounded by single-family residential subdivisions.

Criterion 1: The District Smith Reservoir & Pump Station is not associated with events that have significantly contributed to the broad patterns of our history. The reservoir and pump station are associated with the context of the development of water infrastructure in Orange County and the City of Villa Park and was among several related water system structures built throughout the region during this time. Research has revealed no important associations between this facility and the greater theme of water infrastructure within the county and region or any other historic contexts. The Serrano Water District's early establishment and the reservoir and pump station are not significantly associated with themes of water systems or irrigation. Therefore, the reservoir and pump station are recommended not eligible for listing on the CRHR under Criterion 1.

Criterion 2: The District Smith Reservoir and Pump Station are not associated with the life of a person or persons important to our history. Research has revealed no associations between the reservoir and pump station and important historical figures. Therefore, the reservoir and pump station are recommended not eligible for listing on the CRHR under Criterion 2.

Criterion 3: The District Smith Reservoir and Pump Station are not significant for its engineering design. Aboveground elements of the system including the pump station, access features, and pumps are ordinary utilitarian features and do not embody distinctive characteristics of a type, period, or method of construction. As-built drawings do not indicate the underground reservoir, a precast concrete structure, and its associated features possess characteristics that represent the work of a master or possess high artistic values or characteristics that raise to the level of significance to be eligible under this criterion. For these reasons, the reservoir and pump station are recommended not eligible for listing on the CRHR under Criterion 3.

Criterion 4: In rare instances, buildings and structures can serve as sources of important information about historic construction materials or technologies and be significant under Criterion 4. The District Smith Reservoir and Pump Station do not appear to be a principal source of important information in this regard and is recommended not eligible for listing on the CRHR under Criterion 4.

The District Smith Reservoir and Pumps Station are recommended not eligible for listing on the CRHR and are not recommended as a historic resource under CEQA. Therefore, the proposed Project would not cause a substantial adverse change in the significance of an historical resource and no Project impact would result.

Mitigation Measures: No mitigation is required.

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less Than Significant with Mitigation Incorporated. Based on the combined environmental and cultural background, the SCCIC record search results, and existing disturbance, the Project is assessed as having a low sensitivity for archaeological resources within native soils. Although the Project area is developed, there is the potential for subsurface archaeological deposits within soil depths not previously disturbed by development.

If construction ground disturbance depths range within native soils, there would be a potential to impact previously unrecorded subsurface archaeological resources. With Mitigation Measure CUL-1 and CUL-2 incorporated, a less than significant impact is anticipated.

Mitigation Measures: Mitigation Measures CUL-1, CUL-2, and CUL-3.

CUL-1: Environmental Training – Prior to construction of the Project, a qualified archaeologist will provide a cultural resource briefing that includes all applicable laws and penalties pertaining to disturbing cultural resources, a brief discussion of the prehistoric and historic regional context and archaeological sensitivity of the area, types of cultural resources found in the area, instruction that Project workers will halt construction if a cultural resource is inadvertently discovered during construction. If requested, a local tribal representative(s) shall be invited to participate in the environmental training to discuss or provide text from a tribal cultural perspective regarding the cultural resources within the region.

CUL-2: Native American Consultation/Coordination: The Native American Heritage Commission (NAHC) Sacred Lands Search results was positive. The NAHC recommended coordinating with the Juaneño Band of Mission Indians Acjachemen Nation – Belardes tribe and the NAHC listed tribes as they may have information regarding known and recorded tribal cultural resource sites within or near the Project. Prior to determining that an application for a project is complete or a decision by the District to undertake the Project, the District shall consult or coordinate with the NAHC listed tribes to ensure tribal cultural resources are considered. Native American government to government consultation is part of the lead CEQA agency’s responsibilities under AB 52.

CUL-3: Inadvertent Discovery of Archaeological Resources During Construction – During Project-level construction, should subsurface archaeological resources be discovered, all activity within 50 feet of a “find” shall stop and a qualified archaeologist shall be contacted to assess the significance of the find according to CEQA Guidelines Section 15064.5 and/or NRHP criteria (as applicable). The archaeologist (shall have the authority to halt any Project-related construction activities that could impact potentially significant resources. If any find is determined to be significant, the archaeologist shall determine, in consultation with the implementing agencies and any local Native American groups expressing interest, appropriate avoidance measures or other appropriate mitigation. Ground-disturbing activities shall not continue until the discovery has been assessed by the archaeologist. The archaeologist shall be afforded the necessary time to assess the find. With monitoring, construction activities may continue on other areas of the Project site during evaluation and treatment of historic or unique archaeological resources. Under CEQA Guidelines Section 15126.4(b)(3), preservation in place is the preferred means to avoid impacts to archaeological resources qualifying as historical resources. Methods of avoidance may include, but shall not be limited to, (i) Project re-route or re-design, (ii) Project cancellation, or (iii) identification of protection measures such as capping or fencing. Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources

cannot be avoided, the qualified archaeologist shall develop additional treatment measures, such as data recovery or other appropriate measures, in consultation with the implementing agency and any local Native American representatives expressing interest in prehistoric or tribal resources. If an archaeological site does not qualify as an historical resource but meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site shall be treated in accordance with the provisions of Section 21083.2.

c. Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact. Existing regulations require that if human remains and/or cultural items defined by Health and Safety Code, Section 7050.5, are inadvertently discovered, all work in the vicinity of the find would cease and the Orange County Coroner would be contacted immediately. If the remains are found to be Native American as defined by Health and Safety Code, Section 7050.5, the coroner will contact the NAHC by telephone within 24 hours. The NAHC shall immediately notify the person it believes to be the MLD as stipulated by California PRC, Section 5097.98. The MLD(s), with the permission of the landowner and/or authorized representative, shall inspect the site of the discovered remains and recommend treatment regarding the remains and any associated grave goods. The MLD shall complete their inspection and make their recommendations within 48 hours of notification by the NAHC. Any discovery of human remains would be treated in accordance with Section 5097.98 of the PRC and Section 7050.5 of the Health and Safety Code. Therefore, with compliance with existing regulations, Project impact would be less than significant.

Mitigation Measures: No mitigation is required.

3.4.6 Energy

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b.	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				X

Discussion

a. Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant Impact. According to the CEQA Guidelines, “[u]ses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.” Therefore, the purpose of this analysis is to identify any significant irreversible environmental effects of Project implementation that cannot be avoided.

Construction of the proposed Project would lead to the consumption of limited, slowly renewable, and non-renewable resources, committing such resources to uses that future generations would be unable to reverse. Project construction would require the commitment of resources that include: (1) building materials; (2) fuel; and (3) the transportation of goods and people to and from the proposed Project.

During Project construction, energy will be consumed in the form of petroleum-based fuels associated with the use of construction vehicles and equipment on the Project site, construction worker travel to and from the Project site, and truck trips delivering building materials to the Project site and hauling solid waste from the Project site.

During Project operation, energy consumption will involve electricity to run the reservoir facilities. However, this is a replacement project and operational energy use from the proposed design would largely remain the same as existing operations. Therefore, operational energy use from the Project were considered negligible.

The Proposed Project will comply with all applicable regulations and codes which require achievement of various levels of energy efficiency in building design, construction, and operation. The consumption of such resources would represent a long-term commitment of those resources. The commitment of resources required for the construction of the proposed Project would limit the

availability of such resources for future generations or for other uses during the life of the Project. However, use of such resources will be short-term and minimal during construction and will not result in energy consumption requiring a significant increase in energy production for the energy provider. In addition, the proposed Project will comply with all applicable regulations and codes. Therefore, the energy demand associated with the proposed Project will be less than significant.

Mitigation Measures: No mitigation is required.

b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact. As noted above, the Project will not result in energy consumption requiring a significant increase in energy production for the energy provider. The Project is not expected to conflict with or obstruct a state or local plan for renewable energy or energy efficiency and therefore, no impacts are expected.

Mitigation Measures: No mitigation is required.

3.4.7 Geology and Soils

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i.) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the state geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
	ii.) Strong seismic ground shaking?			X	
	iii.) Seismic-related ground failure, including liquefaction?				X
	iv.) Landslides?				X
b.	Result in substantial soil erosion or the loss of topsoil?			X	
c.	Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?			X	
d.	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			X	
e.	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X
f.	Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?		X		

Existing Conditions

The Project site is not located within an Alquist-Priolo Earthquake Fault Zone (CGS 2023). The principal seismic hazard that could affect the site is ground shaking resulting from an earthquake occurring along any one of several major active faults in the region. The known regional faults that could produce the most significant ground shaking at the project site include the Elsinore, Puente Hills Blind Thrust, and San Joaquin Hills Blind Trust faults located approximately 5.7 miles, 6.7 miles and 9.0 miles, respectively, from the site (Leighton 2022).

The site is underlain by man-made fill associated with construction of the existing improvements at the site and young/old alluvial fan deposits (Qyf/Qof). The fill is 2 to 5 feet thick and consisted mainly of clayey gravel and clayey sand with gravel. Below the fill, the alluvium generally consisted of dense to very dense gravel with varying amounts of clay and sand, and stiff to hard sandy clay with gravel to the maximum explored depth of 41½ feet (Leighton 2022).

The soils have low collapse potential and low compressibility potential under the expected loads (Leighton 2022).

The Project site is not located within a liquefaction zone or a landslide zone (CGS 2023). The presence of very dense gravelly soils and the relatively deep historic groundwater levels also indicate that the liquefaction potential is very low (Leighton 2022).

The Project site is located in an area of paleontological sensitivity (County of Orange 2012).

Discussion

a. **Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:**

i.) **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the state geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**

Less Than Significant Impact. The Project site is not located within an Alquist-Priolo Earthquake Fault Zone (CGS 2023). No active faults are known to cross the Project site (Leighton 2022). The probability of damage because of surface ground rupture is low due to the lack of known active faults crossing the Project Area. Project facilities have been designed in accordance with applicable seismic safety standards. The operation of the proposed Project, therefore, is not anticipated to expose people or structures to potential substantial adverse effects, including risk of loss, injury, or death from the rupture of a known earthquake fault. The impact is anticipated to be less than significant.

Mitigation Measures: No mitigation is required.

ii.) **Strong seismic ground shaking?**

Less Than Significant Impact. The Project is located within the seismically active Southern California region and is likely to experience strong ground shaking from seismic events generated on regionally active faults. The Project has been designed in accordance with applicable seismic safety standards. The operation of the proposed Project, therefore, is not anticipated to expose people or structures to potential substantial adverse effects from strong seismic ground-shaking. The impact is anticipated to be less than significant.

Mitigation Measures: No mitigation is required.

iii.) **Seismic-related ground failure, including liquefaction?**

No Impact. The Project is not located within a liquefaction hazard zone (CGS 2023). Construction of Project facilities will comply with applicable measures of the California Building Code regarding seismic safety measures. Operation of the proposed Project would not expose people or structures to substantial impacts involving seismic-related ground failure from liquefaction; therefore, no impact would occur.

Mitigation Measures: No mitigation is required.

iv.) **Landslides?**

No Impact. The Project site is not located in a landslide area. The land within and in the vicinity of the Project site is relatively flat; thus, no impact from landslides is anticipated.

Mitigation Measures: No mitigation is required.

b. Would the project result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. Construction of the Project would include ground-disturbing activities, such as excavation and grading in order to build the proposed Project. As the proposed Project involves over one acre, the proposed Project would be subject to and will comply with the requirements of the Construction General Permit under the National Pollutant Discharge Elimination System (NPDES) program administered by the State Water Resources Control Board. The Project site will be paved or landscaped upon completion, so that no exposed soil would remain. The Project will have a less than significant impact related to erosion and loss of topsoil in the construction and operational phases.

Mitigation Measures: No mitigation is required.

c. Is the project located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslides, lateral spreading, subsidence, liquefaction, or collapse?

Less than Significant Impact. Based on the analysis provided in Responses (a.) (iii. and iv.) above, no impact would be experienced related to liquefaction or onsite or off-site landslides. No other geological hazards are identified for the Project site (Leighton 2022). Construction of the reservoir facilities will comply with applicable measures of the California Building Code regarding seismic safety measures. Operation of the proposed Project would not expose people or structures to substantial impacts involving unstable geology or unstable soils; therefore, a less than significant impact would occur.

Mitigation Measures: No mitigation is required.

d. Is the project located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Less than Significant Impact. The Villa Park Safety Element of the General Plan states that expansive soil conditions require specialized grading techniques or foundation treatment to control uplift characteristics of these materials. Settlement due to structural loading within areas underlain by compressible materials, such as thick topsoil, alluvium, and/or terrace deposits is a potential problem within the lower elevations of the community (City of Villa Park 2019b).

The design and construction of the Project will comply with applicable regulations and standard specifications to prevent potential risk of damage from expansive soils. As part of the proposed Project, the foundation for the reservoir will be at least 20 feet below grade and will be constructed on undisturbed, competent native soils. If the native soils exposed at the bottom of the foundation excavation have been previously disturbed or they are unsuitable, they would be removed and replaced with a uniform layer of structural fill. The foundation for the booster pump station and other at-grade structures will be constructed on undisturbed, competent native soils or properly compacted structural fill following the removal of existing fill and recompaction. In addition, the Project would be required to comply with building codes in order to minimize the potential for hazards due to

expansive soils. Therefore, regulatory compliance will ensure that impacts would be less than significant.

Mitigation Measures: No mitigation is required.

- e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?**

No Impact. No septic tanks or alternative wastewater systems will be constructed as part of the Project, and no impacts will occur.

Mitigation Measures: No mitigation is required.

- f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

Less Than Significant with Mitigation Incorporated. The Project site is underlain by 2 to 5 feet of man-made fill, with young/old alluvial fan deposits under the fill. Shallow excavations in the younger alluvial fan deposits are unlikely to uncover significant fossil vertebrate remains. However, deeper excavations in old alluvial fan deposits encounter significant vertebrate fossil remains. Given the highly disturbed condition of the Project site and surroundings, the likelihood that paleontological resources or unique geologic features exist onsite is considered low. Nevertheless, ground-disturbing activities, such as grading or excavation, could unearth undocumented paleontological resources or unique geologic features by disturbing native soils that may contain such resources. The proposed Project could potentially cause a substantial adverse change in significance to a paleontological resource, but incorporation of the following Mitigation Measure GEO-1 would reduce the potential impact on paleontological resources to less than significant.

Mitigation Measures:

GEO-1: Inadvertent Discoveries of Paleontological Resources — If the construction staff or others observe previously unidentified paleontological resources during ground disturbing activities, they will halt work within a 200-foot radius of the find(s), delineate the area of the find with flagging tape or rope (may also include dirt spoils from the find area), and immediately notify a qualified Paleontologist. Construction will halt within the flagged or roped-off area. The Paleontologist will assess the resource as soon as possible and determine appropriate next steps in coordination with the District. Such finds will be formally recorded and evaluated. The resource will be protected from further disturbance or looting pending evaluation.

3.4.8 Greenhouse Gas Emissions

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b.	Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?				X

Existing Conditions:

The State of California has enacted key legislation in an effort to reduce its contribution to climate change. Climate change is a result of greenhouse gases emitted all around the world from sources such as the combustion of fuel for transportation and heat, cement manufacture, and refrigerant emissions.

AB 32, the California Global Warming Solutions Act of 2006, requires that greenhouse gases emitted in California be reduced to 1990 levels by the year 2020. The Air Resources Board is the State agency charged with monitoring and regulating sources of emissions of greenhouse gases. AB 32 requires the Air Resources Board to adopt and implement a list of discrete and early action greenhouse gas reduction measures, which was completed in October 2007.

The SCAG is the regional planning agency for ensuring implementation of Senate Bill 375 (i.e., the Sustainable Communities and Climate Protection Act of 2008) which supports the State's climate action goals to reduce greenhouse gas (GHG) emissions through coordinated transportation and land use planning with the goal of more sustainable communities. Under the Sustainable Communities Act, the Air Resources Board sets regional targets for GHG emissions reductions from passenger vehicle use.

The SCAQMD provides significance thresholds GHGs that are used to determine if a significant impact under Appendix G has occurred. If emissions exceed the thresholds, then a project is considered to have a significant impact on air quality and must incorporate all feasible mitigation measures. SCAQMD has established a screening significance threshold of 10,000 metric tons of carbon dioxide (CO₂) equivalent (CO₂e) emissions per year for industrial projects (SCAQMD 2008b).

Discussion

a. **Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

Less Than Significant Impact. For this Project, the major source of GHG is the combustion of fuel in construction equipment, in vehicles used to haul materials, and in vehicles used by workers commuting to and from the site.

There are three types of GHG from fuel combustion, including CO₂, methane (CH₄) and nitrous oxide (N₂O). GHG emissions are presented as CO₂e. CO₂e is computed based on global warming equivalence. The CH₄ global warming equivalence is 25 times that of CO₂, and the N₂O global warming equivalence is 298 times that of CO₂. Mathematically, the CO₂e can be represented by the following equation:

$$CO_2e \text{ Emissions} = CO_2 \text{ Emissions} + (25 \times CH_4) + (298 \times N_2O)$$

For typical diesel-fueled combustion equipment used in construction activities, the emissions factors adjusted with global warming equivalence are the following:

1. CO₂ emission factors are 22.4 pounds of CO₂e per gallon consumed;
2. CH₄ emission factors are 0.065 pounds of CO₂e per gallon consumed; and
3. N₂O emission factors are 0.068 pounds of CO₂e per gallon consumed.

The CalEEMod model was used to estimate GHG emissions during the construction and operation phase of the proposed Project. Construction GHG emissions were estimated based on the construction schedule, types and quantities of construction equipment, worker trips, vendor trips, and hauling trips. Operation of the Project would generate GHG emissions through motor vehicle trips to and from the Project site, on-site maintenance, water usage, stationary sources, and energy consumption. However, this is a replacement project and operational emissions from the proposed design would largely remain the same as existing operations. Therefore, operational emissions from the Project were considered negligible. The GHG emissions from construction were amortized over a default 30-year operational life and added to annual operational emissions for comparison with SCAQMD's GHG screening threshold as summarized in Table 3-5.

Table 3-5. Estimated Annual Greenhouse Gas Emissions

Total Project Emissions	CO ₂	CH ₄	N ₂ O	CO ₂ e ^{1/}
	Metric Tons per Year			
<i>Construction</i>				
<i>Phase 1</i>	276	0.06	0.004	279
<i>Phase 2</i>	194	0.03	0.004	196
Total Construction GHG (CO ₂ e)				474
Total Construction GHG (CO ₂ e) Amortized Emissions over 30 Years				15.8
<i>Operation</i>				
<i>2027 and Onwards</i>	0	0	0	0
Total Amortized Construction + Operational CO ₂ e Emissions				15.8
SCAQMD GHG Screening Threshold				10,000
<i>Exceeds screening threshold?</i>				No

^{1/}Equivalent CO₂e Emissions = Construction GHG Emissions x Global Warming Equivalent Factor

When temporary construction CO₂e emissions are amortized and added to annual operational emissions, the total annual emissions will not exceed the SCAQMD GHG screening threshold. The Project's GHG emissions cumulatively are not a considerable contribution to climate change and, therefore, are less than significant.

Due to the complex physical, chemical and atmospheric mechanisms involved in global climate change, there is no basis for concluding that the Project's theoretically small emissions increase could

actually cause a measurable increase in global GHG emissions necessary to influence global climate change. The GHG emissions of the Project alone will likely not cause a direct physical change in the environment. Global emissions in their aggregate contribute to climate change, not any one source of Project emissions alone. Therefore, due to the incremental amount of GHG emissions estimated for this Project, and the lack of any evidence for concluding that the Project's GHG emissions could cause any measurable increase in global GHG emissions necessary to force global climate change, the Project is not considered to be hindering the goals of AB 32. Thus, because the Project would result in total GHG emissions less than the SCAQMD 10,000 tons CO₂e annual threshold, it is not considered to have a significant impact on a cumulative level.

Mitigation Measures: No mitigation is required.

b. Would the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact. The proposed Project would not conflict with any applicable plan, policy, or regulation in regard to GHG emissions. The City of Villa Park has not yet completed a climate action plan (CAP) to reduce GHG emissions within its jurisdiction. CAPs typically include a number of GHG reduction measures that target GHG emissions associated with transportation, building, energy, waste, water, and other activities. As shown in Table 3-5, the Project results in GHG emissions below the SCAQMD threshold of 10,000 tons per year. Therefore, the Project would not conflict with any applicable plan, policy, and/or regulation to reduce GHG emissions. Thus, the project is considered to have no impact.

Mitigation Measures: No mitigation is required.

3.4.9 Hazards And Hazardous Materials

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b.	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?			X	
c.	Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?				X
d.	Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e.	Be located within an airport land use plan area or, where such a plan has not been adopted, be within 2 miles of a public airport or public use airport, and result in a safety hazard or excessive noise for people residing or working in the project area?				X
f.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g.	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.				X

Existing Conditions

The Project Area is urbanized with municipal, light industrial, commercial, and multi-family residential uses.

The Project site is not included on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (DTSC 2023; CWRCB 2023).

The Project site is also not located within 2 miles of a public airport or public use airport. The nearest airport is John Wayne Airport located approximately 9.8 miles to the southwest.

The OCFA provides emergency response to fires and hazardous materials incidents in the City of Villa Park. The City of Villa Park Safety Element incorporates the Orange County Local Hazard Mitigation Plan by reference (City of Villa Park 2019b).

Discussion:

- a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

Less Than Significant Impact. The short-term construction process for the proposed Project would not involve any routine transport, use, or disposal of hazardous materials. Some examples of hazardous materials include fuels, lubricating fluids such as paints and adhesives, and solvents. Fuels and solvents for construction would be stored and utilized pursuant to existing regulatory requirements. Therefore, short-term construction impacts would be less than significant.

Operation of the reservoir would require limited transport, storage, use, and disposal of hazardous materials. All chemical storage and usage would comply with existing federal, State, and local requirements. No disposal of hazardous materials would occur onsite. Impacts would be less than significant.

Mitigation Measures: No mitigation is required.

b. Would the project create a significant hazard to the public or the environment through the reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?

Less Than Significant Impact. During construction, there is a potential for accidental release of hazardous substances such as petroleum-based fuels or hydraulic fluid used by construction equipment. The level of risk associated with the accidental release of hazardous substances is not considered significant due to the small volume and low concentration of hazardous materials utilized during construction. The construction contractor would be required to use standard construction controls and safety procedures that would avoid and minimize the potential for accidental release of such substances into the environment. Standard construction practices would be observed such that any materials released are appropriately contained and remediated as required by local, State, and federal law. As with the discussion for 3.4.9(a) above, all chemical and fuel storage and usage would comply with existing federal, State, and local requirements. Impacts would be less than significant.

Mitigation Measures: No mitigation is required.

c. Would the project emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

No Impact. There are no schools within 0.25 mile. The closest school, Linda Vista Elementary School, is located approximately 0.5 mile to the southeast of the Project site. No impact would occur.

Mitigation Measures: No mitigation is required.

d. Is the project located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. Since the Project site is not on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, there would be no hazard to the public or environment and therefore, no impact would be experienced.

Mitigation Measures: No mitigation is required.

- e. For a project located within an airport land use plan area or, where such a plan has not been adopted, be within 2 miles of a public airport or public use airport, and result in a safety hazard or excessive noise for people residing or working in the project area?**

No Impact. The Project site is also not located within 2 miles of a public airport or public use airport. The nearest airport is John Wayne Airport located approximately 9.8 miles to the southwest. The Project would not result in a safety hazard for people residing or working in the Project Area and no impact would occur.

Mitigation Measures: No mitigation is required.

- f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

Less Than Significant Impact. For construction of the proposed Project, traffic control may be needed to temporarily reduce available lanes during the construction at the reservoir site. However, full road closures are not anticipated. In addition, a traffic control plan will be prepared to accommodate the work area on Cannon Street for the valve vault. These impacts would be short-term and temporary and would have a less than significant impact to roadways utilized for emergency purposes. Therefore, the proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan and impacts would be less than significant.

Mitigation Measures: No mitigation is required.

- g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.**

No Impact. The Project site is located in an urbanized and fully developed area and is not located within or near any Fire Hazard Severity Zones in a State Responsibility Area or Local Responsibility Area (OSFM 2023, City of Villa Park 2019b). In addition, the Proposed Project would not involve the construction of any habitable structures that would expose people to wildfire hazard risks. Therefore, the Project would not pose a fire hazard due to wildland fires and no impact would occur.

Mitigation Measures: No mitigation is required.

3.4.10 Hydrology And Water Quality

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b.	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner that would:				
	(i) result in substantial erosion or siltation on site or off site?			X	
	(ii) substantially increase the rate or amount of surface runoff in a manner that would result in flooding on site or off site?			X	
	(iii) create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			X	
	(iv) impede or redirect flood flows?			X	
d.	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				X
e.	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

Existing Conditions

The Project Area is urbanized with municipal, commercial, and residential uses. Stormwater currently drains from primarily impervious surfaces across the site to storm gutters located in the adjacent Sycamore Street.

The Project and the surrounding areas are in a Federal Emergency Management Agency (FEMA) Flood Zone X, where the probability of flooding is minimal (FEMA 2009).

Discussion

- a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?**

Less Than Significant Impact.

Short-term Impacts

The proposed Project could potentially result in water quality impacts in the short-term during the construction process. Grading and excavation required for Project implementation would result in exposed soils that may be subject to wind and water erosion. Because the Project impact area is expected to be more than one acre, the proposed Project will be subject to the requirements of the Construction General Permit under the NPDES program administered by the State Water Resources Control Board. This means, construction of the proposed Project will be required to comply both with the NPDES General Permit, and water quality control measures established by the city of Villa Park. This would include requirements for the implementation of BMPs to minimize the potential for water quality impacts during construction.

Long-Term Operational Impacts

The proposed Project would not affect water quality in the Project area upon completion of construction. Development of the majority of the Project site will result in a new impervious surface which will merely replace a previous impervious surface. The facility will include a biofiltration system to treat stormwater flow in conformance with the County of Orange Water Quality Management Plan. Additionally, the Project is not expected to alter drainage conditions surrounding, or within, the Project area, so impacts would be less than significant.

Mitigation Measures: No mitigation is required.

b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less Than Significant Impact. This Project is expected to require very little water during the construction phase, and not create any new operational water demand. The Project will not create any significant new impervious areas, interfere with local groundwater basins, or affect their recharge areas. The Project will not result in any significant draw on water resources or change groundwater recharge opportunity. Therefore, the Project would not deplete groundwater supplies or interfere with groundwater recharge resulting in a net decrease in aquifer volume or a lowering of the groundwater table level. Thus, impacts to groundwater supply would be less than significant.

Mitigation Measures: No mitigation is required.

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner that would:

(i). Result in substantial erosion or siltation on site or off site?

Less Than Significant Impact. Refer to Response 3.4.10(a) above. Development of the Project will not alter drainage conditions within the Project site or for the larger watershed area that surrounds the Project. Thus, impacts in this regard would be less than significant.

Mitigation Measures: No mitigation is required.

(ii). Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on site or off site?

Less Than Significant Impact. Refer to Responses 3.4.10(a) and 3.4.10(c) above. The proposed Project is not expected to significantly alter on-site or off-site runoff in comparison to existing conditions. Impacts would be less than significant.

Mitigation Measures: No mitigation is required.

(iii). Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less Than Significant Impact. Refer to responses 3.4.10(a) and 3.4.10(c) above. The proposed Project is not expected to significantly alter on-site or off-site runoff in comparison to existing conditions. Therefore, impacts to stormwater drainage systems would be less than significant.

Mitigation Measures: No mitigation is required.

(iv). Impede or redirect flood flows?

Less Than Significant Impact. As noted in responses 3.4.10(a) and 3.4.10(c) above, the Project is not expected to alter drainage patterns either on-site or off-site. As a result, the Project will not create any new barriers to impede surface runoff or cause flood flows to be redirected from existing drainage conveyances. Impacts to the efficacy of the local stormwater drainage system are expected to be less than significant.

Mitigation Measures: No mitigation is required.

d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

No Impact. The Project site is not located within a 100-year floodplain (FEMA 2009). As a result, potential impacts to structures would be less than significant, and these facilities will not require active and on-site operations personnel so no injury or death from flooding is anticipated. The Project site is not located in any areas at risk for seiche, tsunami or mudflows (Leighton 2022); therefore, no impacts associated with these hazards would occur.

Mitigation Measures: No mitigation is required.

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less Than Significant Impact. Refer to Response 3.4.10(a) and 3.4.10(b) above. Development of the Project would include requirements for the implementation of BMPs to minimize the potential for water quality impacts during construction. Post construction conditions will be essentially the same as current conditions with regard to surface loading and non-point source additions to stormwater constituent loads. In addition, the Project would not deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the groundwater table level. A less than significant impact would occur.

Mitigation Measures: No mitigation is required.

3.4.11 Land Use and Planning

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Physically divide an established community?			X	
b.	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				X

Existing Conditions

The Project is located within a residential area of the City of Villa Park. The Project is currently developed with the existing reservoir.

Land use in the City of Villa Park is directed by the City of Villa Park General Plan and Zoning Code.

According to the City of Villa Park 2010 General Plan Land Use Map (City of Villa Park 2019a), the land use designation for the Project site is Estate Low Density Residential 1.75 dwelling unit/acre (DU/AC) and is zoned Public Institution (City of Villa Park 2015). The land surrounding the Project site has Estate Low Density Residential 1.75 DU/AC designations and E-4 Small Estate Residential zoning.

Discussion:

a. Would the project physically divide an established community?

Less Than Significant Impact. For construction of the proposed Project, traffic control may be needed to temporarily reduce available lanes during the construction at the reservoir site. However, full road closures are not anticipated. In addition, a traffic control plan will be prepared to accommodate the work area on Cannon Street for the valve vault. These impacts would be short-term and temporary and would have a less than significant impact to utilization of sidewalks and roadways. Therefore, the proposed Project would not divide an established community and the impact would be less than significant.

Mitigation Measures: No mitigation is required.

b. Would the project cause a significant environmental impact due to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The Project involves improvements to the existing reservoir and will not require any changes to the land use designation or zoning. The proposed Project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project; therefore, no impacts would occur.

Mitigation Measures: No mitigation is required.

3.4.12 Mineral Resources

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b.	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?				X

Existing Conditions

Mineral Resource Zones are commercially viable mineral or aggregate deposits, such as sand, gravel, and other construction aggregate. The mineral resources in Orange County consist of deposits of regionally significant aggregate resources identified by the California Department of Conservation, Divisions of Mines and Geology (County of Orange 2012). These significant sand and gravel resources for the Orange County region are located in portions of the Santa Ana River, Santiago Creek, San Juan Creek, Arroyo Trabuco and other areas. Orange County's petroleum resources are in the form of oil and natural gas deposits. The primary petroleum resource areas of the County are Huntington Beach, Newport Beach, Seal Beach and the Brea/La Habra foothill regions. The Project site is not located in any of these areas.

Discussion

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. No mineral recovery activities currently occur in the Project vicinity, and the Project site is not underlain by any known mineral resources of value to the region and residents of the State. Thus, no impacts would occur.

Mitigation Measures: No mitigation is required.

b. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No Impact. As stated above, the Project site is not located within a Mineral Resource Zone or an area of oil and gas resources. Thus, no impacts would occur.

Mitigation Measures: No mitigation is required.

3.4.13 Noise

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:					
a.	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in a local general plan or noise ordinance, or applicable standards of other agencies?			X	
b.	Generation of excessive groundborne vibration or groundborne noise levels?			X	
c.	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

Existing Environment

The existing noise environment for the Smith Reservoir and Pump Station primarily consists of vehicle noise from Taft Avenue, Wildwood Way, and Sycamore Street. Land use surrounding the Project site is single family residential, with the closest noise sensitive receptor being approximately 30 feet to the south of the Project. No ambient noise monitoring data have been identified for the project sites, but existing land uses and street patterns as well as the existing noise data published in the City of Villa Park's Noise Element indicates that the existing ambient noise levels at the project site is at or below 55 A-weighted decibels (dBA) Community Noise Equivalent Level (CNEL).

Discussion

- a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?**

Less Than Significant Impact. The County of Orange Noise Element to the General Plan identifies the land use compatibility standard for noise-sensitive land uses as an exterior CNEL of less than 65 dBA CNEL. The County of Orange Municipal Code limits noise at residential receptors to 55 dBA equivalent sound level (L_{eq}) during the daytime, and 50 dBA L_{eq} during the nighttime. The City of Villa Park and the City of Orange also limit noise through their respective Municipal Codes to 55 dBA L_{eq} during the daytime, and 50 dBA L_{eq} during the nighttime outside of residential receptors. The City of Orange Noise Element defines a significant noise impact as a project-related permanent increase in ambient noise levels of 5 dBA CNEL or greater when the existing ambient noise level is less than 65 dBA. The City of Villa Park exempts construction noise between the hours of 7:00 a.m. and 8:00 p.m. on weekdays, 8:00 a.m. to 8:00 p.m. on Saturdays, and is not exempt on Sundays. The City of Orange exempts construction noise between the hours of 7:00 a.m. and 8:00 p.m. on weekdays and Saturday, and between the hours of 9:00 a.m. and 8:00 p.m. on Sundays.

No ambient noise monitoring data have been identified for the project vicinity. However, the City of Villa Park's Noise Element indicates that the existing ambient noise levels should be at or below the CNEL of 55 dBA at the Project site and adjacent properties based on the existing land uses and street patterns. The construction at each of the sites would have only a minimal impact on daily traffic volumes in the project vicinity, and thus would have minimal impact on traffic noise conditions.

Table 3-6 summarizes the received construction noise levels at each NSA. Noise levels resulting from the construction activities would vary significantly depending on several factors such as the type and age of equipment, specific equipment manufacture and model, the operations being performed, and the overall condition of the equipment and exhaust system mufflers. Project construction would occur between 7:00 a.m. and 10:00 p.m., in compliance with the County and City Codes. Further information on the construction assessment can be found in the noise technical report. Due to these circumstances, the temporary increase in noise due to construction is considered to be a less than significant impact.

Table 3-6. Construction Noise Levels Summary (dBA L_{max})

NSA	UTM Coordinates (meters)		Distance to Construction (feet)	Construction Noise Level (dBA, L_{max})						
	Easting	Northing		Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	Stage 7
Phase 1										
NSA-1	425890	3742247	165	80	81	76	86	79	81	82
NSA-2	425890	3742196	165	80	81	76	86	79	81	82
NSA-3	425889	3742161	165	80	81	76	86	79	81	82
NSA-4	425858	3742143	75	87	88	83	93	86	88	89
NSA-5	425804	3742154	45	88	92	88	98	90	92	93
NSA-6	425822	3742143	35	94	94	90	100	93	94	96
NSA-7	425805	3742193	35	94	94	90	100	93	94	96
NSA-8	425804	3742240	35	94	94	90	100	93	94	96
NSA-9	425814	3742294	150	81	82	77	87	80	82	83
NSA-10	425858	3742293	175	80	80	76	86	78	80	82
NSA-11	425893	3742292	225	78	78	74	84	76	78	79
Phase 2										
NSA-1	425890	3742247	65	88	89	87	97	-	89	-
NSA-2	425890	3742196	75	87	88	84	95	-	88	-
NSA-3	425889	3742161	75	87	88	83	93	-	88	-
NSA-4	425858	3742143	50	91	91	83	93	-	91	-
NSA-5	425804	3742154	75	87	88	87	97	-	88	-
NSA-6	425822	3742143	115	83	84	83	93	-	84	-
NSA-7	425805	3742193	115	83	84	79	90	-	84	-
NSA-8	425804	3742240	115	83	84	79	90	-	84	-
NSA-9	425814	3742294	175	80	80	79	90	-	80	-
NSA-10	425858	3742293	80	87	87	76	86	-	87	-
NSA-11	425893	3742292	130	82	83	83	93	-	83	-

The Cadna-A® computer noise model was used to calculate sound pressure levels from the operation of the Project equipment in the vicinity of the Project site. The Project's general arrangement was reviewed and directly imported into the acoustic model so that on-site equipment could be easily identified; buildings and structures could be added; and sound emission data could be assigned to sources as appropriate. The primary noise sources during operations will be the pumps located in the pump station building, the emergency generator located in the generator room, and the 6-ton HVAC unit outside the pump station building. The Project site includes a 10-foot-high solid barrier around the site boundary.

Table 3-7 shows the projected exterior sound levels at the property boundary of each NSA. The noise modeling results indicate that the Project will comply with the 55 dBA daytime and 50 dBA nighttime noise limits. The Project will also not increase the ambient noise level by more than 5 dBA CNEL, as required in the City of Orange Noise Element. Due to these circumstances, the operational aspect of the Project is considered to be a less than significant impact. Further information on the operational assessment can be found in the noise technical report.

Table 3-7. Construction Noise Levels Summary (dBA L_{max})

NSA	UTM Coordinates (meters)		Modeled Operational L _{eq} , dBA	Modeled Operational L _{CNEL} , dBA
	Easting	Northing		
NSA-1	425890	3742247	44	50
NSA-2	425890	3742196	48	54
NSA-3	425889	3742161	45	51
NSA-4	425858	3742143	37	44
NSA-5	425804	3742154	40	47
NSA-6	425822	3742143	37	44
NSA-7	425805	3742193	43	49
NSA-8	425804	3742240	38	45
NSA-9	425814	3742294	41	47
NSA-10	425858	3742293	37	44
NSA-11	425893	3742292	40	47

Mitigation Measures: No mitigation is required.

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. Project construction would be completed in up to 7 work stages. The vibration analysis evaluated the worst-case vibration source, which would be the jackhammer. Based on vibration propagation calculations, construction vibration levels are predicted to be 0.021 peak particle velocity inches per second, or 75 vibration decibels (VdB), at the nearest residential receptor, which is approximately 35 feet from the site. These levels are based on the worst-case vibration producing equipment and it is expected that other vibration generating equipment proposed for the Project construction would result in lower vibration levels. Vibration levels at the nearest sensitive receptor will meet the Federal Transit Administration (FTA) criteria of 75 VdB for occasional vibratory

events (FTA 2018). This vibration level is considered acceptable for impacts to residential homes. Therefore, project impact would be a less than significant.

Mitigation Measures: No mitigation is required.

- c. **For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?**

No Impact. Based on a review of maps and aerial photos for the project region, no public airport or public use airport is located within two miles of the proposed project site. Therefore, no project impact would result.

Mitigation Measures: No mitigation is required.

3.4.14 Population and Housing

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?				X
b.	Displace a substantial number of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

Existing Conditions

Villa Park is a predominantly residential community with relatively few commercial businesses and professional offices (City of Villa Park 2017). It has the smallest population of the cities in Orange County and has no large employment centers or central business district. Villa Park had a population of 5,812 based on the 2010 Census. This represented an approximate 3 percent population decrease between 2000 and 2010. The population loss was largely attributed to the aging community and young adults or college students leaving home. During the 2010-2013 period, the population increased by 88 persons (1.5 percent).

Discussion

- a. Would the project induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?**

No Impact. The Project site is developed with and involves improvements to existing reservoir facilities. The proposed Project would not involve the construction of any homes, businesses, or other uses that would result in direct population growth or new infrastructure that would result in indirect population growth. Therefore, no impacts would occur.

Mitigation Measures: No mitigation is required.

- b. Would the project displace substantial number of existing people or housing, necessitating the construction of replacement housing elsewhere?**

No Impact. The Project site will be developed within an existing reservoir facility that is not currently used for housing. Construction of the Project would not require the removal or obstruction of existing housing and thus would not require the displacement of people or the construction of replacement housing elsewhere. Therefore, no impacts would occur.

Mitigation Measures: No mitigation is required.

3.4.15 Public Services

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
	i.) Fire protection?				X
	ii.) Police protection?				X
	iii.) Schools?				X
	iv.) Parks?				X
	v.) Other public facilities?				X

Existing Conditions

Public services include critical facilities such as police stations, fire stations, hospitals, shelters, and other facilities that provide important services to the community. Other public services include schools, parks, and libraries.

Fire protection and other related services in Villa Park are provided by the OCFA. The closet OCFA station to the Project site is Station No. 23, located on the south side of Villa Park Road east of Hewes Street, approximately 0.5 miles south of the Project site (City of Villa Park 2019a).

The Orange County Sheriff’s Department provides police protection to the City of Villa Park (OCSD 2023).

Discussion

- a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:**

- i.) Fire Protection**

No Impact. The proposed Project would not increase the need for fire protection services as no residential uses are proposed and the Project is not expected to result in an increase in the City of Villa Park’s population. The improvements to the existing reservoir would not cause the development of uses that would result in a substantial increase in the likelihood of a fire or other hazard. Moreover, by improving the City’s water supply reliability for its service area, the Project is expected to result in

beneficial impacts related to fire flow and protection. Therefore, no impacts to fire protection services or facilities are expected.

Mitigation Measures: No mitigation is required.

ii.) Police Protection

No Impact. The Project involves improvements to an existing use and would not increase the need for police protection services. The proposed Project would not introduce residential, commercial, or other uses, that would require an increase in demand for police protection beyond what is currently provided and therefore, would not require existing police facilities to be altered nor create a need for additional new facilities. The buildings onsite would be equipped with an alarm system for security purposes, and the proposed security fencing would limit unauthorized access. Therefore, no impacts to police protection services or facilities are expected.

Mitigation Measures: No mitigation is required.

iii.) Schools

No Impact. Implementation of the proposed Project would not result in the need for the construction of additional school facilities, as the Project would not result in an increase in population, nor would it result in a removal of a school, a reduction of school capacity, or displacement of students from existing schools. Therefore, no impact to school services or facilities are expected.

Mitigation Measures: No mitigation is required.

iv.) Parks

No Impact. Implementation of the proposed Project would not result in the need for the construction of additional park facilities, as the Project would not result in an increase in population nor would it result in a removal of a park. Therefore, no impacts to parks are expected.

Mitigation Measures: No mitigation is required.

v.) Other Public Facilities

No Impact. The proposed Project would not alter any of the government facilities in the area or produce a need for additional or new government services; therefore, no impacts to other public facilities are expected.

Mitigation Measures: No mitigation is required.

3.4.16 Recreation

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b.	Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?				X

Existing Conditions

The City has a Master Plan of Recreational Trails to provide recreational opportunities within the City and provides for off-road linkages to the Santiago Creek Green Belt and the Orange County system of recreational trails including the Santa Ana River trails, the Orange County Regional Parks, and nearby Grijalva Park in the City of Orange (City of Villa Park 2010).

Discussion

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. The construction or operation of the proposed Project would not involve temporary access to, or use of, any park. The proposed Project would not add additional residences or business in the neighborhood and thus would not cause additional demand for the use of any park or other recreational facilities in the area. Therefore, no impact to existing neighborhood and regional parks or other recreational facilities would occur.

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

No Impact. The proposed Project does not include recreational facilities or expansion of existing recreational facilities; therefore, no impact would occur.

Mitigation Measures: No mitigation is required.

3.4.17 Transportation

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle lanes and pedestrian facilities?			X	
b.	Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?			X	
c.	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
d.	Result in inadequate emergency access?			X	

Existing Conditions

Regional access to Villa Park is provided by SR-55 is approximately 0.5 mile west of the city. Villa Park is also accessible from adjacent communities via major arterial surface streets. The project site is in the east central side of Villa Park, with site access from Taft Avenue on the northern end of the site or Sycamore Street on the eastern end of the site. The nearest airport is John Wayne Airport located approximately 9.8 miles to the northwest.

Discussion

a. Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle lanes and pedestrian facilities?

Less Than Significant Impact. The proposed Project would not conflict with any transit plan or ordinance. Traffic control will be needed to temporarily reduce available lanes during construction but full road closures are not anticipated during construction. Construction traffic would be short term and temporary and would have a less than significant impact on circulation surrounding the site. Traffic associated with operation of the reservoir would be the same as existing conditions. Therefore, impacts would be less than significant.

Mitigation Measures: No mitigation is required.

b. Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

Less Than Significant Impact. As discussed in Section 3.4.17 (a), the Project would have less than significant impacts to traffic and circulation.

Mitigation Measures: No mitigation is required.

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. The Project's improvements to an existing reservoir would not result in any design features that would increase traffic hazards. No impacts are expected.

Mitigation Measures: No mitigation is required.

d. Would the project result in inadequate emergency access?

Less Than Significant Impact. Traffic control will be needed to temporarily reduce available lanes during construction but full road closures are not anticipated during construction. Construction equipment and staging for the Project would be at a designated location adjacent to, or within the Project site. These impacts would be short-term and temporary and would not limit access to emergency services; therefore, no significant impact would occur.

Mitigation Measures: No mitigation is required.

3.4.18 Tribal Cultural Resources

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<p>Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:</p>					
a.	Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or		X		
b.	A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		X		

PRC section 21074 defines tribal resources as follows:

- (a) *“Tribal cultural resources” are either of the following:*
 - (1) *Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:*
 - (A) *Included or determined to be eligible for inclusion in the California Register of Historical Resources.*
 - (B) *Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.*
 - (2) *A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.*
- (b) *A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.*
- (c) *A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a “nonunique archaeological resource” as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).*

Existing Conditions

As specified in the PRC Section 21080.31, as amended by AB 52, Gatto, lead agencies must provide notice inviting consultation to California Native American tribes that are traditionally and culturally affiliated with the geographic area of a proposed project if the Tribe has submitted a request in writing to be notified of proposed projects. The District has not received any request from any California Native American tribes to be notified of the District’s proposed projects.

Discussion

- a. **Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?**
- b. **Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.**

Less Than Significant Impact with Mitigation Incorporated. The SCCIC records search did not identify any cultural resources within or adjacent to the Project site. As a result, it is believed the proposed Project would not cause a substantial adverse change in the significance of a known cultural resource as defined in PRC 5020.1 (k).

If construction ground disturbance depths range within native soils, there would be a potential to impact previously unrecorded subsurface tribal cultural resources. With Mitigation Measures CUL-1, CUL-2, and CUL-3 incorporated, a less than significant impact is anticipated.

Mitigation Measures. Mitigation Measures CUL-1, CUL-2, and CUL-3

3.4.19 Utilities and Service Systems

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a.	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b.	Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				X
c.	Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
d.	Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e.	Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				X

Existing Conditions

The District was established in 1876 and provides potable water to the City of Villa Park and a small portion of the City of Orange. The District receives its water supply from local surface water which is stored in Irvine Lake and groundwater from three wells located within the City of Villa Park. The District provides water for a population of 6,500 covering approximately 4.7 square miles. The District has 43 miles of pipeline, 3 wells, a treatment plant, and 2 reservoirs. The water is sourced from Irvine Lake and is treated at the WHWFP, which has an average production rate of 2.2 mgd (Serrano Water District 2023).

OC Waste & Recycling operates three active landfills in Orange County: Olinda Alpha Landfill near Brea; the Frank R. Bowerman Landfill near Irvine; and the Prima Deschecha Landfill in San Juan Capistrano. The Olinda Alpha Landfill is the closest facility to the Project Site.

Discussion

- a. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?**

Less Than Significant Impact. The proposed Project involves replacement and improvements to an existing reservoir. Construction of the reservoir facilities would result in temporary and minor impacts

to air and noise during construction activities, but these have been reduced through mitigation, where necessary, to maintain impacts at a less than significant level. All impacts from Project operations are less than significant or no impact. Overall, impacts from construction and operation of the reservoir would be less than significant.

Mitigation Measures: No mitigation is required.

b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

No Impact. Implementation of the Project would not result in any changes to the District's existing water entitlements. Rather, it would improve reliability and efficiency of the supply system. As such, no impacts would occur.

Mitigation Measures: No mitigation is required.

c. Would the project result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. The proposed Project would not require wastewater treatment and therefore, no impact would occur.

Mitigation Measures: No mitigation is required.

d. Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less Than Significant Impact. The Project would not include any habitable structures and would not have the capability to produce solid waste during long-term operations. Although the Project would require the disposal of construction/demolition debris during the construction process (soil, asphalt, demolished materials, etc.), the generation of these materials would be short-term in nature and would not have the capability to substantially affect the capacity of regional landfills; therefore, impacts would be less than significant.

Mitigation Measures: No mitigation is required.

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact. The proposed Project would comply with all federal, State, and local statutes and regulations related to solid waste, including the California Integrated Waste Management Act and City requirements for solid waste generated during the construction process; therefore, no impact would occur.

Mitigation Measures: No mitigation is required.

3.4.20 Wildfire

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:					
a.	Substantially impair an adopted emergency response plan or emergency evacuation plan?			X	
b.	Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X
c.	Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d.	Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X

Existing Conditions

The Project site is located in an urbanized and fully developed area and is not located within or near any Fire Hazard Severity Zones in a State Responsibility Area or Local Responsibility Area (OSFM 2023, City of Villa Park 2019b). The Project site is not located in a landslide area. The land within and in the vicinity of the Project site is relatively flat. The Orange County Fire Authority (OCFA) provides emergency response to fires and hazardous materials incidents in the City of Villa Park. The City of Villa Park Safety Element incorporates the Orange County Local Hazard Mitigation Plan by reference (City of Villa Park 2019b).

Discussion

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones:

- a. Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?**

Less Than Significant Impact. The Project site is not located within or near any state responsibility areas or lands classified as very high fire hazard severity zones. For construction of the proposed Project, traffic control may be needed to temporarily reduce available lanes during the construction; however, full road closures are not anticipated. In addition, a traffic control plan will be prepared to accommodate the work area along Cannon Street. These impacts would be short-term and temporary and would have a less than significant impact to roadways utilized for emergency purposes.

Mitigation Measures: No mitigation is required.

- b. Would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?**

No Impact. The Project site is not located within or near any state responsibility areas or lands classified as very high fire hazard severity zones. The land within and in the vicinity of the Project site is relatively flat. In addition, the Project does not include any habitable structures. Therefore, the Project would not expose people to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

Mitigation Measures: No mitigation is required.

- c. Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?**

No Impact. The Project site is not located within or near any state responsibility areas or lands classified as very high fire hazard severity zones. The Project facilities will not exacerbate fire risk. Impacts would be less than significant.

Mitigation Measures: No mitigation is required.

- d. Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?**

No Impact. The Project site is not located within or near any state responsibility areas or lands classified as very high fire hazard severity zones. The land within and in the vicinity of the Project site is relatively flat. The Project and the surrounding areas are not located in a flood inundation zone. The Project would not exacerbate any flooding or landslide risks associated with post-fire conditions, therefore, no impacts are expected.

Mitigation Measures: No mitigation is required.

3.4.21 Mandatory Findings of Significance

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Mandatory Findings of Significance					
a.	Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?		X		
b.	Does the project have impacts that are individually limited but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)			X	
c.	Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?			X	

Discussion

- a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?**

Less than Significant Impact with Mitigation Incorporated. As discussed in Section 3.4.4, Biological Resources, the Project is located in an urban area and does not provide biological habitat for species of concern or for federally listed species. The proposed Project would not have the potential to substantially degrade the quality of the existing environment, reduce habitat of fish or wildlife species, threaten plant or animal communities, and/or reduce the number or restrict the range of rare plants or animals.

In addition, as discussed in Section 3.4.5, Cultural Resources, the Project site and surrounding area has been completely disturbed by development and has been subject to extensive ground disturbance in the past. As such, any historical, archaeological, and paleontological resources which may have existed in the Project site would have likely been disturbed. However, adherence to Mitigation Measures **CUL-1**, **CUL-2**, **CUL-3**, and **GEO-1** would be required in the event unexpected resources are uncovered during the grading and excavation process. With implementation of recommended mitigation, the proposed Project is not expected to eliminate important examples of the major periods of California history or prehistory, and impacts would be less than significant.

Mitigation Measures: Mitigation Measures **CUL-1, CUL-2, CUL-3, and GEO-1.**

- b. Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)**

Less than Significant Impact. The Project would serve to enhance the efficiency and reliability of the District’s water supply system. The Project would not result in substantial population growth within the area, either directly or indirectly. Although the Project may incrementally affect other resources at a less than significant level, the Project’s contribution to these effects is not considered “cumulatively considerable”, in consideration of the relatively nominal impacts of the Project and the mitigation measures provided to lessen impacts. Therefore, cumulative impacts would be considered less than significant.

Mitigation Measures: No additional mitigation is required beyond what is already included previously.

- c. Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?**

Less than Significant Impact. Previous sections of this Initial Study/Mitigated Negative Declaration reviewed the proposed Project’s potential impacts related to aesthetics, air quality, geology and soils, GHGs, hydrology/water quality, noise, hazards and hazardous materials, traffic, and other issues. As concluded in these previous discussions, the proposed Project would result in less than significant environmental impacts; therefore, the proposed Project would not result in environmental impacts that would cause substantial adverse effects on human beings and impacts would be less than significant.

Mitigation Measures: No mitigation is required.

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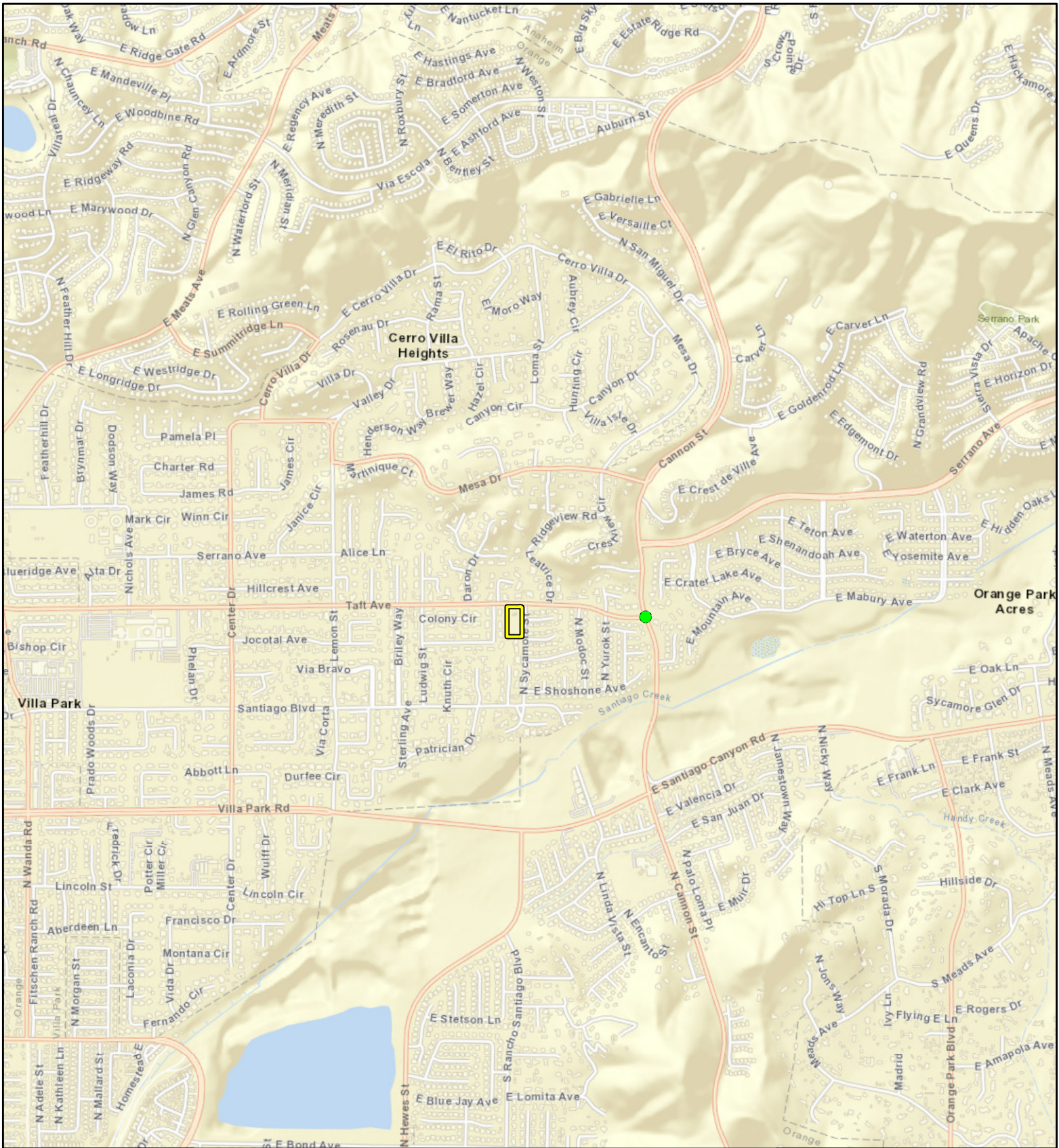
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handbook/localized-significance-thresholds](http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/localized-significance-thresholds)
- 2008b Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance
Threshold. Available at [http://www.aqmd.gov/docs/default-
source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-
thresholds/ghgattachmente.pdf](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgattachmente.pdf)

USFWS (United States Fish and Wildlife Service)

2023 National Wetlands Inventory. Wetlands Mapper. URL:
<https://www.fws.gov/wetlands/data/Mapper.html>. Accessed on June 2023.

FIGURES



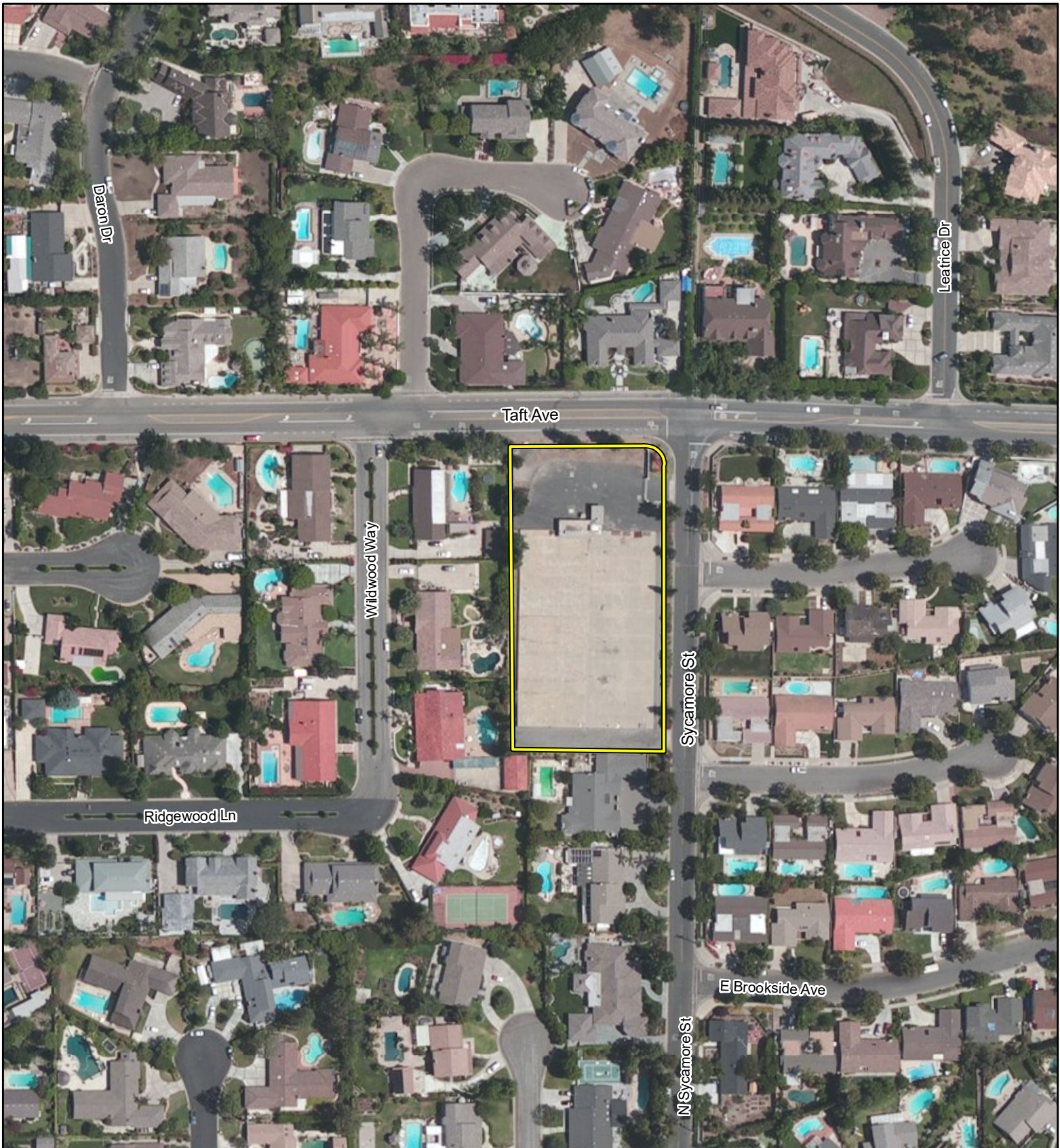
- Project Area
- Valve Vault Site



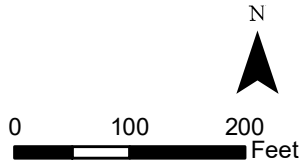
0 1,000 2,000 Feet

**Figure 2-1
Project Vicinity**

Smith Reservoir
Replacement Project
Orange County, CA



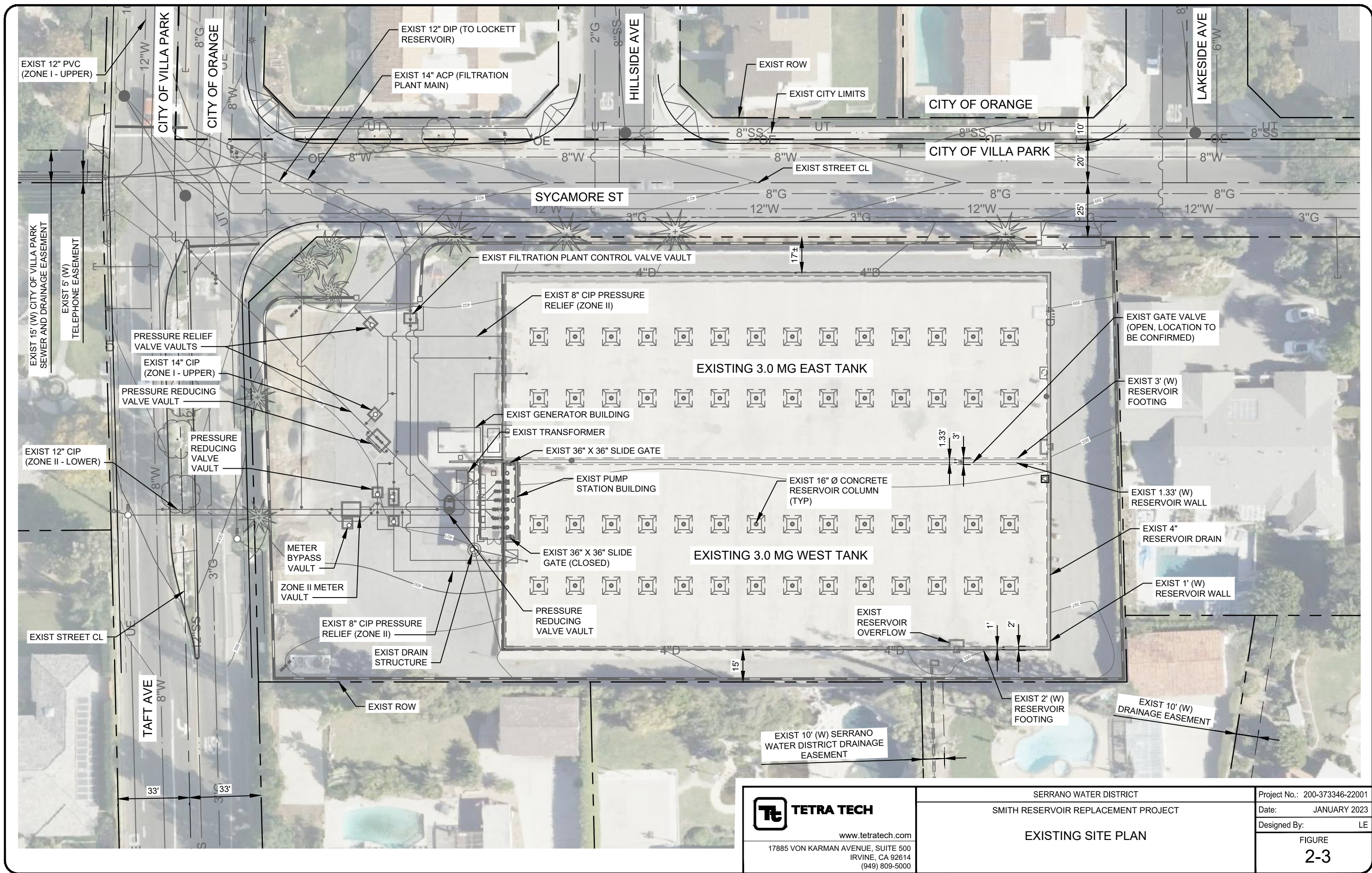
 Project Area



**Figure 2-2
Project Location**

Smith Reservoir
Replacement Project
Orange County, CA

1/11/2023 8:56:55 AM - C:\USERS\MICHAEL.MOJICA\WORKING FILES\CAD\CONCEPTUAL\BODR\FIGURES\C-702 - EXIST SITE PLANDWG - MOJICA, MICHAEL



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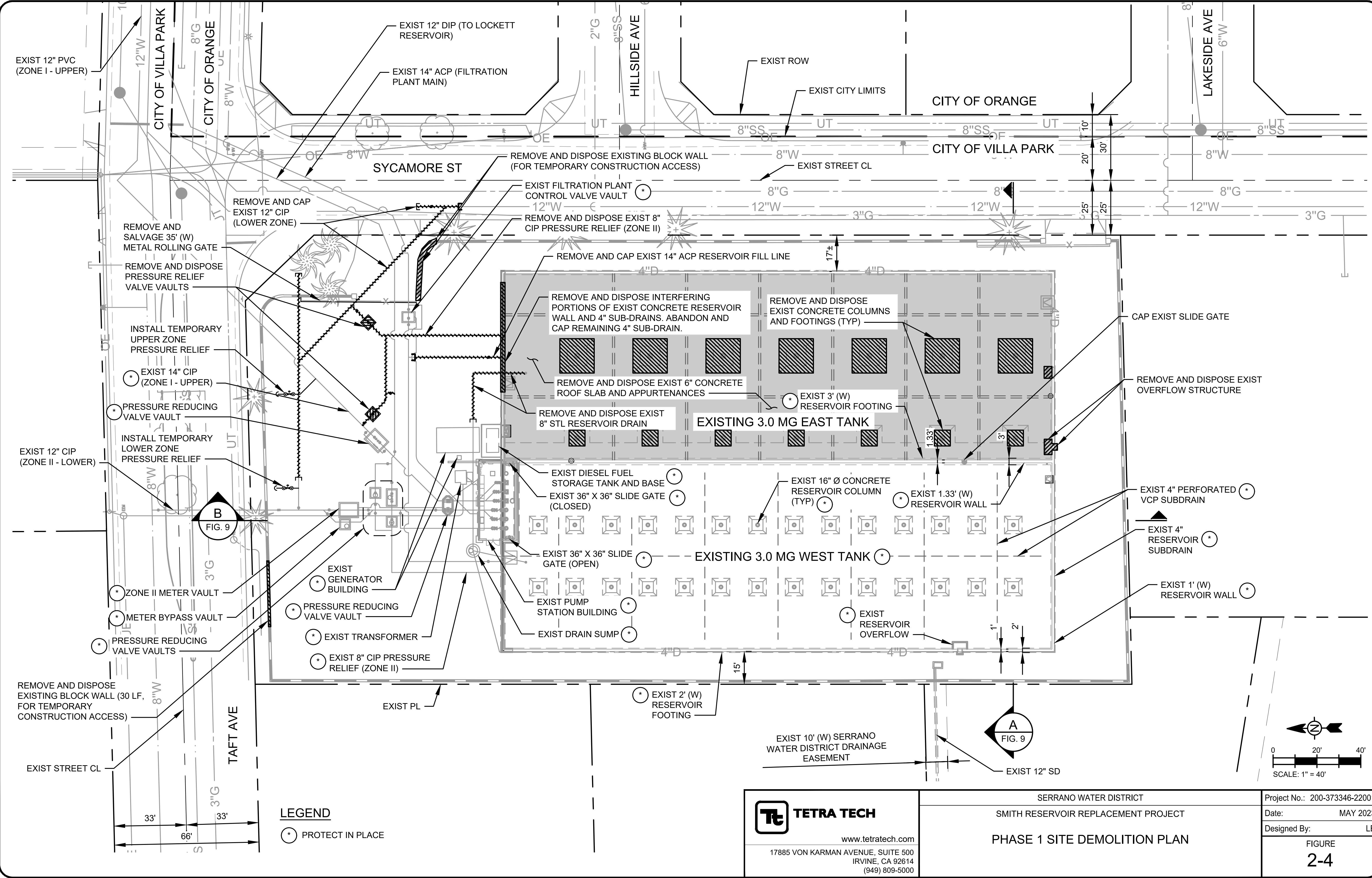
SERRANO WATER DISTRICT
 SMITH RESERVOIR REPLACEMENT PROJECT
EXISTING SITE PLAN

Project No.:	200-373346-22001
Date:	JANUARY 2023
Designed By:	LE
FIGURE	2-3

Bar Measures 1 inch

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LEGEND

⊛ PROTECT IN PLACE

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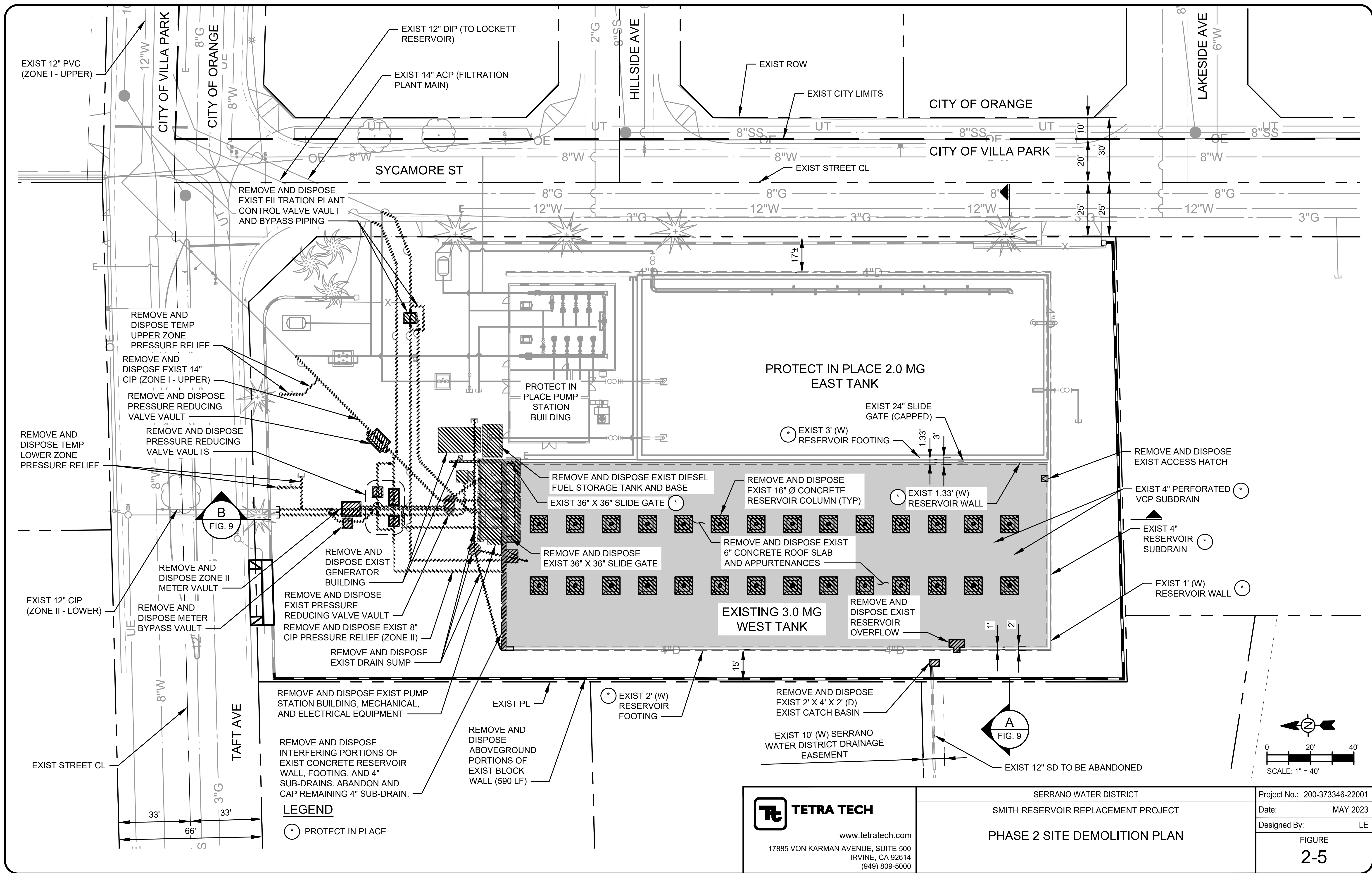
SERRANO WATER DISTRICT
 SMITH RESERVOIR REPLACEMENT PROJECT
PHASE 1 SITE DEMOLITION PLAN

Project No.: 200-373346-22001
 Date: MAY 2023
 Designed By: LE
FIGURE 2-4

Bar Measures 1 inch

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LEGEND
 (*) PROTECT IN PLACE

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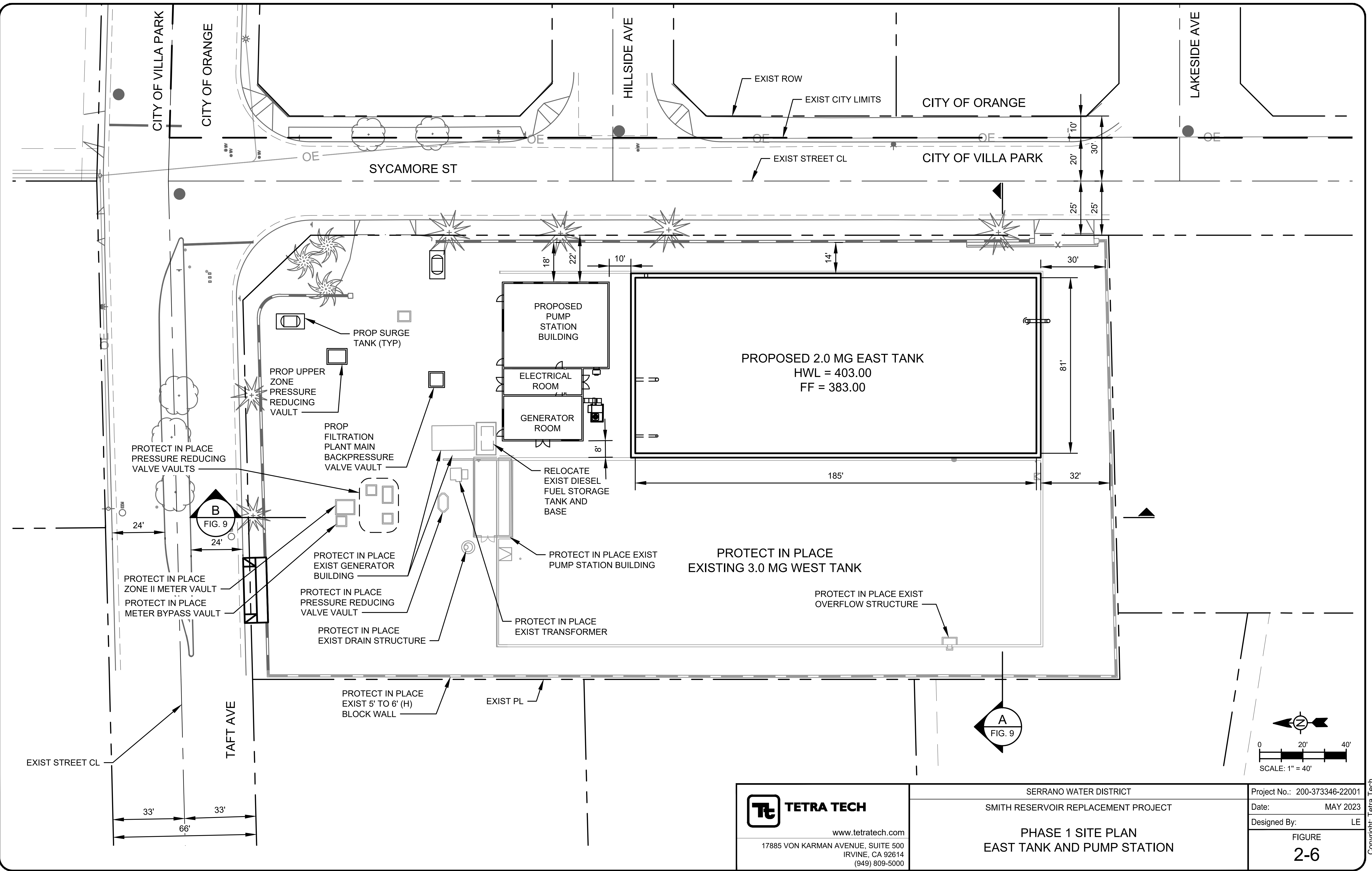
SERRANO WATER DISTRICT
 SMITH RESERVOIR REPLACEMENT PROJECT
PHASE 2 SITE DEMOLITION PLAN

Project No.: 200-373346-22001
 Date: MAY 2023
 Designed By: LE
FIGURE 2-5

Bar Measures 1 inch

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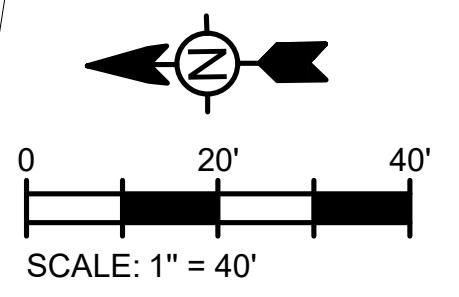
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SERRANO WATER DISTRICT
 SMITH RESERVOIR REPLACEMENT PROJECT
PHASE 1 SITE PLAN
EAST TANK AND PUMP STATION

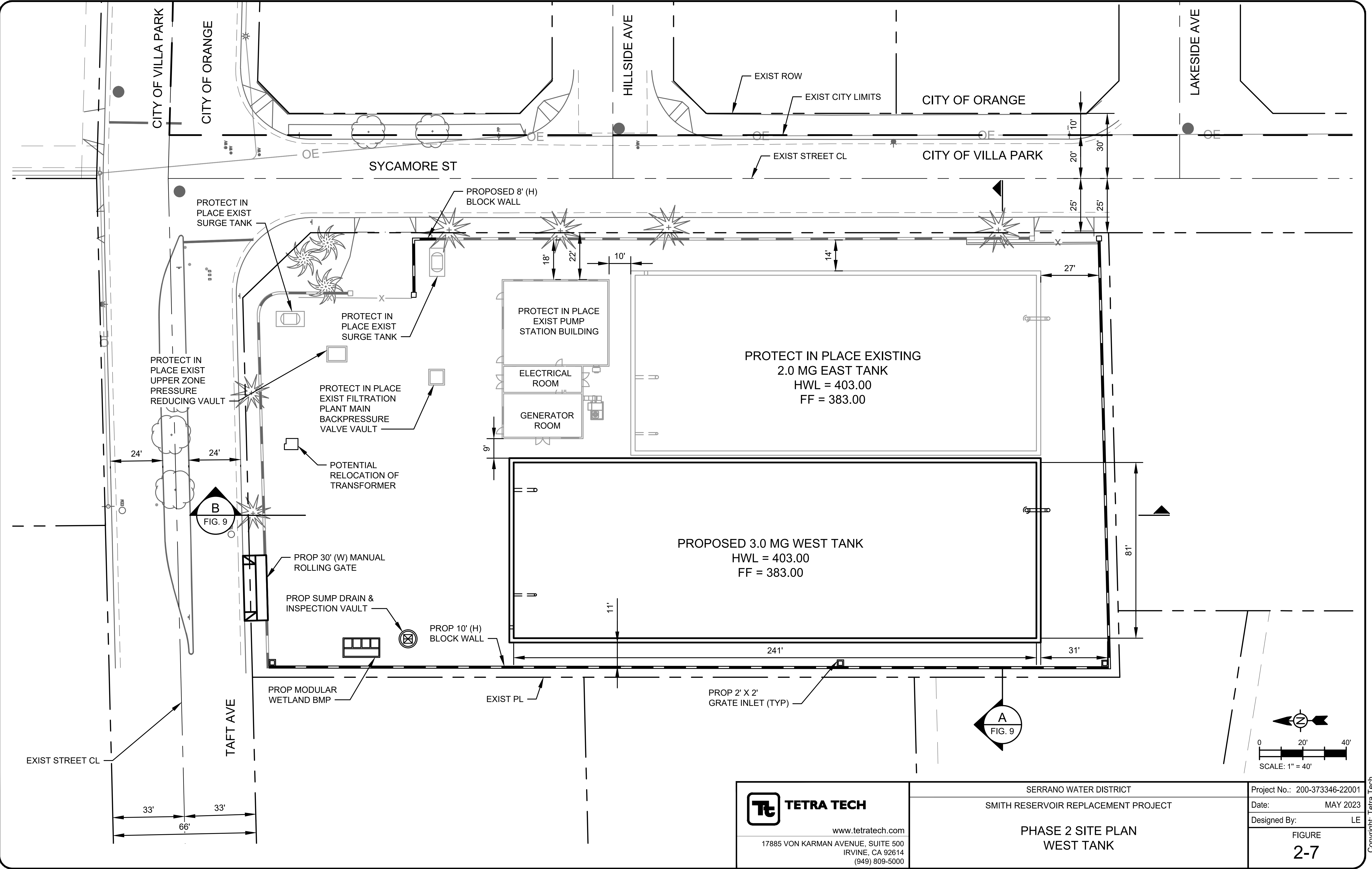
Project No.: 200-373346-22001
Date: MAY 2023
Designed By: LE
FIGURE 2-6



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Bar Measures 1 inch

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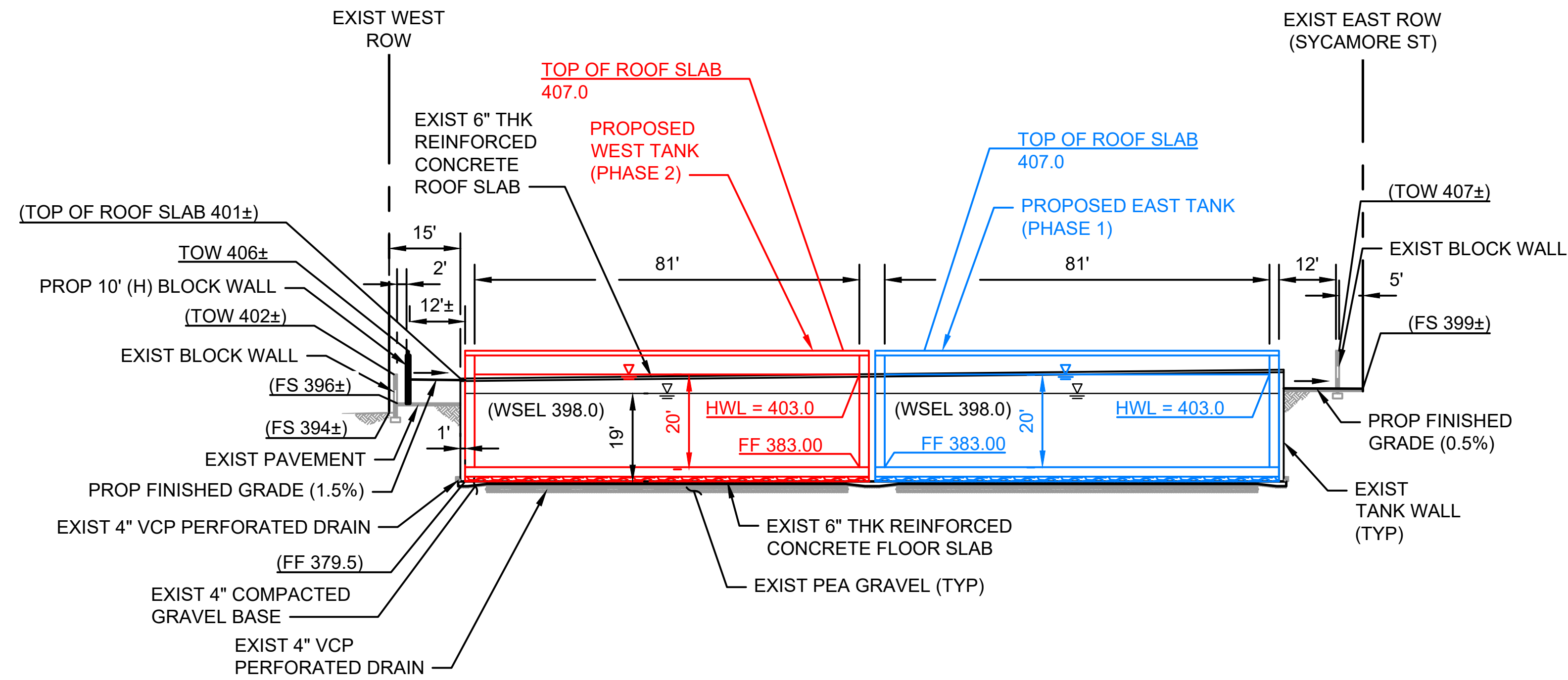
SERRANO WATER DISTRICT
 SMITH RESERVOIR REPLACEMENT PROJECT
**PHASE 2 SITE PLAN
 WEST TANK**

Project No.: 200-373346-22001
 Date: MAY 2023
 Designed By: LE
**FIGURE
 2-7**

Bar Measures 1 inch

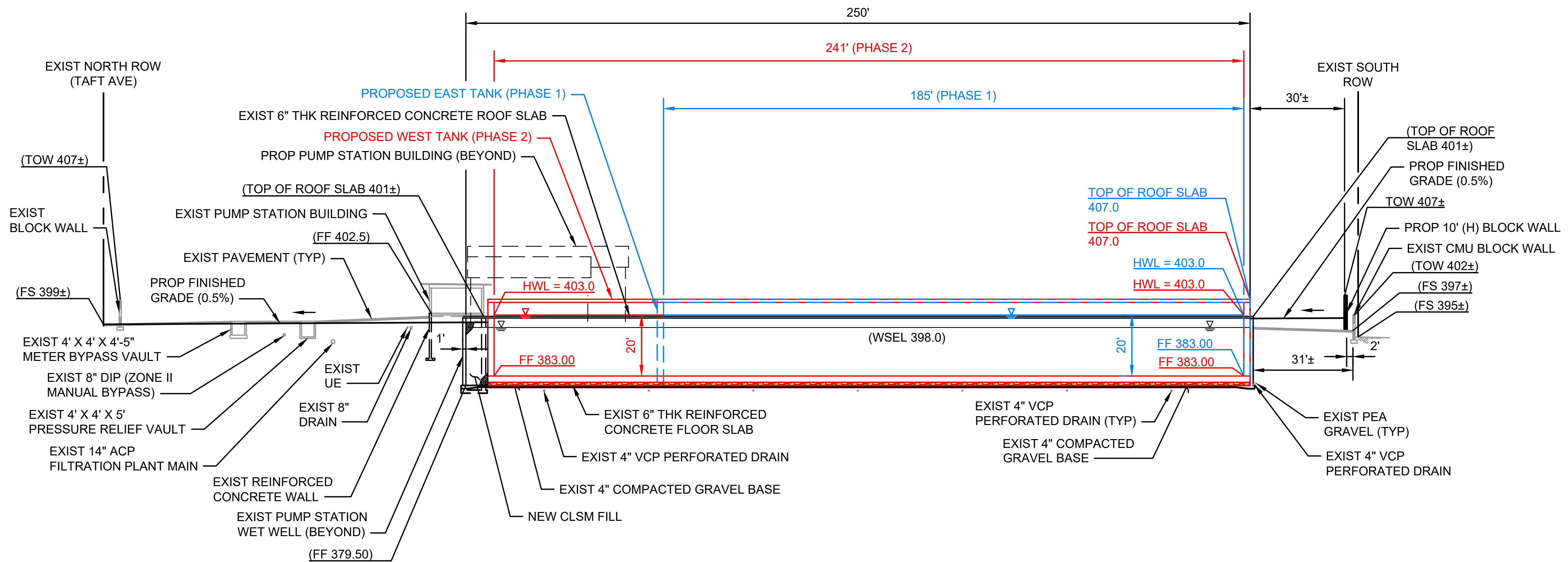
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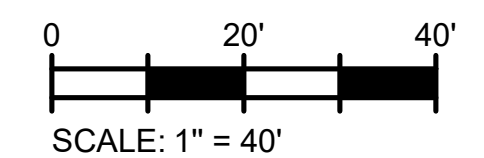
SECTION A

SCALE: 1" = 40'



SECTION B

SCALE: 1" = 20'

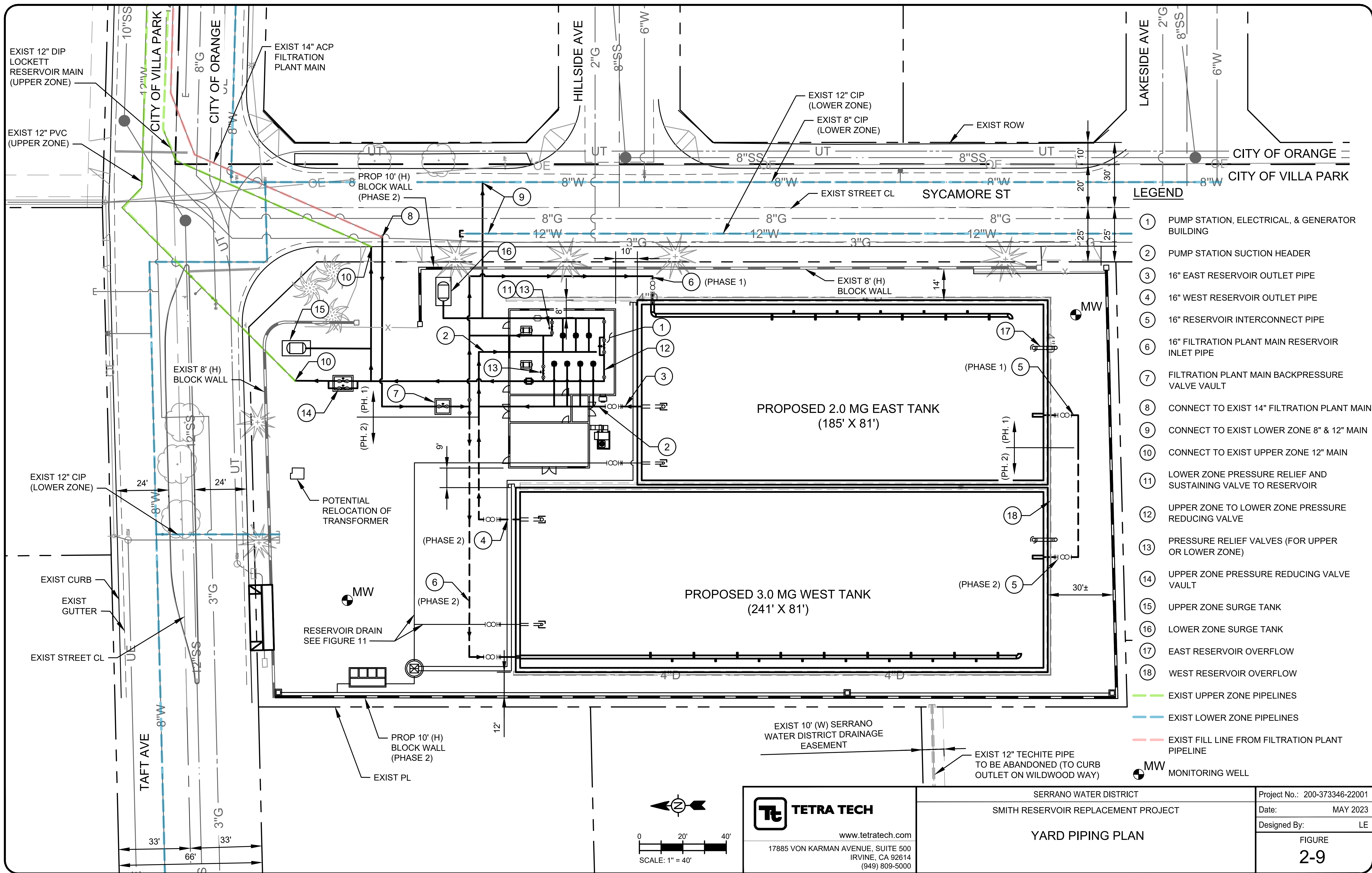


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	FIGURE 2-8	

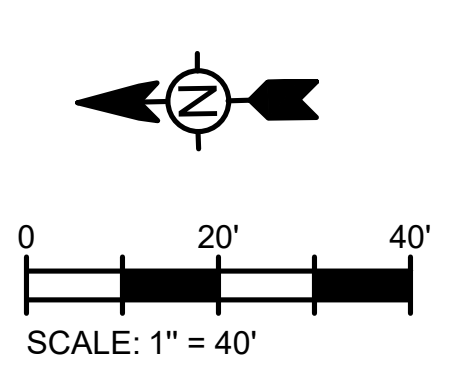
Bar Measures 1 inch

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- LEGEND**
- ① PUMP STATION, ELECTRICAL, & GENERATOR BUILDING
 - ② PUMP STATION SUCTION HEADER
 - ③ 16" EAST RESERVOIR OUTLET PIPE
 - ④ 16" WEST RESERVOIR OUTLET PIPE
 - ⑤ 16" RESERVOIR INTERCONNECT PIPE
 - ⑥ 16" FILTRATION PLANT MAIN RESERVOIR INLET PIPE
 - ⑦ FILTRATION PLANT MAIN BACKPRESSURE VALVE VAULT
 - ⑧ CONNECT TO EXIST 14" FILTRATION PLANT MAIN
 - ⑨ CONNECT TO EXIST LOWER ZONE 8" & 12" MAIN
 - ⑩ CONNECT TO EXIST UPPER ZONE 12" MAIN
 - ⑪ LOWER ZONE PRESSURE RELIEF AND SUSTAINING VALVE TO RESERVOIR
 - ⑫ UPPER ZONE TO LOWER ZONE PRESSURE REDUCING VALVE
 - ⑬ PRESSURE RELIEF VALVES (FOR UPPER OR LOWER ZONE)
 - ⑭ UPPER ZONE PRESSURE REDUCING VALVE VAULT
 - ⑮ UPPER ZONE SURGE TANK
 - ⑯ LOWER ZONE SURGE TANK
 - ⑰ EAST RESERVOIR OVERFLOW
 - ⑱ WEST RESERVOIR OVERFLOW
 - EXIST UPPER ZONE PIPELINES
 - EXIST LOWER ZONE PIPELINES
 - EXIST FILL LINE FROM FILTRATION PLANT PIPELINE
 - MW MONITORING WELL



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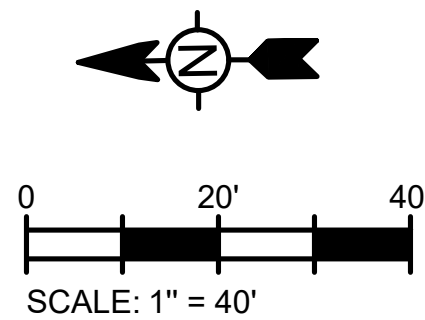
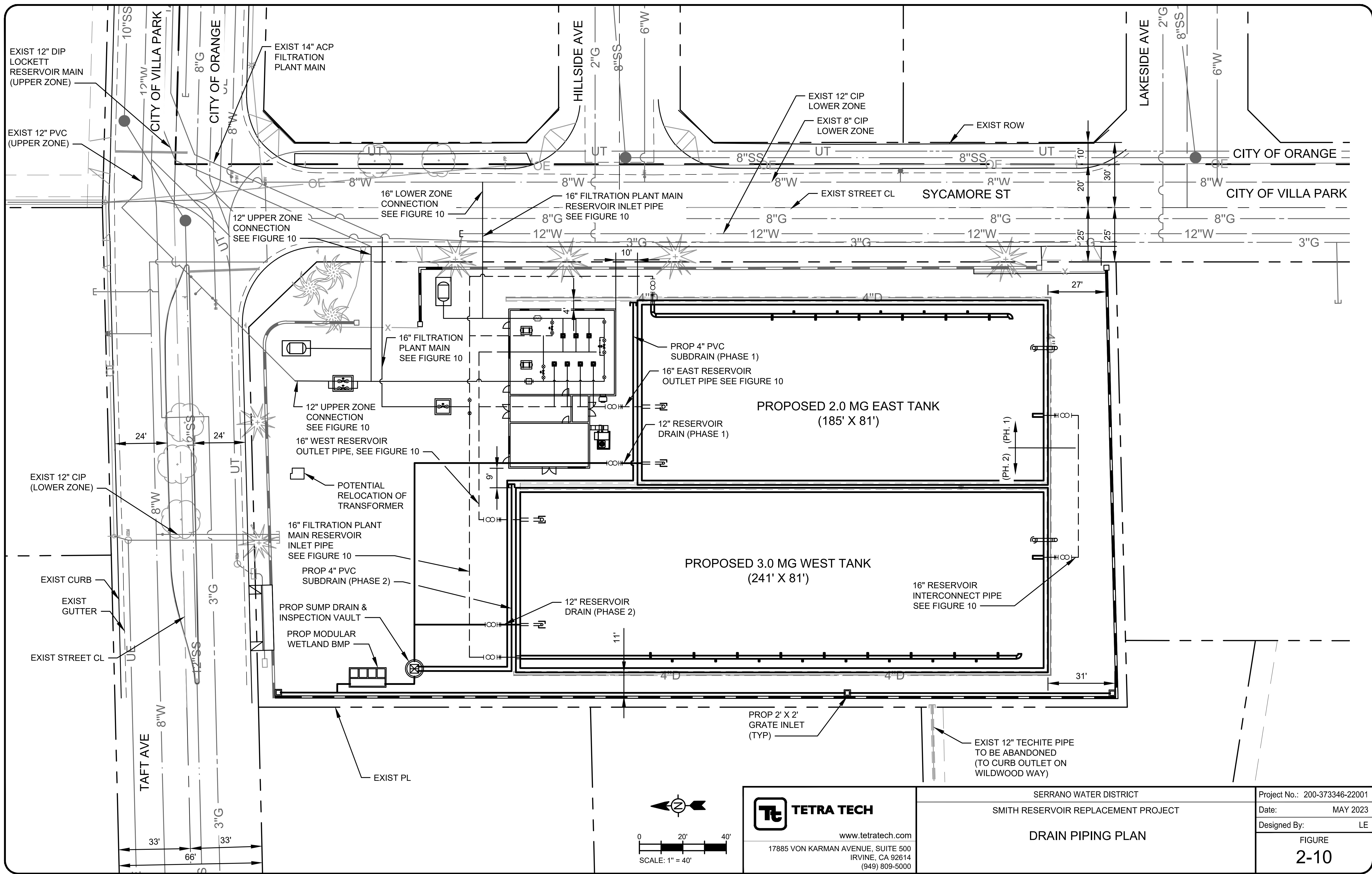
SERRANO WATER DISTRICT
 SMITH RESERVOIR REPLACEMENT PROJECT
YARD PIPING PLAN

Project No.:	200-373346-22001
Date:	MAY 2023
Designed By:	LE
FIGURE	2-9

Bar Measures 1 inch

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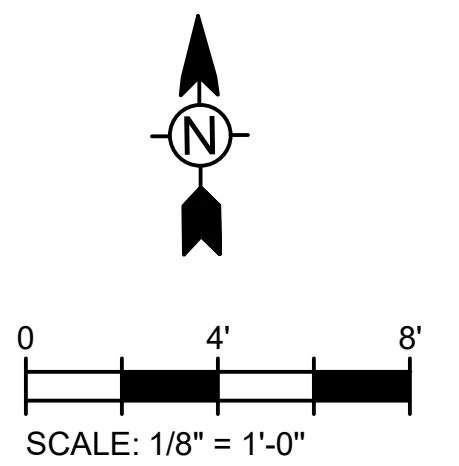
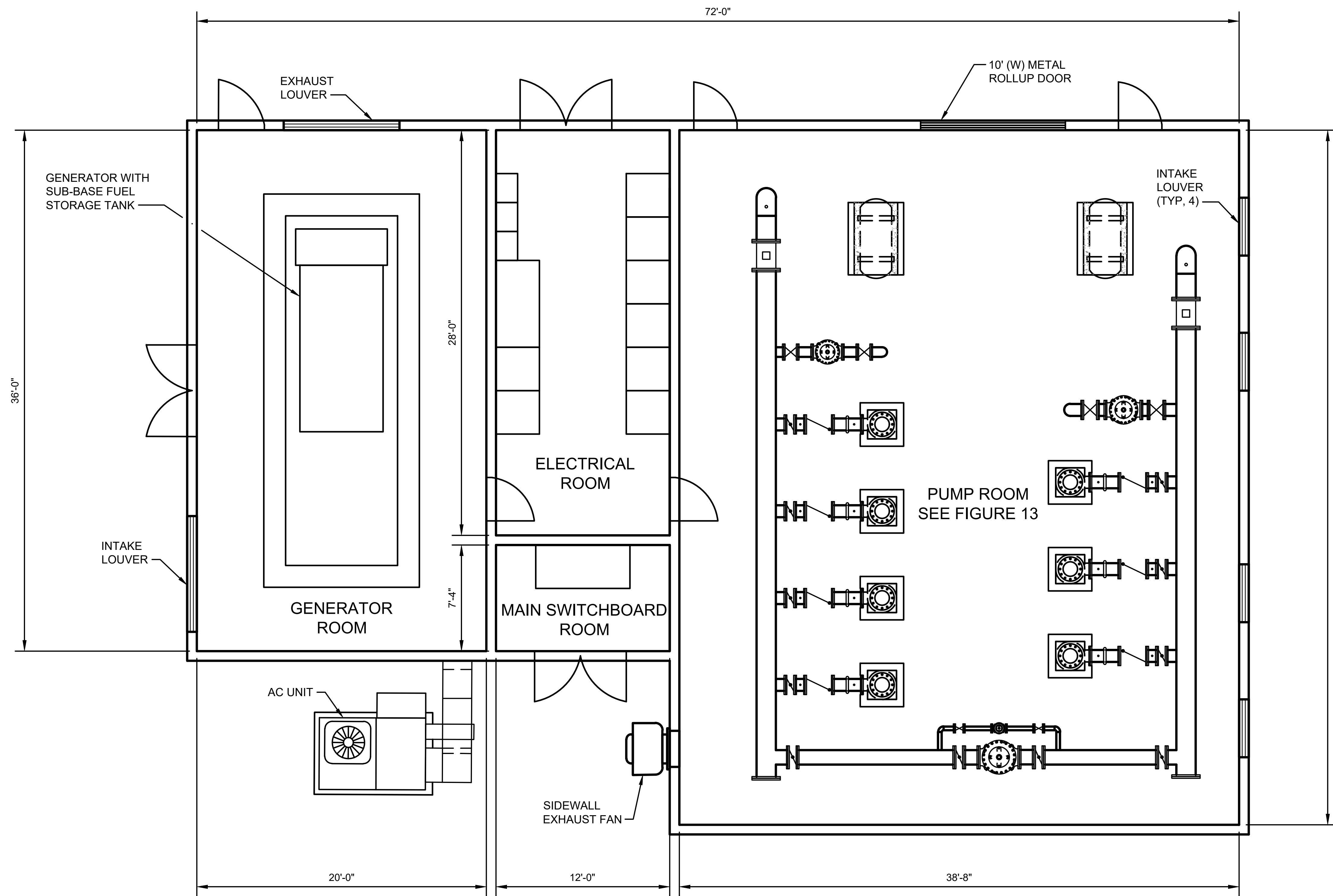
SERRANO WATER DISTRICT
 SMITH RESERVOIR REPLACEMENT PROJECT
DRAIN PIPING PLAN

Project No.: 200-373346-22001
Date: MAY 2023
Designed By: LE
FIGURE 2-10

Bar Measures 1 inch

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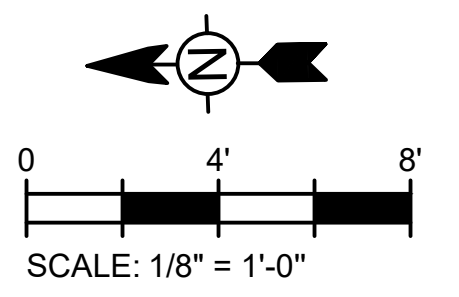
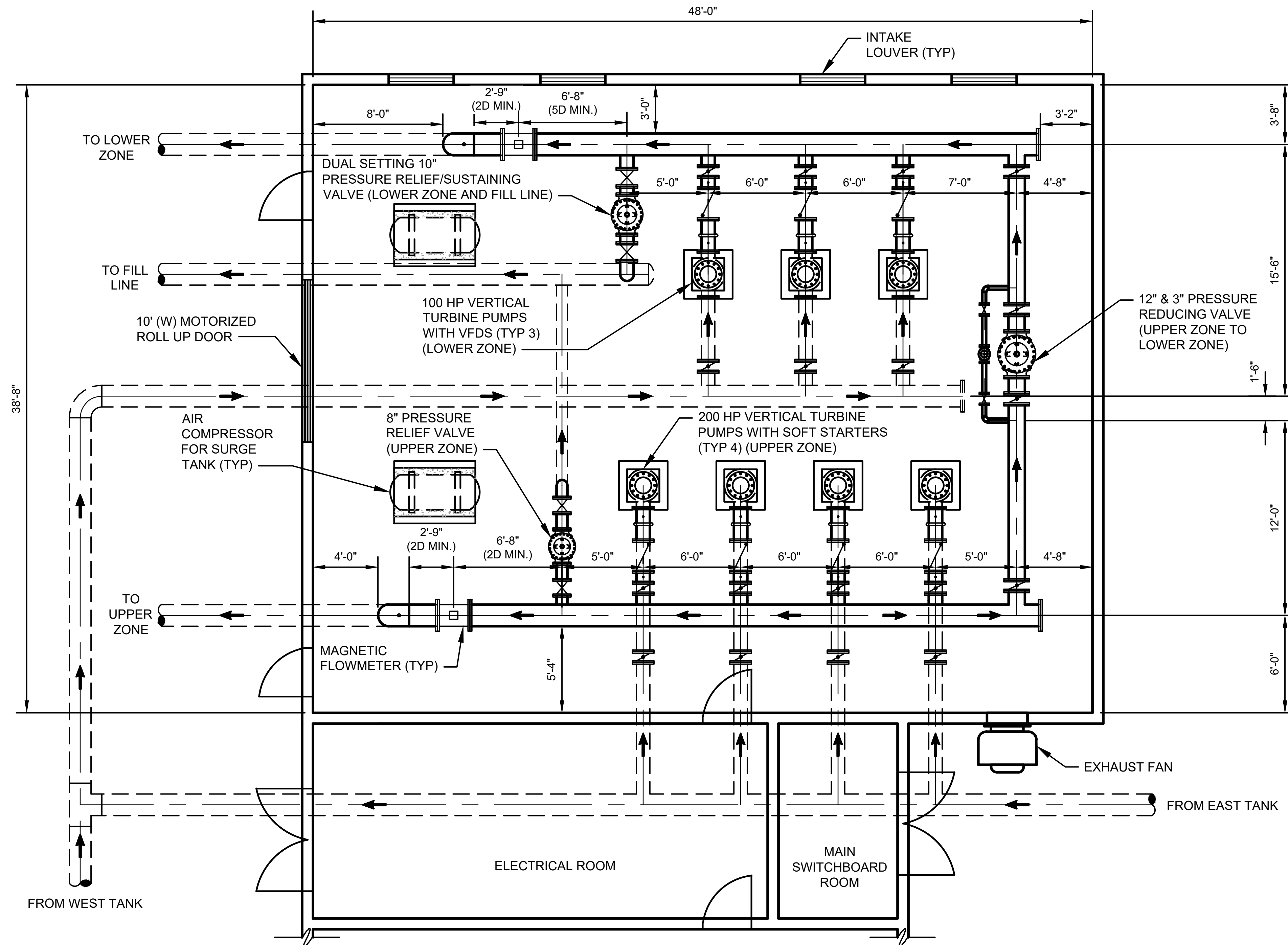



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	SMITH RESERVOIR REPLACEMENT PROJECT		Date: MAY 2023
	PUMP BUILDING OVERALL PLAN		Designed By: LE
			FIGURE 2-11

Bar Measures 1 inch

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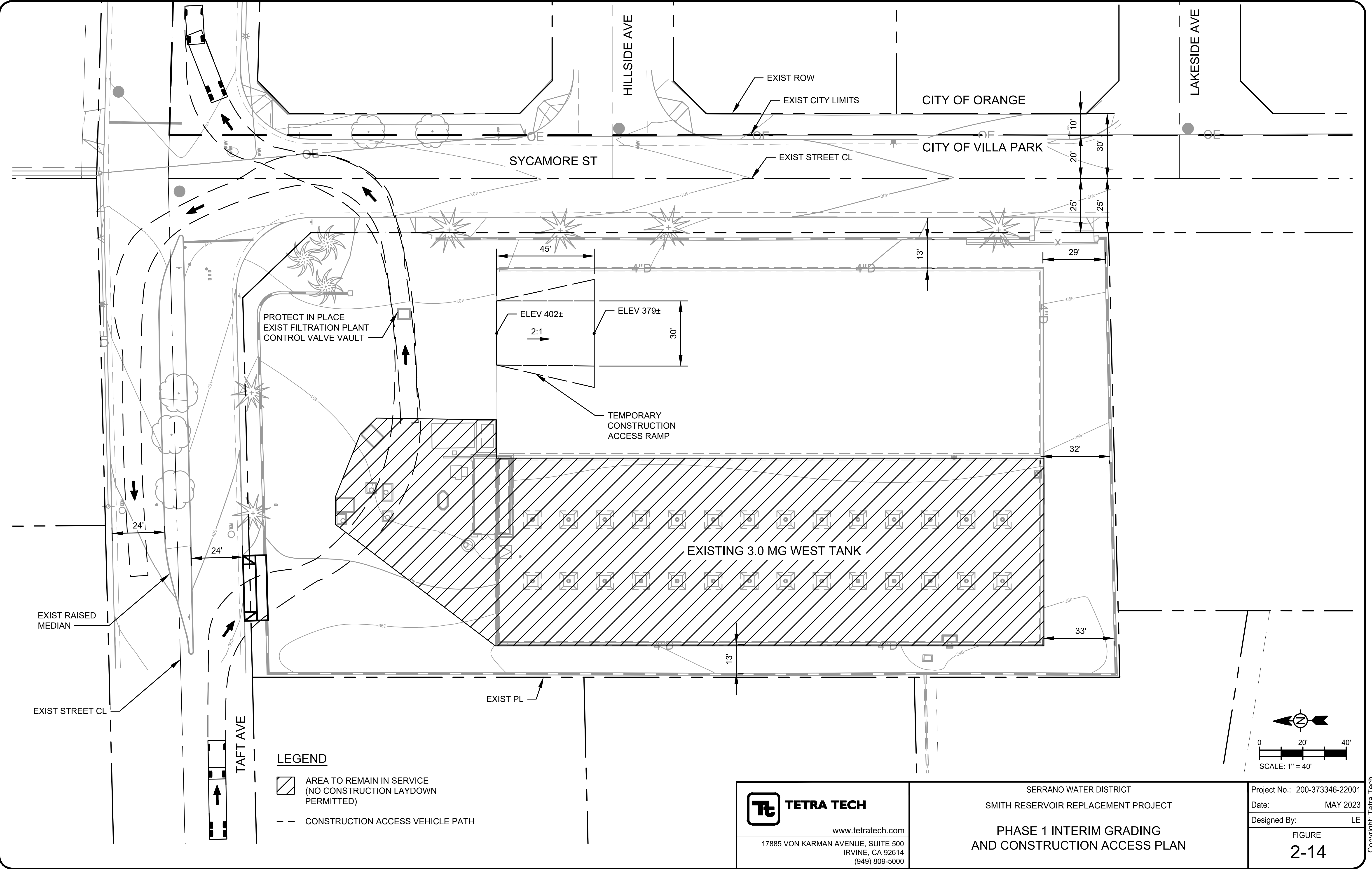


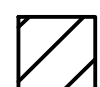

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	PUMP ROOM MECHANICAL PLAN		Date: MAY 2023
			Designed By: LE
			FIGURE 2-12

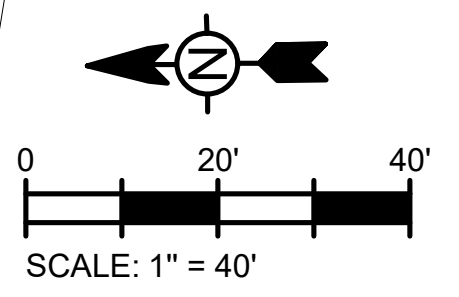
Bar Measures 1 inch

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- LEGEND**
-  AREA TO REMAIN IN SERVICE (NO CONSTRUCTION LAYDOWN PERMITTED)
 -  CONSTRUCTION ACCESS VEHICLE PATH



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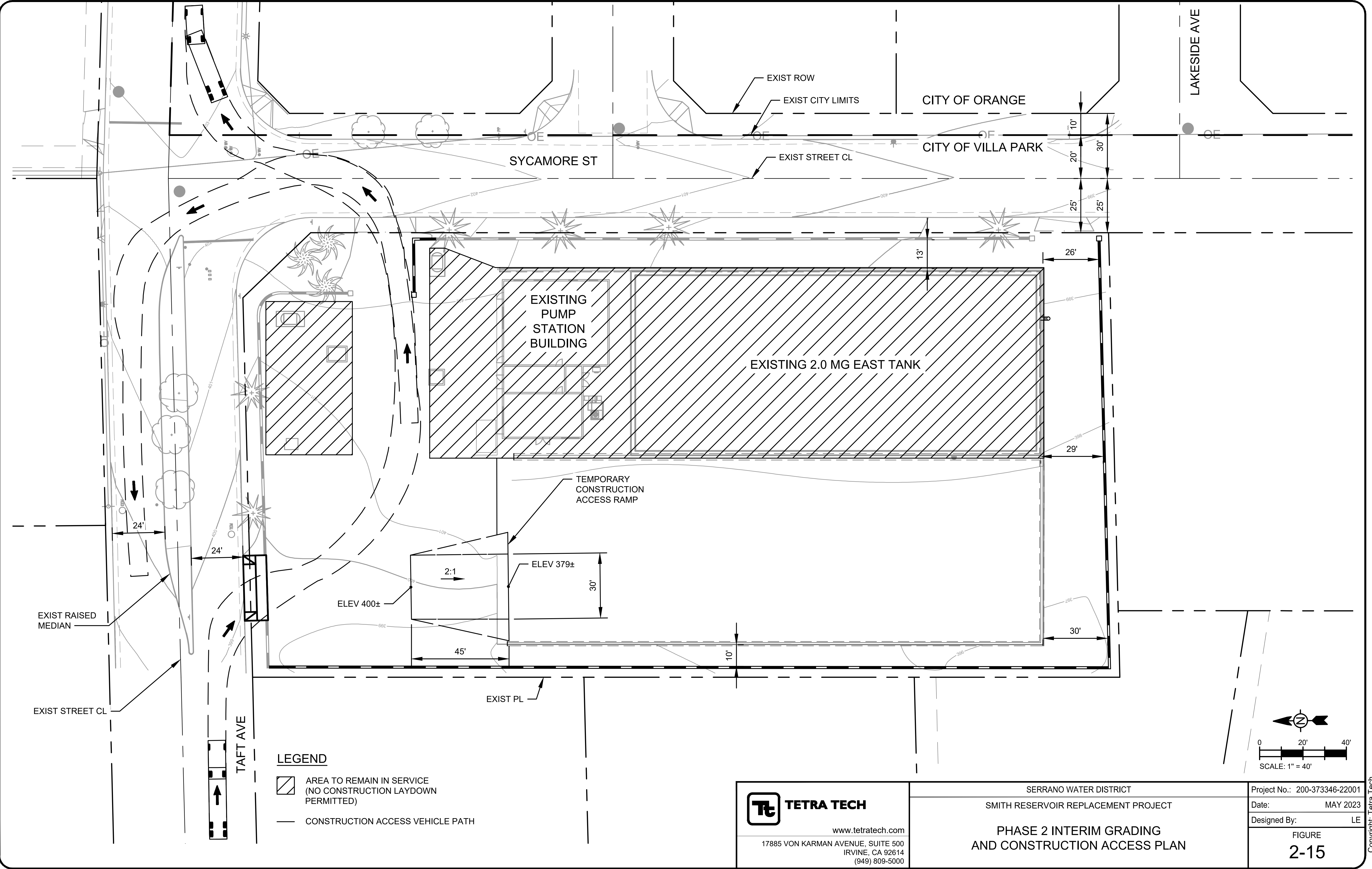
SERRANO WATER DISTRICT
 SMITH RESERVOIR REPLACEMENT PROJECT
**PHASE 1 INTERIM GRADING
 AND CONSTRUCTION ACCESS PLAN**



Project No.:	200-373346-22001
Date:	MAY 2023
Designed By:	LE
FIGURE 2-14	

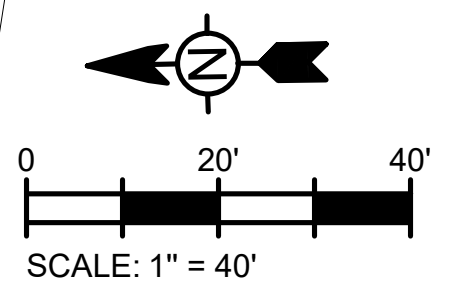
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- LEGEND**
-  AREA TO REMAIN IN SERVICE (NO CONSTRUCTION LAYDOWN PERMITTED)
 -  CONSTRUCTION ACCESS VEHICLE PATH



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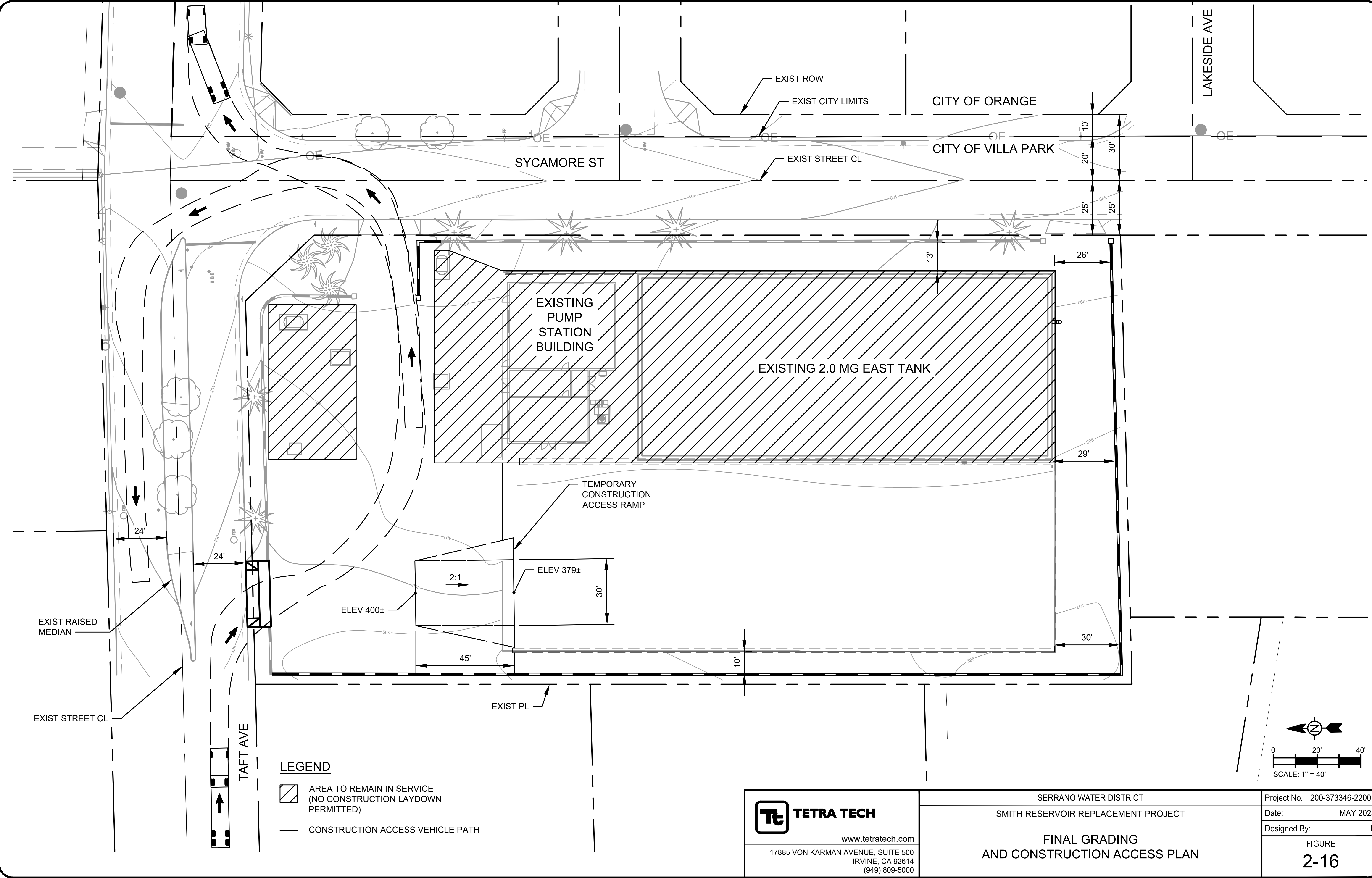
SERRANO WATER DISTRICT
SMITH RESERVOIR REPLACEMENT PROJECT
**PHASE 2 INTERIM GRADING
AND CONSTRUCTION ACCESS PLAN**

Project No.: 200-373346-22001
Date: MAY 2023
Designed By: LE
**FIGURE
2-15**

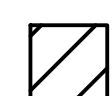
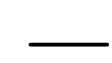
Bar Measures 1 inch

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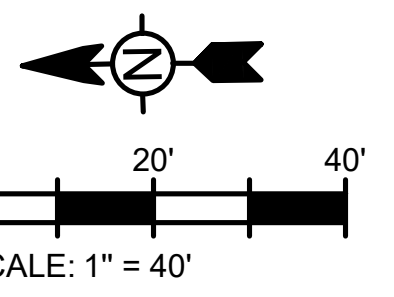
LEGEND

-  AREA TO REMAIN IN SERVICE (NO CONSTRUCTION LAYDOWN PERMITTED)
-  CONSTRUCTION ACCESS VEHICLE PATH

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SERRANO WATER DISTRICT
 SMITH RESERVOIR REPLACEMENT PROJECT
**FINAL GRADING
 AND CONSTRUCTION ACCESS PLAN**

Project No.: 200-373346-22001
 Date: MAY 2023
 Designed By: LE
**FIGURE
 2-16**



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Bar Measures 1 inch

APPENDIX A: MITIGATION MONITORING AND REPORTING PLAN

Serrano Water District Smith Reservoir Replacement Project

MITIGATION MONITORING AND REPORTING PROGRAM

Prepared For:

Serrano Water District
18021 Lincoln Street
Villa Park, California 92861

MITIGATION MONITORING AND REPORTING PROGRAM

Public Resources Code, Section 21081.6 (Assembly Bill 3180) requires that mitigation measures identified in environmental review documents prepared in accordance with California Environmental Quality Act (CEQA) are implemented after a project is approved. Therefore, this Mitigation Monitoring and Reporting Program (MMRP) has been prepared to ensure compliance with the adopted mitigation measures during the Smith Reservoir Replacement Project (Project). The Serrano Water District is the agency responsible for implementation of the mitigation measures identified in the Initial Study/Mitigated Negative Declaration.

This MMRP provides the Serrano Water District with a convenient mechanism for quickly reviewing all the mitigation measures including the ability to focus on select information such as timing. The MMRP includes the following information for each mitigation measure:

- The phase of the project during which the required mitigation measure must be implemented;
- The phase of the project during which the required mitigation measure must be monitored; and
- The monitoring agency.

The MMRP includes a checklist to be used during the mitigation monitoring period. The checklist will verify the name of the monitor, the date of the monitoring activity, and any related remarks for each mitigation measure.

MITIGATION MONITORING AND REPORTING PROGRAM					
Mitigation Measure	Implementation Phase	Monitoring Phase	Monitoring Agency	Compliance Verification	
				Initial	Date
<p>BIO-1: Nesting Birds – Project activities that will remove or disturb potential nest sites will be scheduled outside the breeding bird season. The breeding bird nesting season typically extends from February 15 through September 15.</p> <p>If Project activities cannot be avoided during February 15 through September 15, a qualified biologist will conduct a pre-construction breeding bird survey for breeding birds and active nests or potential nesting sites within the limits of Project disturbance. The survey will be conducted at least seven days prior to the onset of scheduled activities, such as mobilization and staging. It will end no more than three days prior to vegetation, substrate, and structure removal and/or disturbance.</p> <p>If no breeding birds or active nests are observed during the pre-construction survey or they are observed and will not be impacted, Project activities may begin and no further mitigation will be required.</p>	Pre-Construction; Construction	Pre-Construction; Construction	Serrano Water District		

MITIGATION MONITORING AND REPORTING PROGRAM					
Mitigation Measure	Implementation Phase	Monitoring Phase	Monitoring Agency	Compliance Verification	
				Initial	Date
<p>If a breeding bird territory or an active bird nest is located during the pre-construction survey and will potentially be impacted, the site will be mapped on engineering drawings and a no-activity buffer zone will be marked (fencing, stakes, flagging, orange snow fencing, etc.) a minimum of 100 feet in all directions or 500 feet in all directions for listed bird species and all raptors. The biologist will determine the appropriate buffer size based on the type of activities planned near the nest and the type of bird that created the nest. Some bird species are more tolerant than others of noise and activities occurring near their nest. This no-activity buffer zone will not be disturbed until a qualified biologist has determined that the nest is inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area, or the young will no longer be impacted by Project activities. Periodic monitoring by a biologist will be performed to determine when nesting is complete. Once the nesting cycle has finished, Project activities may begin within the buffer zone.</p> <p>If listed bird species are observed within the Project site during the pre-construction survey, the biologist will immediately map the area and notify the appropriate resource agency in order to consult with them on suitable protection measures and/or mitigation measures and to determine if additional surveys or focused protocol surveys are necessary. Project activities may begin within the area only when concurrence is received from the appropriate resource agency.</p> <p>Birds or their active nests will not be disturbed, captured, handled or moved. Active nests cannot be removed or disturbed; however, nests can be removed or disturbed if determined inactive by a qualified biologist.</p>					
<p>CUL-1: Environmental Training: Prior to construction of the Project, a qualified archaeologist will provide a cultural resource briefing that includes all applicable laws and penalties pertaining to disturbing cultural resources, a brief discussion of the prehistoric and historic regional context and archaeological sensitivity of the area, types of cultural resources found in the area, instruction that Project workers will halt construction if a cultural resource is inadvertently discovered during construction. If requested, a local tribal representative(s) shall be invited to participate in the environmental training to discuss</p>	Pre-Construction; Construction	Pre-Construction; Construction	Serrano Water District		

MITIGATION MONITORING AND REPORTING PROGRAM					
Mitigation Measure	Implementation Phase	Monitoring Phase	Monitoring Agency	Compliance Verification	
				Initial	Date
or provide text from a tribal cultural perspective regarding the cultural resources within the region.					
<p>CUL-2: Inadvertent Discovery of Archaeological Resources During Construction – During Project-level construction, should subsurface archaeological resources be discovered, all activity within 50 feet of a “find” shall stop and a qualified archaeologist shall be contacted to assess the significance of the find according to CEQA Guidelines Section 15064.5 and/or NRHP criteria (as applicable). The archaeologist (shall have the authority to halt any Project-related construction activities that could impact potentially significant resources. If any find is determined to be significant, the archaeologist shall determine, in consultation with the implementing agencies and any local Native American groups expressing interest, appropriate avoidance measures or other appropriate mitigation. Ground-disturbing activities shall not continue until the discovery has been assessed by the archaeologist. The archaeologist shall be afforded the necessary time to assess the find. With monitoring, construction activities may continue on other areas of the Project site during evaluation and treatment of historic or unique archaeological resources. Under CEQA Guidelines Section 15126.4(b)(3), preservation in place is the preferred means to avoid impacts to archaeological resources qualifying as historical resources. Methods of avoidance may include, but shall not be limited to, (i) Project re-route or re-design, (ii) Project cancellation, or (iii) identification of protection measures such as capping or fencing. Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures, such as data recovery or other appropriate measures, in consultation with the implementing agency and any local Native American representatives expressing interest in prehistoric or tribal resources. If an archaeological site does not qualify as an historical resource but meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site shall be treated in accordance with the provisions of Section 21083.2.</p>	Construction	Construction	Serrano Water District		
<p>GEO-1: Inadvertent Discoveries of Paleontological Resources – If the construction staff or others observe previously unidentified paleontological resources during ground</p>	Construction	Construction	Serrano Water District		

MITIGATION MONITORING AND REPORTING PROGRAM					
Mitigation Measure	Implementation Phase	Monitoring Phase	Monitoring Agency	Compliance Verification	
				Initial	Date
disturbing activities, they will halt work within a 200-foot radius of the find(s), delineate the area of the find with flagging tape or rope (may also include dirt spoils from the find area), and immediately notify a qualified Paleontologist. Construction will halt within the flagged or roped-off area. The Paleontologist will assess the resource as soon as possible and determine appropriate next steps in coordination with the District. Such finds will be formally recorded and evaluated. The resource will be protected from further disturbance or looting pending evaluation.					

APPENDIX B: AIR QUALITY AND GREENHOUSE GAS EMISSIONS

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

**Smith Reservoir Replacement Project - Phase 1 Construction
Orange County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.70	User Defined Unit	1.70	3,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2027
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - Provided by Applicant
- Construction Phase - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Trips and VMT - Provided by Applicant

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Demolition - Provided by Applicant

Grading - Provided by Applicant

Vehicle Trips - 1 worker/day

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Water And Wastewater - Provided by Applicant

Construction Off-road Equipment Mitigation - Provided by Applicant

Operational Off-Road Equipment - Provided by Applicant

Fleet Mix -

Stationary Sources - Emergency Generators and Fire Pumps - Provided by Applicant

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	10.00
tblConstructionPhase	NumDays	200.00	100.00
tblConstructionPhase	NumDays	200.00	40.00
tblConstructionPhase	NumDays	200.00	30.00
tblConstructionPhase	NumDays	200.00	40.00
tblConstructionPhase	NumDays	200.00	120.00
tblConstructionPhase	NumDays	2.00	20.00
tblLandUse	LandUseSquareFeet	0.00	3,000.00
tblLandUse	LotAcreage	0.00	1.70
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	5.00
tblOffRoadEquipment	UsageHours	6.00	2.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	6.00	5.00
tblOffRoadEquipment	UsageHours	6.00	5.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblTripsAndVMT	HaulingTripNumber	194.00	280.00
tblTripsAndVMT	HaulingTripNumber	0.00	80.00
tblTripsAndVMT	HaulingTripNumber	0.00	300.00
tblTripsAndVMT	HaulingTripNumber	0.00	120.00
tblTripsAndVMT	HaulingTripNumber	0.00	180.00
tblTripsAndVMT	HaulingTripNumber	0.00	80.00
tblTripsAndVMT	HaulingTripNumber	0.00	240.00
tblTripsAndVMT	HaulingTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	13.00	20.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
tblTripsAndVMT	WorkerTripNumber	1.00	20.00
tblTripsAndVMT	WorkerTripNumber	1.00	20.00
tblTripsAndVMT	WorkerTripNumber	1.00	10.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblTripsAndVMT	WorkerTripNumber	1.00	14.00
tblTripsAndVMT	WorkerTripNumber	1.00	20.00
tblTripsAndVMT	WorkerTripNumber	15.00	10.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00

2.0 Emissions Summary

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
2024	0.0394	0.3423	0.4411	1.0000e-003	0.0336	0.0139	0.0475	6.5800e-003	0.0135	0.0201	0.0000	89.6136	89.6136	0.0114	2.6600e-003	90.6891
2025	0.0954	0.8123	1.1026	2.4800e-003	0.0389	0.0314	0.0703	0.0105	0.0300	0.0405	0.0000	220.8455	220.8455	0.0350	5.1900e-003	223.2650
Maximum	0.0954	0.8123	1.1026	2.4800e-003	0.0389	0.0314	0.0703	0.0105	0.0300	0.0405	0.0000	220.8455	220.8455	0.0350	5.1900e-003	223.2650

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					
2024	0.0394	0.3423	0.4411	1.0000e-003	0.0221	0.0139	0.0360	4.8400e-003	0.0135	0.0183	0.0000	89.6135	89.6135	0.0114	2.6600e-003	90.6891
2025	0.0954	0.8123	1.1026	2.4800e-003	0.0389	0.0314	0.0703	0.0105	0.0300	0.0405	0.0000	220.8453	220.8453	0.0350	5.1900e-003	223.2648
Maximum	0.0954	0.8123	1.1026	2.4800e-003	0.0389	0.0314	0.0703	0.0105	0.0300	0.0405	0.0000	220.8453	220.8453	0.0350	5.1900e-003	223.2648

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	15.95	0.00	9.81	10.22	0.00	2.89	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	10-1-2024	12-31-2024	0.3799	0.3799
2	1-1-2025	3-31-2025	0.3365	0.3365
3	4-1-2025	6-30-2025	0.3700	0.3700
4	7-1-2025	9-30-2025	0.1124	0.1124
		Highest	0.3799	0.3799

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	0.0122	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
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	0.0122	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.0122	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
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	0.0122	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	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	Demolition	Demolition	10/1/2024	10/28/2024	5	20	
2	Pavement Removal	Site Preparation	10/22/2024	11/4/2024	5	10	
3	Reservoir Construction: Concrete Formwork	Building Construction	10/29/2024	3/17/2025	5	100	

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Reservoir Construction: Concrete Pouring	Building Construction	3/18/2025	5/12/2025	5	40
5	Pipeline Construction	Building Construction	5/1/2025	6/11/2025	5	30
6	Orange Valve Vault and Connection	Building Construction	5/1/2025	6/25/2025	5	40
7	Pump Station Building Construction	Building Construction	5/13/2025	10/27/2025	5	120
8	Site Improvement	Site Preparation	10/28/2025	11/24/2025	5	20

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
Demolition	Excavators	2	5.00	158	0.38
Demolition	Generator Sets	1	5.00	84	0.74
Demolition	Off-Highway Trucks	1	5.00	402	0.38
Demolition	Tractors/Loaders/Backhoes	1	5.00	97	0.37
Pavement Removal	Concrete/Industrial Saws	1	5.00	81	0.73
Pavement Removal	Other Construction Equipment	1	5.00	172	0.42
Reservoir Construction: Concrete Formwork	Concrete/Industrial Saws	4	5.00	81	0.73
Reservoir Construction: Concrete Formwork	Cranes	1	5.00	231	0.29
Reservoir Construction: Concrete Formwork	Generator Sets	1	5.00	84	0.74
Reservoir Construction: Concrete Pouring	Generator Sets	1	5.00	84	0.74
Reservoir Construction: Concrete Pouring	Off-Highway Trucks	2	5.00	402	0.38
Reservoir Construction: Concrete Pouring	Other Construction Equipment	1	5.00	172	0.42
Pipeline Construction	Generator Sets	1	5.00	84	0.74

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Pipeline Construction	Rollers	1	5.00	80	0.38
Pipeline Construction	Tractors/Loaders/Backhoes	2	5.00	97	0.37
Orange Valve Vault and Connection	Pavers	1	5.00	130	0.42
Orange Valve Vault and Connection	Rollers	2	5.00	80	0.38
Orange Valve Vault and Connection	Tractors/Loaders/Backhoes	2	5.00	97	0.37
Pump Station Building Construction	Cranes	1	2.00	231	0.29
Pump Station Building Construction	Generator Sets	2	2.00	84	0.74
Pump Station Building Construction	Plate Compactors	1	2.00	8	0.43
Pump Station Building Construction	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Pump Station Building Construction	Welders	1	2.00	46	0.45
Site Improvement	Cement and Mortar Mixers	1	5.00	9	0.56
Site Improvement	Generator Sets	1	5.00	84	0.74
Site Improvement	Pavers	1	5.00	130	0.42
Site Improvement	Plate Compactors	1	5.00	8	0.43
Site Improvement	Rollers	1	5.00	80	0.38
Site Improvement	Tractors/Loaders/Backhoes	1	5.00	97	0.37

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
Demolition	5	20.00	0.00	280.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pavement Removal	2	10.00	0.00	80.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Reservoir Construction: Concret	6	20.00	4.00	300.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Reservoir Construction: Concret	4	20.00	4.00	120.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Construction	4	10.00	2.00	180.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Orange Valve Vault and Connection	5	14.00	2.00	80.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pump Station Building Construction	6	20.00	2.00	240.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Improvement	6	10.00	2.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2024

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					0.0210	0.0000	0.0210	3.1800e-003	0.0000	3.1800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0400e-003	0.0633	0.0980	2.1000e-004		2.7200e-003	2.7200e-003		2.5600e-003	2.5600e-003	0.0000	18.1759	18.1759	4.8800e-003	0.0000	18.2979
Total	8.0400e-003	0.0633	0.0980	2.1000e-004	0.0210	2.7200e-003	0.0237	3.1800e-003	2.5600e-003	5.7400e-003	0.0000	18.1759	18.1759	4.8800e-003	0.0000	18.2979

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3.2 Demolition - 2024

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	2.8000e-004	0.0174	5.8700e-003	8.0000e-005	2.4000e-003	1.1000e-004	2.5200e-003	6.6000e-004	1.1000e-004	7.7000e-004	0.0000	8.0145	8.0145	8.3000e-004	1.2900e-003	8.4186
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	5.3000e-004	3.6000e-004	5.4400e-003	2.0000e-005	2.2000e-003	1.0000e-005	2.2100e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.6497	1.6497	4.0000e-005	4.0000e-005	1.6618
Total	8.1000e-004	0.0178	0.0113	1.0000e-004	4.6000e-003	1.2000e-004	4.7300e-003	1.2400e-003	1.2000e-004	1.3600e-003	0.0000	9.6642	9.6642	8.7000e-004	1.3300e-003	10.0804

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					9.4400e-003	0.0000	9.4400e-003	1.4300e-003	0.0000	1.4300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0400e-003	0.0633	0.0980	2.1000e-004		2.7200e-003	2.7200e-003		2.5600e-003	2.5600e-003	0.0000	18.1759	18.1759	4.8800e-003	0.0000	18.2979
Total	8.0400e-003	0.0633	0.0980	2.1000e-004	9.4400e-003	2.7200e-003	0.0122	1.4300e-003	2.5600e-003	3.9900e-003	0.0000	18.1759	18.1759	4.8800e-003	0.0000	18.2979

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2024

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	2.8000e-004	0.0174	5.8700e-003	8.0000e-005	2.4000e-003	1.1000e-004	2.5200e-003	6.6000e-004	1.1000e-004	7.7000e-004	0.0000	8.0145	8.0145	8.3000e-004	1.2900e-003	8.4186
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	5.3000e-004	3.6000e-004	5.4400e-003	2.0000e-005	2.2000e-003	1.0000e-005	2.2100e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.6497	1.6497	4.0000e-005	4.0000e-005	1.6618
Total	8.1000e-004	0.0178	0.0113	1.0000e-004	4.6000e-003	1.2000e-004	4.7300e-003	1.2400e-003	1.2000e-004	1.3600e-003	0.0000	9.6642	9.6642	8.7000e-004	1.3300e-003	10.0804

3.3 Pavement Removal - 2024

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0100e-003	0.0176	0.0240	4.0000e-005		8.6000e-004	8.6000e-004		8.2000e-004	8.2000e-004	0.0000	3.3762	3.3762	6.3000e-004	0.0000	3.3919
Total	2.0100e-003	0.0176	0.0240	4.0000e-005	0.0000	8.6000e-004	8.6000e-004	0.0000	8.2000e-004	8.2000e-004	0.0000	3.3762	3.3762	6.3000e-004	0.0000	3.3919

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Pavement Removal - 2024

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	8.0000e-005	4.9800e-003	1.6800e-003	2.0000e-005	6.9000e-004	3.0000e-005	7.2000e-004	1.9000e-004	3.0000e-005	2.2000e-004	0.0000	2.2898	2.2898	2.4000e-004	3.7000e-004	2.4053
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	1.3000e-004	9.0000e-005	1.3600e-003	0.0000	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4124	0.4124	1.0000e-005	1.0000e-005	0.4155
Total	2.1000e-004	5.0700e-003	3.0400e-003	2.0000e-005	1.2400e-003	3.0000e-005	1.2700e-003	3.4000e-004	3.0000e-005	3.7000e-004	0.0000	2.7023	2.7023	2.5000e-004	3.8000e-004	2.8208

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0100e-003	0.0176	0.0240	4.0000e-005		8.6000e-004	8.6000e-004		8.2000e-004	8.2000e-004	0.0000	3.3762	3.3762	6.3000e-004	0.0000	3.3919
Total	2.0100e-003	0.0176	0.0240	4.0000e-005	0.0000	8.6000e-004	8.6000e-004	0.0000	8.2000e-004	8.2000e-004	0.0000	3.3762	3.3762	6.3000e-004	0.0000	3.3919

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Pavement Removal - 2024

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	8.0000e-005	4.9800e-003	1.6800e-003	2.0000e-005	6.9000e-004	3.0000e-005	7.2000e-004	1.9000e-004	3.0000e-005	2.2000e-004	0.0000	2.2898	2.2898	2.4000e-004	3.7000e-004	2.4053
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	1.3000e-004	9.0000e-005	1.3600e-003	0.0000	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4124	0.4124	1.0000e-005	1.0000e-005	0.4155
Total	2.1000e-004	5.0700e-003	3.0400e-003	2.0000e-005	1.2400e-003	3.0000e-005	1.2700e-003	3.4000e-004	3.0000e-005	3.7000e-004	0.0000	2.7023	2.7023	2.5000e-004	3.8000e-004	2.8208

3.4 Reservoir Construction: Concrete Formwork - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0269	0.2258	0.2881	5.4000e-004		0.0100	0.0100		9.8800e-003	9.8800e-003	0.0000	46.3274	46.3274	4.1500e-003	0.0000	46.4312
Total	0.0269	0.2258	0.2881	5.4000e-004		0.0100	0.0100		9.8800e-003	9.8800e-003	0.0000	46.3274	46.3274	4.1500e-003	0.0000	46.4312

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Reservoir Construction: Concrete Formwork - 2024

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	1.4000e-004	8.5900e-003	2.8900e-003	4.0000e-005	1.1800e-003	6.0000e-005	1.2400e-003	3.2000e-004	5.0000e-005	3.8000e-004	0.0000	3.9500	3.9500	4.1000e-004	6.3000e-004	4.1492
Vendor	9.0000e-005	3.3700e-003	1.3500e-003	2.0000e-005	5.8000e-004	2.0000e-005	6.0000e-004	1.7000e-004	2.0000e-005	1.8000e-004	0.0000	1.6234	1.6234	1.0000e-004	2.3000e-004	1.6956
Worker	1.2200e-003	8.3000e-004	0.0125	4.0000e-005	5.0500e-003	3.0000e-005	5.0700e-003	1.3400e-003	2.0000e-005	1.3600e-003	0.0000	3.7943	3.7943	8.0000e-005	9.0000e-005	3.8222
Total	1.4500e-003	0.0128	0.0168	1.0000e-004	6.8100e-003	1.1000e-004	6.9100e-003	1.8300e-003	9.0000e-005	1.9200e-003	0.0000	9.3677	9.3677	5.9000e-004	9.5000e-004	9.6670

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0269	0.2258	0.2881	5.4000e-004		0.0100	0.0100		9.8800e-003	9.8800e-003	0.0000	46.3273	46.3273	4.1500e-003	0.0000	46.4312
Total	0.0269	0.2258	0.2881	5.4000e-004		0.0100	0.0100		9.8800e-003	9.8800e-003	0.0000	46.3273	46.3273	4.1500e-003	0.0000	46.4312

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Reservoir Construction: Concrete Formwork - 2024

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	1.4000e-004	8.5900e-003	2.8900e-003	4.0000e-005	1.1800e-003	6.0000e-005	1.2400e-003	3.2000e-004	5.0000e-005	3.8000e-004	0.0000	3.9500	3.9500	4.1000e-004	6.3000e-004	4.1492
Vendor	9.0000e-005	3.3700e-003	1.3500e-003	2.0000e-005	5.8000e-004	2.0000e-005	6.0000e-004	1.7000e-004	2.0000e-005	1.8000e-004	0.0000	1.6234	1.6234	1.0000e-004	2.3000e-004	1.6956
Worker	1.2200e-003	8.3000e-004	0.0125	4.0000e-005	5.0500e-003	3.0000e-005	5.0700e-003	1.3400e-003	2.0000e-005	1.3600e-003	0.0000	3.7943	3.7943	8.0000e-005	9.0000e-005	3.8222
Total	1.4500e-003	0.0128	0.0168	1.0000e-004	6.8100e-003	1.1000e-004	6.9100e-003	1.8300e-003	9.0000e-005	1.9200e-003	0.0000	9.3677	9.3677	5.9000e-004	9.5000e-004	9.6670

3.4 Reservoir Construction: Concrete Formwork - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0297	0.2471	0.3371	6.3000e-004		0.0102	0.0102		9.9700e-003	9.9700e-003	0.0000	54.3847	54.3847	4.7200e-003	0.0000	54.5026
Total	0.0297	0.2471	0.3371	6.3000e-004		0.0102	0.0102		9.9700e-003	9.9700e-003	0.0000	54.3847	54.3847	4.7200e-003	0.0000	54.5026

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Reservoir Construction: Concrete Formwork - 2025

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	1.6000e-004	9.9700e-003	3.4700e-003	4.0000e-005	1.3900e-003	7.0000e-005	1.4600e-003	3.8000e-004	6.0000e-005	4.4000e-004	0.0000	4.5577	4.5577	4.9000e-004	7.3000e-004	4.7881
Vendor	1.0000e-004	3.9300e-003	1.5700e-003	2.0000e-005	6.8000e-004	2.0000e-005	7.0000e-004	2.0000e-004	2.0000e-005	2.2000e-004	0.0000	1.8701	1.8701	1.2000e-004	2.7000e-004	1.9537
Worker	1.3600e-003	8.9000e-004	0.0138	5.0000e-005	5.9300e-003	3.0000e-005	5.9600e-003	1.5700e-003	3.0000e-005	1.6000e-003	0.0000	4.3456	4.3456	9.0000e-005	1.0000e-004	4.3763
Total	1.6200e-003	0.0148	0.0189	1.1000e-004	8.0000e-003	1.2000e-004	8.1200e-003	2.1500e-003	1.1000e-004	2.2600e-003	0.0000	10.7735	10.7735	7.0000e-004	1.1000e-003	11.1181

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0297	0.2471	0.3371	6.3000e-004		0.0102	0.0102		9.9700e-003	9.9700e-003	0.0000	54.3846	54.3846	4.7200e-003	0.0000	54.5025
Total	0.0297	0.2471	0.3371	6.3000e-004		0.0102	0.0102		9.9700e-003	9.9700e-003	0.0000	54.3846	54.3846	4.7200e-003	0.0000	54.5025

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Reservoir Construction: Concrete Formwork - 2025

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	1.6000e-004	9.9700e-003	3.4700e-003	4.0000e-005	1.3900e-003	7.0000e-005	1.4600e-003	3.8000e-004	6.0000e-005	4.4000e-004	0.0000	4.5577	4.5577	4.9000e-004	7.3000e-004	4.7881
Vendor	1.0000e-004	3.9300e-003	1.5700e-003	2.0000e-005	6.8000e-004	2.0000e-005	7.0000e-004	2.0000e-004	2.0000e-005	2.2000e-004	0.0000	1.8701	1.8701	1.2000e-004	2.7000e-004	1.9537
Worker	1.3600e-003	8.9000e-004	0.0138	5.0000e-005	5.9300e-003	3.0000e-005	5.9600e-003	1.5700e-003	3.0000e-005	1.6000e-003	0.0000	4.3456	4.3456	9.0000e-005	1.0000e-004	4.3763
Total	1.6200e-003	0.0148	0.0189	1.1000e-004	8.0000e-003	1.2000e-004	8.1200e-003	2.1500e-003	1.1000e-004	2.2600e-003	0.0000	10.7735	10.7735	7.0000e-004	1.1000e-003	11.1181

3.5 Reservoir Construction: Concrete Pouring - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0190	0.1361	0.1753	4.9000e-004		5.5400e-003	5.5400e-003		5.1900e-003	5.1900e-003	0.0000	42.8759	42.8759	0.0118	0.0000	43.1720
Total	0.0190	0.1361	0.1753	4.9000e-004		5.5400e-003	5.5400e-003		5.1900e-003	5.1900e-003	0.0000	42.8759	42.8759	0.0118	0.0000	43.1720

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Reservoir Construction: Concrete Pouring - 2025

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	1.2000e-004	7.3900e-003	2.5700e-003	3.0000e-005	1.0300e-003	5.0000e-005	1.0800e-003	2.8000e-004	5.0000e-005	3.3000e-004	0.0000	3.3761	3.3761	3.6000e-004	5.4000e-004	3.5467
Vendor	8.0000e-005	2.9100e-003	1.1700e-003	1.0000e-005	5.0000e-004	2.0000e-005	5.2000e-004	1.5000e-004	1.0000e-005	1.6000e-004	0.0000	1.3852	1.3852	9.0000e-005	2.0000e-004	1.4472
Worker	1.0100e-003	6.6000e-004	0.0102	3.0000e-005	4.3900e-003	2.0000e-005	4.4100e-003	1.1700e-003	2.0000e-005	1.1900e-003	0.0000	3.2190	3.2190	6.0000e-005	7.0000e-005	3.2417
Total	1.2100e-003	0.0110	0.0140	7.0000e-005	5.9200e-003	9.0000e-005	6.0100e-003	1.6000e-003	8.0000e-005	1.6800e-003	0.0000	7.9803	7.9803	5.1000e-004	8.1000e-004	8.2356

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0190	0.1361	0.1753	4.9000e-004		5.5400e-003	5.5400e-003		5.1900e-003	5.1900e-003	0.0000	42.8759	42.8759	0.0118	0.0000	43.1720
Total	0.0190	0.1361	0.1753	4.9000e-004		5.5400e-003	5.5400e-003		5.1900e-003	5.1900e-003	0.0000	42.8759	42.8759	0.0118	0.0000	43.1720

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Reservoir Construction: Concrete Pouring - 2025

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	1.2000e-004	7.3900e-003	2.5700e-003	3.0000e-005	1.0300e-003	5.0000e-005	1.0800e-003	2.8000e-004	5.0000e-005	3.3000e-004	0.0000	3.3761	3.3761	3.6000e-004	5.4000e-004	3.5467
Vendor	8.0000e-005	2.9100e-003	1.1700e-003	1.0000e-005	5.0000e-004	2.0000e-005	5.2000e-004	1.5000e-004	1.0000e-005	1.6000e-004	0.0000	1.3852	1.3852	9.0000e-005	2.0000e-004	1.4472
Worker	1.0100e-003	6.6000e-004	0.0102	3.0000e-005	4.3900e-003	2.0000e-005	4.4100e-003	1.1700e-003	2.0000e-005	1.1900e-003	0.0000	3.2190	3.2190	6.0000e-005	7.0000e-005	3.2417
Total	1.2100e-003	0.0110	0.0140	7.0000e-005	5.9200e-003	9.0000e-005	6.0100e-003	1.6000e-003	8.0000e-005	1.6800e-003	0.0000	7.9803	7.9803	5.1000e-004	8.1000e-004	8.2356

3.6 Pipeline Construction - 2025

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	6.2600e-003	0.0610	0.0934	1.4000e-004		2.5900e-003	2.5900e-003		2.4500e-003	2.4500e-003	0.0000	12.5975	12.5975	2.5600e-003	0.0000	12.6614
Total	6.2600e-003	0.0610	0.0934	1.4000e-004		2.5900e-003	2.5900e-003		2.4500e-003	2.4500e-003	0.0000	12.5975	12.5975	2.5600e-003	0.0000	12.6614

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Pipeline Construction - 2025

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	1.8000e-004	0.0111	3.8500e-003	5.0000e-005	1.5400e-003	7.0000e-005	1.6200e-003	4.2000e-004	7.0000e-005	4.9000e-004	0.0000	5.0642	5.0642	5.4000e-004	8.1000e-004	5.3201
Vendor	3.0000e-005	1.0900e-003	4.4000e-004	1.0000e-005	1.9000e-004	1.0000e-005	1.9000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.5195	0.5195	3.0000e-005	8.0000e-005	0.5427
Worker	3.8000e-004	2.5000e-004	3.8400e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.4000e-004	0.0000	1.2071	1.2071	2.0000e-005	3.0000e-005	1.2156
Total	5.9000e-004	0.0124	8.1300e-003	7.0000e-005	3.3800e-003	9.0000e-005	3.4600e-003	9.1000e-004	9.0000e-005	9.9000e-004	0.0000	6.7907	6.7907	5.9000e-004	9.2000e-004	7.0784

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	6.2600e-003	0.0610	0.0934	1.4000e-004		2.5900e-003	2.5900e-003		2.4500e-003	2.4500e-003	0.0000	12.5975	12.5975	2.5600e-003	0.0000	12.6614
Total	6.2600e-003	0.0610	0.0934	1.4000e-004		2.5900e-003	2.5900e-003		2.4500e-003	2.4500e-003	0.0000	12.5975	12.5975	2.5600e-003	0.0000	12.6614

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Pipeline Construction - 2025

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	1.8000e-004	0.0111	3.8500e-003	5.0000e-005	1.5400e-003	7.0000e-005	1.6200e-003	4.2000e-004	7.0000e-005	4.9000e-004	0.0000	5.0642	5.0642	5.4000e-004	8.1000e-004	5.3201
Vendor	3.0000e-005	1.0900e-003	4.4000e-004	1.0000e-005	1.9000e-004	1.0000e-005	1.9000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.5195	0.5195	3.0000e-005	8.0000e-005	0.5427
Worker	3.8000e-004	2.5000e-004	3.8400e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.4000e-004	0.0000	1.2071	1.2071	2.0000e-005	3.0000e-005	1.2156
Total	5.9000e-004	0.0124	8.1300e-003	7.0000e-005	3.3800e-003	9.0000e-005	3.4600e-003	9.1000e-004	9.0000e-005	9.9000e-004	0.0000	6.7907	6.7907	5.9000e-004	9.2000e-004	7.0784

3.7 Orange Valve Vault and Connection - 2025

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	8.9000e-003	0.0892	0.1381	2.0000e-004		4.0900e-003	4.0900e-003		3.7700e-003	3.7700e-003	0.0000	17.7721	17.7721	5.7500e-003	0.0000	17.9158
Total	8.9000e-003	0.0892	0.1381	2.0000e-004		4.0900e-003	4.0900e-003		3.7700e-003	3.7700e-003	0.0000	17.7721	17.7721	5.7500e-003	0.0000	17.9158

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3.7 Orange Valve Vault and Connection - 2025

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	8.0000e-005	4.9300e-003	1.7100e-003	2.0000e-005	6.9000e-004	3.0000e-005	7.2000e-004	1.9000e-004	3.0000e-005	2.2000e-004	0.0000	2.2507	2.2507	2.4000e-004	3.6000e-004	2.3645
Vendor	4.0000e-005	1.4600e-003	5.8000e-004	1.0000e-005	2.5000e-004	1.0000e-005	2.6000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.6926	0.6926	4.0000e-005	1.0000e-004	0.7236
Worker	7.0000e-004	4.6000e-004	7.1700e-003	2.0000e-005	3.0700e-003	1.0000e-005	3.0900e-003	8.2000e-004	1.0000e-005	8.3000e-004	0.0000	2.2533	2.2533	4.0000e-005	5.0000e-005	2.2692
Total	8.2000e-004	6.8500e-003	9.4600e-003	5.0000e-005	4.0100e-003	5.0000e-005	4.0700e-003	1.0800e-003	5.0000e-005	1.1300e-003	0.0000	5.1967	5.1967	3.2000e-004	5.1000e-004	5.3573

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	8.9000e-003	0.0892	0.1381	2.0000e-004		4.0900e-003	4.0900e-003		3.7700e-003	3.7700e-003	0.0000	17.7721	17.7721	5.7500e-003	0.0000	17.9158
Total	8.9000e-003	0.0892	0.1381	2.0000e-004		4.0900e-003	4.0900e-003		3.7700e-003	3.7700e-003	0.0000	17.7721	17.7721	5.7500e-003	0.0000	17.9158

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3.7 Orange Valve Vault and Connection - 2025

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	8.0000e-005	4.9300e-003	1.7100e-003	2.0000e-005	6.9000e-004	3.0000e-005	7.2000e-004	1.9000e-004	3.0000e-005	2.2000e-004	0.0000	2.2507	2.2507	2.4000e-004	3.6000e-004	2.3645
Vendor	4.0000e-005	1.4600e-003	5.8000e-004	1.0000e-005	2.5000e-004	1.0000e-005	2.6000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.6926	0.6926	4.0000e-005	1.0000e-004	0.7236
Worker	7.0000e-004	4.6000e-004	7.1700e-003	2.0000e-005	3.0700e-003	1.0000e-005	3.0900e-003	8.2000e-004	1.0000e-005	8.3000e-004	0.0000	2.2533	2.2533	4.0000e-005	5.0000e-005	2.2692
Total	8.2000e-004	6.8500e-003	9.4600e-003	5.0000e-005	4.0100e-003	5.0000e-005	4.0700e-003	1.0800e-003	5.0000e-005	1.1300e-003	0.0000	5.1967	5.1967	3.2000e-004	5.1000e-004	5.3573

3.8 Pump Station Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0186	0.1633	0.1972	3.8000e-004		6.4500e-003	6.4500e-003		6.2300e-003	6.2300e-003	0.0000	31.9634	31.9634	4.7300e-003	0.0000	32.0817
Total	0.0186	0.1633	0.1972	3.8000e-004		6.4500e-003	6.4500e-003		6.2300e-003	6.2300e-003	0.0000	31.9634	31.9634	4.7300e-003	0.0000	32.0817

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3.8 Pump Station Building Construction - 2025

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	2.4000e-004	0.0148	5.1400e-003	6.0000e-005	2.0600e-003	1.0000e-004	2.1600e-003	5.7000e-004	9.0000e-005	6.6000e-004	0.0000	6.7522	6.7522	7.2000e-004	1.0800e-003	7.0935
Vendor	1.2000e-004	4.3700e-003	1.7500e-003	2.0000e-005	7.6000e-004	2.0000e-005	7.8000e-004	2.2000e-004	2.0000e-005	2.4000e-004	0.0000	2.0779	2.0779	1.3000e-004	3.0000e-004	2.1708
Worker	3.0200e-003	1.9700e-003	0.0307	1.0000e-004	0.0132	6.0000e-005	0.0132	3.5000e-003	6.0000e-005	3.5600e-003	0.0000	9.6570	9.6570	1.9000e-004	2.1000e-004	9.7252
Total	3.3800e-003	0.0211	0.0376	1.8000e-004	0.0160	1.8000e-004	0.0162	4.2900e-003	1.7000e-004	4.4600e-003	0.0000	18.4870	18.4870	1.0400e-003	1.5900e-003	18.9894

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0186	0.1633	0.1972	3.8000e-004		6.4500e-003	6.4500e-003		6.2300e-003	6.2300e-003	0.0000	31.9634	31.9634	4.7300e-003	0.0000	32.0817
Total	0.0186	0.1633	0.1972	3.8000e-004		6.4500e-003	6.4500e-003		6.2300e-003	6.2300e-003	0.0000	31.9634	31.9634	4.7300e-003	0.0000	32.0817

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3.8 Pump Station Building Construction - 2025

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	2.4000e-004	0.0148	5.1400e-003	6.0000e-005	2.0600e-003	1.0000e-004	2.1600e-003	5.7000e-004	9.0000e-005	6.6000e-004	0.0000	6.7522	6.7522	7.2000e-004	1.0800e-003	7.0935
Vendor	1.2000e-004	4.3700e-003	1.7500e-003	2.0000e-005	7.6000e-004	2.0000e-005	7.8000e-004	2.2000e-004	2.0000e-005	2.4000e-004	0.0000	2.0779	2.0779	1.3000e-004	3.0000e-004	2.1708
Worker	3.0200e-003	1.9700e-003	0.0307	1.0000e-004	0.0132	6.0000e-005	0.0132	3.5000e-003	6.0000e-005	3.5600e-003	0.0000	9.6570	9.6570	1.9000e-004	2.1000e-004	9.7252
Total	3.3800e-003	0.0211	0.0376	1.8000e-004	0.0160	1.8000e-004	0.0162	4.2900e-003	1.7000e-004	4.4600e-003	0.0000	18.4870	18.4870	1.0400e-003	1.5900e-003	18.9894

3.9 Site Improvement - 2025

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					6.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0500e-003	0.0461	0.0697	1.1000e-004		2.0000e-003	2.0000e-003		1.9000e-003	1.9000e-003	0.0000	9.7474	9.7474	2.0300e-003	0.0000	9.7982
Total	5.0500e-003	0.0461	0.0697	1.1000e-004	6.0000e-005	2.0000e-003	2.0600e-003	1.0000e-005	1.9000e-003	1.9100e-003	0.0000	9.7474	9.7474	2.0300e-003	0.0000	9.7982

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3.9 Site Improvement - 2025

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	4.0000e-005	2.4600e-003	8.6000e-004	1.0000e-005	3.4000e-004	2.0000e-005	3.6000e-004	9.0000e-005	2.0000e-005	1.1000e-004	0.0000	1.1254	1.1254	1.2000e-004	1.8000e-004	1.1822
Vendor	2.0000e-005	7.3000e-004	2.9000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.3463	0.3463	2.0000e-005	5.0000e-005	0.3618
Worker	2.5000e-004	1.6000e-004	2.5600e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1000e-003	2.9000e-004	0.0000	3.0000e-004	0.0000	0.8048	0.8048	2.0000e-005	2.0000e-005	0.8104
Total	3.1000e-004	3.3500e-003	3.7100e-003	2.0000e-005	1.5700e-003	3.0000e-005	1.5900e-003	4.2000e-004	2.0000e-005	4.5000e-004	0.0000	2.2764	2.2764	1.6000e-004	2.5000e-004	2.3545

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					3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0500e-003	0.0461	0.0697	1.1000e-004		2.0000e-003	2.0000e-003		1.9000e-003	1.9000e-003	0.0000	9.7474	9.7474	2.0300e-003	0.0000	9.7982
Total	5.0500e-003	0.0461	0.0697	1.1000e-004	3.0000e-005	2.0000e-003	2.0300e-003	0.0000	1.9000e-003	1.9000e-003	0.0000	9.7474	9.7474	2.0300e-003	0.0000	9.7982

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3.9 Site Improvement - 2025

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	4.0000e-005	2.4600e-003	8.6000e-004	1.0000e-005	3.4000e-004	2.0000e-005	3.6000e-004	9.0000e-005	2.0000e-005	1.1000e-004	0.0000	1.1254	1.1254	1.2000e-004	1.8000e-004	1.1822
Vendor	2.0000e-005	7.3000e-004	2.9000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.3463	0.3463	2.0000e-005	5.0000e-005	0.3618
Worker	2.5000e-004	1.6000e-004	2.5600e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1000e-003	2.9000e-004	0.0000	3.0000e-004	0.0000	0.8048	0.8048	2.0000e-005	2.0000e-005	0.8104
Total	3.1000e-004	3.3500e-003	3.7100e-003	2.0000e-005	1.5700e-003	3.0000e-005	1.5900e-003	4.2000e-004	2.0000e-005	4.5000e-004	0.0000	2.2764	2.2764	1.6000e-004	2.5000e-004	2.3545

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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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	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

Land Use	Miles			Trip %			Trip Purpose %		
	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	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.549407	0.061298	0.183744	0.124141	0.024133	0.006811	0.015066	0.004937	0.000671	0.000371	0.025054	0.000695	0.003670

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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

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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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0122	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Unmitigated	0.0122	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.3900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0108					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	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Total	0.0122	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

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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	1.3900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0108					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	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Total	0.0122	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

7.0 Water Detail

7.1 Mitigation Measures Water

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	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

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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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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
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Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Smith Reservoir Replacement Project - Phase 1 Construction

Orange County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.70	User Defined Unit	1.70	3,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2027
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - Provided by Applicant
- Construction Phase - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Trips and VMT - Provided by Applicant

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Demolition - Provided by Applicant

Grading - Provided by Applicant

Vehicle Trips - 1 worker/day

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Water And Wastewater - Provided by Applicant

Construction Off-road Equipment Mitigation - Provided by Applicant

Operational Off-Road Equipment - Provided by Applicant

Fleet Mix -

Stationary Sources - Emergency Generators and Fire Pumps - Provided by Applicant

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	10.00
tblConstructionPhase	NumDays	200.00	100.00
tblConstructionPhase	NumDays	200.00	40.00
tblConstructionPhase	NumDays	200.00	30.00
tblConstructionPhase	NumDays	200.00	40.00
tblConstructionPhase	NumDays	200.00	120.00
tblConstructionPhase	NumDays	2.00	20.00
tblLandUse	LandUseSquareFeet	0.00	3,000.00
tblLandUse	LotAcreage	0.00	1.70
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	5.00
tblOffRoadEquipment	UsageHours	6.00	2.00

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	6.00	5.00
tblOffRoadEquipment	UsageHours	6.00	5.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblTripsAndVMT	HaulingTripNumber	194.00	280.00
tblTripsAndVMT	HaulingTripNumber	0.00	80.00
tblTripsAndVMT	HaulingTripNumber	0.00	300.00
tblTripsAndVMT	HaulingTripNumber	0.00	120.00
tblTripsAndVMT	HaulingTripNumber	0.00	180.00
tblTripsAndVMT	HaulingTripNumber	0.00	80.00
tblTripsAndVMT	HaulingTripNumber	0.00	240.00
tblTripsAndVMT	HaulingTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	13.00	20.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
tblTripsAndVMT	WorkerTripNumber	1.00	20.00
tblTripsAndVMT	WorkerTripNumber	1.00	20.00
tblTripsAndVMT	WorkerTripNumber	1.00	10.00

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblTripsAndVMT	WorkerTripNumber	1.00	14.00
tblTripsAndVMT	WorkerTripNumber	1.00	20.00
tblTripsAndVMT	WorkerTripNumber	15.00	10.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00

2.0 Emissions Summary

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
2024	1.6829	14.8882	18.6357	0.0433	2.8161	0.6206	3.2800	0.5115	0.6044	0.9500	0.0000	4,406.0115	4,406.0115	0.8258	0.2291	4,494.9295
2025	1.9623	17.0397	23.5951	0.0553	0.7348	0.6668	1.4016	0.1977	0.6234	0.8211	0.0000	5,489.0032	5,489.0032	1.2476	0.1403	5,561.9926
Maximum	1.9623	17.0397	23.5951	0.0553	2.8161	0.6668	3.2800	0.5115	0.6234	0.9500	0.0000	5,489.0032	5,489.0032	1.2476	0.2291	5,561.9926

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					
2024	1.6829	14.8882	18.6357	0.0433	1.6627	0.6206	2.1266	0.3369	0.6044	0.7754	0.0000	4,406.0115	4,406.0115	0.8258	0.2291	4,494.9295
2025	1.9623	17.0397	23.5951	0.0553	0.7348	0.6668	1.4016	0.1977	0.6234	0.8211	0.0000	5,489.0032	5,489.0032	1.2476	0.1403	5,561.9926
Maximum	1.9623	17.0397	23.5951	0.0553	1.6627	0.6668	2.1266	0.3369	0.6234	0.8211	0.0000	5,489.0032	5,489.0032	1.2476	0.2291	5,561.9926

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
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	0.0000
Total	0.0670	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000	0.0000	4.0000e-004

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	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
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	0.0000
Total	0.0670	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000	0.0000	4.0000e-004

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
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	Demolition	Demolition	10/1/2024	10/28/2024	5	20	
2	Pavement Removal	Site Preparation	10/22/2024	11/4/2024	5	10	
3	Reservoir Construction: Concrete Formwork	Building Construction	10/29/2024	3/17/2025	5	100	
4	Reservoir Construction: Concrete Pouring	Building Construction	3/18/2025	5/12/2025	5	40	
5	Pipeline Construction	Building Construction	5/1/2025	6/11/2025	5	30	
6	Orange Valve Vault and Connection	Building Construction	5/1/2025	6/25/2025	5	40	
7	Pump Station Building Construction	Building Construction	5/13/2025	10/27/2025	5	120	
8	Site Improvement	Site Preparation	10/28/2025	11/24/2025	5	20	

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
Demolition	Excavators	2	5.00	158	0.38
Demolition	Generator Sets	1	5.00	84	0.74
Demolition	Off-Highway Trucks	1	5.00	402	0.38

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Demolition	Tractors/Loaders/Backhoes	1	5.00	97	0.37
Pavement Removal	Concrete/Industrial Saws	1	5.00	81	0.73
Pavement Removal	Other Construction Equipment	1	5.00	172	0.42
Reservoir Construction: Concrete Formwork	Concrete/Industrial Saws	4	5.00	81	0.73
Reservoir Construction: Concrete Formwork	Cranes	1	5.00	231	0.29
Reservoir Construction: Concrete Formwork	Generator Sets	1	5.00	84	0.74
Reservoir Construction: Concrete Pouring	Generator Sets	1	5.00	84	0.74
Reservoir Construction: Concrete Pouring	Off-Highway Trucks	2	5.00	402	0.38
Reservoir Construction: Concrete Pouring	Other Construction Equipment	1	5.00	172	0.42
Pipeline Construction	Generator Sets	1	5.00	84	0.74
Pipeline Construction	Rollers	1	5.00	80	0.38
Pipeline Construction	Tractors/Loaders/Backhoes	2	5.00	97	0.37
Orange Valve Vault and Connection	Pavers	1	5.00	130	0.42
Orange Valve Vault and Connection	Rollers	2	5.00	80	0.38
Orange Valve Vault and Connection	Tractors/Loaders/Backhoes	2	5.00	97	0.37
Pump Station Building Construction	Cranes	1	2.00	231	0.29
Pump Station Building Construction	Generator Sets	2	2.00	84	0.74
Pump Station Building Construction	Plate Compactors	1	2.00	8	0.43
Pump Station Building Construction	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Pump Station Building Construction	Welders	1	2.00	46	0.45
Site Improvement	Cement and Mortar Mixers	1	5.00	9	0.56
Site Improvement	Generator Sets	1	5.00	84	0.74
Site Improvement	Pavers	1	5.00	130	0.42
Site Improvement	Plate Compactors	1	5.00	8	0.43
Site Improvement	Rollers	1	5.00	80	0.38
Site Improvement	Tractors/Loaders/Backhoes	1	5.00	97	0.37

Trips and VMT

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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
Demolition	5	20.00	0.00	280.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pavement Removal	2	10.00	0.00	80.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Reservoir Construction: Concret	6	20.00	4.00	300.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Reservoir Construction: Concret	4	20.00	4.00	120.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Construction	4	10.00	2.00	180.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Orange Valve Vault and Connection	5	14.00	2.00	80.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pump Station Building Construction	6	20.00	2.00	240.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Improvement	6	10.00	2.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2024

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					2.0971	0.0000	2.0971	0.3175	0.0000	0.3175			0.0000			0.0000
Off-Road	0.8041	6.3290	9.7999	0.0208		0.2720	0.2720		0.2558	0.2558		2,003.5516	2,003.5516	0.5378		2,016.9968
Total	0.8041	6.3290	9.7999	0.0208	2.0971	0.2720	2.3691	0.3175	0.2558	0.5733		2,003.5516	2,003.5516	0.5378		2,016.9968

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2024

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	0.0271	1.7270	0.5907	7.7400e-003	0.2442	0.0112	0.2554	0.0669	0.0108	0.0776		883.9136	883.9136	0.0914	0.1419	928.4793
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
Worker	0.0581	0.0356	0.5323	1.7400e-003	0.2236	1.0900e-003	0.2246	0.0593	1.0000e-003	0.0603		179.4231	179.4231	3.9000e-003	4.1000e-003	180.7416
Total	0.0852	1.7626	1.1230	9.4800e-003	0.4677	0.0123	0.4800	0.1262	0.0118	0.1379		1,063.3367	1,063.3367	0.0953	0.1460	1,109.2209

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					0.9437	0.0000	0.9437	0.1429	0.0000	0.1429			0.0000			0.0000
Off-Road	0.8041	6.3290	9.7999	0.0208		0.2720	0.2720		0.2558	0.2558	0.0000	2,003.5516	2,003.5516	0.5378		2,016.9968
Total	0.8041	6.3290	9.7999	0.0208	0.9437	0.2720	1.2157	0.1429	0.2558	0.3987	0.0000	2,003.5516	2,003.5516	0.5378		2,016.9968

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2024

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	0.0271	1.7270	0.5907	7.7400e-003	0.2442	0.0112	0.2554	0.0669	0.0108	0.0776		883.9136	883.9136	0.0914	0.1419	928.4793
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
Worker	0.0581	0.0356	0.5323	1.7400e-003	0.2236	1.0900e-003	0.2246	0.0593	1.0000e-003	0.0603		179.4231	179.4231	3.9000e-003	4.1000e-003	180.7416
Total	0.0852	1.7626	1.1230	9.4800e-003	0.4677	0.0123	0.4800	0.1262	0.0118	0.1379		1,063.3367	1,063.3367	0.0953	0.1460	1,109.2209

3.3 Pavement Removal - 2024

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4030	3.5158	4.7893	7.7700e-003		0.1726	0.1726		0.1644	0.1644		744.3183	744.3183	0.1385		747.7814
Total	0.4030	3.5158	4.7893	7.7700e-003	0.0000	0.1726	0.1726	0.0000	0.1644	0.1644		744.3183	744.3183	0.1385		747.7814

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Pavement Removal - 2024

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	0.0155	0.9869	0.3375	4.4200e-003	0.1395	6.4200e-003	0.1459	0.0382	6.1400e-003	0.0443		505.0935	505.0935	0.0522	0.0811	530.5596
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
Worker	0.0291	0.0178	0.2662	8.7000e-004	0.1118	5.4000e-004	0.1123	0.0296	5.0000e-004	0.0301		89.7115	89.7115	1.9500e-003	2.0500e-003	90.3708
Total	0.0446	1.0046	0.6037	5.2900e-003	0.2513	6.9600e-003	0.2583	0.0678	6.6400e-003	0.0745		594.8050	594.8050	0.0542	0.0831	620.9304

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4030	3.5158	4.7893	7.7700e-003		0.1726	0.1726		0.1644	0.1644	0.0000	744.3183	744.3183	0.1385		747.7814
Total	0.4030	3.5158	4.7893	7.7700e-003	0.0000	0.1726	0.1726	0.0000	0.1644	0.1644	0.0000	744.3183	744.3183	0.1385		747.7814

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Pavement Removal - 2024

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	0.0155	0.9869	0.3375	4.4200e-003	0.1395	6.4200e-003	0.1459	0.0382	6.1400e-003	0.0443		505.0935	505.0935	0.0522	0.0811	530.5596
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
Worker	0.0291	0.0178	0.2662	8.7000e-004	0.1118	5.4000e-004	0.1123	0.0296	5.0000e-004	0.0301		89.7115	89.7115	1.9500e-003	2.0500e-003	90.3708
Total	0.0446	1.0046	0.6037	5.2900e-003	0.2513	6.9600e-003	0.2583	0.0678	6.6400e-003	0.0745		594.8050	594.8050	0.0542	0.0831	620.9304

3.4 Reservoir Construction: Concrete Formwork - 2024

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	1.1677	9.8162	12.5243	0.0234		0.4367	0.4367		0.4294	0.4294		2,220.3128	2,220.3128	0.1991		2,225.2905
Total	1.1677	9.8162	12.5243	0.0234		0.4367	0.4367		0.4294	0.4294		2,220.3128	2,220.3128	0.1991		2,225.2905

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Reservoir Construction: Concrete Formwork - 2024

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	5.8100e-003	0.3701	0.1266	1.6600e-003	0.0523	2.4100e-003	0.0547	0.0143	2.3000e-003	0.0166		189.4101	189.4101	0.0196	0.0304	198.9599
Vendor	3.8400e-003	0.1460	0.0595	7.1000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.2000e-004	8.0800e-003		77.8717	77.8717	4.7300e-003	0.0112	81.3364
Worker	0.0581	0.0356	0.5323	1.7400e-003	0.2236	1.0900e-003	0.2246	0.0593	1.0000e-003	0.0603		179.4231	179.4231	3.9000e-003	4.1000e-003	180.7416
Total	0.0677	0.5517	0.7184	4.1100e-003	0.3015	4.2600e-003	0.3057	0.0810	4.0200e-003	0.0850		446.7049	446.7049	0.0282	0.0457	461.0378

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	1.1677	9.8162	12.5243	0.0234		0.4367	0.4367		0.4294	0.4294	0.0000	2,220.3128	2,220.3128	0.1991		2,225.2905
Total	1.1677	9.8162	12.5243	0.0234		0.4367	0.4367		0.4294	0.4294	0.0000	2,220.3128	2,220.3128	0.1991		2,225.2905

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Reservoir Construction: Concrete Formwork - 2024

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	5.8100e-003	0.3701	0.1266	1.6600e-003	0.0523	2.4100e-003	0.0547	0.0143	2.3000e-003	0.0166		189.4101	189.4101	0.0196	0.0304	198.9599
Vendor	3.8400e-003	0.1460	0.0595	7.1000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.2000e-004	8.0800e-003		77.8717	77.8717	4.7300e-003	0.0112	81.3364
Worker	0.0581	0.0356	0.5323	1.7400e-003	0.2236	1.0900e-003	0.2246	0.0593	1.0000e-003	0.0603		179.4231	179.4231	3.9000e-003	4.1000e-003	180.7416
Total	0.0677	0.5517	0.7184	4.1100e-003	0.3015	4.2600e-003	0.3057	0.0810	4.0200e-003	0.0850		446.7049	446.7049	0.0282	0.0457	461.0378

3.4 Reservoir Construction: Concrete Formwork - 2025

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	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691		2,220.3272	2,220.3272	0.1925		2,225.1404
Total	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691		2,220.3272	2,220.3272	0.1925		2,225.1404

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Reservoir Construction: Concrete Formwork - 2025

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	5.7200e-003	0.3661	0.1292	1.6200e-003	0.0523	2.4100e-003	0.0547	0.0143	2.3100e-003	0.0166		186.1768	186.1768	0.0199	0.0299	195.5854
Vendor	3.7800e-003	0.1453	0.0592	6.9000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.3000e-004	8.0900e-003		76.4164	76.4164	4.7900e-003	0.0111	79.8337
Worker	0.0550	0.0322	0.5011	1.6800e-003	0.2236	1.0400e-003	0.2246	0.0593	9.6000e-004	0.0603		175.0535	175.0535	3.5400e-003	3.8500e-003	176.2906
Total	0.0645	0.5437	0.6895	3.9900e-003	0.3014	4.2100e-003	0.3057	0.0810	4.0000e-003	0.0850		437.6467	437.6467	0.0282	0.0448	451.7097

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	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691	0.0000	2,220.3272	2,220.3272	0.1925		2,225.1404
Total	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691	0.0000	2,220.3272	2,220.3272	0.1925		2,225.1404

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Reservoir Construction: Concrete Formwork - 2025

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	5.7200e-003	0.3661	0.1292	1.6200e-003	0.0523	2.4100e-003	0.0547	0.0143	2.3100e-003	0.0166		186.1768	186.1768	0.0199	0.0299	195.5854
Vendor	3.7800e-003	0.1453	0.0592	6.9000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.3000e-004	8.0900e-003		76.4164	76.4164	4.7900e-003	0.0111	79.8337
Worker	0.0550	0.0322	0.5011	1.6800e-003	0.2236	1.0400e-003	0.2246	0.0593	9.6000e-004	0.0603		175.0535	175.0535	3.5400e-003	3.8500e-003	176.2906
Total	0.0645	0.5437	0.6895	3.9900e-003	0.3014	4.2100e-003	0.3057	0.0810	4.0000e-003	0.0850		437.6467	437.6467	0.0282	0.0448	451.7097

3.5 Reservoir Construction: Concrete Pouring - 2025

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	0.9504	6.8057	8.7666	0.0245		0.2769	0.2769		0.2595	0.2595		2,363.1315	2,363.1315	0.6527		2,379.4498
Total	0.9504	6.8057	8.7666	0.0245		0.2769	0.2769		0.2595	0.2595		2,363.1315	2,363.1315	0.6527		2,379.4498

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Reservoir Construction: Concrete Pouring - 2025

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	5.7200e-003	0.3661	0.1292	1.6200e-003	0.0523	2.4100e-003	0.0547	0.0143	2.3100e-003	0.0166		186.1768	186.1768	0.0199	0.0299	195.5854
Vendor	3.7800e-003	0.1453	0.0592	6.9000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.3000e-004	8.0900e-003		76.4164	76.4164	4.7900e-003	0.0111	79.8337
Worker	0.0550	0.0322	0.5011	1.6800e-003	0.2236	1.0400e-003	0.2246	0.0593	9.6000e-004	0.0603		175.0535	175.0535	3.5400e-003	3.8500e-003	176.2906
Total	0.0645	0.5437	0.6895	3.9900e-003	0.3014	4.2100e-003	0.3057	0.0810	4.0000e-003	0.0850		437.6467	437.6467	0.0282	0.0448	451.7097

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	0.9504	6.8057	8.7666	0.0245		0.2769	0.2769		0.2595	0.2595	0.0000	2,363.1314	2,363.1314	0.6527		2,379.4498
Total	0.9504	6.8057	8.7666	0.0245		0.2769	0.2769		0.2595	0.2595	0.0000	2,363.1314	2,363.1314	0.6527		2,379.4498

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Reservoir Construction: Concrete Pouring - 2025

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	5.7200e-003	0.3661	0.1292	1.6200e-003	0.0523	2.4100e-003	0.0547	0.0143	2.3100e-003	0.0166		186.1768	186.1768	0.0199	0.0299	195.5854
Vendor	3.7800e-003	0.1453	0.0592	6.9000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.3000e-004	8.0900e-003		76.4164	76.4164	4.7900e-003	0.0111	79.8337
Worker	0.0550	0.0322	0.5011	1.6800e-003	0.2236	1.0400e-003	0.2246	0.0593	9.6000e-004	0.0603		175.0535	175.0535	3.5400e-003	3.8500e-003	176.2906
Total	0.0645	0.5437	0.6895	3.9900e-003	0.3014	4.2100e-003	0.3057	0.0810	4.0000e-003	0.0850		437.6467	437.6467	0.0282	0.0448	451.7097

3.6 Pipeline Construction - 2025

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	0.4173	4.0679	6.2285	9.6500e-003		0.1726	0.1726		0.1636	0.1636		925.7551	925.7551	0.1879		930.4516
Total	0.4173	4.0679	6.2285	9.6500e-003		0.1726	0.1726		0.1636	0.1636		925.7551	925.7551	0.1879		930.4516

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Pipeline Construction - 2025

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	0.0115	0.7323	0.2585	3.2500e-003	0.1046	4.8200e-003	0.1095	0.0287	4.6100e-003	0.0333		372.3535	372.3535	0.0397	0.0598	391.1708
Vendor	1.8900e-003	0.0727	0.0296	3.5000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		38.2082	38.2082	2.4000e-003	5.5300e-003	39.9169
Worker	0.0275	0.0161	0.2505	8.4000e-004	0.1118	5.2000e-004	0.1123	0.0296	4.8000e-004	0.0301		87.5268	87.5268	1.7700e-003	1.9300e-003	88.1453
Total	0.0409	0.8210	0.5386	4.4400e-003	0.2292	5.7200e-003	0.2349	0.0620	5.4500e-003	0.0674		498.0885	498.0885	0.0439	0.0673	519.2330

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	0.4173	4.0679	6.2285	9.6500e-003		0.1726	0.1726		0.1636	0.1636	0.0000	925.7551	925.7551	0.1879		930.4516
Total	0.4173	4.0679	6.2285	9.6500e-003		0.1726	0.1726		0.1636	0.1636	0.0000	925.7551	925.7551	0.1879		930.4516

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Pipeline Construction - 2025

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	0.0115	0.7323	0.2585	3.2500e-003	0.1046	4.8200e-003	0.1095	0.0287	4.6100e-003	0.0333		372.3535	372.3535	0.0397	0.0598	391.1708
Vendor	1.8900e-003	0.0727	0.0296	3.5000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		38.2082	38.2082	2.4000e-003	5.5300e-003	39.9169
Worker	0.0275	0.0161	0.2505	8.4000e-004	0.1118	5.2000e-004	0.1123	0.0296	4.8000e-004	0.0301		87.5268	87.5268	1.7700e-003	1.9300e-003	88.1453
Total	0.0409	0.8210	0.5386	4.4400e-003	0.2292	5.7200e-003	0.2349	0.0620	5.4500e-003	0.0674		498.0885	498.0885	0.0439	0.0673	519.2330

3.7 Orange Valve Vault and Connection - 2025

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	0.4450	4.4621	6.9053	0.0101		0.2047	0.2047		0.1883	0.1883		979.5180	979.5180	0.3168		987.4379
Total	0.4450	4.4621	6.9053	0.0101		0.2047	0.2047		0.1883	0.1883		979.5180	979.5180	0.3168		987.4379

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Orange Valve Vault and Connection - 2025

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	3.8200e-003	0.2441	0.0862	1.0800e-003	0.0349	1.6100e-003	0.0365	9.5500e-003	1.5400e-003	0.0111		124.1178	124.1178	0.0133	0.0199	130.3903
Vendor	1.8900e-003	0.0727	0.0296	3.5000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		38.2082	38.2082	2.4000e-003	5.5300e-003	39.9169
Worker	0.0385	0.0226	0.3508	1.1800e-003	0.1565	7.3000e-004	0.1572	0.0415	6.7000e-004	0.0422		122.5375	122.5375	2.4800e-003	2.7000e-003	123.4034
Total	0.0442	0.3393	0.4665	2.6100e-003	0.2042	2.7200e-003	0.2069	0.0547	2.5700e-003	0.0573		284.8635	284.8635	0.0181	0.0282	293.7106

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	0.4450	4.4621	6.9053	0.0101		0.2047	0.2047		0.1883	0.1883	0.0000	979.5180	979.5180	0.3168		987.4379
Total	0.4450	4.4621	6.9053	0.0101		0.2047	0.2047		0.1883	0.1883	0.0000	979.5180	979.5180	0.3168		987.4379

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Orange Valve Vault and Connection - 2025

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	3.8200e-003	0.2441	0.0862	1.0800e-003	0.0349	1.6100e-003	0.0365	9.5500e-003	1.5400e-003	0.0111		124.1178	124.1178	0.0133	0.0199	130.3903
Vendor	1.8900e-003	0.0727	0.0296	3.5000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		38.2082	38.2082	2.4000e-003	5.5300e-003	39.9169
Worker	0.0385	0.0226	0.3508	1.1800e-003	0.1565	7.3000e-004	0.1572	0.0415	6.7000e-004	0.0422		122.5375	122.5375	2.4800e-003	2.7000e-003	123.4034
Total	0.0442	0.3393	0.4665	2.6100e-003	0.2042	2.7200e-003	0.2069	0.0547	2.5700e-003	0.0573		284.8635	284.8635	0.0181	0.0282	293.7106

3.8 Pump Station Building Construction - 2025

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	0.3094	2.7218	3.2868	6.2700e-003		0.1075	0.1075		0.1038	0.1038		587.2271	587.2271	0.0869		589.4006
Total	0.3094	2.7218	3.2868	6.2700e-003		0.1075	0.1075		0.1038	0.1038		587.2271	587.2271	0.0869		589.4006

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Pump Station Building Construction - 2025

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	3.8200e-003	0.2441	0.0862	1.0800e-003	0.0349	1.6100e-003	0.0365	9.5500e-003	1.5400e-003	0.0111		124.1178	124.1178	0.0133	0.0199	130.3903
Vendor	1.8900e-003	0.0727	0.0296	3.5000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		38.2082	38.2082	2.4000e-003	5.5300e-003	39.9169
Worker	0.0550	0.0322	0.5011	1.6800e-003	0.2236	1.0400e-003	0.2246	0.0593	9.6000e-004	0.0603		175.0535	175.0535	3.5400e-003	3.8500e-003	176.2906
Total	0.0607	0.3490	0.6169	3.1100e-003	0.2712	3.0300e-003	0.2742	0.0725	2.8600e-003	0.0754		337.3796	337.3796	0.0192	0.0293	346.5977

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	0.3094	2.7218	3.2868	6.2700e-003		0.1075	0.1075		0.1038	0.1038	0.0000	587.2271	587.2271	0.0869		589.4006
Total	0.3094	2.7218	3.2868	6.2700e-003		0.1075	0.1075		0.1038	0.1038	0.0000	587.2271	587.2271	0.0869		589.4006

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Pump Station Building Construction - 2025

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	3.8200e-003	0.2441	0.0862	1.0800e-003	0.0349	1.6100e-003	0.0365	9.5500e-003	1.5400e-003	0.0111		124.1178	124.1178	0.0133	0.0199	130.3903
Vendor	1.8900e-003	0.0727	0.0296	3.5000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		38.2082	38.2082	2.4000e-003	5.5300e-003	39.9169
Worker	0.0550	0.0322	0.5011	1.6800e-003	0.2236	1.0400e-003	0.2246	0.0593	9.6000e-004	0.0603		175.0535	175.0535	3.5400e-003	3.8500e-003	176.2906
Total	0.0607	0.3490	0.6169	3.1100e-003	0.2712	3.0300e-003	0.2742	0.0725	2.8600e-003	0.0754		337.3796	337.3796	0.0192	0.0293	346.5977

3.9 Site Improvement - 2025

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					6.3600e-003	0.0000	6.3600e-003	6.9000e-004	0.0000	6.9000e-004			0.0000			0.0000
Off-Road	0.5051	4.6101	6.9691	0.0114		0.2002	0.2002		0.1901	0.1901		1,074.4633	1,074.4633	0.2243		1,080.0705
Total	0.5051	4.6101	6.9691	0.0114	6.3600e-003	0.2002	0.2065	6.9000e-004	0.1901	0.1908		1,074.4633	1,074.4633	0.2243		1,080.0705

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Site Improvement - 2025

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	3.8200e-003	0.2441	0.0862	1.0800e-003	0.0349	1.6100e-003	0.0365	9.5500e-003	1.5400e-003	0.0111		124.1178	124.1178	0.0133	0.0199	130.3903
Vendor	1.8900e-003	0.0727	0.0296	3.5000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		38.2082	38.2082	2.4000e-003	5.5300e-003	39.9169
Worker	0.0275	0.0161	0.2505	8.4000e-004	0.1118	5.2000e-004	0.1123	0.0296	4.8000e-004	0.0301		87.5268	87.5268	1.7700e-003	1.9300e-003	88.1453
Total	0.0332	0.3329	0.3663	2.2700e-003	0.1595	2.5100e-003	0.1620	0.0429	2.3800e-003	0.0453		249.8528	249.8528	0.0174	0.0274	258.4524

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					2.8600e-003	0.0000	2.8600e-003	3.1000e-004	0.0000	3.1000e-004			0.0000			0.0000
Off-Road	0.5051	4.6101	6.9691	0.0114		0.2002	0.2002		0.1901	0.1901	0.0000	1,074.4633	1,074.4633	0.2243		1,080.0705
Total	0.5051	4.6101	6.9691	0.0114	2.8600e-003	0.2002	0.2030	3.1000e-004	0.1901	0.1904	0.0000	1,074.4633	1,074.4633	0.2243		1,080.0705

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Site Improvement - 2025

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	3.8200e-003	0.2441	0.0862	1.0800e-003	0.0349	1.6100e-003	0.0365	9.5500e-003	1.5400e-003	0.0111		124.1178	124.1178	0.0133	0.0199	130.3903
Vendor	1.8900e-003	0.0727	0.0296	3.5000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		38.2082	38.2082	2.4000e-003	5.5300e-003	39.9169
Worker	0.0275	0.0161	0.2505	8.4000e-004	0.1118	5.2000e-004	0.1123	0.0296	4.8000e-004	0.0301		87.5268	87.5268	1.7700e-003	1.9300e-003	88.1453
Total	0.0332	0.3329	0.3663	2.2700e-003	0.1595	2.5100e-003	0.1620	0.0429	2.3800e-003	0.0453		249.8528	249.8528	0.0174	0.0274	258.4524

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	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

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	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

Land Use	Miles			Trip %			Trip Purpose %		
	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	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.549407	0.061298	0.183744	0.124141	0.024133	0.006811	0.015066	0.004937	0.000671	0.000371	0.025054	0.000695	0.003670

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
Unmitigated	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	7.6200e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0594					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
Total	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	7.6200e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0594					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
Total	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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
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11.0 Vegetation

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

**Smith Reservoir Replacement Project - Phase 1 Construction
Orange County, Summer**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.70	User Defined Unit	1.70	3,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2027
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - Provided by Applicant
- Construction Phase - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Trips and VMT - Provided by Applicant

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Demolition - Provided by Applicant

Grading - Provided by Applicant

Vehicle Trips - 1 worker/day

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Water And Wastewater - Provided by Applicant

Construction Off-road Equipment Mitigation - Provided by Applicant

Operational Off-Road Equipment - Provided by Applicant

Fleet Mix -

Stationary Sources - Emergency Generators and Fire Pumps - Provided by Applicant

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	10.00
tblConstructionPhase	NumDays	200.00	100.00
tblConstructionPhase	NumDays	200.00	40.00
tblConstructionPhase	NumDays	200.00	30.00
tblConstructionPhase	NumDays	200.00	40.00
tblConstructionPhase	NumDays	200.00	120.00
tblConstructionPhase	NumDays	2.00	20.00
tblLandUse	LandUseSquareFeet	0.00	3,000.00
tblLandUse	LotAcreage	0.00	1.70
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	5.00
tblOffRoadEquipment	UsageHours	6.00	2.00

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	6.00	5.00
tblOffRoadEquipment	UsageHours	6.00	5.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblTripsAndVMT	HaulingTripNumber	194.00	280.00
tblTripsAndVMT	HaulingTripNumber	0.00	80.00
tblTripsAndVMT	HaulingTripNumber	0.00	300.00
tblTripsAndVMT	HaulingTripNumber	0.00	120.00
tblTripsAndVMT	HaulingTripNumber	0.00	180.00
tblTripsAndVMT	HaulingTripNumber	0.00	80.00
tblTripsAndVMT	HaulingTripNumber	0.00	240.00
tblTripsAndVMT	HaulingTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	13.00	20.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
tblTripsAndVMT	WorkerTripNumber	1.00	20.00
tblTripsAndVMT	WorkerTripNumber	1.00	20.00
tblTripsAndVMT	WorkerTripNumber	1.00	10.00

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblTripsAndVMT	WorkerTripNumber	1.00	14.00
tblTripsAndVMT	WorkerTripNumber	1.00	20.00
tblTripsAndVMT	WorkerTripNumber	15.00	10.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00

2.0 Emissions Summary

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
2024	1.6768	14.8217	18.6868	0.0435	2.8161	0.6205	3.2800	0.5115	0.6044	0.9500	0.0000	4,418.2259	4,418.2259	0.8258	0.2285	4,506.9725
2025	1.9529	16.9659	23.6657	0.0555	0.7348	0.6668	1.4016	0.1977	0.6234	0.8210	0.0000	5,507.3950	5,507.3950	1.2475	0.1396	5,580.1857
Maximum	1.9529	16.9659	23.6657	0.0555	2.8161	0.6668	3.2800	0.5115	0.6234	0.9500	0.0000	5,507.3950	5,507.3950	1.2475	0.2285	5,580.1857

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					
2024	1.6768	14.8217	18.6868	0.0435	1.6627	0.6205	2.1266	0.3369	0.6044	0.7754	0.0000	4,418.2259	4,418.2259	0.8258	0.2285	4,506.9725
2025	1.9529	16.9659	23.6657	0.0555	0.7348	0.6668	1.4016	0.1977	0.6234	0.8210	0.0000	5,507.3950	5,507.3950	1.2475	0.1396	5,580.1857
Maximum	1.9529	16.9659	23.6657	0.0555	1.6627	0.6668	2.1266	0.3369	0.6234	0.8210	0.0000	5,507.3950	5,507.3950	1.2475	0.2285	5,580.1857

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
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	0.0000
Total	0.0670	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000	0.0000	4.0000e-004

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	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
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	0.0000
Total	0.0670	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000	0.0000	4.0000e-004

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
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	Demolition	Demolition	10/1/2024	10/28/2024	5	20	
2	Pavement Removal	Site Preparation	10/22/2024	11/4/2024	5	10	
3	Reservoir Construction: Concrete Formwork	Building Construction	10/29/2024	3/17/2025	5	100	
4	Reservoir Construction: Concrete Pouring	Building Construction	3/18/2025	5/12/2025	5	40	
5	Pipeline Construction	Building Construction	5/1/2025	6/11/2025	5	30	
6	Orange Valve Vault and Connection	Building Construction	5/1/2025	6/25/2025	5	40	
7	Pump Station Building Construction	Building Construction	5/13/2025	10/27/2025	5	120	
8	Site Improvement	Site Preparation	10/28/2025	11/24/2025	5	20	

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
Demolition	Excavators	2	5.00	158	0.38
Demolition	Generator Sets	1	5.00	84	0.74
Demolition	Off-Highway Trucks	1	5.00	402	0.38

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Demolition	Tractors/Loaders/Backhoes	1	5.00	97	0.37
Pavement Removal	Concrete/Industrial Saws	1	5.00	81	0.73
Pavement Removal	Other Construction Equipment	1	5.00	172	0.42
Reservoir Construction: Concrete Formwork	Concrete/Industrial Saws	4	5.00	81	0.73
Reservoir Construction: Concrete Formwork	Cranes	1	5.00	231	0.29
Reservoir Construction: Concrete Formwork	Generator Sets	1	5.00	84	0.74
Reservoir Construction: Concrete Pouring	Generator Sets	1	5.00	84	0.74
Reservoir Construction: Concrete Pouring	Off-Highway Trucks	2	5.00	402	0.38
Reservoir Construction: Concrete Pouring	Other Construction Equipment	1	5.00	172	0.42
Pipeline Construction	Generator Sets	1	5.00	84	0.74
Pipeline Construction	Rollers	1	5.00	80	0.38
Pipeline Construction	Tractors/Loaders/Backhoes	2	5.00	97	0.37
Orange Valve Vault and Connection	Pavers	1	5.00	130	0.42
Orange Valve Vault and Connection	Rollers	2	5.00	80	0.38
Orange Valve Vault and Connection	Tractors/Loaders/Backhoes	2	5.00	97	0.37
Pump Station Building Construction	Cranes	1	2.00	231	0.29
Pump Station Building Construction	Generator Sets	2	2.00	84	0.74
Pump Station Building Construction	Plate Compactors	1	2.00	8	0.43
Pump Station Building Construction	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Pump Station Building Construction	Welders	1	2.00	46	0.45
Site Improvement	Cement and Mortar Mixers	1	5.00	9	0.56
Site Improvement	Generator Sets	1	5.00	84	0.74
Site Improvement	Pavers	1	5.00	130	0.42
Site Improvement	Plate Compactors	1	5.00	8	0.43
Site Improvement	Rollers	1	5.00	80	0.38
Site Improvement	Tractors/Loaders/Backhoes	1	5.00	97	0.37

Trips and VMT

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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
Demolition	5	20.00	0.00	280.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pavement Removal	2	10.00	0.00	80.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Reservoir Construction: Concret	6	20.00	4.00	300.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Reservoir Construction: Concret	4	20.00	4.00	120.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Construction	4	10.00	2.00	180.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Orange Valve Vault and Connection	5	14.00	2.00	80.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pump Station Building Construction	6	20.00	2.00	240.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Improvement	6	10.00	2.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2024

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					2.0971	0.0000	2.0971	0.3175	0.0000	0.3175			0.0000			0.0000
Off-Road	0.8041	6.3290	9.7999	0.0208		0.2720	0.2720		0.2558	0.2558		2,003.5516	2,003.5516	0.5378		2,016.9968
Total	0.8041	6.3290	9.7999	0.0208	2.0971	0.2720	2.3691	0.3175	0.2558	0.5733		2,003.5516	2,003.5516	0.5378		2,016.9968

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2024

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	0.0288	1.6564	0.5845	7.7300e-003	0.2442	0.0112	0.2554	0.0669	0.0107	0.0776		883.1007	883.1007	0.0915	0.1418	927.6294
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
Worker	0.0530	0.0324	0.5708	1.8300e-003	0.2236	1.0900e-003	0.2246	0.0593	1.0000e-003	0.0603		188.4176	188.4176	3.8000e-003	3.8500e-003	189.6606
Total	0.0818	1.6888	1.1553	9.5600e-003	0.4677	0.0123	0.4800	0.1262	0.0117	0.1379		1,071.5183	1,071.5183	0.0953	0.1456	1,117.2900

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					0.9437	0.0000	0.9437	0.1429	0.0000	0.1429			0.0000			0.0000
Off-Road	0.8041	6.3290	9.7999	0.0208		0.2720	0.2720		0.2558	0.2558	0.0000	2,003.5516	2,003.5516	0.5378		2,016.9968
Total	0.8041	6.3290	9.7999	0.0208	0.9437	0.2720	1.2157	0.1429	0.2558	0.3987	0.0000	2,003.5516	2,003.5516	0.5378		2,016.9968

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2024

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	0.0288	1.6564	0.5845	7.7300e-003	0.2442	0.0112	0.2554	0.0669	0.0107	0.0776		883.1007	883.1007	0.0915	0.1418	927.6294
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
Worker	0.0530	0.0324	0.5708	1.8300e-003	0.2236	1.0900e-003	0.2246	0.0593	1.0000e-003	0.0603		188.4176	188.4176	3.8000e-003	3.8500e-003	189.6606
Total	0.0818	1.6888	1.1553	9.5600e-003	0.4677	0.0123	0.4800	0.1262	0.0117	0.1379		1,071.5183	1,071.5183	0.0953	0.1456	1,117.2900

3.3 Pavement Removal - 2024

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4030	3.5158	4.7893	7.7700e-003		0.1726	0.1726		0.1644	0.1644		744.3183	744.3183	0.1385		747.7814
Total	0.4030	3.5158	4.7893	7.7700e-003	0.0000	0.1726	0.1726	0.0000	0.1644	0.1644		744.3183	744.3183	0.1385		747.7814

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Pavement Removal - 2024

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	0.0165	0.9465	0.3340	4.4200e-003	0.1395	6.4000e-003	0.1459	0.0382	6.1300e-003	0.0443		504.6290	504.6290	0.0523	0.0810	530.0739
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
Worker	0.0265	0.0162	0.2854	9.1000e-004	0.1118	5.4000e-004	0.1123	0.0296	5.0000e-004	0.0301		94.2088	94.2088	1.9000e-003	1.9300e-003	94.8303
Total	0.0430	0.9627	0.6194	5.3300e-003	0.2513	6.9400e-003	0.2582	0.0678	6.6300e-003	0.0745		598.8378	598.8378	0.0542	0.0829	624.9043

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4030	3.5158	4.7893	7.7700e-003		0.1726	0.1726		0.1644	0.1644	0.0000	744.3183	744.3183	0.1385		747.7814
Total	0.4030	3.5158	4.7893	7.7700e-003	0.0000	0.1726	0.1726	0.0000	0.1644	0.1644	0.0000	744.3183	744.3183	0.1385		747.7814

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Pavement Removal - 2024

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	0.0165	0.9465	0.3340	4.4200e-003	0.1395	6.4000e-003	0.1459	0.0382	6.1300e-003	0.0443		504.6290	504.6290	0.0523	0.0810	530.0739
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
Worker	0.0265	0.0162	0.2854	9.1000e-004	0.1118	5.4000e-004	0.1123	0.0296	5.0000e-004	0.0301		94.2088	94.2088	1.9000e-003	1.9300e-003	94.8303
Total	0.0430	0.9627	0.6194	5.3300e-003	0.2513	6.9400e-003	0.2582	0.0678	6.6300e-003	0.0745		598.8378	598.8378	0.0542	0.0829	624.9043

3.4 Reservoir Construction: Concrete Formwork - 2024

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	1.1677	9.8162	12.5243	0.0234		0.4367	0.4367		0.4294	0.4294		2,220.3128	2,220.3128	0.1991		2,225.2905
Total	1.1677	9.8162	12.5243	0.0234		0.4367	0.4367		0.4294	0.4294		2,220.3128	2,220.3128	0.1991		2,225.2905

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Reservoir Construction: Concrete Formwork - 2024

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	6.1800e-003	0.3549	0.1253	1.6600e-003	0.0523	2.4000e-003	0.0547	0.0143	2.3000e-003	0.0166		189.2359	189.2359	0.0196	0.0304	198.7777
Vendor	3.9800e-003	0.1398	0.0577	7.1000e-004	0.0256	7.5000e-004	0.0263	7.3600e-003	7.2000e-004	8.0800e-003		77.7545	77.7545	4.7500e-003	0.0112	81.2120
Worker	0.0530	0.0324	0.5708	1.8300e-003	0.2236	1.0900e-003	0.2246	0.0593	1.0000e-003	0.0603		188.4176	188.4176	3.8000e-003	3.8500e-003	189.6606
Total	0.0631	0.5271	0.7538	4.2000e-003	0.3015	4.2400e-003	0.3057	0.0810	4.0200e-003	0.0850		455.4080	455.4080	0.0282	0.0454	469.6503

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	1.1677	9.8162	12.5243	0.0234		0.4367	0.4367		0.4294	0.4294	0.0000	2,220.3128	2,220.3128	0.1991		2,225.2905
Total	1.1677	9.8162	12.5243	0.0234		0.4367	0.4367		0.4294	0.4294	0.0000	2,220.3128	2,220.3128	0.1991		2,225.2905

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Reservoir Construction: Concrete Formwork - 2024

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	6.1800e-003	0.3549	0.1253	1.6600e-003	0.0523	2.4000e-003	0.0547	0.0143	2.3000e-003	0.0166		189.2359	189.2359	0.0196	0.0304	198.7777
Vendor	3.9800e-003	0.1398	0.0577	7.1000e-004	0.0256	7.5000e-004	0.0263	7.3600e-003	7.2000e-004	8.0800e-003		77.7545	77.7545	4.7500e-003	0.0112	81.2120
Worker	0.0530	0.0324	0.5708	1.8300e-003	0.2236	1.0900e-003	0.2246	0.0593	1.0000e-003	0.0603		188.4176	188.4176	3.8000e-003	3.8500e-003	189.6606
Total	0.0631	0.5271	0.7538	4.2000e-003	0.3015	4.2400e-003	0.3057	0.0810	4.0200e-003	0.0850		455.4080	455.4080	0.0282	0.0454	469.6503

3.4 Reservoir Construction: Concrete Formwork - 2025

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	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691		2,220.3272	2,220.3272	0.1925		2,225.1404
Total	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691		2,220.3272	2,220.3272	0.1925		2,225.1404

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Reservoir Construction: Concrete Formwork - 2025

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	6.0900e-003	0.3511	0.1279	1.6200e-003	0.0523	2.4100e-003	0.0547	0.0143	2.3000e-003	0.0166		186.0028	186.0028	0.0199	0.0299	195.4035
Vendor	3.9200e-003	0.1391	0.0575	6.9000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.2000e-004	8.0800e-003		76.2989	76.2989	4.8100e-003	0.0110	79.7092
Worker	0.0500	0.0294	0.5369	1.7600e-003	0.2236	1.0400e-003	0.2246	0.0593	9.6000e-004	0.0603		183.8102	183.8102	3.4500e-003	3.6200e-003	184.9765
Total	0.0600	0.5196	0.7223	4.0700e-003	0.3014	4.2100e-003	0.3056	0.0810	3.9800e-003	0.0850		446.1119	446.1119	0.0282	0.0445	460.0892

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	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691	0.0000	2,220.3272	2,220.3272	0.1925		2,225.1404
Total	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691	0.0000	2,220.3272	2,220.3272	0.1925		2,225.1404

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Reservoir Construction: Concrete Formwork - 2025

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	6.0900e-003	0.3511	0.1279	1.6200e-003	0.0523	2.4100e-003	0.0547	0.0143	2.3000e-003	0.0166		186.0028	186.0028	0.0199	0.0299	195.4035
Vendor	3.9200e-003	0.1391	0.0575	6.9000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.2000e-004	8.0800e-003		76.2989	76.2989	4.8100e-003	0.0110	79.7092
Worker	0.0500	0.0294	0.5369	1.7600e-003	0.2236	1.0400e-003	0.2246	0.0593	9.6000e-004	0.0603		183.8102	183.8102	3.4500e-003	3.6200e-003	184.9765
Total	0.0600	0.5196	0.7223	4.0700e-003	0.3014	4.2100e-003	0.3056	0.0810	3.9800e-003	0.0850		446.1119	446.1119	0.0282	0.0445	460.0892

3.5 Reservoir Construction: Concrete Pouring - 2025

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	0.9504	6.8057	8.7666	0.0245		0.2769	0.2769		0.2595	0.2595		2,363.1315	2,363.1315	0.6527		2,379.4498
Total	0.9504	6.8057	8.7666	0.0245		0.2769	0.2769		0.2595	0.2595		2,363.1315	2,363.1315	0.6527		2,379.4498

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Reservoir Construction: Concrete Pouring - 2025

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	6.0900e-003	0.3511	0.1279	1.6200e-003	0.0523	2.4100e-003	0.0547	0.0143	2.3000e-003	0.0166		186.0028	186.0028	0.0199	0.0299	195.4035
Vendor	3.9200e-003	0.1391	0.0575	6.9000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.2000e-004	8.0800e-003		76.2989	76.2989	4.8100e-003	0.0110	79.7092
Worker	0.0500	0.0294	0.5369	1.7600e-003	0.2236	1.0400e-003	0.2246	0.0593	9.6000e-004	0.0603		183.8102	183.8102	3.4500e-003	3.6200e-003	184.9765
Total	0.0600	0.5196	0.7223	4.0700e-003	0.3014	4.2100e-003	0.3056	0.0810	3.9800e-003	0.0850		446.1119	446.1119	0.0282	0.0445	460.0892

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	0.9504	6.8057	8.7666	0.0245		0.2769	0.2769		0.2595	0.2595	0.0000	2,363.1314	2,363.1314	0.6527		2,379.4498
Total	0.9504	6.8057	8.7666	0.0245		0.2769	0.2769		0.2595	0.2595	0.0000	2,363.1314	2,363.1314	0.6527		2,379.4498

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Reservoir Construction: Concrete Pouring - 2025

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	6.0900e-003	0.3511	0.1279	1.6200e-003	0.0523	2.4100e-003	0.0547	0.0143	2.3000e-003	0.0166		186.0028	186.0028	0.0199	0.0299	195.4035
Vendor	3.9200e-003	0.1391	0.0575	6.9000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.2000e-004	8.0800e-003		76.2989	76.2989	4.8100e-003	0.0110	79.7092
Worker	0.0500	0.0294	0.5369	1.7600e-003	0.2236	1.0400e-003	0.2246	0.0593	9.6000e-004	0.0603		183.8102	183.8102	3.4500e-003	3.6200e-003	184.9765
Total	0.0600	0.5196	0.7223	4.0700e-003	0.3014	4.2100e-003	0.3056	0.0810	3.9800e-003	0.0850		446.1119	446.1119	0.0282	0.0445	460.0892

3.6 Pipeline Construction - 2025

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	0.4173	4.0679	6.2285	9.6500e-003		0.1726	0.1726		0.1636	0.1636		925.7551	925.7551	0.1879		930.4516
Total	0.4173	4.0679	6.2285	9.6500e-003		0.1726	0.1726		0.1636	0.1636		925.7551	925.7551	0.1879		930.4516

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Pipeline Construction - 2025

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	0.0122	0.7022	0.2559	3.2500e-003	0.1046	4.8100e-003	0.1094	0.0287	4.6000e-003	0.0333		372.0056	372.0056	0.0398	0.0598	390.8071
Vendor	1.9600e-003	0.0695	0.0287	3.5000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		38.1495	38.1495	2.4000e-003	5.5200e-003	39.8546
Worker	0.0250	0.0147	0.2685	8.8000e-004	0.1118	5.2000e-004	0.1123	0.0296	4.8000e-004	0.0301		91.9051	91.9051	1.7300e-003	1.8100e-003	92.4882
Total	0.0392	0.7865	0.5531	4.4800e-003	0.2292	5.7100e-003	0.2349	0.0620	5.4400e-003	0.0674		502.0601	502.0601	0.0439	0.0671	523.1499

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	0.4173	4.0679	6.2285	9.6500e-003		0.1726	0.1726		0.1636	0.1636	0.0000	925.7551	925.7551	0.1879		930.4516
Total	0.4173	4.0679	6.2285	9.6500e-003		0.1726	0.1726		0.1636	0.1636	0.0000	925.7551	925.7551	0.1879		930.4516

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Pipeline Construction - 2025

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	0.0122	0.7022	0.2559	3.2500e-003	0.1046	4.8100e-003	0.1094	0.0287	4.6000e-003	0.0333		372.0056	372.0056	0.0398	0.0598	390.8071
Vendor	1.9600e-003	0.0695	0.0287	3.5000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		38.1495	38.1495	2.4000e-003	5.5200e-003	39.8546
Worker	0.0250	0.0147	0.2685	8.8000e-004	0.1118	5.2000e-004	0.1123	0.0296	4.8000e-004	0.0301		91.9051	91.9051	1.7300e-003	1.8100e-003	92.4882
Total	0.0392	0.7865	0.5531	4.4800e-003	0.2292	5.7100e-003	0.2349	0.0620	5.4400e-003	0.0674		502.0601	502.0601	0.0439	0.0671	523.1499

3.7 Orange Valve Vault and Connection - 2025

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	0.4450	4.4621	6.9053	0.0101		0.2047	0.2047		0.1883	0.1883		979.5180	979.5180	0.3168		987.4379
Total	0.4450	4.4621	6.9053	0.0101		0.2047	0.2047		0.1883	0.1883		979.5180	979.5180	0.3168		987.4379

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Orange Valve Vault and Connection - 2025

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	4.0600e-003	0.2341	0.0853	1.0800e-003	0.0349	1.6000e-003	0.0365	9.5500e-003	1.5300e-003	0.0111		124.0019	124.0019	0.0133	0.0199	130.2690
Vendor	1.9600e-003	0.0695	0.0287	3.5000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		38.1495	38.1495	2.4000e-003	5.5200e-003	39.8546
Worker	0.0350	0.0206	0.3759	1.2300e-003	0.1565	7.3000e-004	0.1572	0.0415	6.7000e-004	0.0422		128.6671	128.6671	2.4200e-003	2.5400e-003	129.4835
Total	0.0410	0.3242	0.4899	2.6600e-003	0.2042	2.7100e-003	0.2069	0.0547	2.5600e-003	0.0573		290.8184	290.8184	0.0181	0.0280	299.6072

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	0.4450	4.4621	6.9053	0.0101		0.2047	0.2047		0.1883	0.1883	0.0000	979.5180	979.5180	0.3168		987.4379
Total	0.4450	4.4621	6.9053	0.0101		0.2047	0.2047		0.1883	0.1883	0.0000	979.5180	979.5180	0.3168		987.4379

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Orange Valve Vault and Connection - 2025

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	4.0600e-003	0.2341	0.0853	1.0800e-003	0.0349	1.6000e-003	0.0365	9.5500e-003	1.5300e-003	0.0111		124.0019	124.0019	0.0133	0.0199	130.2690
Vendor	1.9600e-003	0.0695	0.0287	3.5000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		38.1495	38.1495	2.4000e-003	5.5200e-003	39.8546
Worker	0.0350	0.0206	0.3759	1.2300e-003	0.1565	7.3000e-004	0.1572	0.0415	6.7000e-004	0.0422		128.6671	128.6671	2.4200e-003	2.5400e-003	129.4835
Total	0.0410	0.3242	0.4899	2.6600e-003	0.2042	2.7100e-003	0.2069	0.0547	2.5600e-003	0.0573		290.8184	290.8184	0.0181	0.0280	299.6072

3.8 Pump Station Building Construction - 2025

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	0.3094	2.7218	3.2868	6.2700e-003		0.1075	0.1075		0.1038	0.1038		587.2271	587.2271	0.0869		589.4006
Total	0.3094	2.7218	3.2868	6.2700e-003		0.1075	0.1075		0.1038	0.1038		587.2271	587.2271	0.0869		589.4006

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Pump Station Building Construction - 2025

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	4.0600e-003	0.2341	0.0853	1.0800e-003	0.0349	1.6000e-003	0.0365	9.5500e-003	1.5300e-003	0.0111		124.0019	124.0019	0.0133	0.0199	130.2690
Vendor	1.9600e-003	0.0695	0.0287	3.5000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		38.1495	38.1495	2.4000e-003	5.5200e-003	39.8546
Worker	0.0500	0.0294	0.5369	1.7600e-003	0.2236	1.0400e-003	0.2246	0.0593	9.6000e-004	0.0603		183.8102	183.8102	3.4500e-003	3.6200e-003	184.9765
Total	0.0561	0.3330	0.6510	3.1900e-003	0.2712	3.0200e-003	0.2742	0.0725	2.8500e-003	0.0754		345.9615	345.9615	0.0191	0.0291	355.1001

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	0.3094	2.7218	3.2868	6.2700e-003		0.1075	0.1075		0.1038	0.1038	0.0000	587.2271	587.2271	0.0869		589.4006
Total	0.3094	2.7218	3.2868	6.2700e-003		0.1075	0.1075		0.1038	0.1038	0.0000	587.2271	587.2271	0.0869		589.4006

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Pump Station Building Construction - 2025

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	4.0600e-003	0.2341	0.0853	1.0800e-003	0.0349	1.6000e-003	0.0365	9.5500e-003	1.5300e-003	0.0111		124.0019	124.0019	0.0133	0.0199	130.2690
Vendor	1.9600e-003	0.0695	0.0287	3.5000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		38.1495	38.1495	2.4000e-003	5.5200e-003	39.8546
Worker	0.0500	0.0294	0.5369	1.7600e-003	0.2236	1.0400e-003	0.2246	0.0593	9.6000e-004	0.0603		183.8102	183.8102	3.4500e-003	3.6200e-003	184.9765
Total	0.0561	0.3330	0.6510	3.1900e-003	0.2712	3.0200e-003	0.2742	0.0725	2.8500e-003	0.0754		345.9615	345.9615	0.0191	0.0291	355.1001

3.9 Site Improvement - 2025

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					6.3600e-003	0.0000	6.3600e-003	6.9000e-004	0.0000	6.9000e-004			0.0000			0.0000
Off-Road	0.5051	4.6101	6.9691	0.0114		0.2002	0.2002		0.1901	0.1901		1,074.4633	1,074.4633	0.2243		1,080.0705
Total	0.5051	4.6101	6.9691	0.0114	6.3600e-003	0.2002	0.2065	6.9000e-004	0.1901	0.1908		1,074.4633	1,074.4633	0.2243		1,080.0705

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Site Improvement - 2025

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	4.0600e-003	0.2341	0.0853	1.0800e-003	0.0349	1.6000e-003	0.0365	9.5500e-003	1.5300e-003	0.0111		124.0019	124.0019	0.0133	0.0199	130.2690
Vendor	1.9600e-003	0.0695	0.0287	3.5000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		38.1495	38.1495	2.4000e-003	5.5200e-003	39.8546
Worker	0.0250	0.0147	0.2685	8.8000e-004	0.1118	5.2000e-004	0.1123	0.0296	4.8000e-004	0.0301		91.9051	91.9051	1.7300e-003	1.8100e-003	92.4882
Total	0.0310	0.3183	0.3825	2.3100e-003	0.1595	2.5000e-003	0.1620	0.0429	2.3700e-003	0.0452		254.0564	254.0564	0.0174	0.0273	262.6119

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					2.8600e-003	0.0000	2.8600e-003	3.1000e-004	0.0000	3.1000e-004			0.0000			0.0000
Off-Road	0.5051	4.6101	6.9691	0.0114		0.2002	0.2002		0.1901	0.1901	0.0000	1,074.4633	1,074.4633	0.2243		1,080.0705
Total	0.5051	4.6101	6.9691	0.0114	2.8600e-003	0.2002	0.2030	3.1000e-004	0.1901	0.1904	0.0000	1,074.4633	1,074.4633	0.2243		1,080.0705

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Site Improvement - 2025

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	4.0600e-003	0.2341	0.0853	1.0800e-003	0.0349	1.6000e-003	0.0365	9.5500e-003	1.5300e-003	0.0111		124.0019	124.0019	0.0133	0.0199	130.2690
Vendor	1.9600e-003	0.0695	0.0287	3.5000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		38.1495	38.1495	2.4000e-003	5.5200e-003	39.8546
Worker	0.0250	0.0147	0.2685	8.8000e-004	0.1118	5.2000e-004	0.1123	0.0296	4.8000e-004	0.0301		91.9051	91.9051	1.7300e-003	1.8100e-003	92.4882
Total	0.0310	0.3183	0.3825	2.3100e-003	0.1595	2.5000e-003	0.1620	0.0429	2.3700e-003	0.0452		254.0564	254.0564	0.0174	0.0273	262.6119

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	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

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	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

Land Use	Miles			Trip %			Trip Purpose %		
	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	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.549407	0.061298	0.183744	0.124141	0.024133	0.006811	0.015066	0.004937	0.000671	0.000371	0.025054	0.000695	0.003670

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
Unmitigated	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	7.6200e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0594					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
Total	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	7.6200e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0594					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
Total	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

Smith Reservoir Replacement Project - Phase 1 Construction - Orange County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Annual

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

**Smith Reservoir Replacement Project - Phase 2 Construction
Orange County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.70	User Defined Unit	1.70	3,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2026
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - Provided by Applicant
- Construction Phase - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Trips and VMT - Provided by Applicant
- Demolition - Provided by Applicant

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Annual

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

Grading - Provided by Applicant

Vehicle Trips - 1 worker/day

Energy Use - Provided by Applicant

Water And Wastewater - Provided by Applicant

Construction Off-road Equipment Mitigation - Provided by Applicant

Operational Off-Road Equipment - Provided by Applicant

Stationary Sources - Emergency Generators and Fire Pumps - Provided by Applicant

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	100.00
tblConstructionPhase	NumDays	200.00	30.00
tblConstructionPhase	NumDays	200.00	40.00
tblConstructionPhase	NumDays	2.00	10.00
tblConstructionPhase	NumDays	2.00	20.00
tblLandUse	LandUseSquareFeet	0.00	3,000.00
tblLandUse	LotAcreage	0.00	1.70
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	6.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblTripsAndVMT	HaulingTripNumber	208.00	300.00
tblTripsAndVMT	HaulingTripNumber	0.00	80.00
tblTripsAndVMT	HaulingTripNumber	0.00	400.00
tblTripsAndVMT	HaulingTripNumber	0.00	60.00

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

tbITripsAndVMT	HaulingTripNumber	0.00	160.00
tbITripsAndVMT	HaulingTripNumber	0.00	40.00
tbITripsAndVMT	VendorTripNumber	0.00	4.00
tbITripsAndVMT	VendorTripNumber	0.00	2.00
tbITripsAndVMT	VendorTripNumber	0.00	4.00
tbITripsAndVMT	VendorTripNumber	0.00	2.00
tbITripsAndVMT	WorkerTripNumber	13.00	20.00
tbITripsAndVMT	WorkerTripNumber	5.00	10.00
tbITripsAndVMT	WorkerTripNumber	1.00	20.00
tbITripsAndVMT	WorkerTripNumber	1.00	10.00
tbITripsAndVMT	WorkerTripNumber	1.00	20.00
tbITripsAndVMT	WorkerTripNumber	15.00	10.00
tb\VehicleTrips	CW_TTP	0.00	100.00
tb\VehicleTrips	PR_TP	0.00	100.00

2.0 Emissions Summary

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Annual

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

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					
2025	0.0118	0.1066	0.1503	4.0000e-004	0.0287	3.6400e-003	0.0323	5.0900e-003	3.4600e-003	8.5400e-003	0.0000	36.6881	36.6881	6.8100e-003	1.7600e-003	37.3834
2026	0.0858	0.7170	0.9653	2.1900e-003	0.0259	0.0277	0.0536	6.9300e-003	0.0268	0.0338	0.0000	193.9191	193.9191	0.0264	4.0200e-003	195.7784
Maximum	0.0858	0.7170	0.9653	2.1900e-003	0.0287	0.0277	0.0536	6.9300e-003	0.0268	0.0338	0.0000	193.9191	193.9191	0.0264	4.0200e-003	195.7784

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					
2025	0.0118	0.1066	0.1503	4.0000e-004	0.0163	3.6400e-003	0.0200	3.2100e-003	3.4600e-003	6.6700e-003	0.0000	36.6881	36.6881	6.8100e-003	1.7600e-003	37.3834
2026	0.0858	0.7170	0.9653	2.1900e-003	0.0258	0.0277	0.0535	6.9200e-003	0.0268	0.0338	0.0000	193.9189	193.9189	0.0264	4.0200e-003	195.7782
Maximum	0.0858	0.7170	0.9653	2.1900e-003	0.0258	0.0277	0.0535	6.9200e-003	0.0268	0.0338	0.0000	193.9189	193.9189	0.0264	4.0200e-003	195.7782

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Annual

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	22.91	0.00	14.55	15.72	0.00	4.44	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	12-1-2025	2-28-2026	0.3867	0.3867
2	3-1-2026	5-31-2026	0.3619	0.3619
3	6-1-2026	8-31-2026	0.1428	0.1428
		Highest	0.3867	0.3867

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	0.0122	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
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	0.0122	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Annual

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

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	0.0122	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
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	0.0122	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	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	Demolition	Demolition	12/1/2025	12/26/2025	5	20	
2	Pavement Removal	Site Preparation	12/22/2025	1/2/2026	5	10	
3	Reservoir Construction: Concrete Formwork	Building Construction	12/29/2025	5/15/2026	5	100	

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Annual

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

4	Pipeline Construction	Building Construction	2/2/2026	3/13/2026	5	30
5	Reservoir Construction: Concrete Pouring	Building Construction	5/18/2026	7/10/2026	5	40
6	Site Improvement	Site Preparation	7/13/2026	8/7/2026	5	20

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
Demolition	Excavators	2	5.00	158	0.38
Demolition	Generator Sets	1	5.00	84	0.74
Demolition	Off-Highway Trucks	1	5.00	402	0.38
Demolition	Tractors/Loaders/Backhoes	1	5.00	97	0.37
Pavement Removal	Concrete/Industrial Saws	1	5.00	81	0.73
Pavement Removal	Other Construction Equipment	1	5.00	172	0.42
Reservoir Construction: Concrete Formwork	Concrete/Industrial Saws	4	5.00	81	0.73
Reservoir Construction: Concrete Formwork	Cranes	1	5.00	231	0.29
Reservoir Construction: Concrete Formwork	Generator Sets	1	5.00	84	0.74
Pipeline Construction	Generator Sets	1	5.00	84	0.74
Pipeline Construction	Rollers	1	5.00	80	0.38
Pipeline Construction	Tractors/Loaders/Backhoes	2	5.00	97	0.37
Reservoir Construction: Concrete Pouring	Generator Sets	1	5.00	84	0.74
Reservoir Construction: Concrete Pouring	Off-Highway Trucks	2	5.00	402	0.38
Reservoir Construction: Concrete Pouring	Other Construction Equipment	1	5.00	172	0.42

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

Site Improvement	Cement and Mortar Mixers	1	2.00	9	0.56
Site Improvement	Generator Sets	1	2.00	84	0.74
Site Improvement	Pavers	1	2.00	130	0.42
Site Improvement	Plate Compactors	1	2.00	8	0.43
Site Improvement	Rollers	1	2.00	80	0.38
Site Improvement	Tractors/Loaders/Backhoes	1	2.00	97	0.37

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
Demolition	5	20.00	0.00	300.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pavement Removal	2	10.00	0.00	80.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Reservoir Construction: Concret	6	20.00	4.00	400.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Construction	4	10.00	2.00	60.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Reservoir Construction: Concret	4	20.00	4.00	160.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Improvement	6	10.00	2.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Annual

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

3.2 Demolition - 2025

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					0.0225	0.0000	0.0225	3.4000e-003	0.0000	3.4000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5600e-003	0.0565	0.0975	2.1000e-004		2.3200e-003	2.3200e-003		2.1800e-003	2.1800e-003	0.0000	18.1746	18.1746	4.8700e-003	0.0000	18.2962
Total	7.5600e-003	0.0565	0.0975	2.1000e-004	0.0225	2.3200e-003	0.0248	3.4000e-003	2.1800e-003	5.5800e-003	0.0000	18.1746	18.1746	4.8700e-003	0.0000	18.2962

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	3.0000e-004	0.0185	6.4200e-003	8.0000e-005	2.5700e-003	1.2000e-004	2.7000e-003	7.1000e-004	1.2000e-004	8.2000e-004	0.0000	8.4403	8.4403	9.0000e-004	1.3600e-003	8.8668
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	5.0000e-004	3.3000e-004	5.0900e-003	2.0000e-005	2.2000e-003	1.0000e-005	2.2100e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.5615	1.5615	3.0000e-005	4.0000e-005	1.5729
Total	8.0000e-004	0.0188	0.0115	1.0000e-004	4.7700e-003	1.3000e-004	4.9100e-003	1.2900e-003	1.3000e-004	1.4100e-003	0.0000	10.0018	10.0018	9.3000e-004	1.4000e-003	10.4397

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

3.2 Demolition - 2025

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					0.0101	0.0000	0.0101	1.5300e-003	0.0000	1.5300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5600e-003	0.0565	0.0975	2.1000e-004		2.3200e-003	2.3200e-003		2.1800e-003	2.1800e-003	0.0000	18.1745	18.1745	4.8700e-003	0.0000	18.2962
Total	7.5600e-003	0.0565	0.0975	2.1000e-004	0.0101	2.3200e-003	0.0124	1.5300e-003	2.1800e-003	3.7100e-003	0.0000	18.1745	18.1745	4.8700e-003	0.0000	18.2962

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	3.0000e-004	0.0185	6.4200e-003	8.0000e-005	2.5700e-003	1.2000e-004	2.7000e-003	7.1000e-004	1.2000e-004	8.2000e-004	0.0000	8.4403	8.4403	9.0000e-004	1.3600e-003	8.8668
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	5.0000e-004	3.3000e-004	5.0900e-003	2.0000e-005	2.2000e-003	1.0000e-005	2.2100e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.5615	1.5615	3.0000e-005	4.0000e-005	1.5729
Total	8.0000e-004	0.0188	0.0115	1.0000e-004	4.7700e-003	1.3000e-004	4.9100e-003	1.2900e-003	1.3000e-004	1.4100e-003	0.0000	10.0018	10.0018	9.3000e-004	1.4000e-003	10.4397

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

3.3 Pavement Removal - 2025

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4900e-003	0.0126	0.0191	3.0000e-005		5.9000e-004	5.9000e-004		5.6000e-004	5.6000e-004	0.0000	2.7018	2.7018	5.0000e-004	0.0000	2.7143
Total	1.4900e-003	0.0126	0.0191	3.0000e-005	0.0000	5.9000e-004	5.9000e-004	0.0000	5.6000e-004	5.6000e-004	0.0000	2.7018	2.7018	5.0000e-004	0.0000	2.7143

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	6.0000e-005	3.9400e-003	1.3700e-003	2.0000e-005	5.5000e-004	3.0000e-005	5.8000e-004	1.5000e-004	2.0000e-005	1.8000e-004	0.0000	1.8006	1.8006	1.9000e-004	2.9000e-004	1.8916
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	1.0000e-004	7.0000e-005	1.0200e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3123	0.3123	1.0000e-005	1.0000e-005	0.3146
Total	1.6000e-004	4.0100e-003	2.3900e-003	2.0000e-005	9.9000e-004	3.0000e-005	1.0200e-003	2.7000e-004	2.0000e-005	3.0000e-004	0.0000	2.1129	2.1129	2.0000e-004	3.0000e-004	2.2062

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

3.3 Pavement Removal - 2025

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4900e-003	0.0126	0.0191	3.0000e-005		5.9000e-004	5.9000e-004		5.6000e-004	5.6000e-004	0.0000	2.7018	2.7018	5.0000e-004	0.0000	2.7143
Total	1.4900e-003	0.0126	0.0191	3.0000e-005	0.0000	5.9000e-004	5.9000e-004	0.0000	5.6000e-004	5.6000e-004	0.0000	2.7018	2.7018	5.0000e-004	0.0000	2.7143

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	6.0000e-005	3.9400e-003	1.3700e-003	2.0000e-005	5.5000e-004	3.0000e-005	5.8000e-004	1.5000e-004	2.0000e-005	1.8000e-004	0.0000	1.8006	1.8006	1.9000e-004	2.9000e-004	1.8916
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	1.0000e-004	7.0000e-005	1.0200e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3123	0.3123	1.0000e-005	1.0000e-005	0.3146
Total	1.6000e-004	4.0100e-003	2.3900e-003	2.0000e-005	9.9000e-004	3.0000e-005	1.0200e-003	2.7000e-004	2.0000e-005	3.0000e-004	0.0000	2.1129	2.1129	2.0000e-004	3.0000e-004	2.2062

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

3.3 Pavement Removal - 2026

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7000e-004	3.1400e-003	4.7800e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.4000e-004	1.4000e-004	0.0000	0.6755	0.6755	1.2000e-004	0.0000	0.6786
Total	3.7000e-004	3.1400e-003	4.7800e-003	1.0000e-005	0.0000	1.5000e-004	1.5000e-004	0.0000	1.4000e-004	1.4000e-004	0.0000	0.6755	0.6755	1.2000e-004	0.0000	0.6786

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	2.0000e-005	9.7000e-004	3.5000e-004	0.0000	1.4000e-004	1.0000e-005	1.4000e-004	4.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.4420	0.4420	5.0000e-005	7.0000e-005	0.4644
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	2.0000e-005	1.0000e-005	2.4000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0757	0.0757	0.0000	0.0000	0.0762
Total	4.0000e-005	9.8000e-004	5.9000e-004	0.0000	2.5000e-004	1.0000e-005	2.5000e-004	7.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.5177	0.5177	5.0000e-005	7.0000e-005	0.5406

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

3.3 Pavement Removal - 2026

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7000e-004	3.1400e-003	4.7800e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.4000e-004	1.4000e-004	0.0000	0.6755	0.6755	1.2000e-004	0.0000	0.6786
Total	3.7000e-004	3.1400e-003	4.7800e-003	1.0000e-005	0.0000	1.5000e-004	1.5000e-004	0.0000	1.4000e-004	1.4000e-004	0.0000	0.6755	0.6755	1.2000e-004	0.0000	0.6786

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	2.0000e-005	9.7000e-004	3.5000e-004	0.0000	1.4000e-004	1.0000e-005	1.4000e-004	4.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.4420	0.4420	5.0000e-005	7.0000e-005	0.4644
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	2.0000e-005	1.0000e-005	2.4000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0757	0.0757	0.0000	0.0000	0.0762
Total	4.0000e-005	9.8000e-004	5.9000e-004	0.0000	2.5000e-004	1.0000e-005	2.5000e-004	7.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.5177	0.5177	5.0000e-005	7.0000e-005	0.5406

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

3.4 Reservoir Construction: Concrete Formwork - 2025

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	1.6500e-003	0.0137	0.0187	4.0000e-005		5.6000e-004	5.6000e-004		5.5000e-004	5.5000e-004	0.0000	3.0214	3.0214	2.6000e-004	0.0000	3.0279
Total	1.6500e-003	0.0137	0.0187	4.0000e-005		5.6000e-004	5.6000e-004		5.5000e-004	5.5000e-004	0.0000	3.0214	3.0214	2.6000e-004	0.0000	3.0279

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	7.4000e-004	2.6000e-004	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3376	0.3376	4.0000e-005	5.0000e-005	0.3547
Vendor	1.0000e-005	2.2000e-004	9.0000e-005	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1039	0.1039	1.0000e-005	2.0000e-005	0.1085
Worker	8.0000e-005	5.0000e-005	7.6000e-004	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2342	0.2342	0.0000	1.0000e-005	0.2359
Total	1.0000e-004	1.0100e-003	1.1100e-003	0.0000	4.7000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.6757	0.6757	5.0000e-005	8.0000e-005	0.6991

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

3.4 Reservoir Construction: Concrete Formwork - 2025

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	1.6500e-003	0.0137	0.0187	4.0000e-005		5.6000e-004	5.6000e-004		5.5000e-004	5.5000e-004	0.0000	3.0214	3.0214	2.6000e-004	0.0000	3.0279
Total	1.6500e-003	0.0137	0.0187	4.0000e-005		5.6000e-004	5.6000e-004		5.5000e-004	5.5000e-004	0.0000	3.0214	3.0214	2.6000e-004	0.0000	3.0279

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	7.4000e-004	2.6000e-004	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3376	0.3376	4.0000e-005	5.0000e-005	0.3547
Vendor	1.0000e-005	2.2000e-004	9.0000e-005	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1039	0.1039	1.0000e-005	2.0000e-005	0.1085
Worker	8.0000e-005	5.0000e-005	7.6000e-004	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2342	0.2342	0.0000	1.0000e-005	0.2359
Total	1.0000e-004	1.0100e-003	1.1100e-003	0.0000	4.7000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.6757	0.6757	5.0000e-005	8.0000e-005	0.6991

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

3.4 Reservoir Construction: Concrete Formwork - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0533	0.4438	0.6055	1.1300e-003		0.0182	0.0182		0.0179	0.0179	0.0000	97.6910	97.6910	8.4700e-003	0.0000	97.9028
Total	0.0533	0.4438	0.6055	1.1300e-003		0.0182	0.0182		0.0179	0.0179	0.0000	97.6910	97.6910	8.4700e-003	0.0000	97.9028

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	3.8000e-004	0.0236	8.4500e-003	1.0000e-004	3.3300e-003	1.5000e-004	3.4900e-003	9.1000e-004	1.5000e-004	1.0600e-003	0.0000	10.7183	10.7183	1.1800e-003	1.7200e-003	11.2613
Vendor	1.8000e-004	7.0100e-003	2.8200e-003	3.0000e-005	1.2200e-003	4.0000e-005	1.2600e-003	3.5000e-004	4.0000e-005	3.9000e-004	0.0000	3.2949	3.2949	2.1000e-004	4.8000e-004	3.4430
Worker	2.3100e-003	1.4500e-003	0.0233	8.0000e-005	0.0107	5.0000e-005	0.0107	2.8300e-003	4.0000e-005	2.8700e-003	0.0000	7.3404	7.3404	1.4000e-004	1.6000e-004	7.3925
Total	2.8700e-003	0.0320	0.0346	2.1000e-004	0.0152	2.4000e-004	0.0155	4.0900e-003	2.3000e-004	4.3200e-003	0.0000	21.3536	21.3536	1.5300e-003	2.3600e-003	22.0967

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

3.4 Reservoir Construction: Concrete Formwork - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0533	0.4438	0.6055	1.1300e-003		0.0182	0.0182		0.0179	0.0179	0.0000	97.6909	97.6909	8.4700e-003	0.0000	97.9026
Total	0.0533	0.4438	0.6055	1.1300e-003		0.0182	0.0182		0.0179	0.0179	0.0000	97.6909	97.6909	8.4700e-003	0.0000	97.9026

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	3.8000e-004	0.0236	8.4500e-003	1.0000e-004	3.3300e-003	1.5000e-004	3.4900e-003	9.1000e-004	1.5000e-004	1.0600e-003	0.0000	10.7183	10.7183	1.1800e-003	1.7200e-003	11.2613
Vendor	1.8000e-004	7.0100e-003	2.8200e-003	3.0000e-005	1.2200e-003	4.0000e-005	1.2600e-003	3.5000e-004	4.0000e-005	3.9000e-004	0.0000	3.2949	3.2949	2.1000e-004	4.8000e-004	3.4430
Worker	2.3100e-003	1.4500e-003	0.0233	8.0000e-005	0.0107	5.0000e-005	0.0107	2.8300e-003	4.0000e-005	2.8700e-003	0.0000	7.3404	7.3404	1.4000e-004	1.6000e-004	7.3925
Total	2.8700e-003	0.0320	0.0346	2.1000e-004	0.0152	2.4000e-004	0.0155	4.0900e-003	2.3000e-004	4.3200e-003	0.0000	21.3536	21.3536	1.5300e-003	2.3600e-003	22.0967

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3.5 Pipeline Construction - 2026

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	6.2600e-003	0.0610	0.0934	1.4000e-004		2.5900e-003	2.5900e-003		2.4500e-003	2.4500e-003	0.0000	12.5975	12.5975	2.5600e-003	0.0000	12.6614
Total	6.2600e-003	0.0610	0.0934	1.4000e-004		2.5900e-003	2.5900e-003		2.4500e-003	2.4500e-003	0.0000	12.5975	12.5975	2.5600e-003	0.0000	12.6614

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	6.0000e-005	3.6400e-003	1.3100e-003	2.0000e-005	5.1000e-004	2.0000e-005	5.4000e-004	1.4000e-004	2.0000e-005	1.6000e-004	0.0000	1.6575	1.6575	1.8000e-004	2.7000e-004	1.7414
Vendor	3.0000e-005	1.0800e-003	4.4000e-004	1.0000e-005	1.9000e-004	1.0000e-005	1.9000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.5095	0.5095	3.0000e-005	7.0000e-005	0.5324
Worker	3.6000e-004	2.2000e-004	3.6100e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.4000e-004	0.0000	1.1351	1.1351	2.0000e-005	3.0000e-005	1.1432
Total	4.5000e-004	4.9400e-003	5.3600e-003	4.0000e-005	2.3500e-003	4.0000e-005	2.3800e-003	6.3000e-004	4.0000e-005	6.6000e-004	0.0000	3.3021	3.3021	2.3000e-004	3.7000e-004	3.4170

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

3.5 Pipeline Construction - 2026

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	6.2600e-003	0.0610	0.0934	1.4000e-004		2.5900e-003	2.5900e-003		2.4500e-003	2.4500e-003	0.0000	12.5975	12.5975	2.5600e-003	0.0000	12.6614
Total	6.2600e-003	0.0610	0.0934	1.4000e-004		2.5900e-003	2.5900e-003		2.4500e-003	2.4500e-003	0.0000	12.5975	12.5975	2.5600e-003	0.0000	12.6614

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	6.0000e-005	3.6400e-003	1.3100e-003	2.0000e-005	5.1000e-004	2.0000e-005	5.4000e-004	1.4000e-004	2.0000e-005	1.6000e-004	0.0000	1.6575	1.6575	1.8000e-004	2.7000e-004	1.7414
Vendor	3.0000e-005	1.0800e-003	4.4000e-004	1.0000e-005	1.9000e-004	1.0000e-005	1.9000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.5095	0.5095	3.0000e-005	7.0000e-005	0.5324
Worker	3.6000e-004	2.2000e-004	3.6100e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.4000e-004	0.0000	1.1351	1.1351	2.0000e-005	3.0000e-005	1.1432
Total	4.5000e-004	4.9400e-003	5.3600e-003	4.0000e-005	2.3500e-003	4.0000e-005	2.3800e-003	6.3000e-004	4.0000e-005	6.6000e-004	0.0000	3.3021	3.3021	2.3000e-004	3.7000e-004	3.4170

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

3.6 Reservoir Construction: Concrete Pouring - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0190	0.1361	0.1753	4.9000e-004		5.5400e-003	5.5400e-003		5.1900e-003	5.1900e-003	0.0000	42.8759	42.8759	0.0118	0.0000	43.1720
Total	0.0190	0.1361	0.1753	4.9000e-004		5.5400e-003	5.5400e-003		5.1900e-003	5.1900e-003	0.0000	42.8759	42.8759	0.0118	0.0000	43.1720

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	1.6000e-004	9.7200e-003	3.4900e-003	4.0000e-005	1.3700e-003	6.0000e-005	1.4400e-003	3.8000e-004	6.0000e-005	4.4000e-004	0.0000	4.4199	4.4199	4.9000e-004	7.1000e-004	4.6438
Vendor	8.0000e-005	2.8900e-003	1.1600e-003	1.0000e-005	5.0000e-004	2.0000e-005	5.2000e-004	1.5000e-004	1.0000e-005	1.6000e-004	0.0000	1.3587	1.3587	9.0000e-005	2.0000e-004	1.4198
Worker	9.5000e-004	6.0000e-004	9.6300e-003	3.0000e-005	4.3900e-003	2.0000e-005	4.4100e-003	1.1700e-003	2.0000e-005	1.1800e-003	0.0000	3.0270	3.0270	6.0000e-005	7.0000e-005	3.0485
Total	1.1900e-003	0.0132	0.0143	8.0000e-005	6.2600e-003	1.0000e-004	6.3700e-003	1.7000e-003	9.0000e-005	1.7800e-003	0.0000	8.8056	8.8056	6.4000e-004	9.8000e-004	9.1121

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3.6 Reservoir Construction: Concrete Pouring - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0190	0.1361	0.1753	4.9000e-004		5.5400e-003	5.5400e-003		5.1900e-003	5.1900e-003	0.0000	42.8759	42.8759	0.0118	0.0000	43.1720
Total	0.0190	0.1361	0.1753	4.9000e-004		5.5400e-003	5.5400e-003		5.1900e-003	5.1900e-003	0.0000	42.8759	42.8759	0.0118	0.0000	43.1720

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	1.6000e-004	9.7200e-003	3.4900e-003	4.0000e-005	1.3700e-003	6.0000e-005	1.4400e-003	3.8000e-004	6.0000e-005	4.4000e-004	0.0000	4.4199	4.4199	4.9000e-004	7.1000e-004	4.6438
Vendor	8.0000e-005	2.8900e-003	1.1600e-003	1.0000e-005	5.0000e-004	2.0000e-005	5.2000e-004	1.5000e-004	1.0000e-005	1.6000e-004	0.0000	1.3587	1.3587	9.0000e-005	2.0000e-004	1.4198
Worker	9.5000e-004	6.0000e-004	9.6300e-003	3.0000e-005	4.3900e-003	2.0000e-005	4.4100e-003	1.1700e-003	2.0000e-005	1.1800e-003	0.0000	3.0270	3.0270	6.0000e-005	7.0000e-005	3.0485
Total	1.1900e-003	0.0132	0.0143	8.0000e-005	6.2600e-003	1.0000e-004	6.3700e-003	1.7000e-003	9.0000e-005	1.7800e-003	0.0000	8.8056	8.8056	6.4000e-004	9.8000e-004	9.1121

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3.7 Site Improvement - 2026

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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0200e-003	0.0184	0.0279	5.0000e-005		8.0000e-004	8.0000e-004		7.6000e-004	7.6000e-004	0.0000	3.8990	3.8990	8.1000e-004	0.0000	3.9193
Total	2.0200e-003	0.0184	0.0279	5.0000e-005	2.7000e-004	8.0000e-004	1.0700e-003	3.0000e-005	7.6000e-004	7.9000e-004	0.0000	3.8990	3.8990	8.1000e-004	0.0000	3.9193

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	4.0000e-005	2.4300e-003	8.7000e-004	1.0000e-005	3.4000e-004	2.0000e-005	3.6000e-004	9.0000e-005	2.0000e-005	1.1000e-004	0.0000	1.1050	1.1050	1.2000e-004	1.8000e-004	1.1610
Vendor	2.0000e-005	7.2000e-004	2.9000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.3397	0.3397	2.0000e-005	5.0000e-005	0.3549
Worker	2.4000e-004	1.5000e-004	2.4100e-003	1.0000e-005	1.1000e-003	0.0000	1.1000e-003	2.9000e-004	0.0000	3.0000e-004	0.0000	0.7567	0.7567	1.0000e-005	2.0000e-005	0.7621
Total	3.0000e-004	3.3000e-003	3.5700e-003	2.0000e-005	1.5700e-003	2.0000e-005	1.5900e-003	4.2000e-004	2.0000e-005	4.5000e-004	0.0000	2.2014	2.2014	1.5000e-004	2.5000e-004	2.2780

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3.7 Site Improvement - 2026

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					1.2000e-004	0.0000	1.2000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0200e-003	0.0184	0.0279	5.0000e-005		8.0000e-004	8.0000e-004		7.6000e-004	7.6000e-004	0.0000	3.8989	3.8989	8.1000e-004	0.0000	3.9193
Total	2.0200e-003	0.0184	0.0279	5.0000e-005	1.2000e-004	8.0000e-004	9.2000e-004	1.0000e-005	7.6000e-004	7.7000e-004	0.0000	3.8989	3.8989	8.1000e-004	0.0000	3.9193

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	4.0000e-005	2.4300e-003	8.7000e-004	1.0000e-005	3.4000e-004	2.0000e-005	3.6000e-004	9.0000e-005	2.0000e-005	1.1000e-004	0.0000	1.1050	1.1050	1.2000e-004	1.8000e-004	1.1610
Vendor	2.0000e-005	7.2000e-004	2.9000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.3397	0.3397	2.0000e-005	5.0000e-005	0.3549
Worker	2.4000e-004	1.5000e-004	2.4100e-003	1.0000e-005	1.1000e-003	0.0000	1.1000e-003	2.9000e-004	0.0000	3.0000e-004	0.0000	0.7567	0.7567	1.0000e-005	2.0000e-005	0.7621
Total	3.0000e-004	3.3000e-003	3.5700e-003	2.0000e-005	1.5700e-003	2.0000e-005	1.5900e-003	4.2000e-004	2.0000e-005	4.5000e-004	0.0000	2.2014	2.2014	1.5000e-004	2.5000e-004	2.2780

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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	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	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	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

Land Use	Miles			Trip %			Trip Purpose %		
	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	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.548528	0.060762	0.184345	0.125235	0.024171	0.006748	0.014885	0.004939	0.000666	0.000374	0.024916	0.000699	0.003732

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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

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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

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0122	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Unmitigated	0.0122	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.3900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0108					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	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Total	0.0122	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Annual

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

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	1.3900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0108					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	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Total	0.0122	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

7.0 Water Detail

7.1 Mitigation Measures Water

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Annual

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

	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

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Annual

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

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

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Annual

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

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
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Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Annual

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

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

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

**Smith Reservoir Replacement Project - Phase 2 Construction
Orange County, Winter**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.70	User Defined Unit	1.70	3,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2026
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - Provided by Applicant
- Construction Phase - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Trips and VMT - Provided by Applicant
- Demolition - Provided by Applicant

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

Grading - Provided by Applicant

Vehicle Trips - 1 worker/day

Energy Use - Provided by Applicant

Water And Wastewater - Provided by Applicant

Construction Off-road Equipment Mitigation - Provided by Applicant

Operational Off-Road Equipment - Provided by Applicant

Stationary Sources - Emergency Generators and Fire Pumps - Provided by Applicant

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	100.00
tblConstructionPhase	NumDays	200.00	30.00
tblConstructionPhase	NumDays	200.00	40.00
tblConstructionPhase	NumDays	2.00	10.00
tblConstructionPhase	NumDays	2.00	20.00
tblLandUse	LandUseSquareFeet	0.00	3,000.00
tblLandUse	LotAcreage	0.00	1.70
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	6.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblTripsAndVMT	HaulingTripNumber	208.00	300.00
tblTripsAndVMT	HaulingTripNumber	0.00	80.00
tblTripsAndVMT	HaulingTripNumber	0.00	400.00
tblTripsAndVMT	HaulingTripNumber	0.00	60.00

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

tbITripsAndVMT	HaulingTripNumber	0.00	160.00
tbITripsAndVMT	HaulingTripNumber	0.00	40.00
tbITripsAndVMT	VendorTripNumber	0.00	4.00
tbITripsAndVMT	VendorTripNumber	0.00	2.00
tbITripsAndVMT	VendorTripNumber	0.00	4.00
tbITripsAndVMT	VendorTripNumber	0.00	2.00
tbITripsAndVMT	WorkerTripNumber	13.00	20.00
tbITripsAndVMT	WorkerTripNumber	5.00	10.00
tbITripsAndVMT	WorkerTripNumber	1.00	20.00
tbITripsAndVMT	WorkerTripNumber	1.00	10.00
tbITripsAndVMT	WorkerTripNumber	1.00	20.00
tbITripsAndVMT	WorkerTripNumber	15.00	10.00
tb\VehicleTrips	CW_TTP	0.00	100.00
tb\VehicleTrips	PR_TP	0.00	100.00

2.0 Emissions Summary

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

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					
2025	1.5803	13.9527	18.5831	0.0435	2.9833	0.5350	3.3829	0.5390	0.5206	0.9167	0.0000	4,430.0678	4,430.0678	0.8313	0.2351	4,520.8988
2026	1.6123	14.2011	19.7709	0.0406	0.5702	0.5558	1.1051	0.1536	0.5397	0.6741	0.0000	4,017.9830	4,017.9830	0.6877	0.1339	4,068.3900
Maximum	1.6123	14.2011	19.7709	0.0435	2.9833	0.5558	3.3829	0.5390	0.5397	0.9167	0.0000	4,430.0678	4,430.0678	0.8313	0.2351	4,520.8988

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					
2025	1.5803	13.9527	18.5831	0.0435	1.7475	0.5350	2.1471	0.3519	0.5206	0.7296	0.0000	4,430.0678	4,430.0678	0.8313	0.2351	4,520.8988
2026	1.6123	14.2011	19.7709	0.0406	0.5702	0.5558	1.1051	0.1536	0.5397	0.6741	0.0000	4,017.9830	4,017.9830	0.6877	0.1339	4,068.3900
Maximum	1.6123	14.2011	19.7709	0.0435	1.7475	0.5558	2.1471	0.3519	0.5397	0.7296	0.0000	4,430.0678	4,430.0678	0.8313	0.2351	4,520.8988

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	34.78	0.00	27.54	27.02	0.00	11.76	0.00	0.00	0.00	0.00	0.00	0.00

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
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	0.0000
Total	0.0670	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000	0.0000	4.0000e-004

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	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
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	0.0000
Total	0.0670	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000	0.0000	4.0000e-004

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
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	Demolition	Demolition	12/1/2025	12/26/2025	5	20	
2	Pavement Removal	Site Preparation	12/22/2025	1/2/2026	5	10	
3	Reservoir Construction: Concrete Formwork	Building Construction	12/29/2025	5/15/2026	5	100	
4	Pipeline Construction	Building Construction	2/2/2026	3/13/2026	5	30	
5	Reservoir Construction: Concrete Pouring	Building Construction	5/18/2026	7/10/2026	5	40	
6	Site Improvement	Site Preparation	7/13/2026	8/7/2026	5	20	

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
Demolition	Excavators	2	5.00	158	0.38
Demolition	Generator Sets	1	5.00	84	0.74
Demolition	Off-Highway Trucks	1	5.00	402	0.38
Demolition	Tractors/Loaders/Backhoes	1	5.00	97	0.37
Pavement Removal	Concrete/Industrial Saws	1	5.00	81	0.73

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

Pavement Removal	Other Construction Equipment	1	5.00	172	0.42
Reservoir Construction: Concrete Formwork	Concrete/Industrial Saws	4	5.00	81	0.73
Reservoir Construction: Concrete Formwork	Cranes	1	5.00	231	0.29
Reservoir Construction: Concrete Formwork	Generator Sets	1	5.00	84	0.74
Pipeline Construction	Generator Sets	1	5.00	84	0.74
Pipeline Construction	Rollers	1	5.00	80	0.38
Pipeline Construction	Tractors/Loaders/Backhoes	2	5.00	97	0.37
Reservoir Construction: Concrete Pouring	Generator Sets	1	5.00	84	0.74
Reservoir Construction: Concrete Pouring	Off-Highway Trucks	2	5.00	402	0.38
Reservoir Construction: Concrete Pouring	Other Construction Equipment	1	5.00	172	0.42
Site Improvement	Cement and Mortar Mixers	1	2.00	9	0.56
Site Improvement	Generator Sets	1	2.00	84	0.74
Site Improvement	Pavers	1	2.00	130	0.42
Site Improvement	Plate Compactors	1	2.00	8	0.43
Site Improvement	Rollers	1	2.00	80	0.38
Site Improvement	Tractors/Loaders/Backhoes	1	2.00	97	0.37

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
Demolition	5	20.00	0.00	300.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pavement Removal	2	10.00	0.00	80.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Reservoir Construction: Concrete	6	20.00	4.00	400.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Construction	4	10.00	2.00	60.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Reservoir Construction: Concrete	4	20.00	4.00	160.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Improvement	6	10.00	2.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

Water Exposed Area

3.2 Demolition - 2025

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					2.2469	0.0000	2.2469	0.3402	0.0000	0.3402			0.0000			0.0000
Off-Road	0.7565	5.6499	9.7459	0.0208		0.2323	0.2323		0.2185	0.2185		2,003.4010	2,003.4010	0.5364		2,016.8108
Total	0.7565	5.6499	9.7459	0.0208	2.2469	0.2323	2.4792	0.3402	0.2185	0.5587		2,003.4010	2,003.4010	0.5364		2,016.8108

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

3.2 Demolition - 2025

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	0.0286	1.8307	0.6461	8.1200e-003	0.2616	0.0121	0.2736	0.0716	0.0115	0.0832		930.8837	930.8837	0.0994	0.1495	977.9271
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
Worker	0.0549	0.0322	0.4979	1.6800e-003	0.2236	1.0300e-003	0.2246	0.0593	9.5000e-004	0.0602		169.8367	169.8367	3.5400e-003	3.8500e-003	171.0738
Total	0.0836	1.8629	1.1440	9.8000e-003	0.4851	0.0131	0.4982	0.1309	0.0125	0.1434		1,100.7205	1,100.7205	0.1029	0.1534	1,149.0009

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					1.0111	0.0000	1.0111	0.1531	0.0000	0.1531			0.0000			0.0000
Off-Road	0.7565	5.6499	9.7459	0.0208		0.2323	0.2323		0.2185	0.2185	0.0000	2,003.4010	2,003.4010	0.5364		2,016.8108
Total	0.7565	5.6499	9.7459	0.0208	1.0111	0.2323	1.2434	0.1531	0.2185	0.3716	0.0000	2,003.4010	2,003.4010	0.5364		2,016.8108

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

3.2 Demolition - 2025

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	0.0286	1.8307	0.6461	8.1200e-003	0.2616	0.0121	0.2736	0.0716	0.0115	0.0832		930.8837	930.8837	0.0994	0.1495	977.9271
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
Worker	0.0549	0.0322	0.4979	1.6800e-003	0.2236	1.0300e-003	0.2246	0.0593	9.5000e-004	0.0602		169.8367	169.8367	3.5400e-003	3.8500e-003	171.0738
Total	0.0836	1.8629	1.1440	9.8000e-003	0.4851	0.0131	0.4982	0.1309	0.0125	0.1434		1,100.7205	1,100.7205	0.1029	0.1534	1,149.0009

3.3 Pavement Removal - 2025

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.3714	3.1442	4.7756	7.7800e-003		0.1473	0.1473		0.1401	0.1401		744.5566	744.5566	0.1373		747.9891
Total	0.3714	3.1442	4.7756	7.7800e-003	0.0000	0.1473	0.1473	0.0000	0.1401	0.1401		744.5566	744.5566	0.1373		747.9891

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

3.3 Pavement Removal - 2025

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	0.0153	0.9764	0.3446	4.3300e-003	0.1395	6.4300e-003	0.1459	0.0382	6.1500e-003	0.0444		496.4713	496.4713	0.0530	0.0798	521.5611
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
Worker	0.0275	0.0161	0.2489	8.4000e-004	0.1118	5.2000e-004	0.1123	0.0296	4.8000e-004	0.0301		84.9184	84.9184	1.7700e-003	1.9300e-003	85.5369
Total	0.0427	0.9925	0.5935	5.1700e-003	0.2513	6.9500e-003	0.2582	0.0678	6.6300e-003	0.0745		581.3897	581.3897	0.0548	0.0817	607.0980

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.3714	3.1442	4.7756	7.7800e-003		0.1473	0.1473		0.1401	0.1401	0.0000	744.5566	744.5566	0.1373		747.9891
Total	0.3714	3.1442	4.7756	7.7800e-003	0.0000	0.1473	0.1473	0.0000	0.1401	0.1401	0.0000	744.5566	744.5566	0.1373		747.9891

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

3.3 Pavement Removal - 2025

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	0.0153	0.9764	0.3446	4.3300e-003	0.1395	6.4300e-003	0.1459	0.0382	6.1500e-003	0.0444		496.4713	496.4713	0.0530	0.0798	521.5611
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
Worker	0.0275	0.0161	0.2489	8.4000e-004	0.1118	5.2000e-004	0.1123	0.0296	4.8000e-004	0.0301		84.9184	84.9184	1.7700e-003	1.9300e-003	85.5369
Total	0.0427	0.9925	0.5935	5.1700e-003	0.2513	6.9500e-003	0.2582	0.0678	6.6300e-003	0.0745		581.3897	581.3897	0.0548	0.0817	607.0980

3.3 Pavement Removal - 2026

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.3714	3.1442	4.7756	7.7800e-003		0.1473	0.1473		0.1401	0.1401		744.5566	744.5566	0.1373		747.9891
Total	0.3714	3.1442	4.7756	7.7800e-003	0.0000	0.1473	0.1473	0.0000	0.1401	0.1401		744.5566	744.5566	0.1373		747.9891

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

3.3 Pavement Removal - 2026

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	0.0150	0.9630	0.3507	4.2400e-003	0.1395	6.4000e-003	0.1459	0.0382	6.1200e-003	0.0443		487.4822	487.4822	0.0537	0.0784	512.1743
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
Worker	0.0261	0.0147	0.2354	8.1000e-004	0.1118	4.9000e-004	0.1123	0.0296	4.5000e-004	0.0301		82.3072	82.3072	1.6200e-003	1.8300e-003	82.8922
Total	0.0411	0.9777	0.5861	5.0500e-003	0.2513	6.8900e-003	0.2582	0.0678	6.5700e-003	0.0744		569.7894	569.7894	0.0553	0.0802	595.0665

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.3714	3.1442	4.7756	7.7800e-003		0.1473	0.1473		0.1401	0.1401	0.0000	744.5566	744.5566	0.1373		747.9891
Total	0.3714	3.1442	4.7756	7.7800e-003	0.0000	0.1473	0.1473	0.0000	0.1401	0.1401	0.0000	744.5566	744.5566	0.1373		747.9891

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

3.3 Pavement Removal - 2026

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	0.0150	0.9630	0.3507	4.2400e-003	0.1395	6.4000e-003	0.1459	0.0382	6.1200e-003	0.0443		487.4822	487.4822	0.0537	0.0784	512.1743
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
Worker	0.0261	0.0147	0.2354	8.1000e-004	0.1118	4.9000e-004	0.1123	0.0296	4.5000e-004	0.0301		82.3072	82.3072	1.6200e-003	1.8300e-003	82.8922
Total	0.0411	0.9777	0.5861	5.0500e-003	0.2513	6.8900e-003	0.2582	0.0678	6.5700e-003	0.0744		569.7894	569.7894	0.0553	0.0802	595.0665

3.4 Reservoir Construction: Concrete Formwork - 2025

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	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691		2,220.3272	2,220.3272	0.1925		2,225.1404
Total	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691		2,220.3272	2,220.3272	0.1925		2,225.1404

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

3.4 Reservoir Construction: Concrete Formwork - 2025

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	7.6300e-003	0.4882	0.1723	2.1700e-003	0.0698	3.2200e-003	0.0730	0.0191	3.0800e-003	0.0222		248.2357	248.2357	0.0265	0.0399	260.7806
Vendor	3.7800e-003	0.1453	0.0592	6.9000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.3000e-004	8.0900e-003		76.4164	76.4164	4.7900e-003	0.0111	79.8337
Worker	0.0549	0.0322	0.4979	1.6800e-003	0.2236	1.0300e-003	0.2246	0.0593	9.5000e-004	0.0602		169.8367	169.8367	3.5400e-003	3.8500e-003	171.0738
Total	0.0664	0.6657	0.7294	4.5400e-003	0.3189	5.0100e-003	0.3239	0.0858	4.7600e-003	0.0905		494.4888	494.4888	0.0348	0.0548	511.6881

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	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691	0.0000	2,220.3272	2,220.3272	0.1925		2,225.1404
Total	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691	0.0000	2,220.3272	2,220.3272	0.1925		2,225.1404

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

3.4 Reservoir Construction: Concrete Formwork - 2025

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	7.6300e-003	0.4882	0.1723	2.1700e-003	0.0698	3.2200e-003	0.0730	0.0191	3.0800e-003	0.0222		248.2357	248.2357	0.0265	0.0399	260.7806
Vendor	3.7800e-003	0.1453	0.0592	6.9000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.3000e-004	8.0900e-003		76.4164	76.4164	4.7900e-003	0.0111	79.8337
Worker	0.0549	0.0322	0.4979	1.6800e-003	0.2236	1.0300e-003	0.2246	0.0593	9.5000e-004	0.0602		169.8367	169.8367	3.5400e-003	3.8500e-003	171.0738
Total	0.0664	0.6657	0.7294	4.5400e-003	0.3189	5.0100e-003	0.3239	0.0858	4.7600e-003	0.0905		494.4888	494.4888	0.0348	0.0548	511.6881

3.4 Reservoir Construction: Concrete Formwork - 2026

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	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691		2,220.3272	2,220.3272	0.1925		2,225.1404
Total	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691		2,220.3272	2,220.3272	0.1925		2,225.1404

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

3.4 Reservoir Construction: Concrete Formwork - 2026

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	7.5000e-003	0.4815	0.1753	2.1200e-003	0.0698	3.2000e-003	0.0730	0.0191	3.0600e-003	0.0222		243.7411	243.7411	0.0268	0.0392	256.0872
Vendor	3.7200e-003	0.1443	0.0590	6.8000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.3000e-004	8.0900e-003		74.9542	74.9542	4.8500e-003	0.0109	78.3224
Worker	0.0522	0.0294	0.4709	1.6300e-003	0.2236	9.8000e-004	0.2245	0.0593	9.1000e-004	0.0602		164.6145	164.6145	3.2400e-003	3.6500e-003	165.7844
Total	0.0635	0.6552	0.7052	4.4300e-003	0.3189	4.9400e-003	0.3238	0.0858	4.7000e-003	0.0904		483.3098	483.3098	0.0349	0.0537	500.1940

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	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691	0.0000	2,220.3272	2,220.3272	0.1925		2,225.1404
Total	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691	0.0000	2,220.3272	2,220.3272	0.1925		2,225.1404

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

3.4 Reservoir Construction: Concrete Formwork - 2026

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	7.5000e-003	0.4815	0.1753	2.1200e-003	0.0698	3.2000e-003	0.0730	0.0191	3.0600e-003	0.0222		243.7411	243.7411	0.0268	0.0392	256.0872
Vendor	3.7200e-003	0.1443	0.0590	6.8000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.3000e-004	8.0900e-003		74.9542	74.9542	4.8500e-003	0.0109	78.3224
Worker	0.0522	0.0294	0.4709	1.6300e-003	0.2236	9.8000e-004	0.2245	0.0593	9.1000e-004	0.0602		164.6145	164.6145	3.2400e-003	3.6500e-003	165.7844
Total	0.0635	0.6552	0.7052	4.4300e-003	0.3189	4.9400e-003	0.3238	0.0858	4.7000e-003	0.0904		483.3098	483.3098	0.0349	0.0537	500.1940

3.5 Pipeline Construction - 2026

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	0.4173	4.0679	6.2285	9.6500e-003		0.1726	0.1726		0.1636	0.1636		925.7551	925.7551	0.1879		930.4516
Total	0.4173	4.0679	6.2285	9.6500e-003		0.1726	0.1726		0.1636	0.1636		925.7551	925.7551	0.1879		930.4516

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

3.5 Pipeline Construction - 2026

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	3.7500e-003	0.2408	0.0877	1.0600e-003	0.0349	1.6000e-003	0.0365	9.5500e-003	1.5300e-003	0.0111		121.8706	121.8706	0.0134	0.0196	128.0436
Vendor	1.8600e-003	0.0721	0.0295	3.4000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		37.4771	37.4771	2.4200e-003	5.4500e-003	39.1612
Worker	0.0261	0.0147	0.2354	8.1000e-004	0.1118	4.9000e-004	0.1123	0.0296	4.5000e-004	0.0301		82.3072	82.3072	1.6200e-003	1.8300e-003	82.8922
Total	0.0317	0.3276	0.3526	2.2100e-003	0.1595	2.4700e-003	0.1619	0.0429	2.3400e-003	0.0452		241.6549	241.6549	0.0175	0.0269	250.0970

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	0.4173	4.0679	6.2285	9.6500e-003		0.1726	0.1726		0.1636	0.1636	0.0000	925.7551	925.7551	0.1879		930.4516
Total	0.4173	4.0679	6.2285	9.6500e-003		0.1726	0.1726		0.1636	0.1636	0.0000	925.7551	925.7551	0.1879		930.4516

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

3.5 Pipeline Construction - 2026

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	3.7500e-003	0.2408	0.0877	1.0600e-003	0.0349	1.6000e-003	0.0365	9.5500e-003	1.5300e-003	0.0111		121.8706	121.8706	0.0134	0.0196	128.0436
Vendor	1.8600e-003	0.0721	0.0295	3.4000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		37.4771	37.4771	2.4200e-003	5.4500e-003	39.1612
Worker	0.0261	0.0147	0.2354	8.1000e-004	0.1118	4.9000e-004	0.1123	0.0296	4.5000e-004	0.0301		82.3072	82.3072	1.6200e-003	1.8300e-003	82.8922
Total	0.0317	0.3276	0.3526	2.2100e-003	0.1595	2.4700e-003	0.1619	0.0429	2.3400e-003	0.0452		241.6549	241.6549	0.0175	0.0269	250.0970

3.6 Reservoir Construction: Concrete Pouring - 2026

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	0.9504	6.8057	8.7666	0.0245		0.2769	0.2769		0.2595	0.2595		2,363.1315	2,363.1315	0.6527		2,379.4498
Total	0.9504	6.8057	8.7666	0.0245		0.2769	0.2769		0.2595	0.2595		2,363.1315	2,363.1315	0.6527		2,379.4498

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

3.6 Reservoir Construction: Concrete Pouring - 2026

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	7.5000e-003	0.4815	0.1753	2.1200e-003	0.0698	3.2000e-003	0.0730	0.0191	3.0600e-003	0.0222		243.7411	243.7411	0.0268	0.0392	256.0872
Vendor	3.7200e-003	0.1443	0.0590	6.8000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.3000e-004	8.0900e-003		74.9542	74.9542	4.8500e-003	0.0109	78.3224
Worker	0.0522	0.0294	0.4709	1.6300e-003	0.2236	9.8000e-004	0.2245	0.0593	9.1000e-004	0.0602		164.6145	164.6145	3.2400e-003	3.6500e-003	165.7844
Total	0.0635	0.6552	0.7052	4.4300e-003	0.3189	4.9400e-003	0.3238	0.0858	4.7000e-003	0.0904		483.3098	483.3098	0.0349	0.0537	500.1940

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	0.9504	6.8057	8.7666	0.0245		0.2769	0.2769		0.2595	0.2595	0.0000	2,363.1314	2,363.1314	0.6527		2,379.4498
Total	0.9504	6.8057	8.7666	0.0245		0.2769	0.2769		0.2595	0.2595	0.0000	2,363.1314	2,363.1314	0.6527		2,379.4498

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

3.6 Reservoir Construction: Concrete Pouring - 2026

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	7.5000e-003	0.4815	0.1753	2.1200e-003	0.0698	3.2000e-003	0.0730	0.0191	3.0600e-003	0.0222		243.7411	243.7411	0.0268	0.0392	256.0872
Vendor	3.7200e-003	0.1443	0.0590	6.8000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.3000e-004	8.0900e-003		74.9542	74.9542	4.8500e-003	0.0109	78.3224
Worker	0.0522	0.0294	0.4709	1.6300e-003	0.2236	9.8000e-004	0.2245	0.0593	9.1000e-004	0.0602		164.6145	164.6145	3.2400e-003	3.6500e-003	165.7844
Total	0.0635	0.6552	0.7052	4.4300e-003	0.3189	4.9400e-003	0.3238	0.0858	4.7000e-003	0.0904		483.3098	483.3098	0.0349	0.0537	500.1940

3.7 Site Improvement - 2026

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					0.0265	0.0000	0.0265	2.8600e-003	0.0000	2.8600e-003			0.0000			0.0000
Off-Road	0.2020	1.8440	2.7876	4.5500e-003		0.0801	0.0801		0.0761	0.0761		429.7853	429.7853	0.0897		432.0282
Total	0.2020	1.8440	2.7876	4.5500e-003	0.0265	0.0801	0.1066	2.8600e-003	0.0761	0.0789		429.7853	429.7853	0.0897		432.0282

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

3.7 Site Improvement - 2026

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	3.7500e-003	0.2408	0.0877	1.0600e-003	0.0349	1.6000e-003	0.0365	9.5500e-003	1.5300e-003	0.0111		121.8706	121.8706	0.0134	0.0196	128.0436
Vendor	1.8600e-003	0.0721	0.0295	3.4000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		37.4771	37.4771	2.4200e-003	5.4500e-003	39.1612
Worker	0.0261	0.0147	0.2354	8.1000e-004	0.1118	4.9000e-004	0.1123	0.0296	4.5000e-004	0.0301		82.3072	82.3072	1.6200e-003	1.8300e-003	82.8922
Total	0.0317	0.3276	0.3526	2.2100e-003	0.1595	2.4700e-003	0.1619	0.0429	2.3400e-003	0.0452		241.6549	241.6549	0.0175	0.0269	250.0970

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					0.0119	0.0000	0.0119	1.2900e-003	0.0000	1.2900e-003			0.0000			0.0000
Off-Road	0.2020	1.8440	2.7876	4.5500e-003		0.0801	0.0801		0.0761	0.0761	0.0000	429.7853	429.7853	0.0897		432.0282
Total	0.2020	1.8440	2.7876	4.5500e-003	0.0119	0.0801	0.0920	1.2900e-003	0.0761	0.0773	0.0000	429.7853	429.7853	0.0897		432.0282

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

3.7 Site Improvement - 2026

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	3.7500e-003	0.2408	0.0877	1.0600e-003	0.0349	1.6000e-003	0.0365	9.5500e-003	1.5300e-003	0.0111		121.8706	121.8706	0.0134	0.0196	128.0436
Vendor	1.8600e-003	0.0721	0.0295	3.4000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		37.4771	37.4771	2.4200e-003	5.4500e-003	39.1612
Worker	0.0261	0.0147	0.2354	8.1000e-004	0.1118	4.9000e-004	0.1123	0.0296	4.5000e-004	0.0301		82.3072	82.3072	1.6200e-003	1.8300e-003	82.8922
Total	0.0317	0.3276	0.3526	2.2100e-003	0.1595	2.4700e-003	0.1619	0.0429	2.3400e-003	0.0452		241.6549	241.6549	0.0175	0.0269	250.0970

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

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	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

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	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

Land Use	Miles			Trip %			Trip Purpose %		
	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	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.548528	0.060762	0.184345	0.125235	0.024171	0.006748	0.014885	0.004939	0.000666	0.000374	0.024916	0.000699	0.003732

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

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

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

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	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
Unmitigated	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

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	7.6200e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0594					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
Total	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

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	7.6200e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0594					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
Total	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Winter

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

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

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

**Smith Reservoir Replacement Project - Phase 2 Construction
Orange County, Summer**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.70	User Defined Unit	1.70	3,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2026
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - Provided by Applicant
- Construction Phase - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Off-road Equipment - Provided by Applicant
- Trips and VMT - Provided by Applicant
- Demolition - Provided by Applicant

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

Grading - Provided by Applicant

Vehicle Trips - 1 worker/day

Energy Use - Provided by Applicant

Water And Wastewater - Provided by Applicant

Construction Off-road Equipment Mitigation - Provided by Applicant

Operational Off-Road Equipment - Provided by Applicant

Stationary Sources - Emergency Generators and Fire Pumps - Provided by Applicant

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	100.00
tblConstructionPhase	NumDays	200.00	30.00
tblConstructionPhase	NumDays	200.00	40.00
tblConstructionPhase	NumDays	2.00	10.00
tblConstructionPhase	NumDays	2.00	20.00
tblLandUse	LandUseSquareFeet	0.00	3,000.00
tblLandUse	LotAcreage	0.00	1.70
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	6.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblTripsAndVMT	HaulingTripNumber	208.00	300.00
tblTripsAndVMT	HaulingTripNumber	0.00	80.00
tblTripsAndVMT	HaulingTripNumber	0.00	400.00
tblTripsAndVMT	HaulingTripNumber	0.00	60.00

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

tbITripsAndVMT	HaulingTripNumber	0.00	160.00
tbITripsAndVMT	HaulingTripNumber	0.00	40.00
tbITripsAndVMT	VendorTripNumber	0.00	4.00
tbITripsAndVMT	VendorTripNumber	0.00	2.00
tbITripsAndVMT	VendorTripNumber	0.00	4.00
tbITripsAndVMT	VendorTripNumber	0.00	2.00
tbITripsAndVMT	WorkerTripNumber	13.00	20.00
tbITripsAndVMT	WorkerTripNumber	5.00	10.00
tbITripsAndVMT	WorkerTripNumber	1.00	20.00
tbITripsAndVMT	WorkerTripNumber	1.00	10.00
tbITripsAndVMT	WorkerTripNumber	1.00	20.00
tbITripsAndVMT	WorkerTripNumber	15.00	10.00
tbIVehicleTrips	CW_TTP	0.00	100.00
tbIVehicleTrips	PR_TP	0.00	100.00

2.0 Emissions Summary

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

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					
2025	1.5744	13.8821	18.6296	0.0437	2.9833	0.5350	3.3829	0.5390	0.5206	0.9167	0.0000	4,441.475 4	4,441.475 4	0.8314	0.2345	4,532.139 5
2026	1.6059	14.1582	19.8159	0.0407	0.5702	0.5558	1.1050	0.1536	0.5397	0.6740	0.0000	4,029.502 1	4,029.502 1	0.6876	0.1335	4,079.770 3
Maximum	1.6059	14.1582	19.8159	0.0437	2.9833	0.5558	3.3829	0.5390	0.5397	0.9167	0.0000	4,441.475 4	4,441.475 4	0.8314	0.2345	4,532.139 5

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					
2025	1.5744	13.8821	18.6296	0.0437	1.7475	0.5350	2.1471	0.3519	0.5206	0.7295	0.0000	4,441.475 4	4,441.475 4	0.8314	0.2345	4,532.139 5
2026	1.6059	14.1582	19.8159	0.0407	0.5702	0.5558	1.1050	0.1536	0.5397	0.6740	0.0000	4,029.502 1	4,029.502 1	0.6876	0.1335	4,079.770 3
Maximum	1.6059	14.1582	19.8159	0.0437	1.7475	0.5558	2.1471	0.3519	0.5397	0.7295	0.0000	4,441.475 4	4,441.475 4	0.8314	0.2345	4,532.139 5

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	34.78	0.00	27.54	27.02	0.00	11.76	0.00	0.00	0.00	0.00	0.00	0.00

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
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	0.0000
Total	0.0670	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000	0.0000	4.0000e-004

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	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
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	0.0000
Total	0.0670	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000	0.0000	4.0000e-004

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
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	Demolition	Demolition	12/1/2025	12/26/2025	5	20	
2	Pavement Removal	Site Preparation	12/22/2025	1/2/2026	5	10	
3	Reservoir Construction: Concrete Formwork	Building Construction	12/29/2025	5/15/2026	5	100	
4	Pipeline Construction	Building Construction	2/2/2026	3/13/2026	5	30	
5	Reservoir Construction: Concrete Pouring	Building Construction	5/18/2026	7/10/2026	5	40	
6	Site Improvement	Site Preparation	7/13/2026	8/7/2026	5	20	

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
Demolition	Excavators	2	5.00	158	0.38
Demolition	Generator Sets	1	5.00	84	0.74
Demolition	Off-Highway Trucks	1	5.00	402	0.38
Demolition	Tractors/Loaders/Backhoes	1	5.00	97	0.37
Pavement Removal	Concrete/Industrial Saws	1	5.00	81	0.73

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

Pavement Removal	Other Construction Equipment	1	5.00	172	0.42
Reservoir Construction: Concrete Formwork	Concrete/Industrial Saws	4	5.00	81	0.73
Reservoir Construction: Concrete Formwork	Cranes	1	5.00	231	0.29
Reservoir Construction: Concrete Formwork	Generator Sets	1	5.00	84	0.74
Pipeline Construction	Generator Sets	1	5.00	84	0.74
Pipeline Construction	Rollers	1	5.00	80	0.38
Pipeline Construction	Tractors/Loaders/Backhoes	2	5.00	97	0.37
Reservoir Construction: Concrete Pouring	Generator Sets	1	5.00	84	0.74
Reservoir Construction: Concrete Pouring	Off-Highway Trucks	2	5.00	402	0.38
Reservoir Construction: Concrete Pouring	Other Construction Equipment	1	5.00	172	0.42
Site Improvement	Cement and Mortar Mixers	1	2.00	9	0.56
Site Improvement	Generator Sets	1	2.00	84	0.74
Site Improvement	Pavers	1	2.00	130	0.42
Site Improvement	Plate Compactors	1	2.00	8	0.43
Site Improvement	Rollers	1	2.00	80	0.38
Site Improvement	Tractors/Loaders/Backhoes	1	2.00	97	0.37

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
Demolition	5	20.00	0.00	300.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pavement Removal	2	10.00	0.00	80.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Reservoir Construction: Concrete	6	20.00	4.00	400.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Construction	4	10.00	2.00	60.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Reservoir Construction: Concrete	4	20.00	4.00	160.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Improvement	6	10.00	2.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

Water Exposed Area

3.2 Demolition - 2025

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					2.2469	0.0000	2.2469	0.3402	0.0000	0.3402			0.0000			0.0000
Off-Road	0.7565	5.6499	9.7459	0.0208		0.2323	0.2323		0.2185	0.2185		2,003.4010	2,003.4010	0.5364		2,016.8108
Total	0.7565	5.6499	9.7459	0.0208	2.2469	0.2323	2.4792	0.3402	0.2185	0.5587		2,003.4010	2,003.4010	0.5364		2,016.8108

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

3.2 Demolition - 2025

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	0.0305	1.7556	0.6396	8.1200e-003	0.2616	0.0120	0.2736	0.0716	0.0115	0.0831		930.0140	930.0140	0.0995	0.1494	977.0177
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
Worker	0.0500	0.0293	0.5335	1.7600e-003	0.2236	1.0300e-003	0.2246	0.0593	9.5000e-004	0.0602		178.3309	178.3309	3.4500e-003	3.6200e-003	179.4972
Total	0.0804	1.7849	1.1731	9.8800e-003	0.4851	0.0131	0.4982	0.1309	0.0125	0.1434		1,108.3449	1,108.3449	0.1029	0.1530	1,156.5149

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					1.0111	0.0000	1.0111	0.1531	0.0000	0.1531			0.0000			0.0000
Off-Road	0.7565	5.6499	9.7459	0.0208		0.2323	0.2323		0.2185	0.2185	0.0000	2,003.4010	2,003.4010	0.5364		2,016.8108
Total	0.7565	5.6499	9.7459	0.0208	1.0111	0.2323	1.2434	0.1531	0.2185	0.3716	0.0000	2,003.4010	2,003.4010	0.5364		2,016.8108

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

3.2 Demolition - 2025

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	0.0305	1.7556	0.6396	8.1200e-003	0.2616	0.0120	0.2736	0.0716	0.0115	0.0831		930.0140	930.0140	0.0995	0.1494	977.0177
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
Worker	0.0500	0.0293	0.5335	1.7600e-003	0.2236	1.0300e-003	0.2246	0.0593	9.5000e-004	0.0602		178.3309	178.3309	3.4500e-003	3.6200e-003	179.4972
Total	0.0804	1.7849	1.1731	9.8800e-003	0.4851	0.0131	0.4982	0.1309	0.0125	0.1434		1,108.3449	1,108.3449	0.1029	0.1530	1,156.5149

3.3 Pavement Removal - 2025

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.3714	3.1442	4.7756	7.7800e-003		0.1473	0.1473		0.1401	0.1401		744.5566	744.5566	0.1373		747.9891
Total	0.3714	3.1442	4.7756	7.7800e-003	0.0000	0.1473	0.1473	0.0000	0.1401	0.1401		744.5566	744.5566	0.1373		747.9891

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

3.3 Pavement Removal - 2025

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	0.0162	0.9363	0.3411	4.3300e-003	0.1395	6.4100e-003	0.1459	0.0382	6.1400e-003	0.0443		496.0075	496.0075	0.0531	0.0797	521.0761
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
Worker	0.0250	0.0147	0.2667	8.8000e-004	0.1118	5.2000e-004	0.1123	0.0296	4.8000e-004	0.0301		89.1655	89.1655	1.7300e-003	1.8100e-003	89.7486
Total	0.0412	0.9510	0.6079	5.2100e-003	0.2513	6.9300e-003	0.2582	0.0678	6.6200e-003	0.0745		585.1729	585.1729	0.0548	0.0815	610.8247

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.3714	3.1442	4.7756	7.7800e-003		0.1473	0.1473		0.1401	0.1401	0.0000	744.5566	744.5566	0.1373		747.9891
Total	0.3714	3.1442	4.7756	7.7800e-003	0.0000	0.1473	0.1473	0.0000	0.1401	0.1401	0.0000	744.5566	744.5566	0.1373		747.9891

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

3.3 Pavement Removal - 2025

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	0.0162	0.9363	0.3411	4.3300e-003	0.1395	6.4100e-003	0.1459	0.0382	6.1400e-003	0.0443		496.0075	496.0075	0.0531	0.0797	521.0761
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
Worker	0.0250	0.0147	0.2667	8.8000e-004	0.1118	5.2000e-004	0.1123	0.0296	4.8000e-004	0.0301		89.1655	89.1655	1.7300e-003	1.8100e-003	89.7486
Total	0.0412	0.9510	0.6079	5.2100e-003	0.2513	6.9300e-003	0.2582	0.0678	6.6200e-003	0.0745		585.1729	585.1729	0.0548	0.0815	610.8247

3.3 Pavement Removal - 2026

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.3714	3.1442	4.7756	7.7800e-003		0.1473	0.1473		0.1401	0.1401		744.5566	744.5566	0.1373		747.9891
Total	0.3714	3.1442	4.7756	7.7800e-003	0.0000	0.1473	0.1473	0.0000	0.1401	0.1401		744.5566	744.5566	0.1373		747.9891

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

3.3 Pavement Removal - 2026

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	0.0160	0.9234	0.3473	4.2400e-003	0.1395	6.3800e-003	0.1459	0.0382	6.1100e-003	0.0443		487.0201	487.0201	0.0537	0.0783	511.6912
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
Worker	0.0237	0.0134	0.2522	8.5000e-004	0.1118	4.9000e-004	0.1123	0.0296	4.5000e-004	0.0301		86.4171	86.4171	1.5800e-003	1.7200e-003	86.9686
Total	0.0397	0.9368	0.5994	5.0900e-003	0.2513	6.8700e-003	0.2582	0.0678	6.5600e-003	0.0744		573.4372	573.4372	0.0553	0.0800	598.6598

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.3714	3.1442	4.7756	7.7800e-003		0.1473	0.1473		0.1401	0.1401	0.0000	744.5566	744.5566	0.1373		747.9891
Total	0.3714	3.1442	4.7756	7.7800e-003	0.0000	0.1473	0.1473	0.0000	0.1401	0.1401	0.0000	744.5566	744.5566	0.1373		747.9891

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

3.3 Pavement Removal - 2026

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	0.0160	0.9234	0.3473	4.2400e-003	0.1395	6.3800e-003	0.1459	0.0382	6.1100e-003	0.0443		487.0201	487.0201	0.0537	0.0783	511.6912
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
Worker	0.0237	0.0134	0.2522	8.5000e-004	0.1118	4.9000e-004	0.1123	0.0296	4.5000e-004	0.0301		86.4171	86.4171	1.5800e-003	1.7200e-003	86.9686
Total	0.0397	0.9368	0.5994	5.0900e-003	0.2513	6.8700e-003	0.2582	0.0678	6.5600e-003	0.0744		573.4372	573.4372	0.0553	0.0800	598.6598

3.4 Reservoir Construction: Concrete Formwork - 2025

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	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691		2,220.3272	2,220.3272	0.1925		2,225.1404
Total	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691		2,220.3272	2,220.3272	0.1925		2,225.1404

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

3.4 Reservoir Construction: Concrete Formwork - 2025

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	8.1200e-003	0.4682	0.1706	2.1600e-003	0.0698	3.2100e-003	0.0730	0.0191	3.0700e-003	0.0222		248.0037	248.0037	0.0265	0.0398	260.5381
Vendor	3.9200e-003	0.1391	0.0575	6.9000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.2000e-004	8.0800e-003		76.2989	76.2989	4.8100e-003	0.0110	79.7092
Worker	0.0500	0.0293	0.5335	1.7600e-003	0.2236	1.0300e-003	0.2246	0.0593	9.5000e-004	0.0602		178.3309	178.3309	3.4500e-003	3.6200e-003	179.4972
Total	0.0620	0.6366	0.7615	4.6100e-003	0.3189	5.0000e-003	0.3239	0.0858	4.7400e-003	0.0905		502.6335	502.6335	0.0348	0.0545	519.7445

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	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691	0.0000	2,220.3272	2,220.3272	0.1925		2,225.1404
Total	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691	0.0000	2,220.3272	2,220.3272	0.1925		2,225.1404

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

3.4 Reservoir Construction: Concrete Formwork - 2025

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	8.1200e-003	0.4682	0.1706	2.1600e-003	0.0698	3.2100e-003	0.0730	0.0191	3.0700e-003	0.0222		248.0037	248.0037	0.0265	0.0398	260.5381
Vendor	3.9200e-003	0.1391	0.0575	6.9000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.2000e-004	8.0800e-003		76.2989	76.2989	4.8100e-003	0.0110	79.7092
Worker	0.0500	0.0293	0.5335	1.7600e-003	0.2236	1.0300e-003	0.2246	0.0593	9.5000e-004	0.0602		178.3309	178.3309	3.4500e-003	3.6200e-003	179.4972
Total	0.0620	0.6366	0.7615	4.6100e-003	0.3189	5.0000e-003	0.3239	0.0858	4.7400e-003	0.0905		502.6335	502.6335	0.0348	0.0545	519.7445

3.4 Reservoir Construction: Concrete Formwork - 2026

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	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691		2,220.3272	2,220.3272	0.1925		2,225.1404
Total	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691		2,220.3272	2,220.3272	0.1925		2,225.1404

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

3.4 Reservoir Construction: Concrete Formwork - 2026

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	7.9900e-003	0.4617	0.1736	2.1200e-003	0.0698	3.1900e-003	0.0729	0.0191	3.0500e-003	0.0222		243.5101	243.5101	0.0269	0.0391	255.8456
Vendor	3.8600e-003	0.1381	0.0573	6.8000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.2000e-004	8.0800e-003		74.8368	74.8368	4.8600e-003	0.0109	78.1981
Worker	0.0474	0.0268	0.5043	1.7100e-003	0.2236	9.8000e-004	0.2245	0.0593	9.1000e-004	0.0602		172.8342	172.8342	3.1500e-003	3.4400e-003	173.9372
Total	0.0592	0.6266	0.7352	4.5100e-003	0.3189	4.9300e-003	0.3238	0.0858	4.6800e-003	0.0904		491.1811	491.1811	0.0349	0.0535	507.9809

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	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691	0.0000	2,220.3272	2,220.3272	0.1925		2,225.1404
Total	1.0998	9.1504	12.4846	0.0234		0.3758	0.3758		0.3691	0.3691	0.0000	2,220.3272	2,220.3272	0.1925		2,225.1404

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

3.4 Reservoir Construction: Concrete Formwork - 2026

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	7.9900e-003	0.4617	0.1736	2.1200e-003	0.0698	3.1900e-003	0.0729	0.0191	3.0500e-003	0.0222		243.5101	243.5101	0.0269	0.0391	255.8456
Vendor	3.8600e-003	0.1381	0.0573	6.8000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.2000e-004	8.0800e-003		74.8368	74.8368	4.8600e-003	0.0109	78.1981
Worker	0.0474	0.0268	0.5043	1.7100e-003	0.2236	9.8000e-004	0.2245	0.0593	9.1000e-004	0.0602		172.8342	172.8342	3.1500e-003	3.4400e-003	173.9372
Total	0.0592	0.6266	0.7352	4.5100e-003	0.3189	4.9300e-003	0.3238	0.0858	4.6800e-003	0.0904		491.1811	491.1811	0.0349	0.0535	507.9809

3.5 Pipeline Construction - 2026

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	0.4173	4.0679	6.2285	9.6500e-003		0.1726	0.1726		0.1636	0.1636		925.7551	925.7551	0.1879		930.4516
Total	0.4173	4.0679	6.2285	9.6500e-003		0.1726	0.1726		0.1636	0.1636		925.7551	925.7551	0.1879		930.4516

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

3.5 Pipeline Construction - 2026

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	4.0000e-003	0.2309	0.0868	1.0600e-003	0.0349	1.6000e-003	0.0365	9.5500e-003	1.5300e-003	0.0111		121.7550	121.7550	0.0134	0.0196	127.9228
Vendor	1.9300e-003	0.0690	0.0286	3.4000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		37.4184	37.4184	2.4300e-003	5.4400e-003	39.0991
Worker	0.0237	0.0134	0.2522	8.5000e-004	0.1118	4.9000e-004	0.1123	0.0296	4.5000e-004	0.0301		86.4171	86.4171	1.5800e-003	1.7200e-003	86.9686
Total	0.0296	0.3133	0.3676	2.2500e-003	0.1595	2.4700e-003	0.1619	0.0429	2.3400e-003	0.0452		245.5905	245.5905	0.0174	0.0267	253.9905

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	0.4173	4.0679	6.2285	9.6500e-003		0.1726	0.1726		0.1636	0.1636	0.0000	925.7551	925.7551	0.1879		930.4516
Total	0.4173	4.0679	6.2285	9.6500e-003		0.1726	0.1726		0.1636	0.1636	0.0000	925.7551	925.7551	0.1879		930.4516

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

3.5 Pipeline Construction - 2026

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	4.0000e-003	0.2309	0.0868	1.0600e-003	0.0349	1.6000e-003	0.0365	9.5500e-003	1.5300e-003	0.0111		121.7550	121.7550	0.0134	0.0196	127.9228
Vendor	1.9300e-003	0.0690	0.0286	3.4000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		37.4184	37.4184	2.4300e-003	5.4400e-003	39.0991
Worker	0.0237	0.0134	0.2522	8.5000e-004	0.1118	4.9000e-004	0.1123	0.0296	4.5000e-004	0.0301		86.4171	86.4171	1.5800e-003	1.7200e-003	86.9686
Total	0.0296	0.3133	0.3676	2.2500e-003	0.1595	2.4700e-003	0.1619	0.0429	2.3400e-003	0.0452		245.5905	245.5905	0.0174	0.0267	253.9905

3.6 Reservoir Construction: Concrete Pouring - 2026

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	0.9504	6.8057	8.7666	0.0245		0.2769	0.2769		0.2595	0.2595		2,363.1315	2,363.1315	0.6527		2,379.4498
Total	0.9504	6.8057	8.7666	0.0245		0.2769	0.2769		0.2595	0.2595		2,363.1315	2,363.1315	0.6527		2,379.4498

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

3.6 Reservoir Construction: Concrete Pouring - 2026

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	7.9900e-003	0.4617	0.1736	2.1200e-003	0.0698	3.1900e-003	0.0729	0.0191	3.0500e-003	0.0222		243.5101	243.5101	0.0269	0.0391	255.8456
Vendor	3.8600e-003	0.1381	0.0573	6.8000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.2000e-004	8.0800e-003		74.8368	74.8368	4.8600e-003	0.0109	78.1981
Worker	0.0474	0.0268	0.5043	1.7100e-003	0.2236	9.8000e-004	0.2245	0.0593	9.1000e-004	0.0602		172.8342	172.8342	3.1500e-003	3.4400e-003	173.9372
Total	0.0592	0.6266	0.7352	4.5100e-003	0.3189	4.9300e-003	0.3238	0.0858	4.6800e-003	0.0904		491.1811	491.1811	0.0349	0.0535	507.9809

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	0.9504	6.8057	8.7666	0.0245		0.2769	0.2769		0.2595	0.2595	0.0000	2,363.1314	2,363.1314	0.6527		2,379.4498
Total	0.9504	6.8057	8.7666	0.0245		0.2769	0.2769		0.2595	0.2595	0.0000	2,363.1314	2,363.1314	0.6527		2,379.4498

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

3.6 Reservoir Construction: Concrete Pouring - 2026

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	7.9900e-003	0.4617	0.1736	2.1200e-003	0.0698	3.1900e-003	0.0729	0.0191	3.0500e-003	0.0222		243.5101	243.5101	0.0269	0.0391	255.8456
Vendor	3.8600e-003	0.1381	0.0573	6.8000e-004	0.0256	7.6000e-004	0.0263	7.3600e-003	7.2000e-004	8.0800e-003		74.8368	74.8368	4.8600e-003	0.0109	78.1981
Worker	0.0474	0.0268	0.5043	1.7100e-003	0.2236	9.8000e-004	0.2245	0.0593	9.1000e-004	0.0602		172.8342	172.8342	3.1500e-003	3.4400e-003	173.9372
Total	0.0592	0.6266	0.7352	4.5100e-003	0.3189	4.9300e-003	0.3238	0.0858	4.6800e-003	0.0904		491.1811	491.1811	0.0349	0.0535	507.9809

3.7 Site Improvement - 2026

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					0.0265	0.0000	0.0265	2.8600e-003	0.0000	2.8600e-003			0.0000			0.0000
Off-Road	0.2020	1.8440	2.7876	4.5500e-003		0.0801	0.0801		0.0761	0.0761		429.7853	429.7853	0.0897		432.0282
Total	0.2020	1.8440	2.7876	4.5500e-003	0.0265	0.0801	0.1066	2.8600e-003	0.0761	0.0789		429.7853	429.7853	0.0897		432.0282

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

3.7 Site Improvement - 2026

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	4.0000e-003	0.2309	0.0868	1.0600e-003	0.0349	1.6000e-003	0.0365	9.5500e-003	1.5300e-003	0.0111		121.7550	121.7550	0.0134	0.0196	127.9228
Vendor	1.9300e-003	0.0690	0.0286	3.4000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		37.4184	37.4184	2.4300e-003	5.4400e-003	39.0991
Worker	0.0237	0.0134	0.2522	8.5000e-004	0.1118	4.9000e-004	0.1123	0.0296	4.5000e-004	0.0301		86.4171	86.4171	1.5800e-003	1.7200e-003	86.9686
Total	0.0296	0.3133	0.3676	2.2500e-003	0.1595	2.4700e-003	0.1619	0.0429	2.3400e-003	0.0452		245.5905	245.5905	0.0174	0.0267	253.9905

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					0.0119	0.0000	0.0119	1.2900e-003	0.0000	1.2900e-003			0.0000			0.0000
Off-Road	0.2020	1.8440	2.7876	4.5500e-003		0.0801	0.0801		0.0761	0.0761	0.0000	429.7853	429.7853	0.0897		432.0282
Total	0.2020	1.8440	2.7876	4.5500e-003	0.0119	0.0801	0.0920	1.2900e-003	0.0761	0.0773	0.0000	429.7853	429.7853	0.0897		432.0282

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

3.7 Site Improvement - 2026

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	4.0000e-003	0.2309	0.0868	1.0600e-003	0.0349	1.6000e-003	0.0365	9.5500e-003	1.5300e-003	0.0111		121.7550	121.7550	0.0134	0.0196	127.9228
Vendor	1.9300e-003	0.0690	0.0286	3.4000e-004	0.0128	3.8000e-004	0.0132	3.6800e-003	3.6000e-004	4.0400e-003		37.4184	37.4184	2.4300e-003	5.4400e-003	39.0991
Worker	0.0237	0.0134	0.2522	8.5000e-004	0.1118	4.9000e-004	0.1123	0.0296	4.5000e-004	0.0301		86.4171	86.4171	1.5800e-003	1.7200e-003	86.9686
Total	0.0296	0.3133	0.3676	2.2500e-003	0.1595	2.4700e-003	0.1619	0.0429	2.3400e-003	0.0452		245.5905	245.5905	0.0174	0.0267	253.9905

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

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	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

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	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

Land Use	Miles			Trip %			Trip Purpose %		
	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	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.548528	0.060762	0.184345	0.125235	0.024171	0.006748	0.014885	0.004939	0.000666	0.000374	0.024916	0.000699	0.003732

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

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

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

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	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
Unmitigated	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

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	7.6200e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0594					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
Total	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

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	7.6200e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0594					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004
Total	0.0670	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		4.0000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

Smith Reservoir Replacement Project - Phase 2 Construction - Orange County, Summer

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

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: CULTURAL RESOURCE LETTER REPORT

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # _____

HRI # _____

Trinomial _____

NRHP Status Code _____

Other Listings _____

Review Code _____ Reviewer _____ Date _____

Page 1 of 8

*Resource Name or # (Assigned by recorder) Serrano Water District Smith Reservoir & Pump Station

P1. Other Identifier: Serrano Water District Smith Reservoir & Pump Station

*P2. Location: Not for Publication Unrestricted

*a. County Orange

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad Newport Beach California, Date 1981 T ; R ; ¼ of Sec ; B.M.

c. Address N/A City Villa Park Zip 92861

d. UTM: (give more than one for large and/or linear resources) Zone ; mE/ mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)

Pump station and reservoir are approximately southwest of the intersection of Taft Avenue and Sycamore Street.

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Smith Reservoir and Pump Station were built in 1970. The pump station and reservoir facility (Photograph 1) are surrounded by a masonry wall, which obstructs views from the street. The pump station is single story with an L-shape footprint, topped with a flat roof with several galvanized metal roof hatches, and exterior walls of 8-inch by 8-inch by 16-inch, concrete masonry units. It rests on a concrete slab foundation; double metal doors access the interior of the building. Metal vents, exhaust fans, piping, light fixtures, and security cameras are along the exterior walls; the north and east elevations feature aluminum jalousie sashes. The concrete reservoir is below grade on an eastern downward slope, to the rear (east) of the pump station. The reservoir is covered by reinforced concrete that is 4-feet high at its tallest point, with 6-inch aluminum screen vents set into the side walls at intervals. (Photographs 2 and 3) A plaque is on the south elevation of the pump station (Photograph 4), which consists of three 1,000 gallons per minute (gpm) vertical turbine pumps, each equipped with 125 horsepower (HP) motors and three 1,650 gpm vertical turbine pumps with two 100 HP motors and one 125 HP motor (Photograph 5). Photographs 6 and 7 show a steel manhole cover and water access point along surrounding streets. (See Continuation Sheet)

*P3b. Resource Attributes: (List attributes and codes) HP9. Public Utility Building, HP11. Engineering Structure, HP20. Canal/aqueduct

*P4. Resources Present: Building Structure Object Site District Element of District Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #) Photograph 1: View to the northeast, photograph taken by Tetra Tech, Inc., August 11, 2023.

*P6. Date Constructed/Age and Sources:

Historic Prehistoric Both

1970, c. 1980, Serrano Water District

*P7. Owner and Address:

Serrano Water District

18021 Lincoln Street

Villa Park, California 92861

*P8. Recorded by: (Name, affiliation, address)

Paula Fell and Julia Mates, Tetra Tech

17885 Von Karman Ave. Suite 500

Irvine, CA 92614-6213

*P9. Date Recorded: August 11, 2023

*P10. Survey Type: (Describe) Intensive

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Initial

Study/Mitigated Negative Declaration for Smith



Reservoir Replacement Project, prepared for Serrano Water District

*Attachments: NONE Location Map Sketch Map Continuation Sheet Building, Structure, and Object Record Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record Artifact Record Photograph Record Other (list)

State of California  The Resources Agency Primary #
 DEPARTMENT OF PARKS AND RECREATION HRI#
BUILDING, STRUCTURE, AND OBJECT RECORD

*Resource Name or # (Assigned by recorder) Serrano Water District Smith Reservoir & Pump Station *NRHP Status Code
 Page 2 of 8

B1. Historic Name: Reservoir & Pump Station for the Serrano Irrigation District
 B2. Common Name: Smith Reservoir and Pump Station
 B3. Original Use: water distribution system B4. Present Use: water distribution system

*B5. Architectural Style: N/A

*B6. Construction History: (Construction date, alteration, and date of alterations) Original Construction, 1970, additional tank constructed c. 1980.

*B7. Moved? No Yes Unknown Date: _____ Original Location: _____

*B8. Related Features: N/A

B9. Architect: N/A b. Builder: N/A

*B10. Significance: Theme N/A Area _____

Period of Significance N/A Property Type N/A Applicable Criteria N/A

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Serrano Water District Smith Reservoir and Pump Station have been evaluated in accordance with Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guideline, using the criteria outlined in Section 5024.1 of the California Public Resources Code. The pump house and reservoir are recommended not eligible for listing in the California Register of Historical Resources (CRHR) as a historic resource under CEQA (see continuation sheet).

B11. Additional Resource Attributes: (List attributes and codes)

*B12. References: Serrano Irrigation District As-Built plans, *Construction Plans for Reservoir and Pump Station, Orange County, California*, June 25, 1970, and see footnotes.

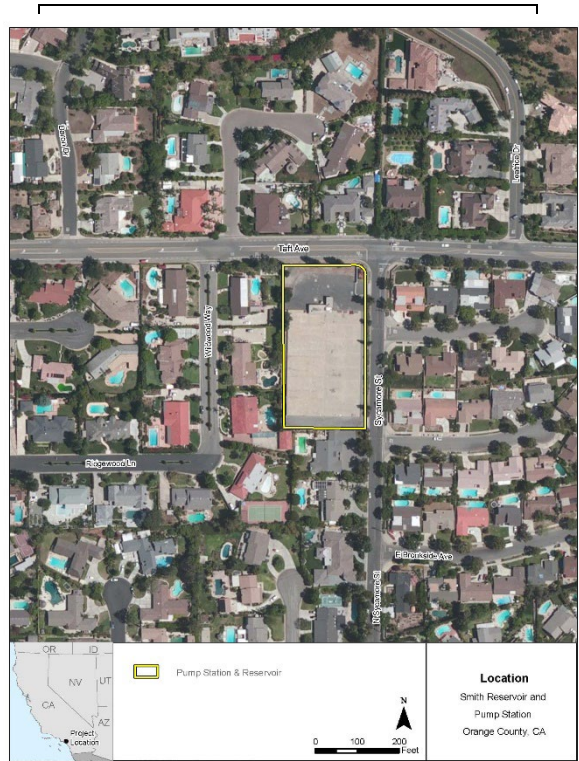
B13. Remarks:

*B14. Evaluator: Julia Mates

*Date of Evaluation: August 25, 2023.

(This space reserved for official comments.)

(This space reserved for official comments.)



*P3a. Description: (continued):



Photograph 2: Reservoir covered with reinforced concrete, camera facing northwest August 11, 2023, Photo taken by Tetra Tech Inc.

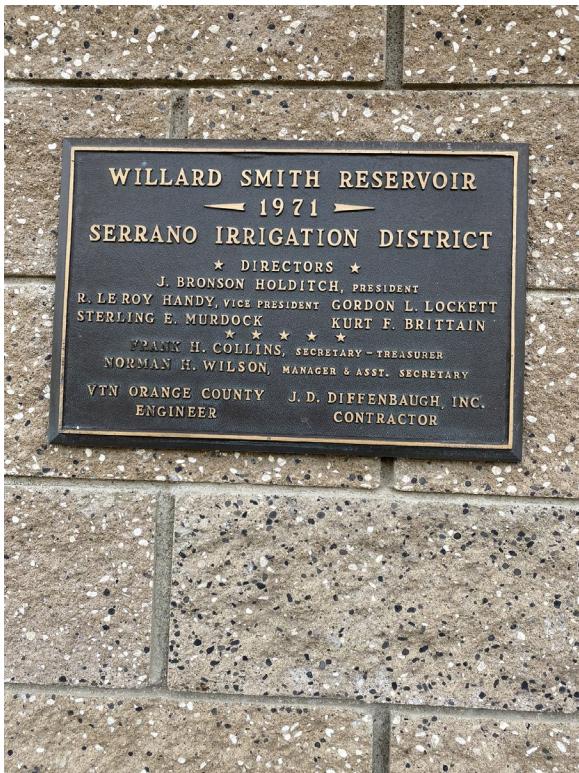


Photograph 3: Reservoir and pump station, camera facing south, August 11, 2023, photo taken by Tetra Tech, Inc.

Page 4 of 8 *Resource Name or # (Assigned by recorder) Serrano Water District Smith Reservoir & Pump Station

*Recorded by Paula Fell & Julia Mates, Tetra Tech, Inc.

*Date: August 11, 2023 Continuation Update



Photograph 4: Plaque on south elevation of pump station, camera facing north, August 11, 2023, photo taken by Tetra Tech, Inc.



Photograph 5: Interior, pump station, camera facing northeast, August 11, 2023, photo taken by Tetra Tech, Inc.

Page 5 of 8 *Resource Name or # (Assigned by recorder) Serrano Water District Smith Reservoir & Pump Station

*Recorded by Paula Fell & Julia Mates, Tetra Tech, Inc.

*Date: August 11, 2023 Continuation Update



Photograph 6: Water access, August 11, 2023, photo taken by Tetra Tech, Inc.



Photograph 7: Manhole, August 11, 2023, photo taken by Tetra Tech, Inc.

Page 6 of 8 *Resource Name or # (Assigned by recorder) Serrano Water District Smith Reservoir & Pump Station

*Recorded by Paula Fell & Julia Mates, Tetra Tech, Inc.

*Date: August 11, 2023 Continuation Update

P3a. Description (continued):

The 1.7-acre site contains the pump station and reservoir. There are two below grade rectangular cast in place concrete tanks (east and west) having a total capacity of 6.0 million gallons (MG). The 3.0 MG west tank was built in 1970, is 250 feet long by 81 feet wide. A second tank, constructed directly adjacent to the east c.1980, provides an additional 3.0 MG of capacity to the reservoir and is 15 feet long by 81 feet wide. Both tanks have an approximate finished floor elevation of 371 feet (ft) and high-water level (HWL) of 390 feet.

Historic maps indicate the parcel on which the Smith Pump Station and reservoir are now located contained orchards until 1972, when the western tank of the reservoir was constructed. By 1980, the facility is in its current configuration with both the east and west tanks in place and the facility is surrounded by single-family residential subdivisions.¹

B10. Significance (continued):

Orange County

Part of greater Los Angeles, Orange County is one of the largest counties in California. The original inhabitants of the area were members of the Tongva, Juaneno, and Luiseno tribes. The Spanish settled the area in 1776.² In the 1880s, as the populations of Los Angeles and the nearby city of Santa Ana grew, local boosters proposed a new county. In 1889, Orange County was created by dividing Los Angeles County. Like other areas in Southern California, Orange County struggled to source enough water to sustain growing towns and cities. The main source of water for Orange County was the Santa Ana River. In 1884, the Anaheim Union Water Company was formed, consolidating previous water companies that held rights on the Santa Ana River. The company established ditches, pumping plants, and reservoirs to improve the water supply from the river. The Santa Ana Valley Irrigation Company distributed water from the Santa Ana River to the areas southeast of the river. Additionally, many farmers drew water from creeks and wells to irrigate their fields and grow large quantities of fruit, grain, nuts, and vegetables.³

In 1929, Orange County had one of the biggest citrus crops in its history, and prices remained high the following year. Thus, the Great Depression was slow to affect the area. However, when the citrus market crashed, the economy in the area suffered and unemployment was high in the 1930s. With no federal relief offered to the county, the Orange Community Welfare Board helped citizens by providing donations of food and clothing.⁴

After the Great Depression, citrus became popular once more, and agriculture remained the most important part of the economy. The oil industry also played a role in Orange County's development. In the 1950s, the Santa Ana (Interstate 5) Freeway was built, and many farms were replaced by tract housing. Disneyland opened in 1955, making Orange County a tourist destination. By the 1960s, the county population was approximately 1,000,000, and many new cities were incorporated. Throughout the 1980s and 1990s, the regional population continued to expand and Orange County incorporated communities such as Irvine, Mission Viejo, and Ladera Ranch. By 2021, Orange County consisted of 34 incorporated cities and had over 3,000,000 residents.⁵

Villa Park

The City of Villa Park encompasses 2.1 square miles and is completely encircled by the City of Orange except for a small area controlled by Orange County along Santiago Creek. The City of Villa Park is in the low foothills on the west flank of the Santa Ana Mountains and is southeast of the Santa Ana River. Prior to incorporation as a city in 1962, the area was predominately used for ranching and agricultural purposes, producing grapes, apricots, walnuts, and citrus. Citrus was the major crop produced, producing such large volumes that in 1912, forty-eight growers united and organized the Villa Park Orchards Association (VPOA) to harvest, pack, and market oranges. The 1912 and 1913 crop of oranges was predicted to be so large that the VPOA purchased two parcels of land and for the construction of a

¹ Historic Aerials, 1946, 1952, 1963, 1966, 1972, 1980. [Historic Aerials: Viewer](#). Accessed August 29, 2023.

² Samuel Armor, *History of Orange County, California: With Biographical Sketches of the Leading Men and Women of the County who Have Been Identified with Its Earliest Growth and Development from the Early Days to the Present*, United States: Historic Record Company, 1921, 33-36.

³ Armor, 48-52.

⁴ Phil Brigandi, *A Brief History of Orange, California: The Plaza City*, United States: Arcadia Publishing Incorporated, 2011.

⁵ "A Brief History of Orange County," Orange County Historical Society, Accessed May 6, 2021, https://www.orangecountyhistory.org/wp/?page_id=38.

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*Recorded by Paula Fell & Julia Mates, Tetra Tech, Inc.

*Date: August 11, 2023 Continuation Update

packing house and basement.⁶ By 1914, VPOA membership exceeded 100 growers and by 1967, 575 members owned 6,000 acres of citrus farmland in Villa Park. Citrus remained the area's major crop for sixty years.⁷ The early ranchers and growers of what is present-day Villa Park are credited with creating the community that became the City of Villa Park. The neighboring town of Orange was annexing more and more land after World War II and the ensuing surge of residents coming to Southern California during this period. In order to avoid being annexed to the City of Orange and in an effort to maintain their rural atmosphere, Villa Park incorporated as a separate city.⁸ Growth in the production of housing increased dramatically in Villa Park in the 1970s and continued into the 1980s. The population of Villa Park in 1970 was 2,723 and in 2022 it was 5,731.⁹

Historic aerial imagery from 1946 through 1966 show what is now the City of Villa Park as entirely orchards, with only a few scattered buildings. By 1972, a dramatic change in land use is apparent, with residential developments established throughout the City of Villa Park and far fewer orchards present. Residences are shown surrounding Ridgewood Lane, Santiago Boulevard, and East Taft Avenue in 1972, adjacent to the reservoir and pump station.

Serrano Water District

The Serrano Water District was established in 1876 from a consolidation of several water companies and associations. Most of the irrigation organizations were privately owned by ranchers and farmers in the area. In 1927, the Serrano Water Association, the John T. Carpenter Water Company, and the Irvine Company incorporated the Serrano Irrigation District as a public corporation under the State of California's Irrigation Act.¹⁰ Once formed, the Serrano Water Association was able to establish and sell bonds to finance their portion of the construction of the Santiago Dam, constructed in 1931. At this time, the first domestic water system of Villa Park was funded through the sale of bonds to provide water service. In 1928, the Villa Park Mutual Water Company absorbed three other water companies: the Gray Tract Well Company, Cerro Villa Mutual Water Company, and Santiago Well Company. In 1956, Serrano Irrigation District carried out all functions of the Villa Park Mutual Water Company, which was dissolved by 1963. The Serrano Irrigation District then provided water to the Villa Park Mutual Water Company shareholders. The Serrano Irrigation District became the Serrano Water District (District).¹¹ It provides potable water to the City of Villa Park and a small portion of the City of Orange and receives its water supply from local surface water which is stored in Irvine Lake and groundwater from three wells located within the City of Villa Park. The District provides water for a population of 6,500 covering approximately 4.7 square miles, serving primarily large lot single family homes and one shopping center. The District has 43 miles of pipeline, 3 wells, a treatment plant, and 2 reservoirs. The District's water is treated at the Walter E. Howiler, Jr. Water Filtration Plant (WHWFP), which has an average production rate of 2.2 million gallons per day (mgd).¹²

Evaluation¹³:

CRHR requires that at least one significance criterion, 1 through 4, be met for a resource to be eligible for listing.

Criterion 1: The Serrano Water District Smith Reservoir & Pump Station is not associated with events that have significantly contributed to the broad patterns of our history. The reservoir and pump station are associated with the context of the development of water infrastructure in Orange County and the City of Villa Park and was among several related water system structures built throughout the region during this time. Research has revealed no important associations between this facility and the greater theme of water

⁶ City of Villa Park, About Us, "History of Villa Park," [City of Villa Park, California - The Hidden Jewel > About Us > History](#). Accessed August 28, 2023; Villa Park Orchards Association, "A Brief History of Villa Park." [About - Villa Park Orchards \(vpoa.net\)](#), Accessed August 28, 2023

⁷ City of Villa Park, About Us, Villa Park Knowles, "History of the Wanda Greenbelt," [City of Villa Park, California - The Hidden Jewel > About Us > Villa Park Knowles](#). Accessed August 28, 2023.

⁸ Orange County Historical Society, "A Brief History of Orange," [A Brief History of Orange – Orange County Historical Society \(orangecountyhistory.org\)](#). Accessed August 29, 2023.

⁹ United States Census Bureau, Census of Population and Housing. [Decennial Census of Population and Housing by Decades](#) Accessed August 29, 2023; United States Census Bureau, Quick Facts, Villa Park City, CA. [U.S. Census Bureau QuickFacts: Villa Park city, California](#). Accessed August 29, 2023.

¹⁰ Online Archive of California. Guide to the Serrano Irrigation District Records MS.R.079, Organizational History, [Serrano Irrigation District Records \(cdlib.org\)](#). Accessed August 29, 2023.

¹¹ Ibid.

¹² Serrano Water District, Serrano Water District History, URL: <https://serranowater.org/History.html> Accessed March 17, 2023.

¹³ US Department of the Interior, National Parks Service, National Bulletin Register 15, *How to Apply the National Register Criteria for Evaluation*, 1995, p. 18.

Page 8 of 8 *Resource Name or # (Assigned by recorder) Serrano Water District Smith Reservoir & Pump Station

*Recorded by Paula Fell & Julia Mates, Tetra Tech, Inc.

*Date: August 11, 2023 Continuation Update

infrastructure within the county and region or any other historic contexts. The Serrano Water District's early establishment and the reservoir and pump station are not significantly associated with themes of water systems or irrigation. Therefore, the reservoir and pump station are recommended not eligible for listing on the CRHR under Criterion 1.

Criterion 2: The Serrano Water District Smith Reservoir & Pump Station are not associated with the life of a person or persons important to our history. Research has revealed no associations between the reservoir and pump station and important historical figures. Therefore, the reservoir and pump station are recommended not eligible for listing on the CRHR under Criterion 2.

Criterion 3: The Serrano Water District Smith Reservoir & Pump Station are not significant for its engineering design. Aboveground elements of the system including the pump station, access features, and pumps are ordinary utilitarian features and do not embody distinctive characteristics of a type, period, or method of construction. As-built drawings do not indicate the underground reservoir, a precast concrete structure, and its associated features possess characteristics that represent the work of a master or possess high artistic values or characteristics that raise to the level of significance to be eligible under this criterion. For these reasons, the reservoir and pump station are recommended not eligible for listing on the CRHR under Criterion 3.

Criterion 4: In rare instances, buildings and structures can serve as sources of important information about historic construction materials or technologies and be significant under Criterion 4. The Serrano Water District Smith Reservoir and Pump Station do not appear to be a principal source of important information in this regard and is recommended not eligible for listing on the CRHR under Criterion 4.

The Serrano Water District Smith Reservoir and Pumps Station are recommended not eligible for listing on the CRHR and are not recommended as a historic resource under CEQA.

To: Jerry Vilander, General Manager, Serrano Water District, 18021 Lincoln Street, Villa Park, California 92861

From: Jenna Farrell, MA, RPA, Principal Archaeologist, Tetra Tech, Inc.

Cc: Paula Fell, Senior Environmental Planner/Project Manager, Tetra Tech, Inc.

Date: September 5, 2023

Subject: Cultural Resource Desktop Study for the Smith Reservoir and Pump Station, Orange County, California

1.0 CULTURAL RESOURCE DESKTOP STUDY

1.1 Project Description

The purpose of this memo is to describe the results of a cultural resources desktop study for Serrano Water District's (District) proposed Smith Reservoir and Pump Station (Project), Villa Park, Orange County, California. The Project proposes to replace the existing reservoir with a below grade cast in place concrete reservoir which will provide storage capacity that will meet operational, fire, and emergency water demands for the District. Following review of the proposed Project, the District has determined that it is subject to the guidelines and regulations of the California Environmental Quality Act (CEQA).

Background: The existing Smith Reservoir and Pump Station were built in 1970. The reservoir is comprised of two below grade concrete tanks (east and west) having a total capacity of 6.0 million gallons (MG), see Attachment 1, Figure 1 (Existing Site Plan) of the Administrative Draft Initial Study/Mitigated Negative Declaration. The 3.0 MG west tank was built first in 1970 and the east tank was built in 1980 to provide an additional 3.0 MG of capacity to the reservoir. The east and west tanks have an approximate finished floor elevation of 371 feet and high-water level of 390 feet. The pump station consists of three 1,000 gallons per minute vertical turbine pumps, each equipped with 125 horsepower (HP) motors for the upper zone. The lower zone consists of three 1,650 gallons per minute vertical turbine pumps with two 100 HP motors and one 125 HP motor.

Project Location

The proposed Project is located approximately southwest of the intersection of Taft Avenue and Sycamore Street in the City of Villa Park, Orange County (Attachment 1, Figure 2). The Project is approximately 1.7 acres and is within an existing paved area and structure (Project area; Attachment 1, Figure 3). The Project is within a densely populated area and is specifically within a residential neighborhood. The Project is within United States Geological Survey (USGS) 7.5-minute Orange California, quadrangle, not sectioned and outside of the Public Land Survey System (Attachment 1, Figure 4).

1.2 Regulatory Context

Brief paraphrased descriptions of the regulatory context is presented below.

California Environmental Quality Act

CEQA (Section 21084.1) requires a lead agency determine whether a project could have a significant effect on historical resources and tribal cultural resources (Public Resource Code [PRC] Section 21074 [a][1][A]-[B]). Under the CEQA (Section 15064.5), a historic resource (e.g. buildings, structures, or archaeological resources) is resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR) or a local register or landmark, identified as significant in a historical resource survey (meeting the requirements of Section 5024.1(g) of the PRC), or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (Section 15064.5[a][3]). Under the California Code of Regulations (CCR), Title 14, Chapter 11.5, properties listed on or formally determined to be eligible for listing in the National Register of Historic Places (NRHP) are automatically eligible for listing in the CRHR. A resource is generally considered to be historically significant under CEQA if it meets the criteria for listing in the CRHR (see PRC Section 5024.1, Title 14 CCR, Section 5024.1).

California Health and Safety Code, Sections 7052 and 7050.5

Section 7052 of the Health and Safety Code states that it is a felony to disturb Native American burials. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If determined to be Native American, the coroner must contact the California Native American Heritage Commission (NAHC).

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act (Act) applies to both state and private lands. The Act requires that upon discovery of human remains, construction or excavation activity cease and that the county coroner be notified. If the remains are Native American, the coroner must notify the NAHC. The NAHC will then identify and notify a most likely descendant (MLD). The Act stipulates the procedures the MLD may follow for treating or disposing of the remains and associated grave goods.

California Public Resource Code, Section 5097

PRC Section 5097 specifies the procedures to be followed in the event of an unexpected discovery of human remains on non-federal land. The disposition of Native American remains falls within the jurisdiction of the NAHC. Section 5097.5 of the Code states:

“No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.”

As used in this section, “public lands” means lands owned by, or under the jurisdiction of the state or any city, county, district, authority, public corporation, or any agency thereof.

Assembly Bill 52

Under CEQA, Assembly Bill 52 requires a lead agency to consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project. Consultations must include discussing the type of environmental review necessary, the significance of

tribal cultural resources, and the significance of the project's impacts on the tribal cultural resources, and alternatives and mitigation measures recommended by the tribe. That consultation must take place prior to the determination of whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project.

California State Senate Bill 18

California State Senate Bill 18, signed into law in September 2004 and implemented March 1, 2005, requires cities and counties to notify and consult with California-recognized Native American Tribes about proposed local land use planning decisions for the purpose of protecting Traditional Tribal Cultural Places. The Governor's Office of Planning and Research was mandated to amend its General Plan Guidelines to include the stipulations of Senate Bill 18 and to add advice for consulting with California Native American Tribes.

1.3 Record Search Results

South Central Coast Information Center Search

Tetra Tech staff conducted a record search of the cultural resources site and Project file collection at the South Central Coast Information Center (SCCIC), California State University at Fullerton, of the California Historical Resources Information System, was conducted on March 30, 2023 (Record Search File No.: 24649.10795). As part of this records search, the SCCIC database of survey reports and overviews was consulted, as well as documented cultural resources, cultural landscapes, and ethnic resources. Additionally, the search included a review of the following publications and lists: California Office of Historic Preservation Historic Properties Directory, NRHP, California Office of Historic Preservation Archaeological Determinations of Eligibility, California Inventory of Historical Resources/CRHR, California Points of Historical Interest, and California Historical Landmarks. A literature search of ethnographic information, historical literature, historical maps and plats, and local historic resource inventories was also conducted. The records search focused specifically on the proposed Project and a 0.50-mile buffer centered on the Project (Attachment 1, Figure 4).

The SCCIC records search did not identify any previously conducted reports within the Project. Nine previously conducted surveys were identified within 0.50 mile of the Project. These surveys were conducted between 1976 and 2010. These previous investigations consist of architectural and archaeological assessments, construction monitoring projects, and cultural resources literature reviews.

No previously recorded cultural resources were identified within the Project area. One previously recorded built environment resource was identified within 0.50 mile of the Project area. This resource consist of the Smith and Clark Brother Ranch House and Grounds (P-30-160083) and is listed on the National Register of Historic Places.

The records search results for previously conducted reports and previously recorded resources within 0.50 mile of the Project area are listed on data sheets in Attachment 2.

Historic United States Geological Survey Map and General Land Office Plat Map and Historic Aerial Review

Review of historic maps provides information regarding potential unrecorded historic features or sites within the Project. Based on the USGS historic map review, the Project area appears as undeveloped land until the

late 1960s when it is depicted as under agricultural use. Historic aerial imagery from 1952 to 1966 depict the Project area as an agricultural orchard. By 1972, the western portion of the reservoir is in place. By 1980, the Project area is in its current configuration as a single-family residential subdivision. Review of historic maps did not identify any features or structures within the Project area. The results of the review of available historic aerials and USGS quadrangle maps are presented in Table 1 below.

Table 1. Review of Historic USGS Maps and Aerial Photographs.

Map Name	Date(s)	Author	Legal Description	Description of Potential Resource within Project Area
Anaheim, CA; 1:62,500 Scale	1896, 1891, 1901, 1922, 1944	USGS	33.817256, -117.801314	Project area appears undeveloped.
Orange, CA; 1:24,000 Scale	1964, 1970,	USGS	33.817256, -117.801314	Project area appears undeveloped.
Historic Aerial	1946	Netronline	33.817256, -117.801314	Project area appears as an agricultural field, surrounded by orchards.
Historic Aerial	1952, 1963, 1966	Netronline	33.817256, -117.801314	Project area appears as an orchard.
Historic Aerial	1972, 1980	Netronline	33.817256, -117.801314	In 1972, the orchard is no longer extant and is replaced by the western reservoir. By 1980, the Project area is in its current configuration.

NATIVE AMERICAN HERITAGE COMMISSION SACRED LAND FILE SEARCH

Tetra Tech contacted the NAHC on October 13, 2022 and requested that the NAHC review its Sacred Land File Search. The NAHC replied on February 24, 2023, that the Sacred Land File results were positive (See Attachment 3). The NAHC recommends contacting the Juaneño Band of Mission Indians Acjachemen Nation – Belardes for more information regarding tribal cultural resources. The NAHC also provided a list of local Native American contacts with knowledge of the region (see Attachment 3). The NAHC recommends conducting outreach to the listed tribes or individuals as they may have knowledge of the positive results and tribal cultural resources within or near the Project. Native American government to government consultation is part of the lead CEQA agency’s responsibilities under Assembly Bill 52.

ENVIRONMENTAL AND ARCHAEOLOGICAL BACKGROUND AND RESOURCE SENSITIVITY

The prehistory of the southern California region has been summarized within four major horizons or cultural periods: Horizon I – Early Period (12,000 to 7,500 years before present [BP]), Horizon II – Millingstone Horizon (7,500 to 3,000 BP), Horizon III – Intermediate Cultures (3,000 to 1,000 BP), and Horizon IV – Late Prehistoric (1,000 BP to European historic contact).

The Project is within the ethnographic territory traditionally inhabited by the Gabrieliño (Tongva) people. The Gabrieliño occupied most of Los Angeles and Orange counties, as well as the southern Channel Islands—San Clemente, Santa Catalina, San Nicolas, and Santa Barbara islands. The Gabrieliño were fisher-hunter-gatherers and exploited a variety of coastal bay, littoral, riverine, and inland floral and faunal resources available within the diverse ecological zones of their territory (i.e., coastal plain, rivers, foothills, mountains, and ocean). Subsistence resources included items such as several species of oak trees, grasses, sage bushes, rabbits, deer, fish, shellfish, and other terrestrial and marine mammals.

European settlement began in 1771, when Spanish missionaries began to settle along the California coast and adjacent inland areas. The missionaries grazed cattle within the present-day Santa Ana/Costa Mesa area. Following the Mexican American War and secularization of the nearby missions in 1834, the region was transferred to private landowners (ranchos) who established a primary economy of cattle ranching. Specifically, the former footprint of the Rancho Santiago de Santa Ana is within the Project and surrounding area. Rancho Santiago de Santa Ana was granted to José Antonio Yorba and his nephew Pablo Peralta by Governor José Joaquín de Arrillaga on behalf of the Spanish Government.

After the fall of the rancho system, European settlers purchased substantial land holdings in the area. Santa Ana was listed as a township of Los Angeles County in the 1860 and 1870 census, with an area encompassing most of what is now northern and central Orange County. Santa Ana was founded in 1869 by William Spurgeon and the original town layout consisted of 24 blocks. Santa Ana served as a shopping center and post office for surrounding agricultural areas. In 1878 the Southern Pacific Railroad arrived, and the Santa Fe Railroad followed in 1886. This encouraged development of Santa Ana. In 1889, the Orange County seat was located in Santa Ana and this further stimulated the development of businesses, stores, financial institutions, and hotels serving the metropolitan population. Citrus and walnut farms were still plentiful and buying and selling land became the number one enterprise. The Anaheim district was enumerated separately from Santa Ana later in 1870. In 1920, the town just south of Santa Ana named Harper was renamed as Costa Mesa and agricultural crops continued to be the main industry. The town of Mountain View (later known as Villa Park) was known for ranching and agricultural farms and was established in the 1800s. The city of Villa Park was incorporated in 1962.

Based on modern aerial google imagery, the Project area and surrounding area is built up with commercial residential subdivision, and vegetation consists primarily of nonnative species and landscaping. Prior to water diversions in the nineteenth century for agricultural use and the introduction of nonnative species, the region was characterized by vegetation communities such as coastal scrub, marshland, riparian forest along rivers and drainages, uplands areas, and littoral zones. Wildlife in the region included aquatic resources (ocean resources from the nearby Pacific coastline, anadromous fish, and mussels), upland resources, and mammals such as deer, rabbits, foxes, small rodents, various birds, reptiles, and insects.

Regionally, the Project lies within the western end of the Peninsular Ranges Geomorphic Province. The Project is within the southern end of the broad Coastal Plain of Orange County. Specifically, the Project is east of the foothills of the Santa Ana Mountains. Sediments within the Project area consist of Quaternary aged deposits: Holocene (recent to 10,000 years old, 10 to 20 feet in depth) and Pleistocene (10,000 to 2 million years old, over 20 feet in depth) alluvium deposits derived from the erosion of bedrock out of the Santa Ana Mountains and the San Joaquin Hills.

The surficial and subsurface deposits within the Project area have been subjected to previous ground disturbance and fill due to historic and modern development (the reservoir). The Project is within an entirely built environment with paved areas and the existing reservoir that is 20 feet below ground surface. An archaeological survey was not conducted for the Project due to the built environment and no visible non-disturbed or natural ground surface.

The SCCIC record search did not identify any previously recorded cultural resources within the Project area. One NRHP listed built environment resource is located within 0.5 mile of the Project area.

1.4 Summary and Recommendations

The summary and recommended management measures resulting from this study of the Project are discussed below. The current Project background research, consultation, cultural resource inventory, recommendations, and impact analysis discussed in this memo were conducted to partially fulfill the requirements of CEQA.

Based on the combined environmental and cultural background, the SCCIC record search results, and existing disturbance, the Project is assessed as having a low sensitivity for archaeological resources within native soils. A portion of the reservoir is historic in age and will be addressed in a separate report. Although the Project area is developed, there is the potential for subsurface archaeological deposits within soil depths not previously disturbed by development.

If construction ground disturbance depths range within native soils, there would be a potential to impact previously unrecorded subsurface archaeological resources. Therefore, the following management measures are recommended below:

1. **Environmental Training** – Prior to construction of the Project, a qualified archaeologist will provide a cultural resource briefing that includes all applicable laws and penalties pertaining to disturbing cultural resources, a brief discussion of the prehistoric and historic regional context and archaeological sensitivity of the area, types of cultural resources found in the area, instruction that Project workers will halt construction if a cultural resource is inadvertently discovered during construction. If requested, a local tribal representative(s) shall be invited to participate in the environmental training to discuss or provide text from a tribal cultural perspective regarding the cultural resources within the region.
2. **Native American Consultation/Coordination:** The NAHC Sacred Lands Search results was positive. The NAHC recommended coordinating with the Juaneño Band of Mission Indians Acjachemen Nation – Belardes tribe and the NAHC listed tribes as they may have information regarding known and recorded tribal cultural resource sites within or near the Project. Prior to determining that an application for a project is complete or a decision by the District to undertake the Project, the District shall consult or coordinate with the NAHC listed tribes to ensure tribal cultural resources are considered. Native American government to government consultation is part of the lead CEQA agency’s responsibilities under Assembly Bill 52.
3. **Inadvertent Discovery of Archaeological Resources During Construction** – During Project-level construction, should subsurface archaeological resources be discovered, all activity within 50 feet of a “find” shall stop and a qualified archaeologist shall be contacted to assess the significance of the find according to CEQA Guidelines Section 15064.5 and/or NRHP criteria (as applicable). The archaeologist shall have the authority to halt any Project-related construction activities that could impact potentially significant resources. If any find is determined to be significant, the archaeologist shall

determine, in consultation with the implementing agencies and any local Native American groups expressing interest, appropriate avoidance measures or other appropriate mitigation. Ground-disturbing activities shall not continue until the discovery has been assessed by the archaeologist. The archaeologist shall be afforded the necessary time to assess the find. With monitoring, construction activities may continue on other areas of the Project site during evaluation and treatment of historic or unique archaeological resources. Under CEQA Guidelines Section 15126.4(b)(3), preservation in place is the preferred means to avoid impacts to archaeological resources qualifying as historical resources. Methods of avoidance may include, but shall not be limited to, (i) Project re-route or re-design, (ii) Project cancellation, or (iii) identification of protection measures such as capping or fencing. Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures, such as data recovery or other appropriate measures, in consultation with the implementing agency and any local Native American representatives expressing interest in prehistoric or tribal resources. If an archaeological site does not qualify as an historical resource but meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site shall be treated in accordance with the provisions of Section 21083.2.

Existing regulations require that if human remains and/or cultural items defined by Health and Safety Code, Section 7050.5, are inadvertently discovered, all work in the vicinity of the find would cease and the Orange County Coroner would be contacted immediately. If the remains are found to be Native American as defined by Health and Safety Code, Section 7050.5, the coroner will contact the NAHC by telephone within 24 hours. The NAHC shall immediately notify the person it believes to be the MLD as stipulated by California PRC, Section 5097.98. The MLD(s), with the permission of the landowner and/or authorized representative, shall inspect the site of the discovered remains and recommend treatment regarding the remains and any associated grave goods. The MLD shall complete their inspection and make their recommendations within 48 hours of notification by the NAHC. Any discovery of human remains would be treated in accordance with Section 5097.98 of the PRC and Section 7050.5 of the Health and Safety Code. Therefore, with compliance with existing regulations, Project impact would be less than significant.

Should you have any questions regarding the information provided above, please contact Tetra Tech's Cultural Resource Specialist, Jenna Farrell at jenna.farrell@tetratech.com or (916) 206-8705.

Attachments:

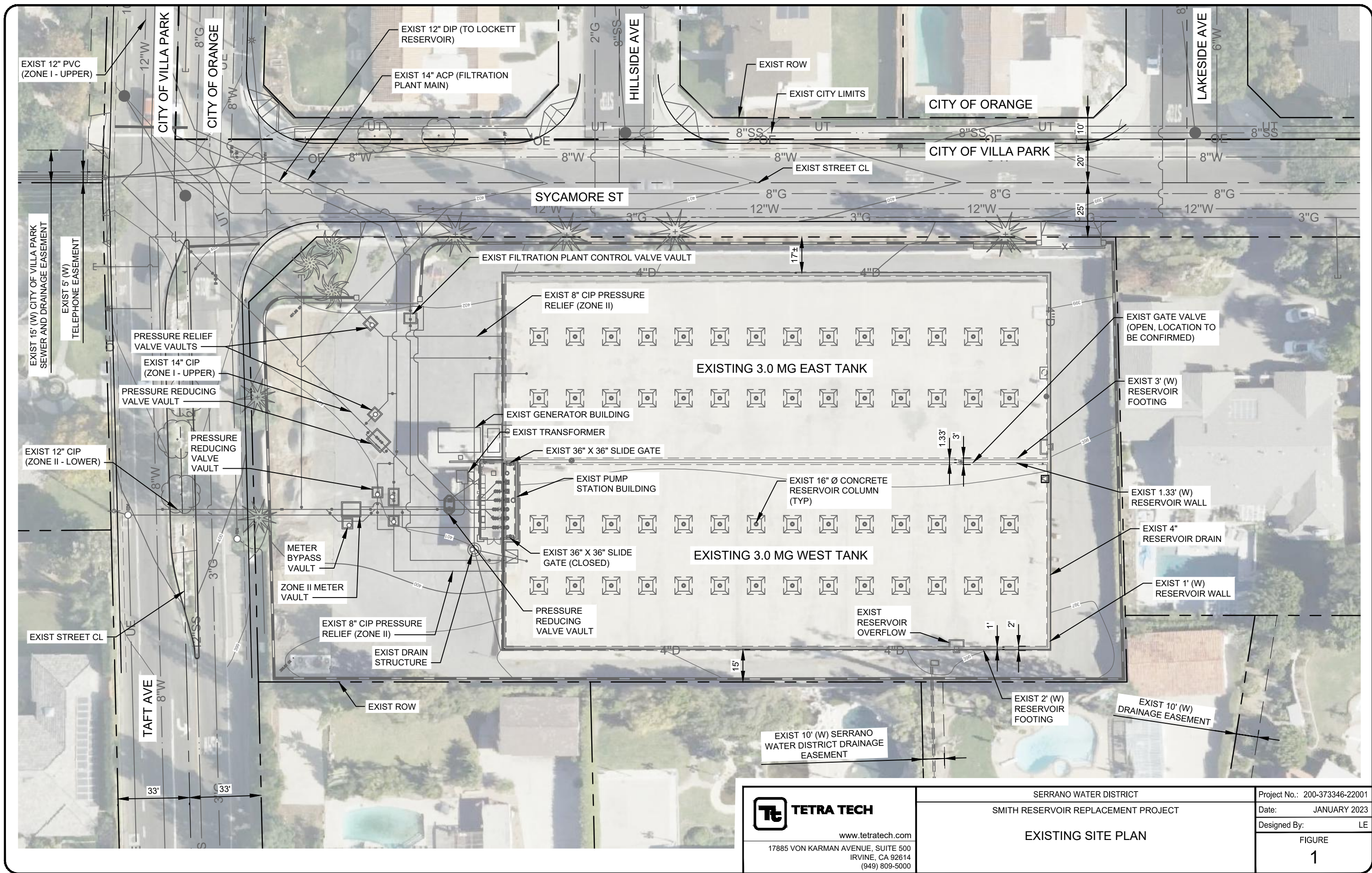
Attachment 1. Figures

Attachment 2. South Central Coast Information Center Results

Attachment 3. Native American Heritage Commission Sacred Land File results

ATTACHMENT 1. FIGURES

1/11/2023 8:56:55 AM - C:\USERS\MICHAEL.MOJICA\WORKING FILES\CAD\CONCEPTUAL\BODR\FIGURES\C-702 - EXIST SITE PLANDWG - MOJICA, MICHAEL



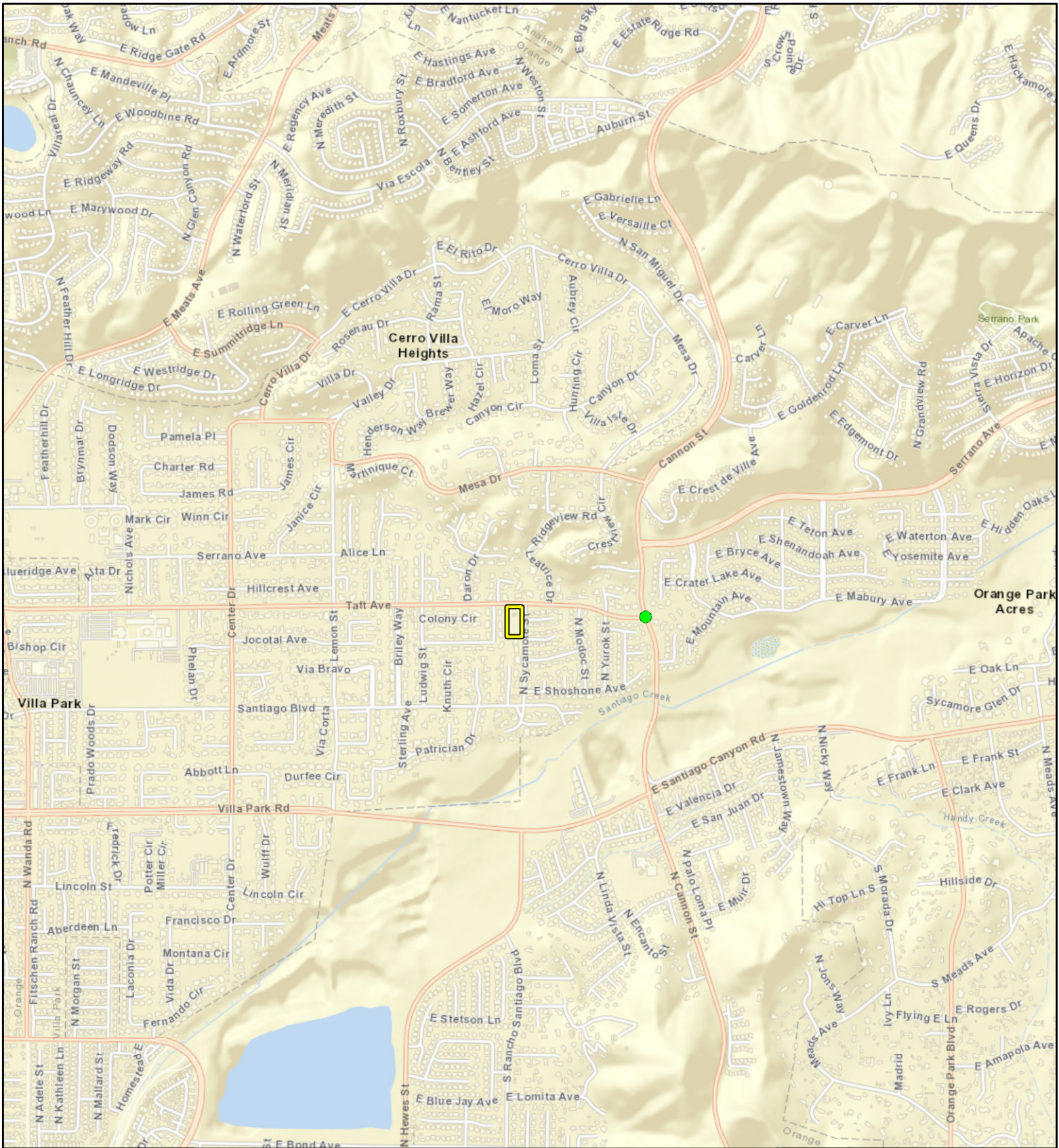
TETRA TECH
 www.tetrattech.com
 17885 VON KARMAN AVENUE, SUITE 500
 IRVINE, CA 92614
 (949) 809-5000

SERRANO WATER DISTRICT
 SMITH RESERVOIR REPLACEMENT PROJECT
EXISTING SITE PLAN

Project No.: 200-373346-22001
Date: JANUARY 2023
Designed By: LE
FIGURE 1

Bar Measures 1 inch

Copyright Tetra Tech



- Project Area
- Valve Vault Site

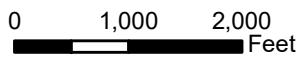
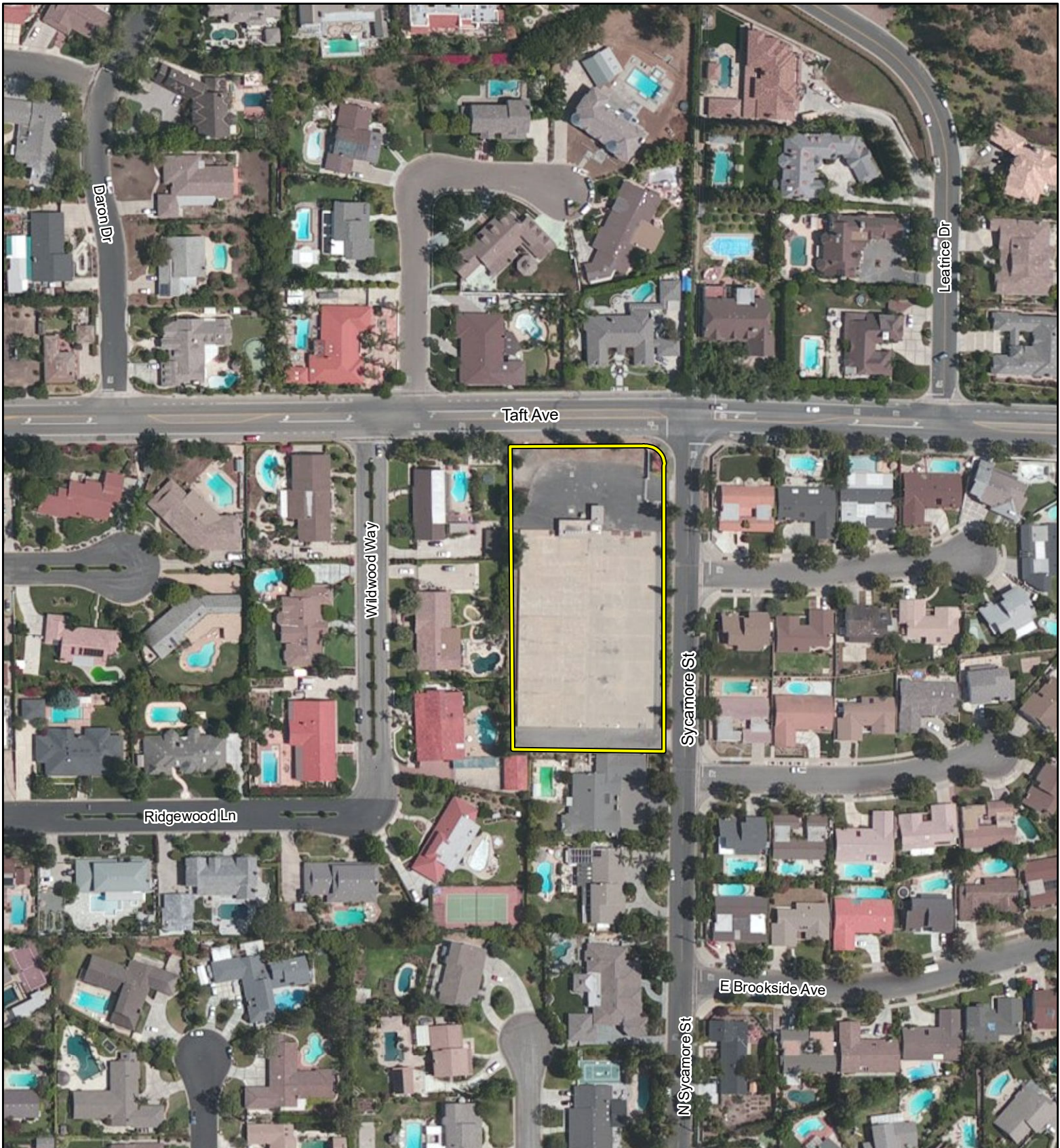
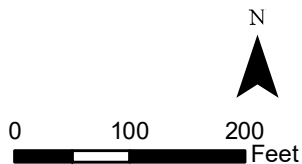


Figure 2
Project Vicinity

Smith Reservoir
Replacement Project
Orange County, CA

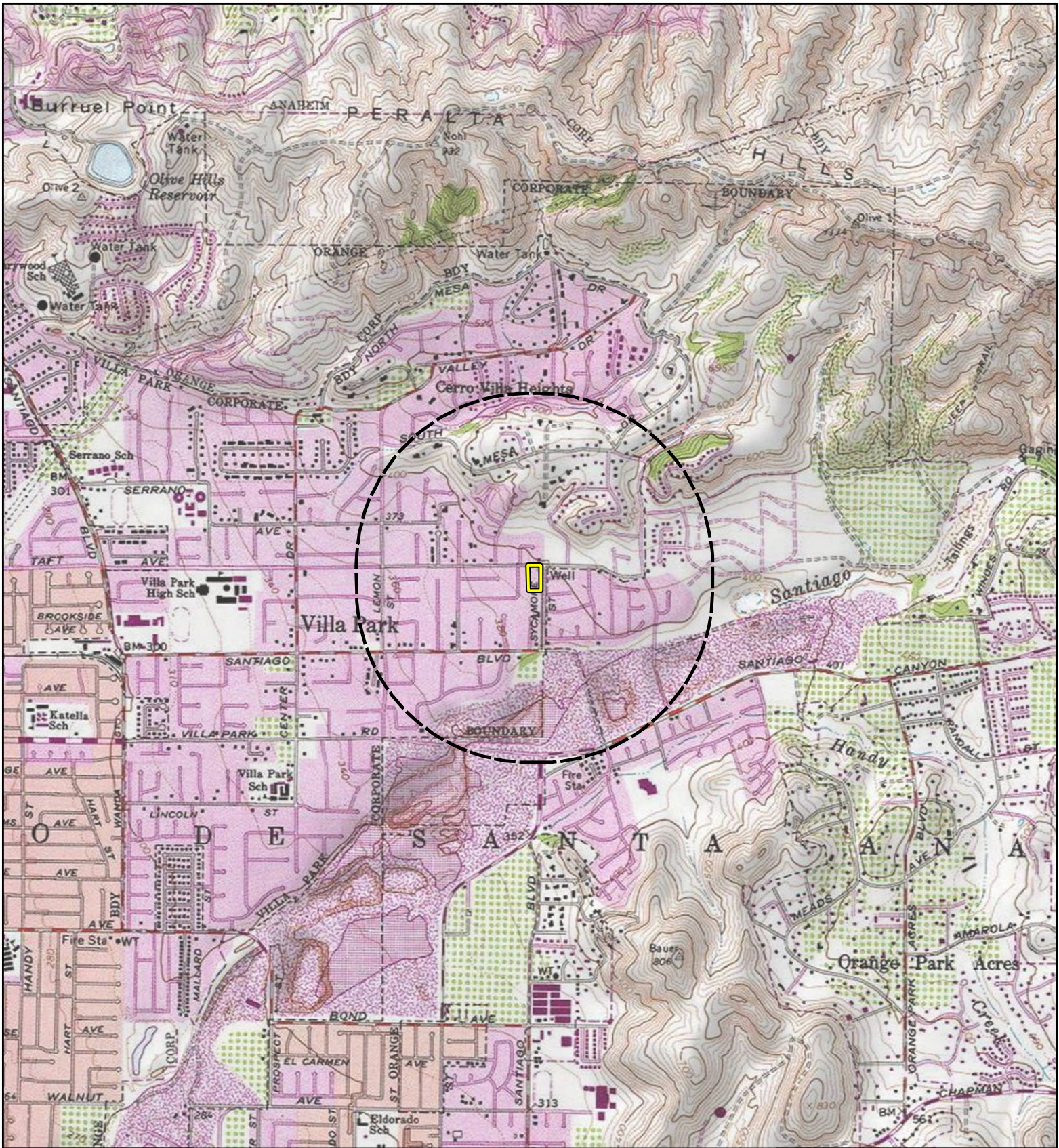




 Project Area



**Figure 3
Project Location**

Smith Reservoir
Replacement Project
Orange County, CA



-  Project Area
-  1/2-mile Search Area

USGS 7.5' Quad: Orange, CA (1977)

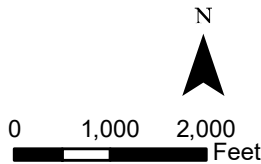


Figure 4
Records Search Area

Smith Reservoir
Replacement Project
Orange County, CA

ATTACHMENT 2. SOUTH CENTRAL COAST INFORMATION CENTER RESULTS

South Central Coastal Information Center

California State University, Fullerton
Department of Anthropology MH-426
800 North State College Boulevard
Fullerton, CA 92834-6846
657.278.5395 / FAX 657.278.5542
sccic@fullerton.edu

California Historical Resources Information System
Orange, Los Angeles, and Ventura Counties

3/30/2023

Records Search File No.: 24649.10795

Jenna Farrell
Tetra Tech, Inc.
3101 Zinfandel Drive, Bldg B, Suite 200
Rancho Cordova, CA 95670

Re: Record Search Results for the Smith Reservoir Replacement Project

The South Central Coastal Information Center received your records search request for the project area(s) referenced above, located on the Orange, CA USGS 7.5' quadrangle(s). The following reflects the results of the records search for the project area and a ½-mile radius:

As indicated on the data request form, the locations of resources and reports are provided in the following format: custom GIS maps shape files hand-drawn maps

Resources within project area: 0	None
Resources within ½-mile radius: 1	SEE ATTACHED MAP or LIST
Reports within project area: 0	None
Reports within ½-mile radius: 9	SEE ATTACHED MAP or LIST

- Resource Database Printout (list):** enclosed not requested nothing listed
- Resource Database Printout (details):** enclosed not requested nothing listed
- Resource Digital Database (spreadsheet):** enclosed not requested nothing listed
- Report Database Printout (list):** enclosed not requested nothing listed
- Report Database Printout (details):** enclosed not requested nothing listed
- Report Digital Database (spreadsheet):** enclosed not requested nothing listed
- Resource Record Copies:** enclosed not requested nothing listed
- Report Copies:** enclosed not requested nothing listed
- OHP Built Environment Resources Directory (BERD) 2022:** available online; please go to https://ohp.parks.ca.gov/?page_id=30338
- Archaeo Determinations of Eligibility 2022:** enclosed not requested nothing listed
- Los Angeles Historic-Cultural Monuments** enclosed not requested nothing listed
- Historical Maps:** enclosed not requested nothing listed
- San Bernardino Historical Maps:** not available at SCCIC; please go to <https://ngmdb.usgs.gov/topoview/viewer/#4/39.98/-100.02>

Ethnographic Information: not available at SCCIC
Historical Literature: not available at SCCIC
GLO and/or Rancho Plat Maps: not available at SCCIC
Caltrans Bridge Survey: not available at SCCIC; please go to
<http://www.dot.ca.gov/hq/structur/strmaint/historic.htm>
Shipwreck Inventory: not available at SCCIC; please go to
http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp
Soil Survey Maps: (see below) not available at SCCIC; please go to
<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System,

Isabela Kott  Digitally signed by Isabela Kott
Date: 2023.03.30 10:05:45 -07'00'

Isabela Kott
Assistant Coordinator, GIS Program Specialist

Enclosures:

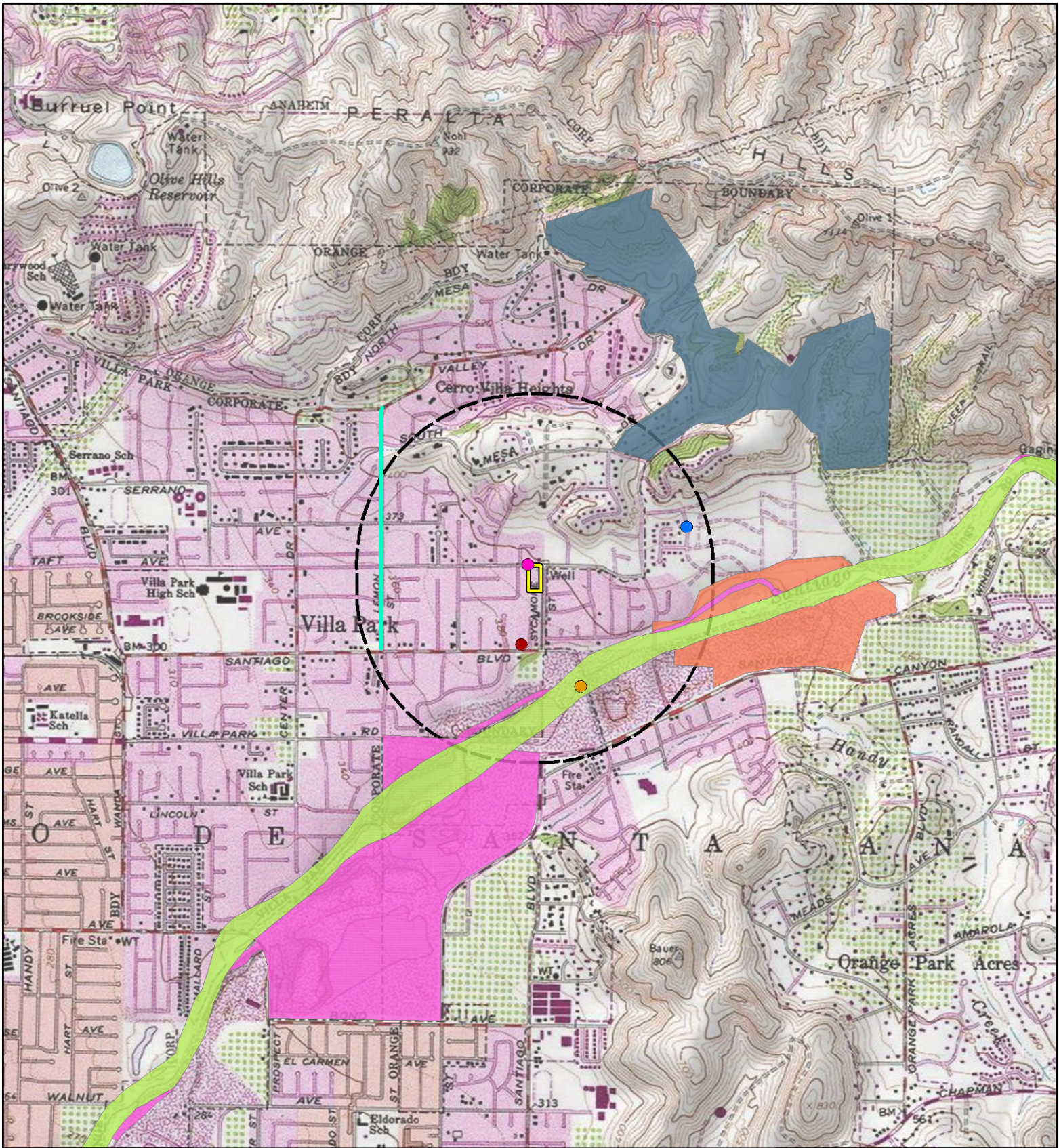
- (X) GIS Shapefiles – 10 shapes
- (X) Resource Database Printout (list) – 1 page
- (X) Resource Digital Database (spreadsheet) – 1 line
- (X) Report Database Printout (list) – 1 page
- (X) Report Digital Database (spreadsheet) – 9 lines
- (X) Resource Record Copies – (all) 27 pages
- (X) Report Copies – (all) 824 pages

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-00778		1976	Drover, Christopher E.	Archaeological Reconnaissance of the Santiago Creek Specific Plan Property	Golden West College	30-000369
OR-00801		1985	Langenwalter, Paul E. and James Brock	Phase II Archaeological Studies Prado Basin and the Lower Santa Ana River		30-000089, 30-000817
OR-00949		1988	Brown, Robert S. and Marie G. Cottrell	Tentative Tract 13125: 195.3 Acre Parcel Located in the Peralta Hills, Orange County, California	Archaeological Resource Management Corp.	
OR-02379		2000	McKenna, Jeanette A.	A Cultural Resources Investigation of the Fieldstone Communities, Inc. Project Area in the City of Orange, Orange County, California	McKenna et al.	30-000064, 30-000246, 30-000369
OR-03101	Cellular -	2004	Bonner, Wayne H. and Taniguchi, Christeen	Records Search and Site Visit Results for Cingular Telecommunications Facility Candidate Sc-464-01 (cannon Road) 1425 North Santiago Boulevard, Orange, Orange County, California	Michael Brandman Associates	
OR-03463	Cellular -	2007	Bonner, Wayne H. and Crawford, Kathleen A.	Cultural Resource Records Search and Site Visit Results for T-mobile Candidate IE24016 (Serrano Water Dist.), Taft Avenue and Sycamore Street, Villa Park, Orange County, California	Michael Brandman Associates	
OR-03527	Cellular -	2009	Wlodarski, Robert J.	Records Search and Field Reconnaissance for Proposed Bechtel Wireless Telecommunications Site OC0189, Villa Park ROW	Cellular Archaeological Resource Evaluations	
OR-04090		2008	Gust, Sherri and Harper, Veronica	Archaeological Assessment of the Lemon Hill Recreational Trail, Villa Park, California	Cogstone Resource Management Inc.	30-000645, 30-160083
OR-04288		2010	Maxon, Pat	Draft Initial Study/Mitigated Negative Declaration, Serrano Water District Walter E Howiler, Jr. WFP and Wells #3 and #5 Modifications Project	BonTerra Consulting	30-000369, 30-001017, 30-001018, 30-001019, 30-001172

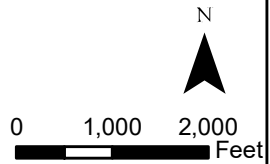
Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-30-160083		OHP Property Number - 039451; Resource Name - Smith & Clark Brothers Ranch House & Grounds; Other - Willard Smith House; Other - zip 92861	Building, District	Historic	HP02	1982 (Paul Clark, Orange Community Historical Society)	OR-04090



- Project Area
- 1/2-mile Search Area
- OR-03101
- OR-03463
- OR-03527
- OR-04288
- OR-04090
- OR-00778
- OR-00801
- OR-00949
- OR-02379

USGS 7.5' Quad: Orange, CA (1977)



Previous Reports

Smith Reservoir
Replacement Project
Orange County, CA

ATTACHMENT 3. NATIVE AMERICAN HERITAGE COMMISSION SACRED LAND FILE RESULTS

NATIVE AMERICAN HERITAGE COMMISSION

February 24, 2023

Jenna Farrell
Tetra Tech, Inc.

Via Email to: jenna.farrell@tetratech.com

Re: Smith Reservoir Replacement Project, Orange County

Dear Ms. Farrell:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information submitted for the above referenced project. The results were positive. Please contact the Juaneno Band of Mission Indians Acjachemen Nation - Belardes on the attached list for information. Please note that tribes do not always record their sacred sites in the SLF, nor are they required to do so. A SLF search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with a project's geographic area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites, such as the appropriate regional California Historical Research Information System (CHRIS) archaeological Information Center for the presence of recorded archaeological sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. Please contact all of those listed; if they cannot supply information, they may recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,



Andrew Green
Cultural Resources Analyst

Attachment



CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Sara Dutschke
Miwok

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

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Buffy McQuillen
Yokayo Pomo, Yuki,
Nomlaki

COMMISSIONER
Wayne Nelson
Luiseño

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
[Vacant]

COMMISSIONER
[Vacant]

EXECUTIVE SECRETARY
**Raymond C.
Hitchcock**
Miwok/Nisenan

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