FILED

SEP 14 2021

ORANGE COUNTY CLERK-RECORDER DEPARTMENT

BY: DEPUTY

Hugh Nguyen, Clerk-Recorder

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Notice of Determination

To:

☒ Office of Planning and Research

U.S. Mail: P.O. Box 3044, Sacramento, CA 95812-3044

Street Address: 1400 Tenth St., Rm 113, Sacramento, CA 95814

☒ County Clerk
County of: Orange
Address: 601 N. Ross Street
Santa Ana, CA 92701

From:
Public Agency: Irvine Ranch Water District
Address: 15600 Sand Canyon Avenue

Contact: Jo Ann Corey
Phone: (949) 453-5326

Lead Agency (if different from above):

Address:

Contact:
Phone:

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse Number (if submitted to State Clearinghouse): 2021060289

Project Title: Fleming Zone 8 Reservoir and Pump Station Improvements Project

Project Applicant: Irvine Ranch Water District

Project Location (include county): 7431 Santiago Canyon Road, Silverado, Orange County, California

Project Description:

The project involves the demolition of existing water storage and conveyance infrastructure at IRWD's Fleming Reservoir and Pump Station facility and the construction of a new reservoir, pump station, and support structures that are appropriately sized to meet IRWD operational performance and storage standards.

This is to advise that the Irvine Ranch Water District has approved the above
(☒ Lead Agency or ☐ Responsible Agency)

described project on 9/13/2021 (date) and has made the following determinations regarding the above described project.

1. The project [☐ will ☒ will not] have a significant effect on the environment.
2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   ☒ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [☒ were ☐ were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [☒ was ☐ was not] adopted for this project.
5. A statement of Overriding Considerations [☐ was ☒ was not] adopted for this project.
6. Findings [☒ were ☐ were not] made pursuant to the provisions of CEQA.

POSTED

SEP 14 2021

HUGH NGUYEN, CLERK-RECORDER

BY:

This is to certify that the final EIR with comments and responses and record of project approval, or the negative Declaration, is available to the General Public at:
https://www.irwd.com/doing-business/environmental-documents

Signature (Public Agency): Title: Environmental Comp. Analyst

Date: September 14, 2021 Date Received for filing at OPR:

Authority cited: Sections 21083, Public Resources Code.
Reference Section 21000-21174, Public Resources Code.

Revised 2011

FINAL

Initial Study/Mitigated Negative Declaration
Fleming Zone 8 Reservoir and
Pump Station Improvements Project

Prepared for:

Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, California 92618
Contact: Jo Ann Corey, MPA

Prepared by:

DUDEK
27372 Calle Arroyo
San Juan Capistrano, California 92675
Contact: Rachel Struglia, PhD, AICP

AUGUST 2021

Printed on 30% post-consumer recycled material.

Table of Contents

TABLES

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5 Introduction

An Initial Study/Mitigated Negative Declaration (IS/MND) was prepared for the proposed Fleming Zone 8 Reservoir and Pump Station Improvements project (project) and made available for public comment for a 30-day public review period from June 14, 2021, through July 13, 2021. In accordance with the California Environmental Quality Act (CEQA) Guidelines, Section 15074(b) (14 CCR 15074(b)), before approving the proposed project, Irvine Ranch Water District (IRWD), as the lead agency under CEQA, will consider the IS/MND with any comments received during this public review period. Specifically, Section 15074(b) of the CEQA Guidelines (14 CCR 15074(b)) states the following:

Prior to approving a project, the decision-making body of the lead agency shall consider the proposed negative declaration or mitigated negative declaration together with any comments received during the public review process. The decision-making body shall adopt the proposed negative declaration or mitigated negative declaration only if it finds on the basis of the whole record before it (including the initial study and any comments received), that there is no substantial evidence that the project will have a significant effect on the environment and that the negative declaration or mitigated negative declaration reflects the lead agency's independent judgment and analysis.

The agencies and individuals who provided substantive written comments on the environmental issues addressed in the Draft IS/MND/MND are listed in Table 1. Although CEQA (California Public Resources Code, Section 21000 et seq.) and the CEQA Guidelines (14 CCR 15000 et seq.) do not explicitly require a lead agency to provide written responses to comments received on an IS/MND, the lead agency may do so voluntarily. Individual comments within each communication are numbered so comments can be cross-referenced with responses.

Table 1. Comment Letter Summary

Letter Number	Commenter	Date
Comment Letters Received During CEQA Public Review Period		
1	Robert J. Distaso, PE. Orange County Fire Authority	June 30, 2021
2	David Mayer, Environmental Program Manager California Department of Fish and Wildlife, South Coast Region	July 13, 2021
3	Lori Schmitz, Environmental Scientist California Water Boards	July 13, 2021

Responses to comments are made in the following text to supplement, clarify, or expand on information already presented in the Draft IS/MND. These responses do not change the significance determinations made or the severity of potential environmental impacts evaluated in the Draft IS/MND/MND. Section 15073.5(c)(4) of the CEQA Guidelines (14 CCR 15073.5(c)(4)) permits the inclusion of new information within an IS/MND if the additional information "merely clarifies, amplifies, or makes insignificant modifications to the negative declaration."

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Comment Letter 1

ORANGE COUNTY FIRE AUTHORITY
P. O. Box 57115, Irvine, CA 92619-7115 • 1 Fire Authority Road, Irvine, CA 92602-0125
Brian Fennessy, Fire Chief (714) 573-6000 www.ocfa.org

June 30, 2021

Irvine Ranch Water District
Water Resources & Policy Department
Jo Ann Corey, Environmental Compliance Analyst
P.O. Box 57000
Irvine, CA 92619-7000
corey@irwd.com

Subject: Notice of Intent to Adopt a Mitigated Negative Declaration– Fleming Zone 8 Reservoir and Pump Station Improvements

Dear Jo Ann Corey:

Thank you for the opportunity to review the subject document. The Orange County Fire Authority (OCFA) provides fire protection and emergency medical services response to 23 cities in Orange County and all unincorporated areas. The OCFA operates 77 fire stations throughout Orange County, several within Irvine and Silverado, which includes the project area. Services include: structural fire protection, emergency medical and rescue services, education and hazardous material response. OCFA also participates in disaster planning as it relates to emergency operations, which includes high occupant areas and school sites and may participate in community disaster drills planned by others. Resources are deployed based upon a regional service delivery system, assigning personnel and equipment to emergency incidents without regard to jurisdictional boundaries. 1-1

The following are our comments:

- The project is subject to review by the OCFA and current editions of the CBC, CFC and related codes. I 1-2
- A water supply system to supply fire hydrants and automatic fire sprinkler systems is required. I 1-3
- If this project is in a fuel modification zone, it is subject to review by the OCFA, and Guideline C-05. I 1-4
- Fire department access shall be provided all around the buildings and site I 1-5

Thank you for providing us with this information. Please contact me at 714-573-6253 if you have any questions. 1-6

Sincerely,

Robert J Distaso PE
Fire Safety Engineer
Planning and Development
robertdistaso@ocfa.org
www.ocfa.org

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Letter 1

Orange County Fire Authority
Robert J. Distaso, PE, Fire Safety Engineer, OCFA

1-1 Irvine Ranch Water District (IRWD) acknowledges this comment. No changes to the Draft MND are required as a result of this comment and the Draft MND's analysis is adequate as provided.

1-2 The project would be subject to review by the Orange County Fire Authority (OCFA) and current editions of the California Building Code (CBC), California Fire Code (CFC) and related codes. As discussed in Section 3.20, Wildfire, of the Draft MND, design and operation of the project would be required to comply with OCFA requirements, including preparation of a fire master plan (OCFA Guideline B-09) and compliance with guidelines for activities in hazardous fire areas (OCFA Guideline B-09a). Prior to construction, IRWD will provide plan sets and the fire master plan to OCFA for review and approval. No changes to the Draft MND are required as a result of this comment and the Draft MND's analysis is adequate as provided.

1-3 The project, by its nature as a water storage facility, would be equipped with a water supply system to supply on site fire hydrants. No changes to the Draft MND are required as a result of this comment and the Draft MND's analysis is adequate as provided.

1-4 As discussed in Section 3.20, Wildfire, of the Draft MND, the project site is located within a very high fire severity hazard zone. OCFA guidelines and state regulations for development in fire hazard areas provide specifications for fire safety, including, but not limited to, requirements for site access, vegetation clearance and defensible space, ignition-resistant construction methods and materials, and adequate water supply. IRWD would comply with all applicable OCFA guidelines and state regulations, including fuel modification requirements as applicable. No changes to the Draft MND are required as a result of this comment and the Draft MND's analysis is adequate as provided.

1-5 As discussed in Section 3.20, Wildfire, of the Draft MND, any lane or driveway closures would be coordinated with OCFA and local emergency service providers as part of the encroachment permit process, which sets forth requirements for traffic control measures to be implemented during construction, including measures to preserve access in the event of an emergency. Once the project is constructed, access to the project site would be provided by an access road that connects Santiago Canyon Road and Silverado Canyon Road. This access driveway would have a motorized gate and be designed to meet OCFA access requirements. In the event of an emergency, fire department personnel would be able to access the site via this driveway and would have access to all the structures onsite. Additionally, IRWD will prepare and submit a fire master plan to OCFA for review and approval, which will further detail compliance with OCFA access requirements. No changes to the Draft MND are required as a result of this comment and the Draft MND's analysis is adequate as provided.

1-6 IRWD acknowledges this comment and will contact the phone number provided with any further questions. No changes to the Draft MND are required as a result of this comment and the Draft MND's analysis is adequate as provided.

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Comment Letter 2

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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

July 13, 2021

Jo Ann Corey
Environmental Compliance Analyst
Irvine Ranch Water District
15600 San Canyon Avenue
Irvine, CA 92701
Corey@irwd.com

Subject: Comments on the Initial Study/Mitigated Negative Declaration for the Fleming Zone 8 Reservoir and Pump Station Improvements Project (SCH #2021060289)

Dear Ms. Corey:

The Department of Fish and Wildlife (CDFW) has reviewed the above-referenced Initial Study/Mitigated Negative Declaration (IS/MND) for the Fleming Zone 8 Reservoir and Pump Station Improvements Project (Project). The following statements and comments have been prepared pursuant to CDFW's authority as Trustee Agency with jurisdiction over natural resources affected by the project (California Environmental Quality Act [CEQA] Guidelines § 15386) and pursuant to our authority as a Responsible Agency under CEQA Guidelines section 15381 over those aspects of the Project that come under the purview of the California Endangered Species Act (Fish and Game Code § 2050 et seq.) and Fish and Game Code section 1600 *et seq*. CDFW also administers the Natural Community Conservation Planning (NCCP) program. The Irvine Ranch Water District (IRWD) participates in the NCCP program through its role as a Participating Landowner under the County of Orange Central and Coastal Subregion Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP).

The proposed Project involves the replacement of an existing water storage and conveyance infrastructure at IRWD's Fleming Reservoir and Pump Station facility. The project is located at IRWD's existing site at 7431 Santiago Canyon Road, Silverado, California. The Project site is approximately 500 feet east of the intersection of Santiago Canyon Road and Silverado Canyon Road, in the Santiago Canyon area of unincorporated Orange County. The existing facility is located on a 2.9-acre parcel owned by IRWD. The site is surrounded by Silverado Canyon Road to the north, Santiago Canyon Road to the south, and undeveloped vegetated land to the east and west. Only the eastern half of the site is used by IRWD and is occupied by the existing Fleming Reservoir and Pump Station facility. The western portion of the site is undeveloped. The proposed project would be located on the eastern portion of the site where the past development has occurred. Primary Project activities include: demolition of the existing aboveground 150,000-gallon reservoir, pump station, and associated buildings, construction of an aboveground 1.3 million-gallon concrete reservoir, associated pipelines, new pump station, storage building, and masonry block building, replacement of an existing generator, site improvements to the access road, fencing, retaining walls and swing gates, new landscaping, and installation of new pipelines located in the access road which will extend into an outlet adjacent to an existing storm drain south of Santiago Canyon Road.

2-1

Conserving California's Wildlife Since 1870

According to the NCCP/HCP, the Project site is located outside of the reserve space and is mapped as urban land. The area immediately surrounding the Project site to the east and west is within a conservation easement. Approximately 67 square feet (0.002 acre) of disturbed coastal sage scrub (CSS) will be impacted. There will also be impacts associated with the installation of the off-site storm drain to the understory of coast live oak woodland (0.003 acre). The impacts to 0.003 acre of coast live oak woodland are within the Reserve and are compatible with the Reserve uses. The Project will take approximately two years to complete, beginning in 2022.

2-1 Cont.

CDFW offers the comments and recommendations below to assist Irvine Ranch Water District in adequately avoiding and minimizing potential Project impacts on biological resources and maintaining consistency with the NCCP/HCP.

1. The IS/MND indicates the potential for NCCP/HCP covered species to occur on or adjacent to the Project site. The NCCP/HCP identifies construction-related minimization measures to assure that development/construction within areas recommended to be authorized for incidental take of CSS be undertaken in a manner that minimizes impacts on the federally threatened coastal California gnatcatcher (*Polioptila californica californica*) presently using, or in close proximity to, the habitat to be converted. The Project would impact 67 square feet (0.002 acre) of disturbed CSS along the western edge of the Project site. CSS is a covered habitat type in the NCCP/HCP. According to measure three in the NCCP/HCP Construction-Related Minimization Measures, a monitoring biologist must be on site during any clearing of CSS. It is the job of the monitoring biologist to assure that identified bird species will not be directly impacted by brush-clearing and earth-moving equipment in a manner that also allows for construction activities in a timely basis. CDFW recommends having a monitoring biologist present during any clearing of CSS on the Project site.

2-2

CDFW appreciates the opportunity to comment on the IS/MND to assist IRWD in identifying and mitigating Project impacts on biological resources and ensuring Project consistency with the requirements of the NCCP/HCP. Questions regarding this letter or further coordination should be directed to Emily Gray, Environmental Scientist, at Emily.Gray@wildlife.ca.gov.

2-3

Sincerely,

DocuSigned by:
David Mayer
D700B4520375406...

David A. Mayer
Environmental Program Manager
South Coast Region

ec: CDFW
Karen Drewe, San Diego – Karen.Drewe@wildlife.ca.gov
Jennifer Ludovissy, San Diego – Jennifer.Ludovissy@wildlife.ca.gov
Susan Howell, San Diego – Susan.Howell@wildlife.ca.gov
CEQA Program Coordinator, Sacramento – CEQACommentLetters@wildlife.ca.gov
State Clearinghouse, Sacramento – State.Clearinghouse@opr.ca.gov
Jonathan Snyder, US Fish and Wildlife Service – Jonathan_d_Snyder@fws.gov

Letter 2

California Department of Fish and Wildlife
South Coast Region
David A. Mayer; Environmental Program Manager

2-1 The comment states that the California Department of Fish and Wildlife (CDFW) has reviewed the Draft MND for the Fleming Zone 8 Reservoir and Pump Station Improvements Project. This is an introductory comment and no changes to the Draft MND are required.

2-2 IRWD acknowledges that CDFW is recommending an addition to the Draft MND in order to further avoid and minimize potential project impacts on coastal sage scrub (CSS) and the federally threatened coastal California gnatcatcher (*Polioptila californica californica*). In consideration of CDFW's recommendation, IRWD has revised Mitigation Measure (MM)-BIO-1 to include having a monitoring biologist present during the clearing of CSS on the project site. Changes that resulted from this comment are shown in ~~strikeout~~/underline below.

MM-BIO-1 **Coastal California Gnatcatcher Pre-Construction Surveys.** If project construction must commence during the coastal California gnatcatcher breeding season (February 15 – July 30), a pre-construction survey (in accordance with U.S. Fish and Wildlife Service presence/absence survey protocol) shall be conducted by a permitted biologist to determine the presence/absence of gnatcatchers within 300 feet of the project site prior to the start of construction. If an active coastal California gnatcatcher nest is determined to be present, additional avoidance measures will be required to minimize impacts to the maximum extent feasible, such as limiting construction within 300-feet of occupied habitat and delaying work within this buffer until nesting activity is completed. In addition, a monitoring biologist shall be on site during the clearing of CSS. The monitoring biologist will assure that identified bird species will not be directly impacted by brush-clearing and earth-moving equipment in a manner that also allows for construction activities in a timely basis. The permitted biologist, may also recommend other measures to reduce the buffer, which may include, but are not limited to, erection of sound barriers (e.g., noise blankets) and erection of visual barriers (e.g., hay bales)~~, or full-time monitoring by a qualified biologist~~.

2-3 IRWD acknowledges this comment. No changes to the Draft MND are required as a result of this comment and the Draft MND's analysis is adequate as provided.

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Comment Letter 3

GAVIN NEWSOM
GOVERNOR

JARED BLUMENFELD
SECRETARY FOR
ENVIRONMENTAL PROTECTION

July 13, 2021

Irvine Ranch Water District
Attn: Jo Ann Corey
15600 San Canyon Avenue
Irvine, CA Zip 92618

DRAFT IRVINE RANCH WATER DISTRICT (DISTRICT), MITIGATED NEGATIVE DECLARATION (MND), FLEMING ZONE 8 RESERVOIR AND PUMP STATION IMPROVEMENTS PROJECT (PROJECT); STATE CLEARINGHOUSE NUMBER 2021060289

Dear Ms. Jo Ann Corey:

Thank you for the opportunity to review the MND for the proposed Project. The State Water Resources Control Board, Division of Drinking Water (State Water Board) is responsible for issuing water supply permits (WSP) administered under the Safe Drinking Water Act and will require a new or amended WSP for the above referenced Project. A project requires a WSP if it includes water system consolidation or changes to a water supply source, storage, or treatment.

The proposed Project includes the demolition of the existing Fleming Zone 8 Reservoir and Pump Station at 7431 Santiago Canyon Road, Silverado, California. The Project also includes the construction of a new 1.3 MG concrete reservoir, and a new pump station housed in a pump station building. The new pump station building would include an operations room with a restroom. A sewer holding tank would be installed and serviced by a certified pumping company with tanker trucks. Stormwater drainage facilities, electrical power facilities, a new diesel generator, telecommunication facilities, and site improvements within the same general footprint would also be constructed. Drought-tolerant landscaping would be installed to stabilize slopes and the site access road would be widened to allow access for emergency vehicles. A Supervisory Control and Data Acquisition system would also be installed. The Project would bring the facility up to District criteria and operational requirements for storage and pump redundancy for its customers within the Santiago Canyon Area.

3-1

The State Water Board as a responsible agency under the California Environmental Quality Act (CEQA), has the following comments on the District's draft MND:

- The document lists non-discretionary approvals on page 29, pdf page 39. The requirement of a permit amendment for the Project is a discretionary approval for the Division of Drinking Water Santa Ana District office and should be listed as such.

3-2

E. JOAQUIN ESQUIVEL, CHAIR | EILEEN SOBECK, EXECUTIVE DIRECTOR

1001 I Street, Sacramento, CA 95814 | Mailing Address: P.O. Box 100, Sacramento, CA 95812-0100 | www.waterboards.ca.gov

Project Description:

- "Additionally, the existing pump station and reservoir would be kept in service during construction." page 129 / pdf 139. In the project description, please clarify if the tank will be built in the same location as the old tank and a temporary tank will be required or if the new tank will be built in another location and the old tank will then be destroyed. Please include a figure that overlays the old faculties structures over the current plans. 3-3
- "While the Project would increase the capacity of the existing facilities, the project's primary purpose is to bring the existing facility into compliance with current IRWD criteria and operational requirements for potable and fire water storage," Page 115/ pdf page 125. In the Project Description, please further specify the details of the existing facilities compared to the new Project. 3-4
    - What is the capacity for the old tank?
    - What was the capacity of the old pump station?
- "Water Treatment permits would be obtained and followed in accordance with federal, state, and local laws and regulations," (page 94 / pdf 104). Please identify the treatment that may be required. If the treatment is more than chlorination, please expand on this and the needed facilities for this in the document. 3-5

Section 3.4 Biological Resources

- Under Section 3.4 c the document indicates that "The Southern portion of the project site features updates to an existing outlet structure. The outlet does not currently connect to a natural or man-made drainage features and instead sheet flows to the south towards Santiago Creek." State Water Board has jurisdiction over "waters of the state" under Porter-Cologne. Waters of the state means any surface water or groundwater including saline waters, within the boundaries of the state. Please indicate if there are any desert washes on the project site and if so, how they will be protected from degradation. 3-6

Section 3.10 Hydrology and Water Quality

- The document discusses how sewer is not available at the site. Instead an underground wastewater holding tank would be installed on site. Under Section 3.10 Hydrology and Water Quality a., when discussing surface and ground water quality, please indicate how the project will be meeting drinking water regulation standards to ensure the separation of wastewater and drinking water and prevent any drinking water contamination as outlined in the California Water Works Standards under Title 22, Chapter 16, Section 64572. 3-7
- The State and Regional Board have regulatory authority over discharges to surface and groundwater. Section 3.10 Hydrology and Water Quality a. discusses permitting for stormwater but did not discuss discharges related to the removal of the old tank and preparing of the new tank for operation. The section also did not discuss any emergency operational discharges required for the cleaning of the tank. 3-8
    - Please discuss construction and operational discharges for the water system, including the plans for discharge, the quality of discharge, and any permits or waivers that will be obtained from the State or Regional Board.

When the review process has ended, please forward the following items with your permit application to the State Water Board, Santa Ana District Office:

- The draft and final MND and Mitigation Monitoring and Reporting Plan (MMRP)
- The Resolution or Board Minutes certifying and adopting the MND and MMRP and approving the Project;
- The date stamped Notice of Determination (NOD) filed at the Orange County Clerk's Office or Governor's Office of Planning and Research, State Clearinghouse, and
- Any comment letters received and the District's responses, as appropriate.

3-9

Please contact Yen Tran at Santa Ana District Office, at (714) 558-4707 or email at yen.tran@waterboards.ca.gov if you have any questions regarding water supply permitting requirements.

Sincerely,

Lori Schmitz

Lori Schmitz
Environmental Scientist
Division of Financial Assistance
Special Project Review Unit
1001 I Street, 16th Street
Sacramento, CA 95814
Lori.Schmitz@waterboards.ca.gov
(916) 449-5285

Cc:

Office of Planning and Research, State Clearinghouse

Yen Tran
Associate Sanitary Engineer
Santa Ana District

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Letter 3

California Water Boards
Lori Schmitz; Environmental Scientist

3-1 IRWD appreciates the State Water Board's (Water Board) review of the Draft MND. This is an introductory comment and no changes to the Draft MND are required.

3-2 IRWD acknowledges that the Water Board requires a permit amendment for the project to be a discretionary approval for the Division of Drinking Water Santa Ana District office. In consideration of the Water Board's comment, IRWD has revised Section 2.6, Project Approvals, to include the permit amendment under discretionary actions. Changes to the Draft MND, that resulted from this comment are shown in ~~strikeout~~/underline in the Changes to the MND chapter of this Final MND.

3-3 The new reservoir and pump station building were sited to allow the existing reservoir and pump station to remain operational during the entirety of construction. Currently, the existing reservoir and pump station are in the northern portion of the site. To allow for the continued operation of these facilities, the new reservoir would be constructed in the southern portion of the site and the new pump station would be constructed in center-east portion of the site. The current site plan is provided in Figure 6, Site Plan. The exact configuration of these facilities is still subject to refinement during the final design process, and it may be premature to provide a figure that overlays the old facilities over the current plans. Nonetheless, as part of the permit amendment process for the project, IRWD will coordinate with the Water Board to ensure it has all necessary information for permit issuance.

3-4 This comment requests additional information about the existing tank and pump station. The capacity for the existing tank is 150,000-gallons. The existing pump station consists of two, 600 gallon per minute, vertical turbine pumps, each equipped with 60 horsepower motors.

3-5 This comment requests additional information regarding the water treatment and chlorination. As discussed in Section 2.1, Project Overview of the Draft MND, a new disinfection building would be constructed in the southwestern portion of the site, adjacent to the concrete reservoir. The building would house disinfection equipment used to store and feed chemicals commonly used to disinfect drinking water, including sodium hypochlorite and aqueous ammonia. [. The two chemicals will be used for chloramination to maintain water quality in the reservoir. No changes to the Draft MND are required as a result of this comment and the Draft MND's analysis is adequate as provided.

3-6 IRWD acknowledges this comment from the Water Board. As discussed in Section 3.4, Biological Resources of the Draft MND, the project would not impact jurisdictional wetlands or waters, and no desert washes exist on the project site. No changes to the Draft MND are required as a result of this comment and the Draft MND's analysis is adequate as provided.

3-7 This comment requests additional information regarding how the project will be meeting drinking water regulation standards, ensure the separation of wastewater and drinking water, and prevent any drinking water contamination from the proposed underground wastewater holding tank that will be installed on site. IRWD ensures that its drinking water meets all the quality standards set by both the state and federal government. Per Division of Drinking Water requirements, the holding tank will have minimum separations of 100 feet to the reservoir and 25 feet to potable water mains. Additionally,

IRWD's water quality experts continuously monitor its drinking water supply and conduct hundreds of laboratory tests each year on water taken from sample points throughout the IRWD service areas, ensuring that the water quality of its drinking water meets all state and federal regulations. No changes to the Draft MND are required as a result of this comment and the Draft MND's analysis is adequate as provided.

3-8 IRWD acknowledges this comment from the Water Board. As discussed in Section 3.10, Hydrology and Water Quality, of the Draft MND, the project is subject to the requirements of the National Pollutant Discharge Elimination System Construction General Permit issued by the Santa Ana Regional Water Quality Control Board. The permit requires the implementation of stormwater controls and development of a Storm Water Pollution Prevention Plan to minimize the amount of sediment and other pollutants from being discharged in stormwater runoff during construction of the project. Under the proposed conditions, a series of catch basins would capture surface flows and route them to a biofiltration system for attenuation and treatment. The system would be consistent with the North Orange County Municipal Separate Storm Sewer System Permit and the Orange County Technical Guidance Document for Project Water Quality Management Plans.

IRWD will provide the plans for discharge, quality of discharge, and any permits or waivers when they are available. No changes to the Draft MND are required as a result of this comment and the Draft MND's analysis is adequate as provided.

3-9 IRWD acknowledges this comment. Upon the end of the review process, IRWD will forward the aforementioned items with the permit application to the State Water Board, Santa Ana District Office. No changes to the Draft MND are required as a result of this comment and the Draft MND's analysis is adequate as provided.

7 Changes to the MND

The following provides minor revisions, corrections, and additions to the Draft IS/MND. The corrections and additions are organized by section and page number of the Draft IS/MND. New text additions are shown in underline format, and deletions are shown in ~~strikeout~~ format.

Section 2.6 Project Approvals, page 29

Discretionary Actions

The actions and/or approvals that IRWD needs to consider for the proposed project include, but are not limited to, the following:

- **Project Approval and Adoption of the IS/MND.** Following public review and comment of this IS/MND, the project and this IS/MND would require approval by the IRWD Board of Directors.
- **~~Department~~ Division of Drinking Water, Santa Ana District office.** The project would be subject to the requirements and approval of the Division of Drinking Water. The facility's existing permit would require an amendment to include a new drinking water storage reservoir and the new disinfection facilities used to maintain water quality in the reservoir.

Subsequent non-discretionary approvals would include:

- **Approval of the Fire Master Plan by OCFA.** The disinfection system would utilize liquid sodium hypochlorite and aqueous ammonia. Per OCFA requirements, a fire master plan is therefore required. The fire master plan would include hazardous materials identification and chemical classification packet.
- **Permit to Construct/Operate.** The project would involve the replacement of an existing 150-kW standby diesel generator with a new Tier 3 350 kW standby diesel generator. A Permit to Construct/Operate would be required by the South Coast Air Quality Management District for the installation of the new generator on site.
- **Construction General Permit.** Because the project would involve ground disturbance greater than 1 acre, the project would require coverage under the State Regional Water Quality Control Board General Permit for Construction Activities, which would involve the preparation of a stormwater pollution prevention plan (SWPPP).
- **County of Orange Public Works Permit.** An encroachment permit would be required from the County of Orange to connect to the Carlton Storm Drain Facility E08 on the south side of Santiago Canyon Road. The permit would also include the connection to the pipelines within the south side of Santiago Canyon Road.
- ~~**Department of Drinking Water.** The project would be subject to the requirements and approval of the Division of Drinking Water. The facility's existing permit would require an amendment to include new drinking water storage reservoir and the new disinfection facilities used to maintain water quality in the reservoir.~~

Section 3.4, Biological Resources, page 61

The following mitigation measure would be modified as follows:

MM-BIO-1 **Coastal California Gnatcatcher Pre-Construction Surveys**. If project construction must commence during the coastal California gnatcatcher breeding season (February 15 – July 30), a pre-construction survey (in accordance with U.S. Fish and Wildlife Service presence/absence survey

protocol) shall be conducted by a permitted biologist to determine the presence/absence of gnatcatchers within 300 feet of the project site prior to the start of construction. If an active coastal California gnatcatcher nest is determined to be present, additional avoidance measures will be required to minimize impacts to the maximum extent feasible, such as limiting construction within 300-feet of occupied habitat and delaying work within this buffer until nesting activity is completed. In addition, a monitoring biologist shall be on site during any clearing of Coastal Sage Scrub. The monitoring biologist will assure that identified bird species will not be directly impacted by brush-clearing and earth-moving equipment in a manner that also allows for construction activities in a timely basis. The permitted biologist, may also recommend other measures to reduce the buffer, which may include, but are not limited to, erection of sound barriers (e.g., noise blankets) and erection of visual barriers (e.g., hay bales)~~, or full-time monitoring by a qualified biologist~~.

8 Mitigation Monitoring and Reporting Program

The California Environmental Quality Act (CEQA) requires that a public agency adopting a Mitigated Negative Declaration (MND) take affirmative steps to determine that approved mitigation measures are implemented after project approval. The lead or responsible agency must adopt a reporting and monitoring program for the mitigation measures incorporated into a project or included as conditions of approval. The program must be designed to ensure compliance with the MND during project implementation (California Public Resources Code, Section 21081.6(a)(1)).

This Mitigation Monitoring and Reporting Program (MMRP) will be used by Irvine Ranch Water District (IRWD) to ensure compliance with adopted mitigation measures identified in the MND for the proposed Fleming Zone 8 Reservoir and Pump Station Improvements Project (project) when construction begins. IRWD, as the lead agency, will be responsible for ensuring that all mitigation measures are carried out. Implementation of the mitigation measures would reduce impacts to below a level of significance for biological resources, cultural resources, and geological resources.

The remainder of this MMRP consists of a table that identifies the mitigation measures by resource for each project component. Table 1 identifies the mitigation monitoring and reporting requirements, list of mitigation measures, the responsible party for implementing the mitigation measures, timing for implementation of mitigation measures, the agency responsible for monitoring of implementation, and the date of completion. With the MND and related documents, this MMRP will be kept on file at the following location:

Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, California 92618

Table 2. Mitigation Monitoring and Reporting Program Table

Mitigation Measure	Implementation Timing	Agency Responsible for Monitoring	Date of Completion
Biological Resources			
MM-BIO-1: **Coastal California Gnatcatcher Pre-Construction Surveys**. If project construction must commence during the coastal California gnatcatcher breeding season (February 15 – July 30), a pre-construction survey (in accordance with U.S. Fish and Wildlife Service presence/absence survey protocol) shall be conducted by a permitted biologist to determine the presence/absence of gnatcatchers within 300 feet of the project site prior to the start of construction. If an active coastal California gnatcatcher nest is determined to be present, additional avoidance measures will be required to minimize impacts to the maximum extent feasible, such as limiting construction within 300-feet of occupied habitat and delaying work within this buffer until nesting activity is completed. In addition, a monitoring biologist shall be on site during any clearing of CSS. This monitoring biologist will assure that identified bird species will not be directly impacted by brush-clearing and earth-moving equipment in a manner that also allows for construction activities in a timely basis. The permitted biologist, may also recommend other measures to reduce the buffer, which may include, but are not limited to, erection of sound barriers (e.g., noise blankets) and erection of visual barriers (e.g., hay bales).	Prior to construction; during construction (if active nests are identified)	Irvine Ranch Water District	
MM-BIO-2: **Nesting Bird Surveys and Avoidance of Active Nests.** If project construction must commence between February 1 and September 1, a qualified biologist shall conduct a nesting bird survey within 5 days of commencement of construction activities to confirm the absence of nesting birds. If active nesting of birds is observed within 100 feet (ft) (500 ft for raptors) of the designated construction area during surveys, the biologist, in consultation with Irvine Ranch Water District, will determine suitable buffers around the active nests (e.g., a minimum of 50 ft for passerines and 250 ft for raptors). The buffer areas must be avoided until the nests are no longer	Prior to construction; during construction (if active nests are identified)	Irvine Ranch Water District	

Table 2. Mitigation Monitoring and Reporting Program Table

Mitigation Measure	Implementation Timing	Agency Responsible for Monitoring	Date of Completion
occupied and the juvenile birds can survive independently from the nests. The qualified biologist may also recommend other measures to reduce the size of the buffer, which may include, but are not limited to, erection of sound barriers (e.g., noise blankets), erection of visual barriers (e.g., hay bales), or full-time monitoring by a qualified biologist.			
Cultural Resources			
MM-CUL-1: All construction personnel and monitors shall be briefed regarding inadvertent discoveries prior to the start of construction activities. A basic presentation and handout or pamphlet shall be prepared in order to ensure proper identification and treatment of inadvertent discoveries. The purpose of the Workers Environmental Awareness Program training is to provide specific details on the kinds of archaeological materials that may be identified during construction of the project and explain the importance of and legal basis for the protection of significant archaeological resources. Each worker shall also learn the proper procedures to follow in the event that cultural resources or human remains are uncovered during ground-disturbing activities. These procedures include work curtailment or redirection, and the immediate contact of the site supervisor and archaeological monitor.	Prior to construction	Irvine Ranch Water District	
MM-CUL-2: A qualified archaeologist shall be retained and on call to respond and address any inadvertent discoveries identified during initial excavation in native soil. Initial excavation is defined as initial construction-related earth moving of sediments from their place of deposition. As it pertains to archaeological monitoring, this definition excludes movement of sediments after they have been initially disturbed or displaced by project-related construction. A qualified archaeological principal investigator, meeting the Secretary of the Interior's Professional Qualification Standards, should oversee and, in consultation with IRWD,	During construction	Irvine Ranch Water District	

Table 2. Mitigation Monitoring and Reporting Program Table

Mitigation Measure	Implementation Timing	Agency Responsible for Monitoring	Date of Completion
adjust monitoring efforts as needed (increase, decrease, or discontinue monitoring frequency) based on the observed potential for construction activities to encounter cultural deposits or material. The archaeological monitor will be responsible for maintaining daily monitoring logs. In the event that potential prehistoric or historical archaeological resources (sites, features, or artifacts) are exposed during construction activities for the project, all construction work occurring within 100 feet of the find shall immediately stop and a qualified archaeologist must be notified immediately to assess the significance of the find and in consultation with IRWD, determine whether or not additional study is warranted. Depending upon the significance of the find, the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work such as preparation of an archaeological treatment plan, testing, data recovery, or monitoring may be warranted. If monitoring is conducted, an archaeological monitoring report shall be prepared within 60 days following completion of ground disturbance and submitted to IRWD for review. This report should document compliance with approved mitigation, document the monitoring efforts, and include an appendix with daily monitoring logs. The final report shall be submitted to the South Central Coastal Information Center.			
Geology and Soils			
MM-GEO-1: Prior to commencement of any ground-disturbing activity in areas of moderate to high paleontological sensitivity, IRWD shall retain a qualified paleontologist per the 2010 Society of Vertebrate Paleontology guidelines. The qualified paleontologist shall conduct construction worker paleontological resources sensitivity training prior to the start	Prior to construction; during construction	Irvine Ranch Water District	

Table 2. Mitigation Monitoring and Reporting Program Table

Mitigation Measure	Implementation Timing	Agency Responsible for Monitoring	Date of Completion
of ground disturbing. This can occur in coordination with the Cultural Resources Workers Environmental Awareness Program training (Mitigation Measure CUL—1). A paleontological monitor under the direction of the qualified paleontologist shall be on site during ground-disturbing activities that extend to depths greater than 5 feet below the ground surface in areas of previously undisturbed moderate and/or high paleontological resources sensitivity. In the event that paleontological resources (e.g., fossils) are unearthed, the paleontological monitor shall notify IRWD, temporarily halt and/or divert ground-disturbing activity to allow recovery of paleontological resources and consult with IRWD. Once documentation and collection of the find is completed, the paleontological monitor, in consultation with IRWD, shall allow ground-disturbing activities to recommence in the area of the find.			

DRAFT

Initial Study/Mitigated Negative Declaration
Fleming Zone 8 Reservoir and
Pump Station Improvements Project

Prepared for:

Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, California 92618
Contact: Jo Ann Corey, MPA

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DUDEK
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San Juan Capistrano, California 92675
Contact: Rachel Struglia, PhD, AICP

JUNE 2021

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Table of Contents

APPENDICES

FIGURES

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AB	Assembly Bill
AQMP	Air Quality Management Plan
AST	aboveground storage tank
bgs	below ground surface
BMP	best management practice
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAL FIRE	California Department of Forestry and Fire Protection
CalRecycle	California Department of Resources Recycling and Recovery
CalSTA	California State Transportation Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFPP	Construction Fire Protection Plan
CH_2	methane
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
dB	decibel
dBA	A-weighted decibel
DOF	Department of Finance
DPM	diesel particulate matter
DPR	California Department of Parks and Recreation
EMD	Emergency Management Division
EO	Executive Order
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
FTA	Federal Transit Administration
GHG	greenhouse gas
GoBiz	Governor's Office of Business and Economic Development
HCP/NCCP	Habitat Conservation Plan and Natural Community Conservation Plan
hz	hertz
IBank	California Infrastructure Economic Development Bank
ips	inches per second
IRWD	Irvine Ranch Water District

Acronym/Abbreviation	Definition
IS	Initial Study
LACM	Natural History Museum of Los Angeles County
L_{dn}	day–night average noise level
L_{eq}	energy-equivalent noise level over a given period
L_{max}	maximum sound level during the measurement interval
LST	localized significance threshold
L_{xx}	statistical sound level
MG	million gallons
mgd	million gallons per day
MM	mitigation measure
MND	Mitigated Negative Declaration
MT	metric ton
MWRP	Michelson Water Recycling Plant
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NO_x	oxides of nitrogen
NO_2	nitrogen dioxide
NRHP	National Register of Historic Places
O_3	ozone
OA	Operational Area
OCSD	Orange County Sheriff Department
OCFA	Orange County Fire Authority
OPR	Governor's Office of Planning and Research
PM_{10}	coarse particulate matter
$PM_{2.5}$	fine particulate matter
PPV	peak particle velocity
RCNM	Roadway Construction Noise Model
RMS	Reservoir Management System
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
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
SGC	Strategic Growth Council
SILMOD	Silverado-Modjeska Specific Plan
SLF	Sacred Lands File
SPL	sound pressure level
SR	State Route
SRA	Source-Receptor Area
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles traveled

Acronym/Abbreviation	Definition
VdB	vibration decibel
VHFHSZ	very high fire hazard severity zone
VOC	volatile organic compound

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1 Introduction

1.1 Introduction and Purpose of this Initial Study

This Draft Initial Study (IS) was prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental effects associated with the Fleming Zone 8 Reservoir and Pump Station Improvements Project (project), proposed by Irvine Ranch Water District (IRWD) and located within the Santiago Canyon area of unincorporated Orange County. The proposed project involves the replacement of existing water storage and conveyance infrastructure at IRWD's Fleming Reservoir and Pump Station facility with new water storage and conveyance infrastructure that is appropriately sized to meet IRWD criteria and operational requirements. A detailed description of the proposed project and its location is provided in Section 2, Project Description.

1.2 California Environmental Quality Act Compliance

IRWD is the lead agency responsible for the preparation of the environmental documentation and for the approval of the project. Based on the findings of this Draft IS, IRWD has made the determination that a Mitigated Negative Declaration (MND) is the appropriate environmental document to be prepared in compliance with CEQA (California Public Resources Code, Section 21000 et seq.).

This IS/MND has been prepared by IRWD and is in conformance with Section 15070(a) of the CEQA Guidelines (14 CCR 15000 et seq.). The purpose of the MND and the IS checklist is to determine any potentially significant impacts associated with the project and to incorporate mitigation measures into the project design, as necessary, to reduce or eliminate significant or potentially significant effects. As determined in this IS/MND, there is no substantial evidence, in light of the whole record before the agency, that the project would have a significant effect on the environment.

1.3 Public Review Process

In accordance with CEQA, this IS/MND has been made available for public review to potentially affected agencies and individuals for a period of 30 days, in accordance with Section 15073 of the State CEQA Guidelines. During review of the IS/MND, affected public agencies and the interested public have an opportunity to focus on the document's adequacy in identifying and analyzing the potential environmental impacts and the ways in which the potentially significant effects of the project can be avoided or mitigated.

Notices of the availability of the IS/MND for review and comment as well as the environmental documentation are available for review on IRWD's website:

https://www.irwd.com/doing-business/environmental-documents

Comments on the IS/MND must be received by 4:00 p.m., July 13, 2021 and should be sent:

Via Email to:

Jo Ann Corey
Environmental Compliance Analyst
Irvine Ranch Water District
corey@irwd.com

Via Mail to:

Irvine Ranch Water District
Water Resources Department
Attn: Jo Ann Corey, Environmental Compliance Analyst
P.O. Box 57000
Irvine, California 92619-7000

Following the close of the public comment period, IRWD will consider this IS/MND and comments thereto in determining whether to approve the proposed project.

Following receipt and evaluation of comments from agencies, organizations, and/or individuals, IRWD will determine whether any substantial new environmental issues have been raised. If so, further documentation—such as an Environmental Impact Report (EIR) or an expanded IS/MND—may be required. If not, the project and the environmental documentation will be scheduled to be submitted to IRWD's Board of Directors for consideration.

2 Project Description

2.1 Project Overview

IRWD is proposing to implement the Fleming Zone 8 Reservoir and Pump Station Improvements Project (project). The proposed project would be located at IRWD's existing Fleming Reservoir and Pump Station facility, which is located at 7431 Santiago Canyon Road, Silverado, California. The site is approximately 500 feet east of the intersection of Santiago Canyon Road and Silverado Canyon Road, in the Santiago Canyon area of unincorporated Orange County. The existing site currently contains a 150,000-gallon steel drinking water storage reservoir, a pump station, support structures, and associated equipment, and is the only source of water service for IRWD's approximately 2,500 customers within Santiago Canyon, Silverado Canyon, Williams Canyon, and Modjeska Canyon (collectively known as the Santiago Canyon Area). IRWD has identified that improvements to the facilities are needed to ensure that the facilities are capable of supplying maximum daily water demands redundancy.

Implementation of the project would improve the reliability of IRWD's drinking water storage and conveyance facilities in this part of IRWD's service area. Major project components would include:

- Demolition of the existing aboveground 150,000-gallon steel reservoir, pump station, and administration and storage buildings.
- Construction of an aboveground 1.3 million-gallon (MG) prestressed concrete reservoir and associated pipelines.
- Construction of a new, pump station, equipped with three, approximately 660-gallons-per-minute, pumps that will be enclosed within a masonry block building and will include a dedicated electrical room and dedicated operations room with a restroom.
- Construction of a replacement storage building.
- Construction of a masonry block building for the disinfection facilities, which will include sodium hypochlorite and aqueous ammonia storage and feed systems.
- Replacement of an existing 150-kilowatt (kW) standby diesel generator with a new Tier 3 350 kW standby diesel generator to provide power to the facilities during both planned and unplanned electrical service outages.
- Improvements to the existing site electrical service and installation of new controls and telemetry equipment, including installation of a 20-foot-tall antenna on top of the tank for radio communications and equipment control.
- Installation of site improvements including a modified access road, fencing, retaining walls, two motorized swing gates, and landscaping.
- Installation of new pipelines, located in the access road, which will extend into an outlet adjacent to an existing storm drain outlet south of Santiago Canyon Road across from the site's access road. This outlet for the overflow pipe would be constructed with rip rap and a small concrete headwall.

See Section 2.5, Project Characteristics, for additional detail.

2.2 Project Location

The proposed project would be located at IRWD's existing Fleming Reservoir and Pump Station facility, which is located in the Santiago Canyon area of unincorporated Orange County (Figure 1, Project Location). The existing facility is located approximately 500 feet east of the intersection of Santiago Canyon Road and Silverado Canyon Road.

2.3 Environmental Setting

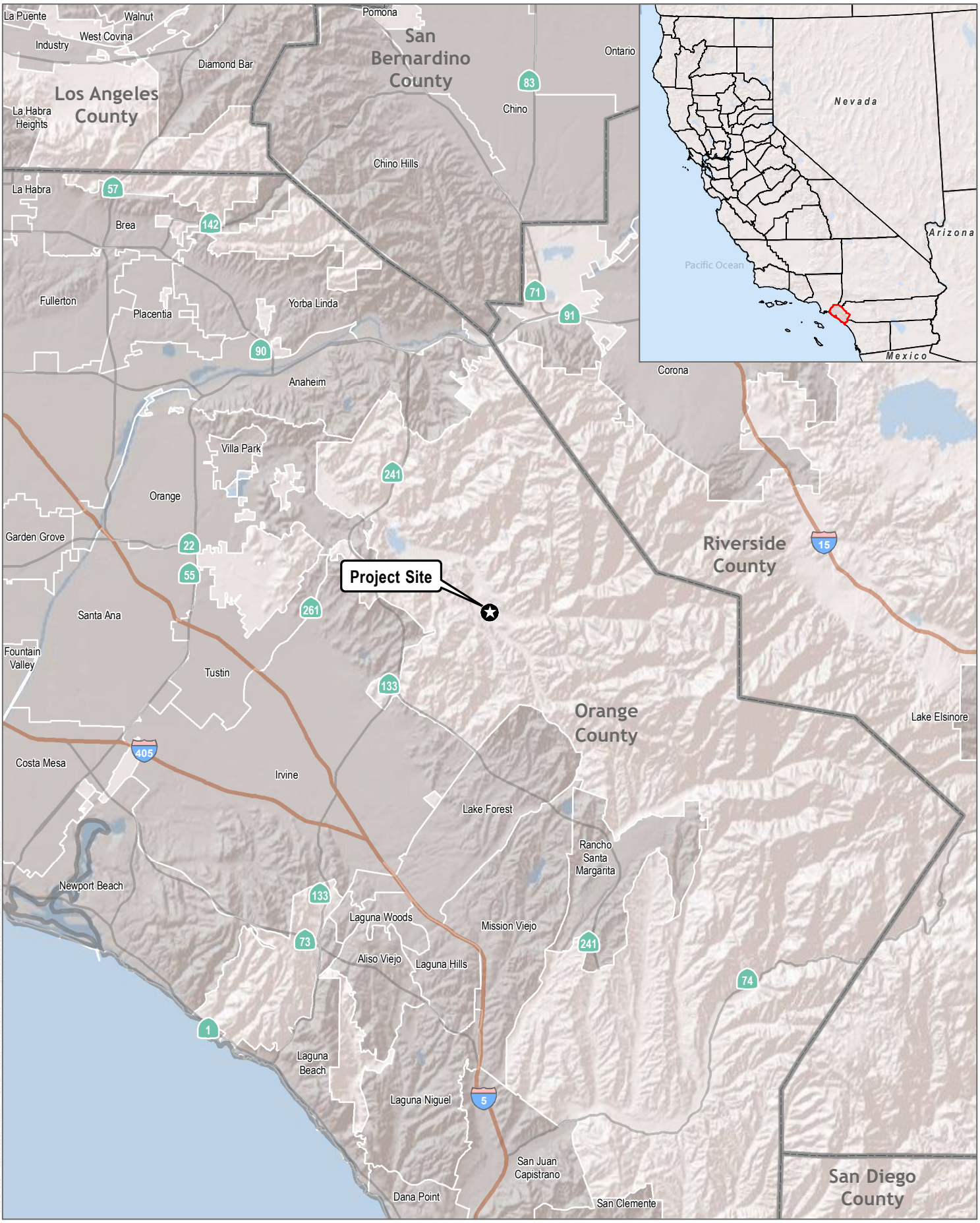
The project site is situated in a predominantly rural area within the foothills of the northern Santa Ana Mountains. In October and December 2020, the Silverado and Bond fires burned through the Santa Ana Mountains, including immediately around the project site. As a result, the vegetation to the west and south of the project site was burned during these two fires, but shows signs of recovery which will lead to re-establishment of the native scrub vegetation that previously occupied these areas. Charred remains of shrubs and resprouts of native plants were observed in burned areas to the west of the project site. Native coastal sage scrub vegetation to the north of the project site, across Silverado Canyon Road, remains in pristine condition as it was not affected by the fires. Biological resources were documented in their current condition as was observed during a biological reconnaissance by Dudek in May 2021, which takes into account the habitat conditions on site prior to the fires in 2020, as described in the Biological Resources Assessment (Appendix B).

Existing Facility

The existing facility is located on an approximately 2.9-acre parcel that is owned by IRWD (Figure 2, Project Aerial). The parcel is bound by Silverado Canyon Road to the north, Santiago Canyon Road to the south, and undeveloped vegetated land to the east and west. The parcel is bisected by a private access road owned by IRWD that connects Silverado Canyon Road and Santiago Canyon Road. Currently, only the eastern half of the parcel is used by IRWD and is occupied by the existing Fleming Reservoir and Pump Station facility. In addition to the storage reservoir and pump station, the Fleming facility also contains an existing administrative building with a conference room and restroom, two storage buildings, a generator, and an AT&T cellular antenna facility. The cellular antenna facility is not owned by IRWD and is leased to AT&T through an existing lease agreement with the prior owner. The remaining western portion of the site is undeveloped. Photos of the project site and surrounding area are provided in Figure 3A-B, Existing Conditions. Similar to the existing conditions, the proposed project would be located on the eastern portion of the site to minimize impacts to the undeveloped portion of the site.

The County of Orange General Plan Land Use Element designates the site as General Agriculture, and the County of Orange Zoning map designates the site as A1 General Agricultural (County of Orange 2005). Surrounding land uses in the immediate vicinity of the project site include:

- **North:** Silverado Canyon Road; Silverado Creek, Silverado Canyon
- **Northeast:** Black Star Canyon Road, Baker Canyon
- **West:** Agricultural use (Christmas tree farm), Santiago Creek, Limestone Canyon Regional Park
- **South:** Santiago Canyon Road, Santiago Creek, Limestone Canyon Regional Park
- **Southwest:** Silverado Library, Irvine Mesa (vegetated hillside that is part of Silverado-Modjeska Conservation Easement)
- **West:** Vegetated hillside (part of Silverado-Modjeska Conservation Easement), Santiago Canyon Road, community of Silverado



SOURCE: Esri 2014

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FIGURE 1

Project Location

Fleming Zone 8 Reservoir and Pump Station Improvements Project

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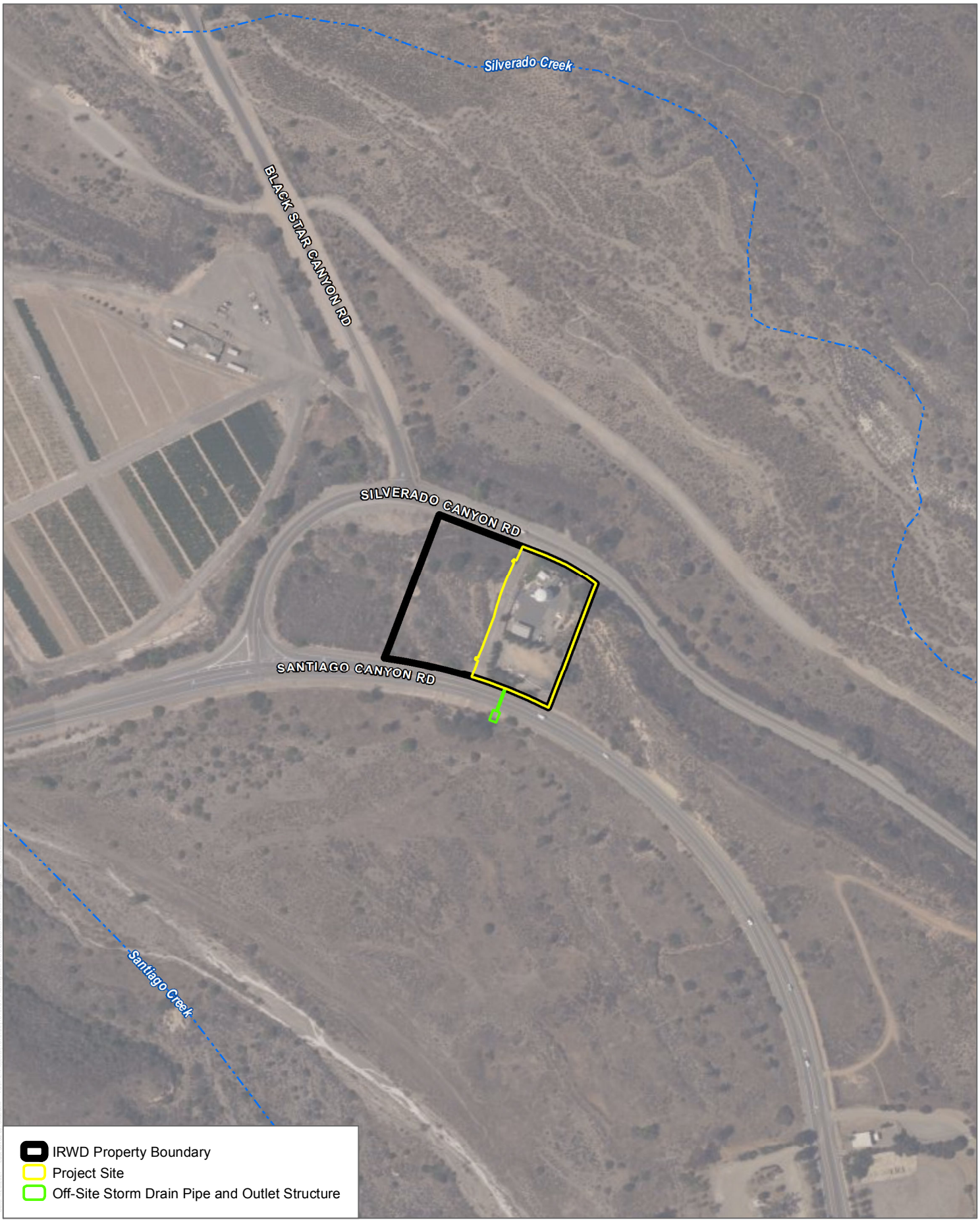

SOURCE: Bing Maps 2021; USGS NHD 2021

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FIGURE 2

Project Aerial

Fleming Zone 8 Reservoir and Pump Station Improvements Project

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Photo A

Photo B

Photo C

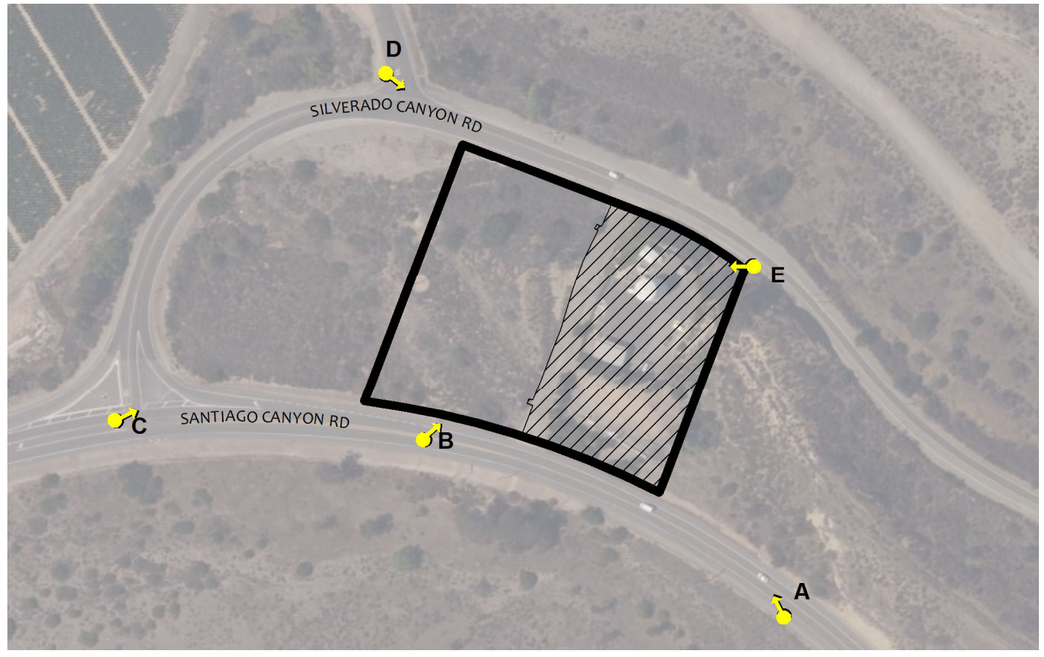

Photo Key Map

SOURCE: Dudek 2021

FIGURE 3A

Existing Conditions

Fleming Zone 8 Reservoir and Pump Station Improvements Project

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Photo D

Photo E

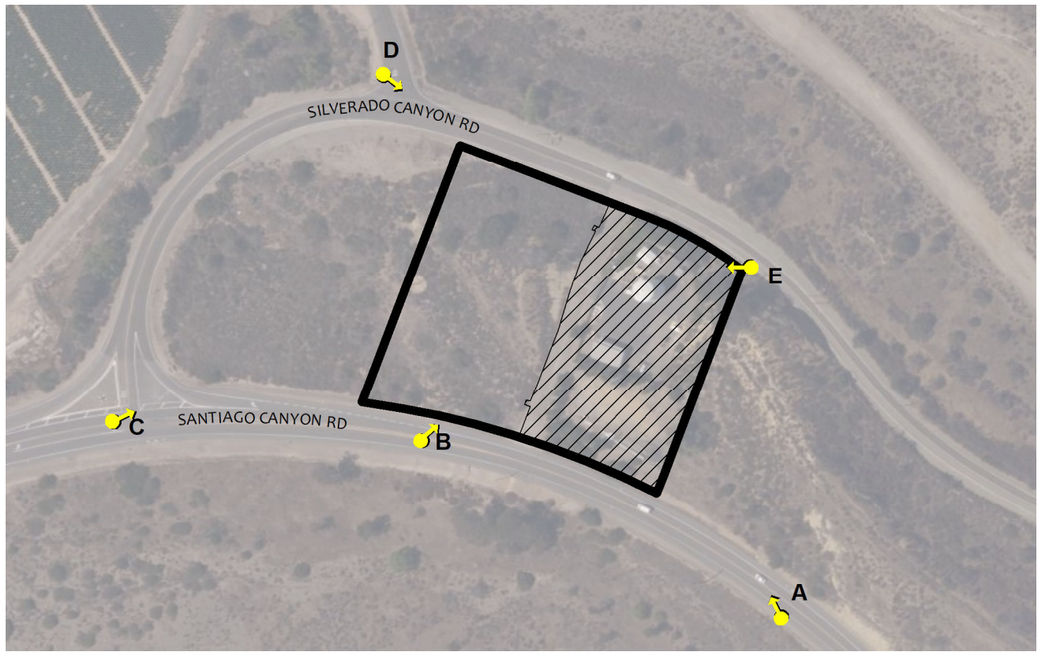

Photo Key Map

SOURCE: Dudek 2021

FIGURE 3B

Existing Conditions

Fleming Zone 8 Reservoir and Pump Station Improvements Project

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The project site is located within the boundary of the Silverado-Modjeska Specific Plan (SILMOD Plan). Although not part of the Orange County General Plan, the SILMOD Plan is a policy document for the defined areas of Modjeska Canyon, Williams Canyon, Silverado Canyon, Baker Canyon, and Black Star Canyon. The SILMOD Plan was adopted by the Orange County Board of Supervisors in 1977 and interprets and details many general plan policies with specific reference to the conditions of the Silverado-Modjeska area. Generally, the SILMOD Plan places an emphasis on maintaining low densities within the canyon areas and preserving the beauty and integrity of the natural terrain and vegetation (County of Orange 1977). While the proposed project is exempt from local planning and zoning laws due to its status as a water storage and conveyance facility carried out by a Special District, the SILMOD Plan does not provide any specific zoning designations for the site.

The project site is also located within the boundaries of the Orange County Central and Coastal Subregion Habitat Conservation Plan and Natural Community Conservation Plan (HCP/NCCP; County of Orange 1996). The HCP/NCCP is a planning and policy document designed to protect and manage habitat supporting a broad range of plant and animal populations within the Central and Coastal Subregion of Orange County. The HCP/NCCP creates a subregional habitat reserve system and implements a coordinated program to manage biological resources within the habitat reserves. According to the HCP/NCCP, the project site is located outside of the reserve space and is mapped as urban land (County of Orange 1996; see Figure 4, Central and Coastal Subregional HCP/NCCP Map). Special linkages and habitat reserves are mapped in the immediate area of the project site.

Topographically, the project site contains elevations ranging approximately from 1,012 to 1,059 feet above mean sea level. The site is located on a narrow piece of property that rises approximately 20 to 30 feet above the Santiago Creek and Silverado Creek drainages (Figure 5, Topographical Map).

2.4 Project Background and Need

The existing Fleming Reservoir and Pump Station facility was first constructed by the Santiago County Water District in the 1960s and 1970s to provide drinking water to the rural communities within the Santiago Canyon area. In 2006, the Santiago County Water District consolidated with IRWD, and IRWD took over ownership and operation of these facilities. Upon assessing the capacity of the existing facilities and demands of the Santiago Area, IRWD identified that the existing facilities do not comply with current IRWD criteria and operational requirements. As a result, IRWD is proposing to improve the storage and pump redundancy at the Fleming Reservoir and Pump Station facility to increase drinking water storage and delivery capabilities to the entire Santiago Canyon Area. Additionally, implementation of the project would allow IRWD to demolish outdated facilities that are structurally deficient and contain hazardous building materials (see Section 3.9, Hazards and Hazardous Materials) and replace those facilities with modern facilities that are fire hardened meet current building codes and seismic safety requirements.

2.5 Project Characteristics

2.5.1 Proposed Facilities

Project implementation would involve the demolition of existing on-site structures and the construction of a new aboveground 1.3 MG reservoir, a new pump station, support structures, and site improvements. As discussed previously, the existing facility is located on the eastern half of IRWD's property. Similarly, the proposed project would be located generally within the same footprint as the existing facility to minimize impacts to the undeveloped, vegetated side of the property.

Major project components are discussed below and shown on Figure 6, Site Plan. Conceptual renderings of the project are provided on Figures 7A through 7C, Conceptual Renderings.

Demolition

The project would require the removal of the majority of existing structures and features at the facility, including the steel reservoir, booster pumps station, operations building, storage buildings, piping, cell tower, septic tank, sewer manhole, sewer holding tank, generator, and all electrical and control equipment. Soils around the septic tank and sewer holding tank may be contaminated and, if so, would be removed and transported to a facility permitted to accept contaminated soils or remediated on site.

Grading

Some minor grading would be required to raise the southeastern portion of the site to match the elevation of the northeastern portion of the site, creating a level surface that can accommodate the new reservoir. A retaining wall would be constructed along portions of the site perimeter. The retaining wall would generally range in height from approximately 5 feet to 9 feet and would be constructed of concrete and masonry blocks. The existing access road would be regraded and repaved.

Construction

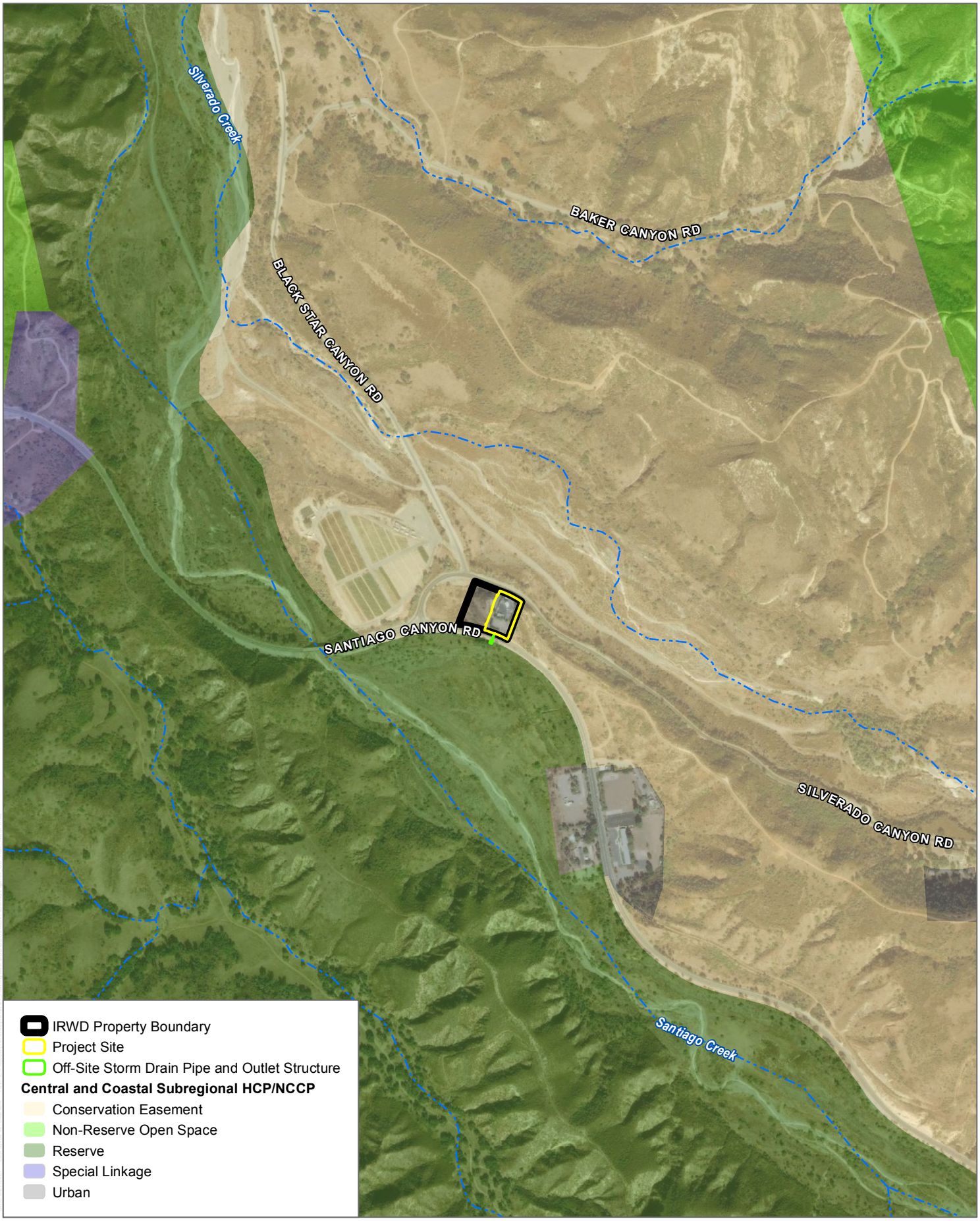
Reservoir

A new aboveground 1.3 MG prestressed concrete drinking water storage reservoir will be constructed on the southern portion of the site. The reservoir would be approximately 88 feet in diameter and approximately 35 feet tall and would feature a flat top. An approximately 20-foot-tall supervisory control and data acquisition (SCADA) communication antenna would be installed at the top of the tower to provide IRWD with real-time controls of equipment at the facility.

Support Structures

A new enclosed pump station structure would be constructed on the northeastern portion of the site. The pump station building would be a masonry block building with a mono-slope roof. The building would have a pump room, electrical room, and operations room with a restroom. The pump station would house pumps, an air compressor, and associated piping and mechanical equipment. Because sewer service is unavailable in the area, an underground wastewater holding tank would be installed on-site. A surge tank would be located outside of the pump station.

A new disinfection building would be constructed in the southwestern portion of the site, adjacent to the concrete reservoir. The building would house disinfection equipment used to store and feed chemicals commonly used to disinfect drinking water, including sodium hypochlorite and aqueous ammonia. The building would be of similar construction as the pump station building and would feature masonry block walls and a mono-slope roof. Pursuant to Orange County Fire Authority (OCFA) requirements, a fire master plan for the site would be required and would include hazardous materials identification and a chemical classification packet.



SOURCE: Esri Wolrd Imagery 2019; County of Orange 1996; USGS NHD 2021

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0 500 1,000 Feet

FIGURE 4

Central and Coastal Subregional HCP/NCCP Map

Fleming Zone 8 Reservoir and Pump Station Improvements Project

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SOURCE: Bing Maps 2021; County of Orange 2020; USGS NHD 2021

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FIGURE 5

Topographic Map

Fleming Zone 8 Reservoir and Pump Station Improvements Project

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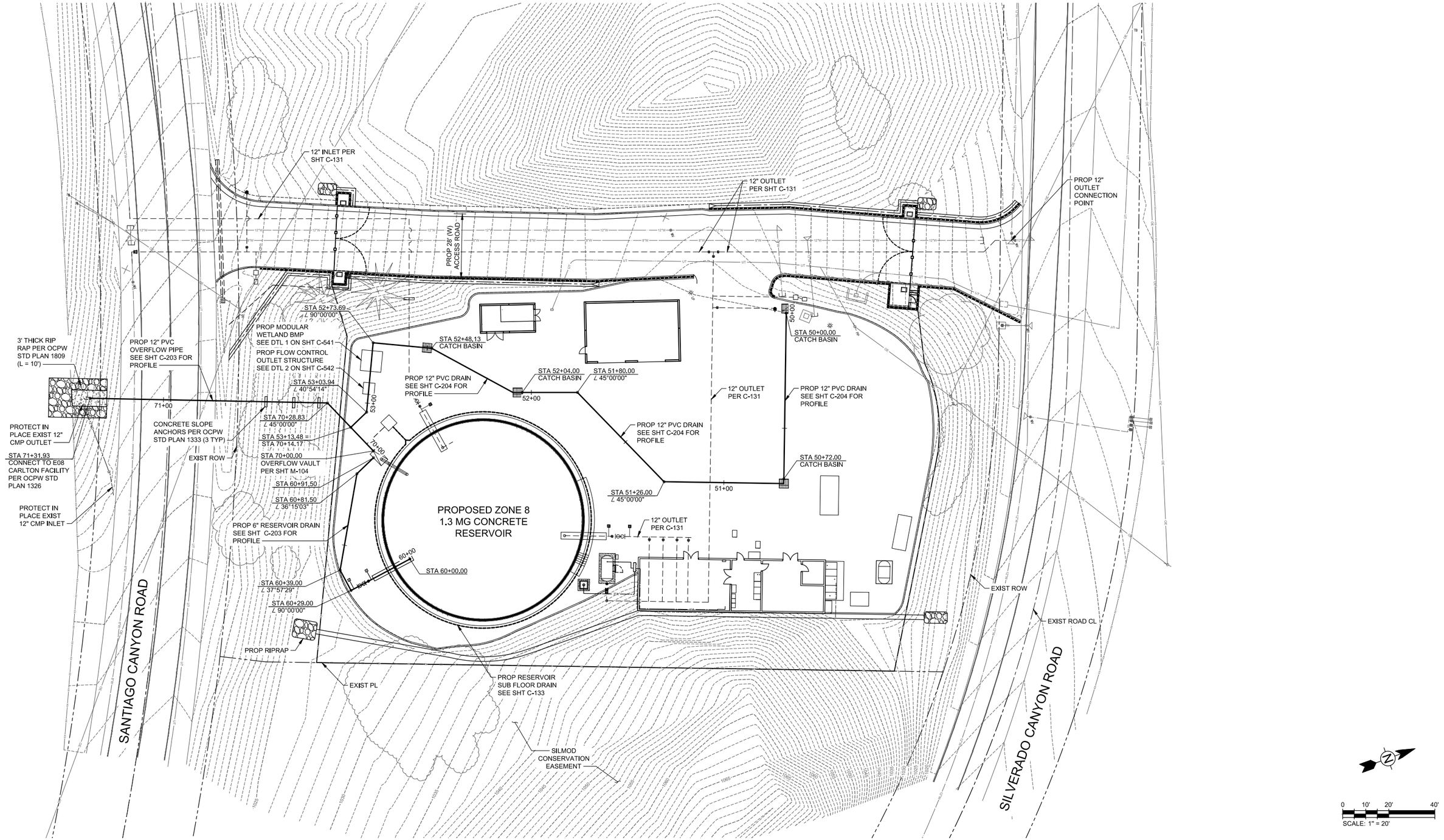

SOURCE: Tetra Tech 2021

FIGURE 6

Site Plan

Fleming Zone 8 Reservoir and Pump Station Improvements Project

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SOURCE: Tetra Tech 2021

FIGURE 7A

Conceptual Rendering: View looking southwest towards project site and Santiago Canyon Road

Fleming Zone 8 Reservoir and Pump Station Improvements Project

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SOURCE: Tetra Tech 2021

FIGURE 7B

Conceptual Rendering: View looking east towards project site

Fleming Zone 8 Reservoir and Pump Station Improvements Project

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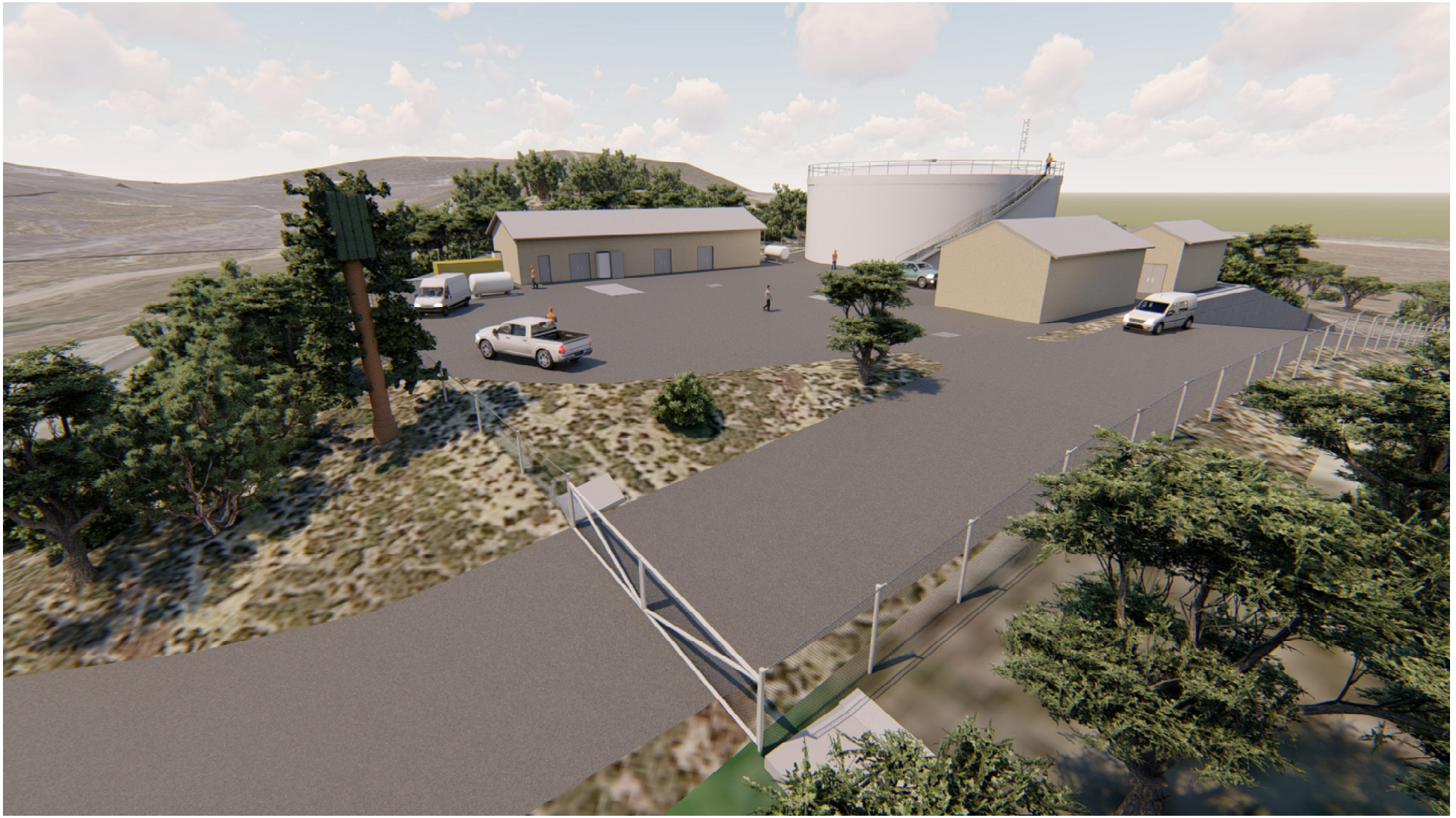

SOURCE: Tetra Tech 2021

FIGURE 7C

Conceptual Rendering: View looking southeast towards project site

Fleming Zone 8 Reservoir and Pump Station Improvements Project

DUDEK

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An approximately 1,000-square-foot storage building would be located on the central portion of the site. Similar to the pump station and disinfection buildings, the storage building would feature masonry block walls and a mono-slope roof as well as two roll-up doors.

Cellular Tower

The existing facility currently contains an AT&T monopole cellular tower. During construction of the new reservoir and pump station facilities, the cellular tower would be removed and a temporary, portable tower may be installed in its stead. Upon completion of construction, AT&T may elect to install a permanent replacement tower on site under a new lease arrangement with IRWD.

Pipelines and Electrical Service

New underground pipelines would be installed throughout the site, including new pipelines that would connect to existing pipelines within Santiago Canyon Road and Silverado Canyon Road. There are currently two existing electrical service lines provided by Southern California Edison (SCE) at the site, primarily through pole-mounted transformers and power poles. As part of the project, SCE would modify the overhead lines and install a new pad-mounted transformer. Additionally, the existing 150 kW standby diesel generator would be replaced with a new Tier 3 350 kW standby diesel generator for emergency use.

Site Access, Security, and Lighting

Site access to the existing facility is currently provided via an IRWD-owned private access road that connects Santiago Canyon Road and Silverado Canyon Road. The road varies from 21 to 28 feet wide with slopes primarily in the 13% to 14% range. The project would involve the widening and re-grading of this access road to 28 feet wide with a maximum slope of 15%, in accordance with requirements set forth by OCFA for roads within wildfire hazard areas. For the portions of the road where widening is necessary, the new road's footprint would only encroach on the eastern side of the property (i.e., where the existing facility is located) so as not to disturb the vegetated western portion of the IRWD property to the maximum extent feasible.

The site would be secured with a motorized swing gate at both ends of the access road. A portion of the gates' square mechanical housings would require the removal of a small amount of vegetation on the undeveloped western side of the IRWD property. Preliminary estimates indicate between approximately 50 to 100 feet of vegetation may require removal, and IRWD will work to minimize the total amount of removal. The site would be enclosed with an approximately 6-foot-high black vinyl coated chain-link fence with barbed wire on top.

The site would include site lighting. IRWD will keep lighting to a minimum and focus lighting in areas that are required for site security and to perform work, as necessary. Moreover, lighting control features would be included in project design, which would ensure that lighting would remain off during nighttime hours unless in the event of an emergency where personnel are required to access the site.

Landscaping

Upon completion of construction, landscaping would be provided around the facility to stabilize the slopes and to restore the site to its pre-construction natural look. The landscape palette would include a variety of drought-tolerant plants, shrubs, and trees designed to blend with the surrounding natural environment.

Stormwater Management

Under the existing conditions, stormwater is allowed to run off site into Silverado Canyon Road and Santiago Canyon Road. Under the proposed conditions, a series of catch basins would capture surface flows and route them to a biofiltration system for attenuation and treatment. The system would be appropriately consistent with the North Orange County Municipal Separate Storm Sewer System Permit and the Orange County Technical Guidance Document for Project Water Quality Management Plans. IRWD will ensure that the project's stormwater system is consistent with these requirements so as to prevent downstream impacts.

Wildfire Hardening

All proposed structures would be designed to meet the fire hardening requirements outlined in IRWD Facility Fire Protection Improvements Report (RRM 2008), which was prepared in accordance with the California Fire and Building Codes. These codes call for ignition-resistant construction methods and materials for all new buildings in California's fire-prone areas. The project would also be designed to provide appropriate access to OCFA vehicles and equipment. Additionally, the standby emergency generator would comply with the 2019 California Fire Code 324.1 – OCFA Amendment, which requires that equipment or devices within wildland areas that generate heat or sparks be setback at least 30 feet from combustible vegetation.

During project construction, IRWD's construction contractors would implement standard best management practices to minimize fire risks. For example, IRWD would require that spark arrestors on construction and maintenance equipment be in good working order. Construction contractors would be empowered to limit or pause construction activities when fire risk is high, such as during Red Flag Warnings and High to Extreme Fire Danger days. Additionally, the existing pump station and reservoir would be kept in service during construction. As such, a water source would be immediately available in the event of a fire. Nonetheless, contractors would be required to have access to functional fire extinguishers at all times and be trained in their proper use.

2.5.2 Project Operational Characteristics

Upon completion of construction, the proposed project would primarily serve as a remotely operated drinking water storage and conveyance facility. Similar to the existing conditions, IRWD staff would occasionally visit the site for routine maintenance or in the event of an emergency.

Currently, the facility's existing administration building is used as a remote operations center for IRWD staff during an emergency. Upon completion of proposed construction, the proposed pump station structure, which will feature an operations room, and would continue to provide IRWD staff with a space for coordination in the event of an emergency in the Santiago Canyon Area.

2.5.3 Project Construction and Scheduling

Project construction is scheduled to begin in late 2022 and will take two years to complete, weather permitting.

The existing reservoir and pump station will remain in service during construction of the new facilities to ensure continuous, uninterrupted drinking water delivery. As such, construction would be split into two phases to allow for the construction of the new facilities, followed by the demolition of the existing reservoir and pump station. Additional information regarding construction equipment and phasing is provided in Section 3.3, Air Quality.

2.6 Project Approvals

Discretionary Actions

The actions and/or approvals that IRWD needs to consider for the proposed project include, but are not limited to, the following:

- **Project Approval and Adoption of the IS/MND.** Following public review and comment of this IS/MND, the project and this IS/MND would require approval by the IRWD Board of Directors.
- ~~Department~~ **Division of Drinking Water, Santa Ana District office.** The project would be subject to the requirements and approval of the Division of Drinking Water. The facility's existing permit would require an amendment to include a new drinking water storage reservoir and the new disinfection facilities used to maintain water quality in the reservoir.

Subsequent non-discretionary approvals would include:

- **Approval of the Fire Master Plan by OCFA.** The disinfection system would utilize liquid sodium hypochlorite and aqueous ammonia. Per OCFA requirements, a fire master plan is therefore required. The fire master plan would include hazardous materials identification and chemical classification packet.
- **Permit to Construct/Operate.** The project would involve the replacement of an existing 150-kW standby diesel generator with a new Tier 3 350 kW standby diesel generator. A Permit to Construct/Operate would be required by the South Coast Air Quality Management District for the installation of the new generator on site.
- **Construction General Permit.** Because the project would involve ground disturbance greater than 1 acre, the project would require coverage under the State Regional Water Quality Control Board General Permit for Construction Activities, which would involve the preparation of a stormwater pollution prevention plan (SWPPP).
- **County of Orange Public Works Permit.** An encroachment permit would be required from the County of Orange to connect to the Carlton Storm Drain Facility E08 on the south side of Santiago Canyon Road. The permit would also include the connection to the pipelines within the south side of Santiago Canyon Road.
- ~~**Department of Drinking Water.** The project would be subject to the requirements and approval of the Division of Drinking Water. The facility's existing permit would require an amendment to include new drinking water storage reservoir and the new disinfection facilities used to maintain water quality in the reservoir~~.

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3 Initial Study Checklist

1. **Project title:**

   Fleming Zone 8 Reservoir and Pump Station Improvements Project

2. **Lead agency name and address:**

   Irvine Ranch Water District
   15600 Sand Canyon Avenue
   Irvine, California 92618

3. **Contact person and phone number:**

   Jo Ann Corey, MPA
   Environmental Compliance Analyst
   949.453.5326
   corey@irwd.com

4. **Project location:**

   The project would be located at IRWD's existing Fleming Reservoir and Pump Station facility, which is located at 7431 Santiago Canyon Road, Silverado, California. The site is in the Santiago Canyon area of unincorporated Orange County. The existing facility is located approximately 500 feet east of the intersection of Santiago Canyon Road and Silverado Canyon Road.

5. **Project sponsor's name and address:**

   Irvine Ranch Water District
   15600 Sand Canyon Avenue
   Irvine, California 92618

6. **General plan designation:**

   General Agriculture

7. **Zoning:**

   A1 General Agricultural

8. **Description of project:**

   The project involves the demolition of existing water storage and conveyance infrastructure at IRWD's Fleming Reservoir and Pump Station facility and the construction of a new reservoir and pump station that is appropriately sized to meet IRWD operational performance and safety standards.

9. Surrounding land uses and setting:

The project site is situated in a predominantly rural area within the foothills of the northern Santa Ana Mountains. In October and December 2020, the Silverado and Bond fires burned through the Santa Ana Mountains, including immediately around the project site. Prior to these fires, the project site was surrounded by undeveloped, vegetated land. After these fires, the surrounding area now contains recovering vegetation.

10. Other public agencies whose approval is required:

The project would require the following coordination efforts and approvals:

- **Approval of the Fire Master Plan by OCFA.** The Reservoir Management System would utilize liquid sodium hypochlorite and aqueous ammonia. Per OCFA requirements, a fire master plan would thus be required. The fire master plan would include hazardous materials identification and a chemical classification packet.
- **Permit to Construct/Operate.** The project would involve the replacement of an existing 150-kW standby diesel generator with a new Tier 3 350 kW standby diesel generator. A Permit to Construct/Operate would be required by the South Coast Air Quality Management District for the installation of the new generator on site.
- **Construction General Permit.** Because the project would involve ground disturbance greater than 1 acre, the project would require coverage under the State Regional Water Quality Control Board General Permit for Construction Activities, which would involve the preparation of a SWPPP.
- **County of Orange Public Works Permit.** An encroachment permit would be required from the County of Orange to connect to the Carlton Storm Drain Facility E08 on the south side of Santiago Canyon Road. The permit would also include the connection to the pipelines within the south side of Santiago Canyon Road.
- ~~Department~~ Division of Drinking Water. The project would be subject to the requirements and approval of the Division of Drinking Water. The facility's existing permit would require an amendment ~~to include the Reservoir Management System where sodium hypochlorite and aqueous ammonia is used to maintain water quality in the reservoir~~ to include a new drinking water storage reservoir and the new disinfection facilities used to maintain water quality in the reservoir.

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

Yes, refer to Section 3.18 (Tribal Cultural Resources) for details.

Environmental Factors Potentially Affected

The environmental factors checked below 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.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Energy
☒ Geology and Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☐ Hydrology and Water Quality	☐ Land Use and Planning	☐ Mineral Resources
☐ Noise	☐ Population and Housing	☐ Public Services
☐ Recreation	☐ Transportation	☒ Tribal Cultural Resources
☐ Utilities and Service Systems	☐ Wildfire	☒ Mandatory Findings of Significance

Determination

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 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 ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature
Jo Ann Corey, Environmental Compliance Analyst, IRWD

6/4/21
Date

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 where it is based on project-specific factors as well as general standards (e.g., the project will 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, then 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 Environmental Impact Report (EIR) is required.
4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "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 (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the 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 they 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 Measures Incorporated," describe the mitigation measures which 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, where 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 less than significance

3.1 Aesthetics

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
I.	**AESTHETICS –** Except as provided in Public Resources Code Section 21099, would the project**:**				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b)	Substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
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?	☐	☐	☒	☐
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

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

Less-than-Significant Impact. For the purposes of this analysis, a scenic vista is defined as a long, expansive view of a highly valued landscape from a publicly accessible vantage point. "Highly valued landscapes" can include natural open spaces, topographic formations including mountains or hills, or more generally, areas that contribute to a high level of visual quality.

The project site is located in the Santiago Canyon area of unincorporated Orange County. The Orange County General Plan and the SILMOD Plan do not identify protected scenic vistas within the unincorporated areas of the County. However, Santiago Canyon Road, which passes directly north of the project site, is designated as a "view corridor" in the County General Plan (County of Orange 2005) and as a "scenic highway corridor" by the SILMOD Plan (County of Orange 1977). Additionally, the general development guidelines in the SILMOD Plan aim to "reduce development problems in hillside areas and to preserve areas of natural scenic beauty" (County of Orange 1977). As shown in Figure 3A, Photos A, B, and C, views of the project site are available from Santiago Canyon Road. Views of the existing project site generally include vegetated slopes and the existing facility, which contains the white steel tank, security fencing and electrical powerlines. The surrounding views consist of rural, undeveloped hillsides visible from Santiago Canyon Road in all directions, as well as views of the limestone ridgelines visible from Santiago Canyon Road to the south and west.

The project would result in the replacement of the existing Fleming Reservoir and Pump Station facility. While the project would result in the construction of a new, larger tank and supporting structures, the project would be located within the footprint of the existing facility and would not change the overall composition of existing views of the project site (i.e., those of a public utility facility). Fencing and landscaping would provide screening to reduce visibility. Views of the limestone ridgelines and surrounding natural hillsides, which are visible to the southwest of the site and Santiago Canyon Road, would not be obstructed as a result of the project. Therefore, impacts to scenic vistas would be less than significant.

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

Less-than-Significant Impact. The project would involve the demolition of existing on-site structures and the construction of a new, larger tank and supporting structures, infrastructure, and site improvements. The project site is readily visible from surrounding roadways (Santiago Canyon Road and Silverado Canyon Road). There is one officially designated and five eligible state scenic highways in Orange County (Caltrans 2019). The County's one officially designated state scenic highway—State Route (SR-) 91—is located approximately 8.4 miles northwest of the project site; SR-91 continues to the northeast as an eligible state scenic highway. The five eligible state scenic highways in the County include SR-74, located approximately 14 miles southeast of the project site; SR-1, located approximately 15.5 miles southwest of the project site; SR-5, located approximately 17 miles south of the project site; and SR-15, located approximately 10 miles northeast of the project site (Caltrans 2018). Due to distance and intervening terrain, the project site is not visible from any of these officially designated or eligible state scenic highways, nor are they visible from the project site.

As previously discussed, Santiago Canyon Road is a locally designated scenic highway (County of Orange 1977, 2005). Santiago Canyon Road is located immediately north of the project site, and motorists would have immediate and uninterrupted views of the project site. The SILMOD Plan prohibits neighborhood commercial uses and outlines requirements for site plan review for residential development along the scenic highway corridor. The project does not consist of neighborhood commercial or residential development. As such, these policies do not apply to the project.

As stated in Section 2.2, Project Location, the project would be located at IRWD's existing Fleming Reservoir and Pump Station facility. Because the proposed project would demolish and replace existing structures with modern facilities, the project site would return to similar visual conditions upon completion of construction. Additionally, the proposed project would include landscaping around the facility's perimeter to soften and enhance views of the site. The landscape palette would include a variety of drought-tolerant plants, shrubs, and trees designed to blend with the surrounding natural environment. Therefore, the project would not result in damage to scenic resources within a state scenic highway. Impacts would be less than significant.

c) In non-urbanized areas, would the project 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. For purposes of CEQA, an "urbanized area" is defined by Public Resources Code Section 21071. In order for an unincorporated area to be considered an "urbanized area," it must

have a population density of greater than 1,000 persons per square mile, among other criteria. The project site does not meet the criteria for an unincorporated area to be considered an "urbanized area," and therefore the analysis addresses the project's impact to existing visual character and the quality of public views of the site and its surroundings.

Construction activities associated with the proposed project would temporarily be visible to motorists and pedestrians. The aboveground improvements would be limited to new structures within the existing Fleming Reservoir and Pump Station facility. Figures 3A and 3B, Existing Conditions, present photographs of the project site and surrounding area from Santiago Canyon Road and Silverado Canyon Road, respectively. As shown in Figure 3A, the existing visual environment surrounding the project site looking north of Santiago Canyon Road consists of rural hillsides with native vegetation, including trees, shrubs, and dry grasses. Additionally, a small portion of the existing on-site reservoir can be seen in Photos A, B, and C; however, the remaining components of the facility are not visible from Santiago Canyon Road. As shown in Figure 3B, the existing visual environment surrounding the project site, looking south from Silverado Canyon Road, shows a similar view of hillsides and native vegetation. While views of the existing on-site reservoir are more noticeable in Photos D and E, the existing hills and vegetation cover views of the remaining facility area. The project site is predominately hidden from views along Santiago Canyon Road and Silverado Canyon Road.

The existing visual character of the project site can be described as a mix of developed, disturbed land and undeveloped land containing vegetation. As described in Section 3.1(a) above, new structures would replace existing structures that would be removed as part of the project. For visuals of the project, refer to Figures 7A through 7C, Conceptual Renderings. Additionally, the proposed project would include landscaping around the facility to soften and enhance views of the site. The landscape palette would include a variety of drought-tolerant plants, shrubs, and trees designed to blend with the surrounding natural environment. Upon completion of construction, the project site would be similar in character to the existing conditions of the current facility. Therefore, with regard to degradation of the existing visual character or quality of the site, impacts would be less than significant.

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

Less-than-Significant Impact. Existing sources of light and glare in the project area are limited. Lighting conditions are typical of a rural setting and limited to occasional streetlights along Santiago Canyon Road and Silverado Canyon Road. Surrounding land is undeveloped and does not contain additional sources of lighting. As described in Section 3.1(a) above, the proposed project would replace structures within the existing Fleming Reservoir and Pump Station facility; thus, light generated as a result of the project would be similar to existing conditions, and no substantial additional sources of light or glare would be added to the project area.

The site would include site lighting. IRWD will keep lighting to a minimum and focus lighting in areas that are required for site security and to perform work, as necessary. Moreover, lighting control features would be included in project design, which would ensure that lighting would remain off during nighttime hours unless in the event of an emergency where personnel are required to access the site. Additionally, in compliance with Section 7-9-67, Lighting and Illumination, of the County's Code of Ordinances, all lighting shall be designed and located as to confine direct rays to the premises (County of Orange 2020). Therefore, impacts associated with light or glare would be less than significant.

3.2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES – 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 Department 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:				
a) 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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒

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. The County of Orange Zoning map designates the project site as A1 General Agricultural (OCPW 2021). However, the project site is currently developed with IRWD's existing Fleming Reservoir and Pump Station facility and has never been used for agricultural purposes, primarily due to the steep topography, small parcel size, and location of the site in between Santiago Canyon Road and Silverado Canyon Road, all of which preclude the use of the project site for an agricultural purpose. Moreover, the California Department of Conservation does

not designate the project site as Prime Farmland, Unique Farmland or Farmland of Statewide Importance (collectively called Important Farmland) (DOC 2021a). Therefore, no impact associated with the conversion of Farmland would occur.

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

No Impact. The Williamson Act, also known as the California Land Conservation Act of 1969 (California Government Code, Section 51200 et seq.) preserves agricultural and open space lands from the conversion to urban land uses by establishing a contract between local governments and private landowners to voluntarily restrict their land holdings to agricultural or open space use. The project site is not enrolled in a Williamson Act contract. With respect to potential conflicts with the project site's existing A1 General Agricultural use, the project, as a facility involving the storage and transmission of water, is exempt from the provisions of the County of Orange Zoning Code. Notwithstanding, the project would only involve the replacement of equipment and structures within the general footprint of the existing Fleming Reservoir and Pump Station facility and would not result in a change in the use of the project site. As such, the project would not conflict with the existing zoning for agricultural use or with a Williamson Act contract, and impacts would be less than significant.

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

No Impact. No forest land, timberland, or timberland zoned Timberland Production areas (as defined in California Resources Code Sections 12220(g), 4526, and 51104(g) are located within or adjacent to the project site. Therefore, the project would not conflict with existing zoning for forest land, timberland, or Timberland Production areas, and no impact would occur.

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

No Impact. As discussed above in Section 3.2(c), no forest land or timberland are located within or adjacent to the project site. No forest land would be lost or converted to non-forest use as a result of the project; therefore, no impact would occur.

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. As discussed throughout this Draft IS/MND, the project would not involve significant changes to the existing environment. The project would involve the replacement of IRWD's existing Fleming Reservoir and Pump Station facility, which has been in operation at the site for over 40 years. As discussed in Section 3.14, Population and Housing, the project would not enable development or population growth in the surrounding canyon areas, and accordingly, would not enable the conversion of existing agricultural areas to non-agricultural uses. Therefore, no impacts would occur.

3.3 Air Quality

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY – 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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.) indicates that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to determine whether the project would have a significant impact on air quality.

The South Coast Air Quality Management District (SCAQMD) has established Air Quality Significance Thresholds, as revised in April 2019, that set forth quantitative emission significance thresholds below which a project would not have a significant impact on ambient air quality (SCAQMD 2019). The quantitative air quality analysis provided herein applies the SCAQMD thresholds identified in Table 1 to determine the potential for the proposed project to result in a significant impact under CEQA.

Table 1. SCAQMD Air Quality Significance Thresholds

Criteria Pollutants Mass Daily Thresholds		
Pollutant	*Construction (Pounds per Day)*	*Operation (Pounds per Day)*
VOCs	75	55
NO_x	100	55
CO	550	550
SO_x	150	150
PM_{10}	150	150
$PM_{2.5}$	55	55
Lead[a]	3	3

Table 1. SCAQMD Air Quality Significance Thresholds

Criteria Pollutants Mass Daily Thresholds	
TACs and Odor Thresholds	
TACs[b]	Maximum incremental cancer risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic and acute hazard index ≥ 1.0 (project increment)
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402
Ambient Air Quality Standards for Criteria Pollutants[c]	
NO_2 1-hour average NO_2 annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.030 ppm (state) and 0.0534 ppm (federal)
CO 1-hour average CO 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)
PM_{10} 24-hour average PM_{10} annual average	10.4 μg/m³ (construction)[d] 2.5 μg/m³ (operation) 1.0 μg/m³
$PM_{2.5}$ 24-hour average	10.4 μg/m³ (construction)[d] 2.5 μg/m³ (operation)

Source: SCAQMD 2019.
Notes: SCAQMD = South Coast Air Quality Management District; VOC = volatile organic compounds; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; TAC = toxic air contaminant; NO_2 = nitrogen dioxide; ppm = parts per million by volume; μg/m³ = micrograms per cubic meter.
Greenhouse gas emissions thresholds for industrial projects, as added in the March 2015 revision to the SCAQMD Air Quality Significance Thresholds, were not included in this table as they are addressed within the greenhouse gas emissions analysis and not the air quality analysis.

[a] The phaseout of leaded gasoline started in 1976. Since gasoline no longer contains lead, the project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.
[b] TACs include carcinogens and noncarcinogens.
[c] Ambient air quality standards for criteria pollutants are based on SCAQMD Rule 1303, Table A-2, unless otherwise stated.
[d] Ambient air quality threshold are based on SCAQMD Rule 403.

The phasing out of leaded gasoline started in 1976. As gasoline no longer contains lead, the project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.

The evaluation of whether the project would conflict with or obstruct implementation of the applicable air quality plan (CEQA Guidelines Appendix G Threshold III-1) is based on the SCAQMD CEQA Air Quality Handbook (SCAQMD 1993), Chapter 12, Sections 12.2 and 12.3. The first criterion assesses if the project would result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards of the interim emissions reductions specified in the Air Quality Management Plan (AQMP), which is addressed in detail under Section 3.3(b). The second criterion is if the project would exceed the assumptions in the AQMP or increments based on the year of project buildout and phase, as discussed further in Section 3.3(a).

To evaluate the potential for the project to result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (CEQA Guidelines Appendix G Threshold III-2), this analysis applies SCAQMD's construction criteria pollutants mass daily thresholds, as shown in Table 1. Only those thresholds related to potentially significant construction impacts

are applied herein because the project would not generate substantial criteria pollutant emissions or related impacts associated with operational activities. A project would potentially result in a cumulatively considerable net increase in ozone (O_3), which is a nonattainment pollutant, if the project's construction emissions would exceed the SCAQMD volatile organic compound (VOC) or oxides of nitrogen (NO_x) thresholds shown in Table 1. These emissions-based thresholds for O_3 precursors are intended to serve as a surrogate for an O_3 significance threshold (i.e., the potential for adverse O_3 impacts to occur). This approach is used because O_3 is not emitted directly, and the effects of an individual project's emissions of O_3 precursors (VOC and NO_x) on O_3 levels in ambient air cannot be determined through air quality models or other quantitative methods.

The assessment of the project's potential to expose sensitive receptors to substantial pollutant concentrations (CEQA Guidelines Appendix G Threshold III-3) includes a localized significance threshold (LST) analysis, as recommended by SCAQMD, to evaluate the potential of localized air quality impacts to sensitive receptors in the immediate vicinity of the project from construction and operation. For project sites of 5 acres or less, the SCAQMD LST methodology (SCAQMD 2008a) includes lookup tables that can be used to determine the maximum allowable daily emissions that would satisfy the localized significance criteria (i.e., the emissions would not cause an exceedance of the applicable concentration limits for nitrogen dioxide [NO_2], carbon monoxide [CO], particulate matter with a diameter less than or equal to 10 microns [PM_{10}], and particulate matter with a diameter less than or equal to 2.5 microns [$PM_{2.5}$]) without performing project-specific dispersion modeling.

The LST significance thresholds for NO_2 and CO represent the allowable increase in concentrations above background levels in the vicinity of a project that would not cause or contribute to an exceedance of the relevant ambient air quality standards, while the threshold for PM_{10} represents compliance with Rule 403 (Fugitive Dust). The LST significance threshold for $PM_{2.5}$ is intended to ensure that construction or operational emissions do not contribute substantially to existing exceedances of the $PM_{2.5}$ ambient air quality standards. The allowable emission rates depend on the following parameters:

a. Source-Receptor Area (SRA) in which the project is located
b. Size of the project site
c. Distance between the project site and the nearest sensitive receptor (e.g., residences, schools, hospitals)

The project would be within SRA 19 (Saddleback Valley). LST pollutant screening level concentration data is currently published for 1-, 2-, and 5-acre sites for varying distances (25, 50, 100, 200, and 500 meters). The project is a total of 2.9 acres. In accordance with the SCAQMD Fact Sheet for Applying CalEEMod to Localized Significance Thresholds, the project would disturb a maximum of 1 acre per day during the interim grading and shoring phase (SCAQMD 2014).

Sensitive receptors near the project site include the Silverado Children's Center located 1,400 feet south of the site. As such, the closest LST available, 200 meters (656 feet), was applied. LST values for the project in SRA 19 and for 200 meters are presented in Table 2.

Table 2. Localized Significance Thresholds for Source-Receptor Area 19 (Saddleback Valley)

	Thresholds (Pounds per Day)
Pollutant	*1-Acre Project Site, 200 Meters*
NO_2	140
CO	2,376

Table 2. Localized Significance Thresholds for Source-Receptor Area 19 (Saddleback Valley)

Pollutant	Thresholds (Pounds per Day)
	1-Acre Project Site, 200 Meters
PM_{10}	48
$PM_{2.5}$	19

Source: SCAQMD 2008a.
Notes: NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter.
LSTs are shown for 1-acre project sites corresponding to a distance to a sensitive receptor of 200 meters.

A qualitative CO hotspot analysis is also included under Section 3.3(c), based on comparison to the SCAQMD 2003 AQMP CO hotspot analysis.

The potential for the project to result in other emissions, specifically an odor impact (State CEQA Guidelines Appendix G Threshold III-4), is based on the project's land-use types and anticipated construction activity, and the potential for the project to create an odor nuisance pursuant to SCAQMD Rule 402.

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less-than-Significant Impact. The project site is located within the South Coast Air Basin (SCAB) under the jurisdiction of SCAQMD, which is the local agency responsible for administration and enforcement of air quality regulations for the area. SCAQMD has established criteria for determining consistency with the AQMP, currently the 2016 AQMP, in Chapter 12, Sections 12.2 and 12.3, in the SCAQMD CEQA Air Quality Handbook (SCAQMD 1993). The criteria are as follows (SCAQMD 1993):

- **Consistency Criterion No. 1:** The project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards of the interim emissions reductions specified in the AQMP.
- **Consistency Criterion No. 2:** The project will not exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

Consistency Criterion No. 1

Section 3.3(b) evaluates the project's potential impacts with regard to CEQA Guidelines Appendix G Threshold III-2 (the project's potential to violate any air quality standard or contribute substantially to an existing or projected air quality violation impact analysis). As discussed in Section 3.3(b), the project would not exceed the SCAQMD significance thresholds. Therefore, the project would not result in an increase in the frequency or severity of existing air quality violations. The project also would not conflict with Consistency Criterion No. 1 of the SCAQMD CEQA Air Quality Handbook.

Consistency Criterion No. 2

While striving to achieve the National Ambient Air Quality Standards (NAAQS) for O3 and PM2.5 and the California Ambient Air Quality Standards (CAAQS) for O3, PM10, and PM2.5 through a variety of air quality control measures, the 2016 AQMP also accommodates planned growth in the SCAB. Projects are considered consistent with, and would not conflict with or obstruct implementation of, the AQMP if the growth in socioeconomic factors (e.g., population, employment) is consistent with the underlying regional

plans used to develop the AQMP (per Consistency Criterion No. 2 of the SCAQMD CEQA Air Quality Handbook [SCAQMD 1993]).

SCAQMD primarily uses demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by the Southern California Association of Governments (SCAG) for its Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) (SCAG 2016), which is based on general plans for cities and counties in the SCAB, for the development of the AQMP emissions inventory (SCAQMD 2017).[1] The SCAG 2016 RTP/SCS and associated Regional Growth Forecast are generally consistent with the local plans; therefore, the 2016 AQMP is generally consistent with local government plans. Although not a part of the Orange County General Plan, the project site is located within the boundary of the SILMOD Plan, which is a policy document for the defined areas of Modjeska Canyon, Williams Canyon, Silverado Canyon, Baker Canyon, and Black Star Canyon. The SILMOD Plan was adopted by the Orange County Board of Supervisors in 1977 and interprets and details many general plan policies with specific reference to the conditions of the Silverado-Modjeska area. Generally, the SILMOD Plan places an emphasis on maintaining low densities within the canyon areas and preserving the beauty and integrity of the natural terrain and vegetation (County of Orange 1977). While the project is exempt from local planning and zoning laws due to its status as a water storage and conveyance facility carried out by a Special District, the SILMOD Plan does not provide any specific zoning designations for the site. The project does not include changes outside of the boundary of the existing site and does not propose any changes to the existing land use designation. As such, the project would be consistent with the existing land use designation for the site.

Furthermore, the project would not increase growth-inducing metrics (i.e., housing, employment, population) and thus would not conflict with SCAG's 2020 Connect SoCal and the growth projections included therein.

As the project would contribute to local employment growth and associated vehicle miles traveled (VMT) that are anticipated for the project site in the existing General Plan, the project is accounted for in the State Implementation Plan and the Regional Air Quality Strategy, and the project would be consistent with local air quality plans. Therefore, the impact would be less than significant.

Summary

As described previously, the project would not result in an increase in the frequency and severity of existing air quality violations and would not conflict with Consistency Criterion No. 1. The project would be consistent with the General Plan and growth projections of the SCAG 2020 RTP/SCS. Thus, the project would not conflict with Consistency Criterion No. 2. Therefore, impacts related to the project's potential to conflict with or obstruct implementation of the applicable air quality plan would be less than significant.

[1] Information necessary to produce the emission inventory for the SCAB is obtained from SCAQMD and other governmental agencies, including the California Air Resources Control Board (CARB), California Department of Transportation (Caltrans), and SCAG. Each of these agencies is responsible for collecting data (e.g., industry growth factors, socioeconomic projections, travel activity levels, emission factors, emission speciation profile, and emissions) and developing methodologies (e.g., model and demographic forecast improvements) required to generate a comprehensive emissions inventory. SCAG incorporates these data into their Travel Demand Model for estimating/projecting vehicle miles traveled (VMT) and driving speeds. SCAG's socioeconomic and transportation activities projections in their 2016 RTP/SCS are integrated in the 2016 AQMP (SCAQMD 2017).

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?

Construction

Less-than-Significant Impact. Emissions from the construction phase of the project were estimated using California Emissions Estimator Model (CalEEMod) Version 2016.3.2. Construction scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on information provided by IRWD and CalEEMod default values when project specifics were not known.

For purposes of estimating project emissions, and based on information provided by IRWD, it is assumed that construction of the project would commence in January 2022[2] and would last approximately 21 months, ending in September 2023. The analysis contained herein is based on the following assumptions (duration of phases is approximate):

- Site demolition (Phase 1): 2 weeks
- Interim grading and shoring: 2 months
- Reservoir construction: 7 months
- Pump station, disinfection facility building, and storage building: 3 months
- Vault construction site improvements and electrical improvements: 5 months
- Startup and testing: 2 months
- Site demolition (Phase 2): 3 weeks
- Construct storage building and sewer holding tank: 3 months

The project includes removal and disposal of the existing septic tank, sewer holding tank, existing storage building on upper pad, the underground electric pullbox, the existing steel reservoir, booster pumps and piping, and the operations building and shed. There is an estimated 2,300 cubic yards of cut and 2,500 cubic yards of fill, resulting in an import of 300 cubic yards. This would result in an estimated 38 one-way haul truck trips to import the soil. CalEEMod default trip length values were used for the distances for all construction-related trips. Construction worker, vendor, and haul truck trips are based on CalEEMod default assumptions where project-specific information was not available.

The construction equipment mix and vehicle trips used for estimating the project-generated construction emissions are shown in Table 3.

[2] The analysis assumes a construction start date of January 2022, which represents the earliest date construction would initiate. Assuming the earliest start date for construction represents the worst-case scenario for criteria air pollutant and GHG emissions because equipment and vehicle emission factors for later years would be slightly less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years.

Table 3. Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	*Average Daily Vendor Truck Trips*	*Total Haul Truck Trips*	*Equipment Type*	*Quantity*	*Usage Hours*
Site Demolition (Phase 1)	8	6	32	Excavators	1	6
				Tractors/loaders/	1	2
Interim Grading and Shoring	8	6	76	backhoes	1	4
				Excavators	1	3
				Graders	1	4
				Rubber-tired dozers	1	2
Tank Construction	12	10	80	Tractors/loaders/	1	1
				backhoes	1	2
				Air compressors	1	1
				Cranes	1	1
Pump Station, RMS Facility, and Storage Building	12	10	40	Excavators	1	1
				Tractors/loaders/	1	3
				backhoes	1	2
				Air compressors	1	2
Vault Construction Site Improvements and Electrical Improvements	8	6	40	Cement and mortar mixers	1	1
				Cranes	1	1
				Tractors/loaders/	1	1
				backhoes	1	2
Startup and Testing	6	6	0	Air compressors	NA	NA
				Cement and mortar mixers	NA	NA
Site Demolition (Phase 2)	8	6	50	Paving equipment	1	3
				Tractors/loaders/	1	4
Construct Storage Building and Sewer Holding Tank	8	6	40	backhoes	1	1
				NA	1	1
				NA	1	1

Notes: See Appendix A for details.

The project would implement dust control strategies as a project design feature. To reflect implementation of proposed dust control strategies in accordance with SCAQMD Rule 403, the following was assumed in CalEEMod:

- Water exposed area twice times per day (55% reduction in PM_{10} and $PM_{2.5}$).
- Reduce speed on unpaved roads to 15 miles per hour.

Construction of the project would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and VOC off-gassing) and off-site sources (i.e., on-road haul trucks, vendor trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and for dust,

the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts.

Criteria air pollutant emissions associated with temporary construction activity were quantified using CalEEMod. Construction emissions were calculated for the estimated worst-case day over the construction period associated with each phase and reported as the maximum daily emissions estimated during each year of construction (2022 and 2023). Construction schedule assumptions, including phase type, duration, and sequencing, were based on information provided by IRWD and are intended to represent a reasonable scenario based on the best information available. Default values provided in CalEEMod were used where detailed project information was not available.

Implementation of the project would generate air pollutant emissions from entrained dust, off-road equipment, vehicle emissions, architectural coatings, and asphalt pavement application. Entrained dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil, resulting in PM_{10} and $PM_{2.5}$ emissions. The project would implement various dust control strategies and would be required to comply with SCAQMD Rule 403 to control dust emissions generated during the grading activities. Proposed construction practices that would be employed to reduce fugitive dust emissions include watering of the active sites and unpaved roads two times per day depending on weather conditions. Internal combustion engines used by construction equipment, vendor trucks (i.e., delivery trucks), and worker vehicles would result in emissions of VOCs, NO_x, CO, sulfur oxides (SO_x), PM_{10}, and $PM_{2.5}$. The application of architectural coatings, such as exterior application/interior paint and other finishes, and application of asphalt pavement would also produce VOC emissions; however, the contractor is required to procure architectural coatings from a supplier in compliance with the requirements of SCAQMD's Rule 1113 (Architectural Coatings).

Table 4 presents the estimated maximum daily construction emissions generated during construction of the project. The values shown are the maximum summer or winter daily emissions results from CalEEMod. Details of the emission calculations are provided in Appendix A, Air Quality, Greenhouse Gas Emission, and Energy Emissions Modeling Inputs and Outputs.

Table 4. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions - Unmitigated

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
2022	0.79	8.72	5.23	0.01	1.98	1.12
2023	0.27	2.53	2.97	0.01	0.39	0.16
Maximum Daily Emissions	**0.79**	**8.72**	**5.23**	**0.01**	**1.98**	**1.12**
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District.
See Appendix A for complete results.
The values shown are the maximum summer or winter daily emissions results from CalEEMod. These emissions reflect CalEEMod "mitigated" output, which accounts for compliance with SCAQMD Rule 1113 (Architectural Coatings) and implementation of the project's fugitive dust control strategies, including watering of the project site and unpaved roads two times per day.

Maximum daily construction emissions would not exceed the SCAQMD significance thresholds for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$. Therefore, impacts during construction would be less than significant.

The SCAB has been designated as a national nonattainment area for O_3 and $PM_{2.5}$ and a California nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. The nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SCAB, including motor vehicles, off-road equipment, and commercial and industrial facilities. Construction and operation of the project would generate VOC and NO_x emissions (which are precursors to O_3) and emissions of PM_{10} and $PM_{2.5}$. As indicated in Table 4, project-generated construction emissions would not exceed the SCAQMD emission-based significance thresholds for any criteria air pollutant.

Cumulative localized impacts would potentially occur if a construction project were to occur concurrently with another off-site project. Construction schedules for potential future projects near the project site are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be considered speculative.[3] However, future projects would be subject to CEQA and would require air quality analysis and, where necessary, mitigation if the project would exceed SCAQMD thresholds. Criteria air pollutant emissions associated with construction activity of future projects would be reduced through implementation of control measures required by SCAQMD. Cumulative PM_{10} and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to SCAQMD Rule 403 (Fugitive Dust), which sets forth general and specific requirements for all construction sites in the SCAQMD. In addition, cumulative VOC emissions would be subject to SCAQMD Rule 1113 (Architectural Coatings).

Based on the project-generated construction emissions, the project would not result in a cumulatively considerable increase in emissions of nonattainment pollutants. Impacts would be less than significant.

As discussed above, the project would not result in emissions that would exceed the SCAQMD thresholds during construction. Notably, since the emission-based thresholds used in this analysis were established to provide project-level estimates of criteria air pollutant quantities that the SCAB can accommodate without affecting the attainment dates for the ambient air quality standards, and since the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established the ambient air quality standards at levels above which concentrations could be harmful to human health and welfare, with an adequate margin of safety, elevated levels of criteria air pollutants above adopted thresholds as a result of the project's construction and operation could cause adverse health effects associated with these pollutants. There are numerous scientific and technological complexities associated with correlating criteria air pollutant emissions from an individual project to specific health effects or potential additional nonattainment days. Because the project would not exceed the SCAQMD mass daily thresholds during construction, the project would have a less-than-significant impact on public health.

Operation

Less-than-Significant Impact. Emissions from the operational phase of the project were estimated using CalEEMod Version 2016.3.2. Operational year 2023 was assumed consistent with completion of project construction.

[3] The State CEQA Guidelines state that if a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact (14 CCR 15145). This discussion is nonetheless provided in an effort to show good-faith analysis and comply with CEQA's information disclosure requirements.

Area Sources

CalEEMod was used to estimate operational emissions from area sources, including emissions from consumer product use, architectural coatings, and landscape maintenance equipment.

Consumer products are chemically formulated products used by household and institutional consumers, including detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. Other paint products, furniture coatings, or architectural coatings are not considered consumer products (CAPCOA 2017). Consumer product VOC emissions are estimated in CalEEMod based on the floor area of nonresidential buildings and on the default factor of pounds of VOC per building square foot per day. The CalEEMod default values for consumer products were assumed.

VOC off-gassing emissions result from evaporation of solvents contained in surface coatings such as in paints and primers used during building maintenance. CalEEMod calculates the VOC evaporative emissions from application of surface coatings based on the VOC emission factor, building square footage, assumed fraction of surface area, and reapplication rate. The VOC emission factor is based on the VOC content of the surface coatings, and SCAQMD's Rule 1113 (Architectural Coatings) governs the VOC content for interior and exterior coatings. The model default reapplication rate of 10% of area per year is assumed. Consistent with CalEEMod defaults for nonresidential uses, it is assumed that the surface area for painting equals 2.0 times the floor square footage, with 75% assumed for interior coating and 25% assumed for exterior surface coating (CAPCOA 2017).

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chainsaws, and hedge trimmers. The emissions associated from landscape equipment use are estimated based on CalEEMod default values for emission factors (grams per square foot of building space per day) and number of summer days (when landscape maintenance would generally be performed) and winter days.

Energy Sources

The project is replacing operational buildings and the pump station on site, in addition to other equipment and the reservoir. However, IRWD estimates that energy use is expected to be the same or less than the existing site. Therefore, there is no net increase in energy use associated with the project.

Mobile Sources

Similar to energy use, the project would not result in an increase in vehicle trips during operation compared to the baseline. Therefore, the project would result in no net increase in emissions associated with mobile sources.

Emergency Generator

The current site operates a 150 kW diesel-fueled Tier 2 emergency generator under SCAQMD Permit No. G21627. The generator is permitted to operate up to 200 hours per year. As part of the project, the existing generator will be replaced with a 350 kW Tier 3 generator equipped with a CARB-certified Level-3 diesel particulate filter. The proposed generator is also assumed to operate up to 200 hours per year in accordance with SCAQMD Rule 1470.

Table 5 presents the maximum daily area, energy, off-road equipment, and mobile source emissions associated with operation (year 2023) of the project. The values shown are the maximum summer or winter daily emissions results from CalEEMod. Details of the emission calculations are provided in Appendix A.

Table 5. Estimated Maximum Daily Operational Criteria Air Pollutant Emissions – Unmitigated

Emission Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
Existing Site						
Emergency Generator	0.20	2.28	1.32	0.00	0.08	0.08
Project						
Area Sources	0.02	0.00	0.00	0.00	0.00	0.00
Emergency Generator	0.23	3.27	3.04	0.01	0.03	0.03
Total	**0.25**	**3.27**	**3.04**	**0.01**	**0.03**	**0.03**
Net Total (Project minus Existing Site)	**0.05**	**0.99**	**1.72**	**0.01**	**(0.05)**	**(0.05)**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District; PDF = project design feature.
See Appendix A for complete results.
Totals may not sum due to rounding. Parentheses represents a net reduction in emissions.

As shown in Table 5, the net daily area and emergency generator emissions would not exceed the SCAQMD operational thresholds for VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$. Therefore, the project would result in a less-than-significant impact during operation.

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

Localized Significance Thresholds Analysis

Less-than-Significant Impact. Sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. People most likely to be affected by air pollution include children, the elderly, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993). Sensitive receptors near the project site include the Silverado Children's Center located 1,400 feet south of the site.

An LST analysis has been prepared to determine potential impacts to nearby sensitive receptors during construction of the project. As indicated in the discussion of the thresholds of significance, SCAQMD also recommends the evaluation of localized NO_2, CO, PM_{10}, and $PM_{2.5}$ impacts as a result of construction activities to sensitive receptors in the immediate vicinity of the project site. The impacts were analyzed using methods consistent with those the SCAQMD's Final Localized Significance Threshold Methodology (2008a). According to the Final Localized Significance Threshold Methodology, "off-site mobile emissions from the project should not be included in the emissions compared to the LSTs" (SCAQMD 2008a). Hauling of soils and construction materials associated with project construction are not expected to cause

substantial air quality impacts to sensitive receptors along off-site roadways. Localized emissions from the trucks would be relatively brief in nature and would cease once the trucks pass through the main streets.

Construction activities associated with the project would result in temporary sources of on-site fugitive dust and construction equipment emissions. Operational emissions include use of off-road equipment and mobile sources on site. The maximum allowable daily emissions that would satisfy the SCAQMD localized significance criteria for SRA 19 are presented in Table 6 and compared to the maximum daily on-site construction and operational emissions generated during the project.

Table 6. Localized Significance Thresholds Analysis for Project – Unmitigated

Maximum On-Site Emissions	NO_2	CO	PM_{10}	$PM_{2.5}$
	Pounds per Day			
Construction Emissions	7.68	4.62	1.78	1.06
SCAQMD LST	*140*	*2,376*	*48*	*19*
LST Exceeded?	**No**	**No**	**No**	**No**

Source: SCAQMD 2008a.
Notes: NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District; LST = localized significance threshold.
See Appendix A for complete results.
LSTs are shown for a 1-acre project site corresponding to a distance to a sensitive receptor of 200 meters.
These estimates assume implementation of the project's fugitive dust control strategies, including watering of the project site and unpaved roads two times per day.

As shown in Table 6, construction activities would not generate emissions in excess of site-specific LSTs; therefore, localized impacts during construction of the project would be less than significant.

Health Impacts of Carbon Monoxide

Less-than-Significant Impact. Mobile source impacts occur on two scales of motion. Regionally, project-related travel would add to regional trip generation and increase the VMT within the local airshed and the SCAB. Locally, traffic generated by the project would be added to the County's roadway system near the project site. If such traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles cold-started and operating at pollution-inefficient speeds, and is operating on roadways already crowded with non-project traffic, there is a potential for the formation of microscale CO hotspots in the area immediately around points of congested traffic. Because of continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SCAB is steadily decreasing.

Title 40 of the Code of Federal Regulations, Section 93.123(c)(5), Procedures for Determining Localized CO, PM_{10}, and $PM_{2.5}$ Concentrations (Hot-Spot Analysis), states that "CO, PM_{10}, and $PM_{2.5}$ hot-spot analyses are not required to consider construction-related activities, which cause temporary increases in emissions. Each site which is affected by construction-related activities shall be considered separately, using established 'Guideline' methods. Temporary increases are defined as those which occur only during the construction phase and last five years or less at any individual site" (40 CFR 93.123). While project construction would involve on-road vehicle trips from trucks and workers during construction, construction activities would last approximately 21 months and would not require a project-level construction hotspot analysis. The project would not result in an

increase in vehicle trips during operation compared to the existing site. Therefore, the project would not result in a CO hotspot. Impacts would be less than significant.

Health Impacts of Toxic Air Contaminants

Less-than-Significant Impact. A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute (immediate) and/or chronic (cumulative) non-cancer health effects. A toxic substance released into the air is considered a toxic air contaminant (TAC). Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

TACs are identified by federal and state agencies based on a review of available scientific evidence. In the state of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere.

Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

Project construction would result in emissions of diesel particulate matter (DPM) from heavy construction equipment and trucks accessing the site. DPM is characterized as a TAC by the State of California. The Office of Environmental Health Hazard Assessment has identified carcinogenic and chronic noncarcinogenic effects from long-term exposure, but has not identified health effects due to short-term exposure to diesel exhaust. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period for the maximally exposed individual resident; however, such assessments should be limited to the period/duration of activities associated with the project. Thus, the duration of the proposed construction activities would only constitute a small percentage of the total 30-year exposure period. Due to this relatively short period of exposure (21 months) and minimal particulate emissions on-site, TACs generated by the project would not result in concentrations causing significant health risks. Furthermore, the nearest sensitive receptor to the site is 1,400 feet away. Overall, the project would not result in substantial TAC exposure to sensitive receptors in the vicinity of the proposed project, and impacts would be less than significant.

Additionally, the health risk public-notification thresholds adopted by the SCAQMD Board is 10 excess cancer cases in a million for cancer risk and a hazard index of more than one (1.0) for non-cancer risk. The hazard index of more than 1.0 means that predicted levels of a toxic pollutant are greater than the reference exposure level, which is considered the level below which adverse health effects are not expected. Examples of projects that

emit toxic pollutants include oil and gas processing, gasoline dispensing, dry cleaning, electronic and parts manufacturing, medical equipment sterilization, freeways, and rail yards (SCAQMD 2017). The project would not introduce new sources of TAC emissions on site during operation. With the replacement of the emergency generator, the project would result in a net reduction of DPM emissions compared to the baseline. TAC emissions during operation would be less than significant.

Health Effects of Other Criteria Air Pollutants

Less-than-Significant Impact. Construction of the project would generate criteria air pollutant emissions; however, the project would not exceed the SCAQMD mass-emission thresholds.

The SCAB is designated as nonattainment for O_3 for the NAAQS and CAAQS. Thus, existing O_3 levels in the SCAB are at unhealthy levels during certain periods. The health effects associated with O_3 generally relate to reduced lung function. Because the project would not involve construction activities that would result in O_3 precursor emissions (VOC or NO_x) that would exceed the SCAQMD thresholds, the project is not anticipated to substantially contribute to regional O_3 concentrations and associated health impacts. Similar to construction, no SCAQMD threshold would be exceeded during operation.

In addition to O_3, NO_x emissions contribute to potential exceedances of the NAAQS and CAAQS for NO_2. Exposure to NO_2 and NO_x can cause lung irritation, bronchitis, and pneumonia, and lower resistance to respiratory infections. Project construction and operation would not exceed the SCAQMD NO_x threshold, and existing ambient NO_2 concentrations are below the NAAQS and CAAQS. Thus, construction and operation of the project are not expected to exceed the NO_2 standards or contribute to associated health effects.

CO tends to be a localized impact associated with congested intersections. CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. CO hotspots were discussed previously as a less-than-significant impact. Thus, the project's CO emissions would not contribute to the health effects associated with this pollutant.

The SCAB is designated as nonattainment for PM_{10} under the CAAQS and nonattainment for $PM_{2.5}$ under the NAAQS and CAAQS. Particulate matter contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing (EPA 2016). As with O_3 and NO_x, the project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed SCAQMD's thresholds. Accordingly, the project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for these pollutants.

In summary, the project would not result in any potentially significant contribution to regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants. Impacts would be less than significant.

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. The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

Odors would be potentially generated from vehicles and equipment exhaust emissions during construction of the project. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment, architectural coatings, and asphalt pavement application. Such odors would disperse rapidly from the project site and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be less than significant.

Land uses and industrial operations associated with odor complaints include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding (SCAQMD 1993). The project would not include land uses that generate odors as discussed above during operation. Therefore, project operations would result in an odor impact that is less than significant.

3.4 Biological Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES – 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 Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
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?	☐	☐	☒	☐

Environmental Setting

This analysis of the project's potential impacts on biological resources is based on a Biological Resources Assessment prepared by Dudek in May 2021 (Appendix B). The Biological Resources Assessment included a review of pertinent literature, a biological reconnaissance conducted by a Dudek biologist on May 5, 2021, and a reference population check and focused special-status plant survey conducted by a Dudek biologist on May 20, 2021.

The biological reconnaissance survey was conducted to assess and map the existing biological resources on the project site and a surrounding 100-foot buffer (study area) to account for all on-site and off-site resources. The reconnaissance included an assessment of the existing vegetation communities and soils to evaluate the potential for special-status plant and wildlife species to occur on the project site. Vegetation communities observed during the biological reconnaissance include mostly developed land and disturbed habitat, with planted landscaping consisting of a mix of native and non-native species. Plant species observed during the reconnaissance survey include short-podded mustard (*Hirschfeldia incana*), red brome (*Bromus rubens),* deerweed (*Acmispon glaber*), and remnants of burned laurel sumac (*Malosma laurina*). Vegetation communities within the study area are mapped in Figure 8, Vegetation Communities within the Study Area.

Dudek also conducted a literature review to identify the location of documented sensitive vegetation communities, special-status plants, and special-status wildlife within the vicinity of the project site. The literature review included a query of biological resource databases, including the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2021a, 2021b) and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2021). The California Natural Diversity Database and California Native Plant Society queries found a total of 82 special-status wildlife species and 73 special-status plant species as having occurred in the queried geographic area. Dudek analyzed the potential for the 82 special-status wildlife species and 73 special-status plant species to occur on the project site (see impact analysis below).

SOURCE: Esri World Imagery 2019; County of Orange 1996

DUDEK

0 30 60 Feet

FIGURE 8

Vegetation Communities within the Study Area

Fleming Zone 8 Reservoir and Pump Station Improvements Project

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The project site contains mostly developed land and disturbed habitat, with planted landscaping consisting of a mix of native and non-native species, associated with the existing reservoir facility. The southern portion of the survey area occurs south of Santiago Canyon Road in a disturbed area that contains an existing corrugated metal culvert and a small stand of coast live oak woodland dominated by coast live oak (*Quercus agrifolia*). The northern portion of the survey area contains a portion of the paved Silverado Canyon Road, and high quality native coastal sage scrub vegetation north of the road. The eastern portion of the survey area contains mostly non-native vegetation dominated by short-podded mustard (*Hirschfeldia incana*) and red brome (*Bromus rubens*). The western portion of the survey area was burned during the Silverado Fire in October and November 2020. Remnants of burned laurel sumac (*Malosma laurina*) shrubs were observed in this area with new sprouts of deerweed (*Acmispon glaber*) and short-podded mustard. Prior to the fire, the native vegetation within the western portion of the survey area would have been of relatively high quality and did not show evidence of previous disturbance beyond what occurs for the existing reservoir and pump station. These vegetation communities and land covers listed and quantified in Table 7 and are described in further detail in the Biological Resources Assessment (Appendix B).

Table 7. Vegetation Communities and Land Cover Types within the Study Area

Vegetation Community/Land Cover Type	Study Area (acres)
Native Vegetation Communities	
Coast Live Oak Woodland	0.21
Mixed Coastal Sage Scrub	0.33
Mixed Coastal Sage Scrub (disturbed)	0.82
Non-Natural Communities and Land Covers	
Disturbed Habitat	0.34
Ornamental Landscaping	0.53
Ruderal Grassland	1.06
Urban/Developed	1.65
Total	**4.92**

The project site is also located within the boundaries of the Orange County Central and Coastal Subregion Habitat Conservation Plan and Natural Community Conservation Plan (HCP/NCCP; County of Orange 1996). The HCP/NCCP is a planning and policy document designed to protect and manage habitat supporting a broad range of plant and animal populations within the Central and Coastal Subregion of Orange County. The HCP/NCCP creates a subregional habitat reserve system (Reserve) and implements a coordinated program to manage biological resources within the Reserve. According to the HCP/NCCP, the project site is located outside of the reserve space and is mapped as urban land (R.J. Meade Consulting 1996; see Figure 8, Vegetation Communities within the Study Area). The area immediately surrounding the project site on the east and west is also not located within the Reserve but is within a conservation easement. The Project site is designated as “not a part” of the easement and as “urban”. The off-site storm drainpipe and outlet structure are located partially within the conservation easement and HCP/NCCP Reserve. Habitat Reserves are located in the immediate area of the project site, across Santiago Canyon Road. Special Linkages are located mapped in the greater vicinity of the project site, approximately one-half mile away from the project site (see Figure 4, Central and Coastal Subregional HCP/NCCP Map).

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 Game or U.S. Fish and Wildlife Service?

Less-than-Significant Impact with Mitigation Incorporated. Multiple special-status plant and wildlife species were identified by the literature review query with a potential to occur on the project site. Appendix B lists the special-status plant and wildlife species that have been evaluated for their potential to occur within the project site based on species documentation and habitat suitability. No native habitats or undisturbed vegetation was observed on the project site that would be considered high quality to support any special-status species; however, there is a moderate potential for some special-status species to occur, as discussed below.

Special Status Plants

A total of 73 special-status plant species were reported in the CNDDB, U.S. Fish and Wildlife Service (USFWS), and CNPS databases as occurring in the vicinity of the project site. For each species evaluated, a determination was made regarding the potential for the species to occur on site based on information gathered during the field reconnaissance, including the location of the site, habitats present, current site conditions, and past and present land use.

Dudek determined that 51 special-status plant species were determined to have a low potential to occur on the project site and three were determined to have a moderate potential to occur on the project site. Those three species include: Catalina Mariposa Lily (*Calochortus catalinae*), Plummer's mariposa lily (*Calochortus plummerae*) and Many-stemmed dudleya (*Dudleya multicaulis*). Therefore, a focused special-status plant survey was conducted on May 20, 2021 to determine presence/absence of these special-status species. Before conducting the survey, Dudek botanists conducted reference population checks to confirm the focal species were in bloom and identifiable. None of the focal species were identified during the focused survey. Appendix B includes further information on the species evaluated with a potential to occur. No other special-status plant species were determined to have a moderate to high potential to occur, and no special-status plants were observed on site during the focused special-status plant survey. Therefore, the project would not result in direct or indirect impacts to special-status plant species. As such, there would be no impact to special-status plant species.

Special Status Wildlife

Special-status wildlife include those listed, or candidates for listing, as threatened or endangered by USFWS or CDFW, or designated as a Species of Special Concern by CDFW. A total of 82 special-status wildlife species were reported in the CNDDB and USFWS databases as occurring in the vicinity of the project site. For each species evaluated, a determination was made regarding the potential use of the site based on information gathered during the field reconnaissance, known habitat preferences, and knowledge of their relative distributions in the area.

Of the 82 special-status wildlife species listed in the CNDDB and USFWS databases as occurring in the vicinity of the project site, 35 species were determined to have no potential to occur within the project site based on an evaluation of species ranges/elevation and known habitat preferences. A total of 47 special-status species were determined to have a potential to occur due to suitable habitat within the project site, of which 8 were determined to have a moderate to high potential to occur. These species include: orange-

throated whiptail (*Aspidoscelis hyperythra*), San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*), red diamondback rattlesnake (*Crotalus ruber*), Blainville's horned lizard (*Phrynosoma blainvillii*), coast patch-nosed snake (*Salvadora hexalepis virgultea*), grasshopper sparrow (*Ammodramus savannarum*), coastal California gnatcatcher (*Polioptila californica californica*), and Crotch bumble bee (*Bombus crotchii*). With the exception of San Diegan tiger whiptail and Crotch bumble bee, all of these species are covered under the HCP/NCCP. While these species may occur in the larger area of suitable native habitat adjacent to the work area, the potential for species occurrence with the very limited impact area is exceedingly small. The suitability of the site to support these species would not be reduced by implementation of the project. Therefore, potential impacts to these species from direct mortality or loss of habitat is less than significant.

Additionally, USFWS-designated critical habitat for the federally-threatened and state-endangered arroyo toad (*Anaxyrus californicus*) overlaps with the project site (USFWS 2021). Suitable habitat for this species occurs within the adjacent Santiago Creek and Silverado Creek located outside of the project site boundary. Additionally, the project site lacks primary constituent elements to support this species as there are no drainages or floodplains within the project site. Furthermore, the potential for arroyo toad to utilize upland habitats on the project site for aestivation (i.e., burrowing dormant period of life cycle) is low given the roadway that separates the project site from suitable floodplain habitat and general low suitability of the habitat onsite. Therefore, this species does not have a potential to occur on the project site due to lack of suitable habitat, it will not be impacted by the project and impacts within critical habitat would not adversely affect the species.

In summary, no special-status wildlife species were observed during the biological reconnaissance surveys. In addition, the site is still recovering from fires that occurred in October and November 2020 and does not provide the vegetation coverage that would support these species. However, impacts to active nesting birds and/or harassment of active nesting coastal California gnatcatcher would be considered significant without implementation of MM-BIO-1 and MM-BIO-2. Impacts to special-status wildlife species from the loss of habitat are mitigated through conformance with the NCCP/HCP which provide conservation of multiple species and associated habitats. Therefore, with implementation of MM-BIO-1 and MM-BIO-2, impacts would be less than significant with mitigation incorporated.

MM-BIO-1 **Coastal California Gnatcatcher Pre-Construction Surveys.** If project construction must commence during the coastal California gnatcatcher breeding season (February 15 – July 30), a pre-construction survey (in accordance with U.S. Fish and Wildlife Service presence/absence survey protocol) shall be conducted by a permitted biologist to determine the presence/absence of gnatcatchers within 300 feet of the project site prior to the start of construction. If an active coastal California gnatcatcher nest is determined to be present, additional avoidance measures will be required to minimize impacts to the maximum extent feasible, such as ~~such as~~ limiting construction within 300-feet of occupied habitat and delaying work within this buffer until nesting activity is completed. In addition, a monitoring biologist shall be on site during any clearing of Coastal Sage Scrub. The monitoring biologist will assure that identified bird species will not be directly impacted by brush-clearing and earth-moving equipment in a manner that also allows for construction activities in a timely basis. The permitted biologist, may also recommend other measures to reduce the buffer, which may include, but are not limited to, erection of sound barriers (e.g., noise blankets)~~,~~ or erection of visual barriers (e.g., hay bales)~~, or full-time monitoring by a qualified biologist~~.

MM-BIO-2 **Nesting Bird Surveys and Avoidance of Active Nests.** If project construction must commence between February 1 and September 1, a qualified biologist shall conduct a nesting bird survey within 5 days of commencement of construction activities to confirm the absence of nesting birds. If active nesting of birds is observed within 100 feet (ft) (500 ft for raptors) of the designated construction area during surveys, the biologist, in consultation with Irvine Ranch Water District, will determine suitable buffers around the active nests (e.g., a minimum of 50 ft for passerines and 250 ft for raptors). The buffer areas must be avoided until the nests are no longer occupied and the juvenile birds can survive independently from the nests. The qualified biologist may also recommend other measures to reduce the size of the buffer, which may include, but are not limited to, erection of sound barriers (e.g., noise blankets), erection of visual barriers (e.g., hay bales), or full-time monitoring by a qualified biologist.

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, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less-than-Significant Impact. Sensitive natural communities are natural communities that are considered rare in the region by regulatory agencies, known to provide habitat for sensitive animal or plant species, or known to be important wildlife corridors. Coastal sage scrub is considered a sensitive habitat by the Orange County NCCP/HCP. High quality mixed coastal sage scrub was mapped for the northern portion of the survey area, north of Silverado Canyon Road. Disturbed mixed coastal sage scrub was observed in the western portion of the survey area, which was burned from the Silverado Fire in 2020. Prior to the Silverado Fire in 2020, the vegetation within this distinct community would be similar to what is described above for mixed coastal sage scrub. Currently, the condition of this disturbed mixed coastal sage scrub consists of scorched bare ground and burnt laurel sumac, with resprouts of deerweed, and short-podded mustard. The project would impact 67 square feet of this burnt, disturbed coastal sage scrub along the western edge of the project site. Coastal sage scrub is a covered habitat in the NCCP/HCP. Impacts to coastal sage scrub, even when located outside the NCCP/HCP Reserve, typically require mitigation through the deduction of Non-Reserve Take Allocation credits. These credits are recorded in one-tenth (0.1) or one-hundredth (0.01) of an acre increments. The project-related impacts are so minimal (0.002 acre) any deduction would not affect IRWD's Non-Reserve Take Allocation ledger. This level of impact is considered *de minimus*, would not have any appreciable effect on the integrity of habitat in the area or region, and for these reasons is considered less than significant.

Additionally, as discussed below and in the Biological Resources Assessment (Appendix B), the project site is located within an upland area and no riparian habitat is located within the study area.

Therefore, the project would have a less than significant impact with regard to riparian habitat and other sensitive natural communities.

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

No Impact. The project site is situated between Silverado Creek to the northeast and Santiago Creek to the southwest. Silverado Canyon Road and Santiago Canyon Road separate the project site from these features, respectively. As determined during the May 2021 field surveys that were conducted as part of the Biological Resources Assessment (Appendix B), the project site does not support any riparian/wetland

vegetation communities nor were any tributaries to these two creeks observed. The southern portion of the project site features updates to an existing outlet structure. This outlet does not currently connect to a natural or man-made drainage feature and instead sheet flows to the south towards Santiago Creek. There is also a roadside drainage ditch along the northern portion of Santiago Canyon Road that controls road runoff. There is no connectivity to any tributaries or creeks, and the ditch does not provide habitat. Therefore, the project would have no impact on state or federally protected wetlands.

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 native wildlife nursery sites?

Less-than-Significant Impact. Wildlife movement corridors, also referred to as dispersal corridors or landscape linkages, are generally defined as linear features along which animals can travel from one habitat or resource area to another. The project site's utility as a wildlife corridor and nursery site is severely constrained due to the fact that the site is currently developed with the existing pump station and reservoir facility, is located between Silverado Canyon Road and Santiago Canyon Road, and is of a relatively small size (4.92 acres). Moreover, the project site is surrounded by natural lands that are part of the NCCP/HCP that can be used by wildlife in the area. The project would not result in a direct impact to these off-site areas that would impede wildlife use through construction or the continued operation of the facility. As such, the project would result in less than significant impacts with regard to the movement of resident or migratory fish or wildlife species.

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

Less-than-Significant Impact with Mitigation Incorporated. The County of Orange does not have any local ordinances pertaining to the protection of biological resources (such as a tree preservation policy) that would be applicable to the project. The Resources Element of the County of Orange's General Plan contains Policy 1, Wildlife and Vegetation, which states that it is a policy of the County, "To identify and preserve the significant wildlife and vegetation habitats of the County" (County of Orange 2005). The project's impacts to biological resources have been detailed throughout this Draft IS/MND and the Biological Resources Assessment (Appendix B). As discussed, the project's impacts to special-status species and sensitive natural communities are analyzed and mitigation would be required for impacts that are determined to be potentially significant. Implementation of MM-BIO-1 and MM-BIO-2 would reduce impacts to a less than significant level.

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?

Less-than-Significant Impact. As discussed above, the project site is located within the boundaries of Orange County Central and Coastal Subregion Habitat Conservation Plan and Natural Community Conservation Plan. Project improvements would primarily occur within the existing developed footprint (Figure 8 and Table 8). A minor impact to disturbed coastal sage scrub (67 square feet [sq ft.]) would occur along the western edge of the project site. This impact is located outside of the NCCP/HCP Reserve within take authorized "Urban" designated lands. In addition, installation of the off-site storm drain would result in impacts to the understory of coast live oak woodland (149 sq ft.) and ruderal grassland. The off-site

storm drain impacts (total 615 sq. ft) traverse the NCCP/HCP Reserve (356 sq ft.), take authorized "Urban" designated lands, and a portion of a Conservation Easement coded as "authorized take" (156 sq ft.).

Table 8. Impacts to Vegetation Communities and Land Cover Types within the Project Site

Vegetation Community/Land Cover Type	Study Area (acres)	Impacts (acres)			
		Conservation Easement	*Reserve*	*Urban*	*Total*
Native Vegetation Communities					
Coast Live Oak Woodland	0.21	–	0.003	–	0.003
Mixed Coastal Sage Scrub	0.33	–	–	–	–
Mixed Coastal Sage Scrub (disturbed)	0.82	–	–	0.002	0.002
Non-Natural Communities and Land Covers					
Disturbed Habitat	0.34	–	–	0.291	0.291
Ornamental Landscaping	0.53	–	–	0.400	0.400
Ruderal Grassland	1.06	0.001	0.005	0.139	0.145
Urban/Developed	1.65	0.002	–	0.662	0.664
Total	**4.92**	**0.003**	**0.008**	**1.494**	**1.505**

Impacts to coastal sage scrub, even when located outside the NCCP/HCP Reserve typically require mitigation through the deduction of Non-Reserve Take Allocation credits. These credits are recorded in one-tenth (0.1) or one-hundredth (0.01) of an acre increments. The project-related impacts are so minimal (0.002 acre) any deduction would not affect the Non-Reserve Take Allocation ledger. This level of impact is considered *de minimus*, would not have any appreciable effect on the integrity of habitat in the area or region, and for these reasons is considered less than significant.

Although a minor portion of the impacts associated with the stormdrain outfall would occur within the Reserve, these impacts are compatible with Reserve uses and act to minimize potential adverse indirect impacts from uncontrolled drainage runoff. Similar to the impacts to coastal sage scrub the impacts to the Reserve and understory of coast live oak woodland are de minimus in size, would not have any appreciable effect on the integrity of habitat in the area or region, and for these reasons is considered less than significant.

Impacts to other non-native habitats or land covers do not require mitigation and are adequately offset by IRWD's participation as a landowner in the NCCP/HCP which has resulted in conservation of like habitats within the Reserve.

In addition, the NCCP/HCP identifies certain construction-related minimization measures to assure that development/construction within areas recommended to be authorized for incidental take of coastal sage scrub (including allowed uses within the Reserve System) be undertaken in a manner that minimizes impacts on gnatcatchers presently using or in close proximity to the habitat to be converted. These minimization measures would also be expected to benefit other Identified coastal sage scrub species. For participating landowners, each landowner will comply with the "construction-related minimization measures" as part of compliance with the landowner's individual Section 10(a) permit pursuant to the Implementation Agreement. However, these construction-related measures pertain to development/ construction that occurs within areas of existing coastal sage scrub and other substantial stands of native

habitat. The project site only supports very minimal extent of native habitat and therefore measures such as flushing birds out of small areas of impacted habitat would not meaningfully minimize impacts due to the low potential for birds to occur in these small areas during construction. Other measures such as fencing/marking the limits of work and dust control are considered typical construction practices and would be implemented by IRWD. Given that the project would be consistent with the NCCP/HCP and be constructed using typical construction best management practices that ensure that only minimal effects to NCCP/HCP-covered species and habitat would occur, impacts would be less than significant.

3.5 Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

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

L***ess-than-Significant Impact.*** Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (CEQA Guidelines Section 15064.5(b)). An "historical resource" is any site listed or eligible for listing in the California Register of Historical Resources (CRHR). The CRHR listing criteria are intended to examine whether the resource in question: (a) is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; (b) is associated with the lives of persons important in our past; (c) embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or (d) has yielded, or may be likely to yield, information important in pre-history or history. Sites that are eligible for listing in the National Register of Historic Places (NRHP) or deemed historic pursuant to local designation criteria may also be considered historic resources. Typically, sites and resources that are 45 years old should be evaluated for their eligibility to be considered historic resources.

The Fleming Reservoir and Pump Station was constructed circa 1964 and includes a reservoir and office building over 45 years old, as well as two buildings and several structures that are less than 45 years old. To determine if the Project would impact historical resources under CEQA, the Fleming Zone 8 Reservoir and Pump Station were evaluated for historical significance and integrity in consideration of National Register of Historic Places, CRHR, and local designation criteria and integrity requirements. This evaluation

is included in a Historic Resources Technical Report (Appendix C-1), which included extensive archival research, field survey, and an evaluation of the property's significance.

As detailed in the Historical Resources Technical Report (Appendix C-1), the Fleming Reservoir and Pump Station does not appear eligible under any NRHP or CRHR designation criteria due to a lack of significant historical associations and architectural merit. Therefore, the reservoir and pump station are not considered a historical resource for the purposes of CEQA. Therefore, the Project would result in a less than significant impact to historical resources.

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

Less-than-Significant Impact with Mitigation Incorporated. No prehistoric or historic-era archaeological resources were identified within the proposed project site as a result of the California Historical Resources Information System (CHRIS) records search (completed February 18, 2021) or Native American Heritage Commission's (NAHC) Sacred Lands File (SLF) search (completed January 28, 2021). The pedestrian survey (completed March 17, 2021) determined that the eastern portion of the project site was heavily modified by the development of the Fleming Reservoir and Pump Station facility. According to the 1966 aerial photograph, the project site had been subjected to substantial ground disturbance through the realignment of Santiago Canyon Road, development of the water tank, and cuts in the hill to create an access road. In the 1967 aerial, a utility line pole adjacent to the northwestern portion border of the project site is present. By the 1980s, the project site is fully developed into the current Fleming Reservoir and Pump Station facility (constructed between the 1960s and 1970s), which involved grading for the placement of on-site structures. Also depicted are numerous intersecting dirt roads, including portions of the former alignment of the Santiago Canyon Road that intersect the present-day Santiago Canyon Road and Silverado Canyon Road and Black Star Canyon Road. According to a review of the project's Geotechnical Report (Leighton 2020), fill soils were encountered approximately 6 inches below ground surface (bgs) and up to 2 to 3 feet bgs and is underlain by alluvial soils and/or sedimentary bedrock within the eastern portion of the project site, including the northeast–southwest oriented access road that bisects the project site.

The Geotechnical Report further notes that deeper fill associated with the initial development of the facility may be present, resulting in less-than-reliable survey findings (Leighton 2020). While the pedestrian survey did not identify any cultural material within the developed eastern portion of the project site, the western vacant and undeveloped portion of the site, resulted in the discovery of an isolated prehistoric flaked stone composed of cryptocrystalline silica (ISO-01). While the study area includes both the western undeveloped portion and the eastern portion of the site with the extant Fleming Reservoir and Pump Station facility, the project, as currently proposed, will not encroach on the western undeveloped portion, which has a moderate to high potential to encounter known resources (ISO-01), and unknown archaeological resources. Therefore, beyond recordation of the isolated prehistoric flaked stone (ISO-01) on a Department of Parks and Recreation (DPR) 523 series resource form (see Confidential Appendix E of Appendix C-2) no further cultural investigations are required. However, current project design indicates that the construction work on the eastern portion of the site will involve between 3 to 10 feet bgs for general ground disturbance, including the construction of the retaining walls; between 6 to 7 feet bgs for the proposed pipelines; and up to 11 feet bgs for the construction of the vaults with a maximum depth of 11 to 12 feet overall. In consideration of all these factors, the potential to encounter unknown intact subsurface archaeological resources beyond the depths of identified fill soils within the eastern portion of the project site is low. However, there remains the possibility that cultural material could be encountered in native soils during

construction-related ground disturbance. In the event that unanticipated archaeological resources are encountered during project implementation, impacts to these resources would be potentially significant. With the implementation of mitigation measure MM-CUL-1, which requires that all project construction personnel take the Workers Environmental Awareness Program training for the proper identification and treatment of inadvertent discoveries and MM-CUL-2, which requires the retention of an on-call qualified archaeologist to address inadvertent discoveries and requires all construction work occurring within 100 feet of the find shall immediately stop until the qualified archaeologist, meeting the Secretary of Interior's Professional Qualification Standards for Archaeology, can evaluate the significance of the find, potentially significant impacts to unknown archaeological resources would be reduced to less than significant. Therefore, impacts would be less than significant with mitigation incorporated.

MM-CUL-1 All construction personnel and monitors shall be briefed regarding inadvertent discoveries prior to the start of construction activities. A basic presentation and handout or pamphlet shall be prepared in order to ensure proper identification and treatment of inadvertent discoveries. The purpose of the Workers Environmental Awareness Program training is to provide specific details on the kinds of archaeological materials that may be identified during construction of the project and explain the importance of and legal basis for the protection of significant archaeological resources. Each worker shall also learn the proper procedures to follow in the event that cultural resources or human remains are uncovered during ground-disturbing activities. These procedures include work curtailment or redirection, and the immediate contact of the site supervisor and archaeological monitor.

MM-CUL-2 A qualified archaeologist shall be retained and on call to respond and address any inadvertent discoveries identified during initial excavation in native soil. Initial excavation is defined as initial construction-related earth moving of sediments from their place of deposition. As it pertains to archaeological monitoring, this definition excludes movement of sediments after they have been initially disturbed or displaced by project-related construction. A qualified archaeological principal investigator, meeting the Secretary of the Interior's Professional Qualification Standards, should oversee and, in consultation with IRWD, adjust monitoring efforts as needed (increase, decrease, or discontinue monitoring frequency) based on the observed potential for construction activities to encounter cultural deposits or material. The archaeological monitor will be responsible for maintaining daily monitoring logs.

In the event that potential prehistoric or historical archaeological resources (sites, features, or artifacts) are exposed during construction activities for the project, all construction work occurring within 100 feet of the find shall immediately stop and a qualified archaeologist must be notified immediately to assess the significance of the find and in consultation with IRWD, determine whether or not additional study is warranted. Depending upon the significance of the find, the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work such as preparation of an archaeological treatment plan, testing, data recovery, or monitoring may be warranted.

If monitoring is conducted, an archaeological monitoring report shall be prepared within 60 days following completion of ground disturbance and submitted to IRWD for review. This report should document compliance with approved mitigation, document the monitoring efforts, and include an appendix with daily monitoring logs. The final report shall be submitted to the South Central Coastal Information Center.

c) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Less-than-Significant Impact. No prehistoric or historic burials were identified within the proposed project site as a result of the CHRIS records search, NAHC SLF search, or pedestrian survey. In the event that human remains are inadvertently encountered during construction activities, such resources would be treated in accordance with state and local regulations that provide requirements with regard to the accidental discovery of human remains, including California Health and Safety Code Section 7050.5, California Public Resources Code Section 5097.98, and the California Code of Regulations Section 15064.5(e). In accordance with these regulations, if human remains are found, the County Coroner must be immediately notified of the discovery. No further excavation or disturbance of the project site or any nearby area reasonably suspected to overlie adjacent remains can occur until the County Coroner has determined, within two working days of notification of the discovery, if the remains are potentially human in origin. If the County Coroner determines that the remains are, or are believed to be, Native American, he or she is required to notify the NAHC within 24 hours. The NAHC must immediately notify those persons it believes to be the most likely descendant from the deceased Native American. The most likely descendant must then complete their inspection within 48 hours of being granted access to the site. The most likely descendant would then determine, in consultation with IRWD, the disposition of the human remains. Compliance with these regulations would ensure that impacts to human remains resulting from the proposed project would be less than significant.

3.6 Energy

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. Energy – 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?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

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. The project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation, as discussed below.

Short-Term Construction

CalEEMod Version 2016.3.2 was used to estimate potential project-generated greenhouse gas (GHG) emissions during construction, which were then used to estimate energy consumption. Construction of the project would result in GHG emissions primarily associated with use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. All details for construction criteria air pollutants discussed in Section 3.3, Air Quality, and Appendix A of this Draft IS/MND are also applicable for the estimation of construction-related GHG emissions. The estimated GHGs were back-calculated based on carbon content (i.e., kilograms of carbon dioxide [CO_2] per gallon) in order to estimate fuel usage during project construction. The conversion factor for gasoline is 8.78 kilograms per metric ton CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO_2 per gallon (The Climate Registry 2020). Energy use calculations for construction are provided in Appendix A.

Electricity

Temporary electric power for as-necessary lighting and electronic equipment such as computers inside temporary construction trailers would be provided by SCE. The electricity used for such activities would be temporary and would be substantially less than that required for project operation and would have a negligible contribution to the project's overall energy consumption.

Natural Gas

Natural gas is not anticipated to be required during construction of the project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed below under the "petroleum" subsection. Any minor amounts of natural gas that may be consumed as a result of project construction would have a negligible contribution to the project's overall energy consumption.

Petroleum

Heavy-duty construction equipment associated with demolition and construction activities for construction would rely on diesel fuel, as would haul trucks involved in removing the materials from demolition and excavation. Construction workers would travel to and from the project site throughout the duration of construction. It is assumed in this analysis that construction workers would travel to and from the site in gasoline-powered passenger vehicles.

Heavy-duty construction equipment of various types would be used during each phase of project construction. Appendix A lists the assumed equipment usage for each phase of construction.

Fuel consumption from construction equipment was estimated by converting the total CO_2 emissions from each construction phase to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. Construction is estimated to occur in the years 2022–2023 based on the construction phasing schedule. The conversion factor for gasoline is 8.78 kilograms per metric ton CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO_2 per gallon (The Climate Registry 2020). The estimated diesel fuel usage from construction equipment is shown in Table 9.

Table 9. Construction Equipment Diesel Demand

Phase	Pieces of Equipment	Equipment CO_2 (MT)	kg/CO_2/Gallon	Gallons
Site Demolition (Phase 1)	2	2.04	10.21	200
Interim Grading and Shoring	2	17.78	10.21	1,741
Tank Construction	4	18.23	10.21	1,786
Pump Station, RMS Facility, and Storage Building	4	8.28	10.21	811
Vault Construction Site Improvements, and Electrical Improvements	2	7.24	10.21	709
Startup and Testing	0	0.00	10.21	0
Site Demolition (Phase 2)	2	2.31	10.21	226
Construct Storage Building and Install Sewer Holding Tank	2	2.10	10.21	206
			Total	5,679

Sources: Pieces of equipment and equipment CO_2 (Appendix A); kg/CO_2/Gallon (The Climate Registry 2020).
Notes: CO_2 = carbon dioxide; MT = metric ton; kg = kilogram.

Fuel consumption from worker and vendor trips is estimated by converting the total CO_2 emissions from each construction phase to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. Worker vehicles are assumed to be gasoline and vendor/hauling vehicles are assumed to be diesel. Calculations for total worker, vendor, and haul truck fuel consumption are provided in Tables 10, 11, and 12.

Table 10. Construction Worker Gasoline Demand

Phase	Number of Trips	Equipment CO_2 (MT)	kg/CO_2/Gallon	Gallons
Site Demolition (Phase 1)	80	0.49	8.78	56
Interim Grading and Shoring	320	1.98	8.78	223
Tank Construction	1,680	10.37	8.78	1,181
Pump Station, RMS Facility, and Storage Building	780	4.79	8.78	545
Vault Construction Site Improvements, and Electrical Improvements	720	4.28	8.78	487
Startup and Testing	180	1.07	8.78	122
Site Demolition (Phase 2)	120	0.71	8.78	81
Construct Storage Building and Install Sewer Holding Tank	408	2.42	8.78	276
			Total	2,974

Sources: Trips and vehicle CO2 (Appendix A); kg/CO2/Gallon (The Climate Registry 2020).
Notes: CO2 = carbon dioxide; MT = metric ton; kg = kilogram.

Table 11. Construction Vendor Diesel Demand

Phase	Number of Trips	Equipment CO_2 (MT)	kg/CO_2/Gallon	Gallons
Site Demolition (Phase 1)	60	0.81	10.21	56
Interim Grading and Shoring	240	3.23	10.21	225
Tank Construction	1,400	18.85	10.21	1,181
Pump Station, RMS Facility, and Storage Building	650	8.71	10.21	545
Vault Construction Site Improvements, and Electrical Improvements	540	7.05	10.21	487
Startup and Testing	180	2.35	10.21	122
Site Demolition (Phase 2)	90	1.18	10.21	81
Construct Storage Building and Install Sewer Holding Tank	306	4.00	10.21	276
			Total	4,523

Sources: Trips and vehicle CO2 (Appendix A); kg/CO2/Gallon (The Climate Registry 2020).
Notes: CO2 = carbon dioxide; MT = metric ton; kg = kilogram.

Table 12. Construction Haul Truck Diesel Demand

Phase	Number of Trips	Equipment CO_2 (MT)	kg/CO_2/Gallon	Gallons
Site Demolition (Phase 1)	32	1.18	10.21	116
Interim Grading and Shoring	76	2.80	10.21	275
Tank Construction	80	2.95	10.21	289
Pump Station, RMS Facility, and Storage Building	40	1.47	10.21	144
Vault Construction Site Improvements, and Electrical Improvements	40	1.42	10.21	139
Startup and Testing	0	0.00	10.21	0
Site Demolition (Phase 2)	50	1.77	10.21	174
Construct Storage Building and Install Sewer Holding Tank	40	1.42	10.21	139
			Total	1,274

Sources: Trips and vehicle CO2 (Appendix A); kg/CO2/Gallon (The Climate Registry 2020).
Notes: MT = metric ton; CO2 = carbon dioxide; kg = kilogram.

In summary, construction of the project is anticipated to consume approximately 2,974 gallons of gasoline and 11,476 gallons of diesel, which would last about 20.5 months.

Summary

The electricity and natural gas used for construction of the project would be temporary and would be substantially less than that required for project operation and would have a negligible contribution to the project's overall energy consumption. Construction is anticipated to consume 2,974 gallons of gasoline and 11,476 gallons of diesel. Therefore, impacts to energy resources during construction would be less than significant.

The project will be subject to CARB's In-Use Off-Road Diesel Vehicle Regulation that applies to certain off-road diesel engines, vehicles, or equipment greater than 25 horsepower. The regulation: (1) imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles; (2) requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled; (3) restricts the adding of older vehicles into fleets starting on January 1, 2014; and (4) requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits). The fleet must either show that its fleet average index was less than or equal to the calculated fleet average target rate, or that the fleet has met the Best Achievable Control Technology requirements.

Long-Term Operational Impacts

At buildout, project activities that would consume energy include electricity use for motorized security gates; electricity for on-site buildings, including the proposed pump station building, disinfection facility building, and storage building; electricity for water treatment and water and wastewater conveyance; and petroleum consumption from employees and delivery vehicle trips. Additional assumptions for these sources are described below, and energy use calculations for operations are provided in Appendix A.

Electricity

The operation of the project buildout would require electricity for multiple purposes, including cooling, lighting, water treatment and water and wastewater conveyance, appliances, and various equipment. Additionally, the supply, conveyance, treatment, and distribution of water would indirectly result in electricity usage. However, proposed electricity consumption rates are expected to remain consistent with existing conditions.

Natural Gas

At buildout, the proposed project would not use natural gas for operational activities. On-site energy usage would be derived solely from electricity use and petroleum consumption. Therefore, the proposed project would not result in wasteful, inefficient, or unnecessary natural gas consumption during operations.

Petroleum

During operations, the majority of fuel consumption resulting from the project would involve the use of motor vehicles traveling to and from the project site and emergency generator testing. Proposed on-site fuel consumption associated with vehicle travel is not expected to increase compared to existing conditions. The proposed project would replace the existing Tier 2 generator with a Tier 3 generator. Fuel consumption associated with testing and maintenance activities would be limited and would not exceed 200 hours per year in accordance with SCAQMD Rule 1470. Similar to the construction haul trips, fuel consumption for the emergency generator is estimated by converting the total CO_2 emissions from operation of the project to gallons using the conversion factors for CO_2 to gallons of diesel.

Calculations for annual mobile source fuel consumption are provided in Table 13.

Table 13. Annual Emergency Generator Petroleum Demand

	MT CO_2/year	kg/CO_2/Gallon	Gallons
Existing	28.82	10.21	2,822
Proposed	66.40	10.21	6,504
Net	37.59	10.21	3,681

Sources: Trips and vehicle CO_2 (Appendix A); kg/CO_2/Gallon (The Climate Registry 2020).
Notes: MT = metric ton; CO_2 = carbon dioxide; kg = kilogram.

As seen in Table 13, operation of the proposed generator would consume an additional 3,681 gallons of diesel per year.

Summary

At buildout, the project would not consume additional electricity and natural gas compared to existing conditions. Regardless, new facilities associated with the project would be subject to the State Building Energy Efficiency Standards, outlined in Title 24 of the California Code of Regulations. The efficiency standards apply to new construction of nonresidential buildings and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting.

In summary, on-site operational natural gas and electricity usage would not increase due to the implementation of the project. Although the project would see an increase in petroleum use during construction and operation, fuel consumption associated with testing and maintenance activities of the proposed generator would be limited and would not exceed 200 hours per year in accordance with SCAQMD Rule 1470. Therefore, impacts during operation would be less than significant.

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

Less-than-Significant Impact. The project would be subject to and would comply with, at a minimum, the 2019 California Building Code Title 24 (24 CCR Part 6). The project would not conflict with existing energy standards and regulations. The electricity and natural gas used for construction of the project would be temporary and would have a negligible contribution to the project's overall energy consumption.

Construction

The electricity and natural gas used for construction of the project would be temporary and would have a negligible contribution to the project's overall energy consumption. Construction is anticipated to consume 2,974 gallons of gasoline and 11,476 gallons of diesel. This would be a fraction of petroleum that would be consumed in California and countywide over the course of the construction period. Therefore, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and impacts would be less than significant during construction.

Operation

As discussed under the previous thresholds, the project would result in an increased demand for petroleum. Design features would reduce the project's energy consumption by what is required by the 2019 California Building Code Title 24 standards. The efficiency standards apply to new construction of both residential and nonresidential buildings and regulate energy consumed for heating, cooling, ventilation, water heating,

and lighting. Therefore, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and impacts would be less than significant during operation.

3.7 Geology and Soils

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS – 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.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
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 on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
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?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☒	☐
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

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.

No Impact. The Alquist-Priolo Earthquake Zoning Act (Alquist-Priolo Act) requires the delineation of fault zones along active faults in California. The purpose of the Alquist-Priolo Act is to regulate development on or near active fault traces to reduce hazards associates with fault rupture. The Alquist-Priolo Earthquake Fault Zones are the regulatory zones that include surface traces of active faults. The project site is not located within a designated Alquist-Priolo Earthquake Fault Zone (DOC 2021b). The nearest active Alquist-Priolo Fault Zone to the project site is the Whittier-Elsinore fault zone, located approximately 7.1 miles north–northeast of the project site (DOC 2021b). Therefore, no impacts associated with fault rupture would occur.

ii) Strong seismic ground shaking?

Less-than-Significant Impact. The project site is situated in a seismically active region. As is the case for most areas of southern California, ground shaking resulting from earthquakes associated with nearby and more distant faults may occur at the project site. During the life of the project, seismic activity associated with active faults can be expected to generate moderate to strong ground shaking at the site. The known regional active faults that could produce this type of ground shaking are the Whittier-Elsinore, San Joaquin Hills Blind Thrust, and Chino faults located approximately 7.1 miles, 7.9 miles, and 7.9 miles, respectively, from the site. However, there are no known active or potentially active faults traversing the site (DOC 2021b). The seismic design parameters would be in accordance with the 2019 California Building Code, which sets forth specific engineering requirements (CBC 2019). Additionally, the project would be constructed in accordance with the specific recommendations of the Geotechnical Report, which provides specific design recommendations to ensure the structural integrity of the project in the event that seismic ground shaking is experienced at the project site (Leighton 2020). Compliance with these requirements and implementation of the recommendations of the Geotechnical Report would reduce the potential risk to both people and structures with respect to strong seismic ground shaking. Therefore, impacts associated with strong seismic ground shaking would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less-than-Significant Impact. Liquefaction is typified by a buildup of pore water pressure in the affected soil layer to a point where a total loss of shear strength may occur during a seismic event, causing the soil to behave as a liquid. The California Geological Survey regulatory maps determined that the project site is located in an area susceptible to liquefaction (CGS 2019a). However, upon further site-specific investigation, the Geotechnical Report prepared for the project determined that the project site is not located within an area that has been identified by the State of California as being potentially susceptible to the occurrence of liquefaction. In addition, the Geotechnical Report determined that the presence of shallow bedrock also indicates that the liquefaction potential is very low (Leighton 2020). Therefore, impacts associated with liquefaction would be less than significant.

iv) Landslides?

Less-than-Significant Impact. Landslides typically occur on moderate to steep slopes. Many factors including slope height, slope steepness, shear strength, and orientation of weak layers in the underlying geologic units contribute to landslide susceptibility. The California Geological Survey regulatory maps determined that the project site is located in an area susceptible to landslides (CGS 2019b). However, there are no known landslides that have occurred on or adjacent to the project site (CGS 2019b), and upon further site-specific investigation, the Geotechnical Report (which included a landslide analysis at a more granular level) determined that the project site is not located within an area that has been identified by the State of California as being potentially susceptible to the occurrence of seismically-induced landslides (Leighton 2020). Therefore, impacts associated with landslides would be less than significant.

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

Less-than-Significant Impact. Excavation and ground-disturbing activities during project construction could potentially leave loose soil exposed to the erosive forces of rainfall and high winds, which would increase the potential for soil erosion and loss of topsoil. Adequate drainage on the project site is critical in reducing potential soil erosion or the loss of topsoil. IRWD would prepare and implement a SWPPP, which would include construction best management practices (BMPs) to control erosion and sediment during construction activities. With adherence to the SWPPP and associated construction BMPs related to erosion and sediment control, construction-related impacts to soil erosion and the loss of topsoil would remain below a level of significance. Upon completion of construction, all disturbed surfaces would be stabilized, either by development or by landscaping. Therefore, it is not anticipated that the proposed project would result in substantial soil erosion or significant losses in topsoil. Impacts to soil erosion or the loss of topsoil would be less than significant.

c) Would the project 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 on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less-than-Significant Impact. As previously discussed in Sections 3.7(a)(iii) and 3.7(a)(iv), the project site is not located on potentially liquefiable land or unstable bedrock. However, there is potential for lateral spreading due to a nearby seismic event; thus, the Geotechnical Report recommends that building design parameters such as a permanent subsurface drainage system be implemented to avoid hydrostatic pressure on the walls of the proposed structures (Leighton 2020). As stated in the Geotechnical Report, soils that underlie the project site have low potential for subsidence or collapse, unless there is significant soil saturation; therefore, any proposed infiltration system should not be located near existing or proposed improvement to reduce the risk of infiltration (Leighton 2020). Additional recommendations are provided to further reduce impacts associated with unstable soils. With adherence to all recommendations listed in the Geotechnical Report, impacts would be less than significant.

d) Would the project 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?

Less-than-Significant Impact. Expansive soils are characterized by the ability to undergo significant volume change (shrink and swell) as a result of variation in soil moisture content. Soil moisture content can change

due to many factors, including perched groundwater, landscape irrigation, rainfall, and utility leakage. Expansive soils are commonly very fine-grained with a high to very high percentage of clay. According to the Geotechnical Report, the soils near the surface of the site are comprised of sand, silty sand, and clayey sand, meaning that the swell potential is low (Leighton 2020). In addition, the underlying alluvium of the site has a moderate swell potential when saturated with water. In order to address these potential issues, the Geotechnical report provides specific design recommendations to ensure the structural integrity of the project, thereby reducing potential risks involving expansive soils (Leighton 2020). Therefore, impacts associated with expansive soils would be considered less than significant.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

Less-than-Significant Impact. The proposed project would replace the existing septic tank with a 4,000-gallon sewer holding tank. According to the project's Geotechnical Report, this tank can be supported by undisturbed bedrock or by compacted structural fill (Leighton 2020). Given that the soils would be capable of supporting the sewer holding tank (or compacted structural fill would be placed to support the tank), impacts would be less than significant.

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

Less-than-Significant Impact with Mitigation Incorporated. The project area has been previously developed and is mapped as being underlain by Holocene (<11,700 years ago) young axial-channel deposits (map unit Qya) associated with Santiago Creek, located west of the project area and early to middle Pleistocene age (~2.58 million years old to 129,000 years old) Very old alluvial fan deposits (map unit Qvof) (Morton and Miller 2006; Cohen et al. 2020). These deposits overlie middle Eocene (~47.8 to 37.8 million years old) Santiago Formation (map unit Tsa) bedrock in this region (Leighton Consulting 2020; Morton and Miller 2006; Cohen et al. 2020). According to the Orange County Curation Guidelines for paleontology (Eisentraut and Cooper 2002; Rivin and Sutton 2010), Pleistocene age older alluvial deposits and the Santiago Formation have high potential to yield paleontological resources (i.e., high resource importance). Younger, surficial deposits, such as Quaternary younger alluvium and artificial fill, both have low potential to yield paleontological resources (Eisentraut and Cooper 2002; Morton and Miller 2006; Rivin and Sutton 2010; Cohen et al. 2020).

A paleontological records search request letter for the project area was sent to the Natural History Museum of Los Angeles County (LACM) on January 14, 2021, and the results were received on January 15, 2021. According to the records search results received from the LACM, no paleontological localities are documented within a 1-mile radius of the project boundaries (LACM 2021). However, one fossil locality—LACM 7695—is located near the project area and Santiago Canyon Road. This fossil locality was recovered from surficial deposits of red sandstone within the Vaqueros Formation and yielded invertebrates (LACM 2021). A second locality, LACM VP 1905/IP 16937, also located near Santiago Canyon Road, yielded plants and invertebrates from the Puente Formation at an unknown depth (LACM 2021). In the vicinity of Silverado Creek within the Ladd Formation, numerous localities yielded both invertebrates and vertebrates (e.g., fish, Chondrichthyes) at the surface (LACM 2021). Fossil localities are documented elsewhere in Orange County from the Pleistocene older alluvium and older sedimentary deposits (Eisentraut and Cooper 2002; Riven and Sutton 2010). These same age sedimentary deposits, if encountered within the project area, have the potential to yield scientifically significant vertebrate fossils.

Although no vertebrate fossils are documented within the project area, previously undisturbed geological units present may be conducive to preserve such remains. If encountered on the project site during construction, high sensitivity deposits would warrant monitoring to mitigate potential impacts. No monitoring is required during excavation within younger alluvial fan or artificial fill deposits. Based on this analysis, it is anticipated that high sensitivity deposits (e.g., Pleistocene age older alluvial deposits and/or Santiago Formation) could be located at shallow depths, approximately 5 feet below ground surface, at the project site.

In order to avoid potential impacts to paleontological resources, mitigation measure MM-GEO-1 shall be required. MM-GEO-1 involves the preparation and implementation of a paleontological resources mitigation program for excavation within high sensitivity geological units (e.g., Pleistocene age older alluvial deposits and/or Santiago Formation). Excavation within lower sensitivity units (e.g., Quaternary younger alluvial fan deposits and artificial fill) does not require mitigation. Implementation of MM-GEO-1 would reduce impacts to paleontological resource to less than significant.

MM-GEO-1 Prior to commencement of any ground-disturbing activity in areas of moderate to high paleontological sensitivity, IRWD shall retain a qualified paleontologist per the 2010 Society of Vertebrate Paleontology guidelines. The qualified paleontologist shall conduct construction worker paleontological resources sensitivity training prior to the start of ground disturbing. This can occur in coordination with the Cultural Resources Workers Environmental Awareness Program training (Mitigation Measure CUL—1). A paleontological monitor under the direction of the qualified paleontologist shall be on site during ground-disturbing activities that extend to depths greater than 5 feet below the ground surface in areas of previously undisturbed moderate and/or high paleontological resources sensitivity. In the event that paleontological resources (e.g., fossils) are unearthed, the paleontological monitor shall notify IRWD, temporarily halt and/or divert ground-disturbing activity to allow recovery of paleontological resources and consult with IRWD. Once documentation and collection of the find is completed, the paleontological monitor, in consultation with IRWD, shall allow ground-disturbing activities to recommence in the area of the find.

3.8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. GREENHOUSE GAS EMISSIONS – Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. There are currently no established thresholds for assessing whether the GHG emissions of a project, such as the project, would be considered a cumulatively

considerable contribution to global climate change; however, all reasonable efforts should be made to minimize a project's contribution to global climate change. In addition, while GHG impacts are recognized exclusively as cumulative impacts (CAPCOA 2008), GHG emissions impacts must also be evaluated at a project level under CEQA.

The CEQA Guidelines do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009). The State of California has not adopted emission-based thresholds for GHG emissions under CEQA. The Governor's Office of Planning and Research's Technical Advisory, titled Discussion Draft CEQA and Climate Change Advisory, states (OPR 2018):

> Neither the CEQA statute nor the CEQA Guidelines prescribe thresholds of significance or particular methodologies for perming an impact analysis. This is left to lead agency judgment and discretion, based upon factual data and guidance from regulatory agencies and other sources where available and applicable. Even in the absence of clearly defined thresholds for GHG emissions, such emissions must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact.

Furthermore, the advisory document indicates that "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice" (OPR 2018). Section 15064.7(c) of the CEQA Guidelines specifies that "when adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence."

In October 2008, SCAQMD proposed recommended numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects as presented in its Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold (SCAQMD 2008b). This guidance document, which builds on the previous guidance prepared by the California Air Pollution Control Officers Association, explored various approaches for establishing a significance threshold for GHG emissions. The draft interim CEQA thresholds guidance document was not adopted or approved by the Governing Board. However, in December 2008, SCAQMD adopted an interim 10,000 metric tons (MT) of carbon dioxide equivalent (CO_2e) per-year screening level threshold for stationary source/industrial projects for which SCAQMD is the lead agency (see SCAQMD Resolution No. 08-35, December 5, 2008).

SCAQMD formed a GHG CEQA Significance Threshold Working Group to work with SCAQMD staff on developing GHG CEQA significance thresholds until statewide significance thresholds or guidelines are established. From December 2008 to September 2010, SCAQMD hosted working group meetings and revised the draft threshold proposal several times, although it did not officially provide these proposals in a subsequent document. SCAQMD has continued to consider adoption of significance thresholds for residential and general land use development projects. The most recent proposal, issued in September 2010, uses the following tiered approach to evaluate potential GHG impacts from various uses (SCAQMD 2010):

Tier 1 Determine if CEQA categorical exemptions are applicable. If not, move to Tier 2.

Tier 2 Consider whether or not the project is consistent with a locally adopted GHG reduction plan that has gone through public hearing and CEQA review, that has an approved inventory, includes monitoring, etc. If not, move to Tier 3.

Tier 3 Consider whether the project generates GHG emissions in excess of screening thresholds for individual land uses. The 10,000 MT CO_2e per year threshold for industrial uses would be recommended for use by all lead agencies. Under option 1, separate screening thresholds are proposed for residential projects (3,500 MT CO_2e per year), commercial projects (1,400 MT CO_2e per year), and mixed-use projects (3,000 MT CO_2e per year). Under option 2, a single numerical screening threshold of 3,000 MT CO_2e per year would be used for all non-industrial projects. If the project generates emissions in excess of the applicable screening threshold, move to Tier 4.

Tier 4 Consider whether the project generates GHG emissions in excess of applicable performance standards for the project service population (population plus employment). The efficiency targets were established based on the goal of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. The 2020 efficiency targets are 4.8 MT CO_2e per service population per year (MT CO_2e/SP/year) for project level analyses and 6.6 MT CO_2e/SP/year for plan level analyses. The 2035 efficiency targets are 3.0 MT CO_2e/SP/year for project level analyses and 4.1 MT CO_2e/SP/year for plan level analyses. If the project generates emissions in excess of the applicable efficiency targets, move to Tier 5.

Tier 5 Consider the implementation of CEQA mitigation (including the purchase of GHG offsets) to reduce the project efficiency target to Tier 4 levels.

To determine the project's potential to generate GHG emissions that would have a significant impact on the environment, the project's GHG emissions were compared to the non-industrial land project quantitative threshold of 3,000 MT CO_2e per year. Per the SCAQMD guidance, construction emissions should be amortized over the operational life of the project, which is assumed to be 30 years (SCAQMD 2008b). In addition, the project is evaluated for its potential to conflict with various GHG emission reduction plans including local GHG reduction plans, CARB's Scoping Plan, SCAG's RTP/SCS, and statewide 2030 and 2050 GHG reduction targets identified in Senate Bill (SB) 32 and Executive Order (EO) S-3-05.

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

Short-Term Construction Emissions

Less-than-Significant Impact. CalEEMod Version 2016.3.2 was used to estimate potential project-generated GHG emissions during construction. Construction of the project would result in GHG emissions primarily associated with the use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. All details for construction criteria air pollutants discussed in Section 3.3 are also applicable for the estimation of construction-related GHG emissions. As such, see Section 3.3 for a discussion of construction emissions calculation methodology and assumptions used in the GHG emissions analysis.

The SCAQMD Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold (SCAQMD 2008b) recommends that, "construction emissions be amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies." Thus, the total construction GHG emissions were calculated, amortized over 30 years, and added to the total operational emissions for comparison with the GHG significance threshold of 3,000

MT CO_2e per year. Therefore, the determination of significance is addressed in the operational emissions discussion following the estimated construction emissions.

Construction of the project is assumed to last a total of approximately 21 months. Table 14 presents construction emissions for the project from on-site and off-site emission sources.

Table 14. Estimated Annual Construction GHG Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2022	100.80	0.02	0.00	101.21
2023	42.48	0.00	0.00	42.59
			Total	**143.80**
			Amortized emissions over 30 years	**4.79**

Notes: GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Appendix A for complete results.

As shown in Table 14, the estimated total GHG emissions during construction would be approximately 144 MT CO_2e over the assumed construction period. Estimated project-generated construction emissions amortized over 30 years would be approximately 5 MT CO_2e per year. Because there is no separate GHG threshold for construction, the evaluation of significance is discussed in the operational emissions analysis in the following text.

Long-Term Operational Emissions

Less-than-Significant Impact. Emissions from the operational phase of the project were estimated using CalEEMod Version 2016.3.2. Operational year 2023 was assumed consistent with completion of project construction. Potential project-generated operational GHG emissions were estimated for area sources (landscape maintenance) and emergency generators. Emissions from each category are discussed in the following text with respect to the project. For additional details, see Section 3.3 for a discussion of operational emission calculation methodology and assumptions, specifically for area, energy (natural gas), and mobile sources.

Area Sources

CalEEMod was used to estimate GHG emissions from the project's area sources, which include operation of gasoline-powered landscape maintenance equipment, which produce minimal GHG emissions. See Section 3.3 for a discussion of landscaping equipment emissions calculations. Consumer product use and architectural coatings result in VOC emissions, which are analyzed in air quality analysis only, and little to no GHG emissions.

Energy

As discussed in Section 3.3, the project would not result in an increase in electricity use compared to the existing site. The project would not have natural gas use on site.

Mobile Sources

As discussed in Section 3.3, the project would not result in an increase in mobile source activity compared to the existing site.

Emergency Generators

The current site operates a 150 kW diesel-fueled Tier 2 emergency generator under SCAQMD Permit No. G21627. The generator is permitted to operate up to 200 hours per year. As part of the project, the existing generator will be replaced with a 350 kW Tier 3 generator equipped with a CARB-certified Level-3 diesel particulate filter. The proposed generator is also assumed to operate up to 200 hours per year in accordance with SCAQMD Rule 1470. The estimated operational project-generated GHG emissions are shown in Table 15.

Table 15. Estimated Annual Operational GHG Emissions – Unmitigated

Emission Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Existing Site				
Emergency Generator	28.82	0.00	0.00	29.00
Project				
Area	0.00	0.00	0.00	0.00
Emergency Generator	66.40	0.00	0.00	66.68
			Total	**66.68**
			Amortized construction emissions	*4.79*
			Total operational + amortized construction GHGs	**71.47**
			Net Total (Project minus existing site)	**42.47**

Notes: GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Appendix A for complete results.
Totals may not sum due to rounding.

As shown in Table 15, estimated annual project-generated GHG emissions would be approximately 67 MT CO_2e per year as a result of project operations only. After accounting for amortized project construction emissions, total GHGs generated by the project would be approximately 72 MT CO_2e per year. When accounting for the existing site, the project would result in net GHG emissions of 43 MT CO_2e per year. As such, annual operational GHG emissions with amortized construction emissions would not exceed the SCAQMD threshold of 3,000 MT CO_2e per year. It should be noted that the project's net operational GHG emissions would not exceed any of the SCAQMD bright-line thresholds. Therefore, impacts would be less than significant.

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

Consistency with the SCAG 2016–2040 RTP/SCS

Less-than-Significant Impact. The SCAG 2016 RTP/SCS is a regional growth-management strategy that targets per-capita GHG reduction from passenger vehicles and light-duty trucks in the Southern California

region. The 2016 RTP/SCS incorporates local land use projections and circulation networks in city and county general plans. Typically, a project would be consistent with the RTP/SCS if the project does not exceed the underlying growth assumptions within the RTP/SCS. Because the project is not growth inducing, this type of consistency analysis does not apply. However, the major goals of the 2016 RTP/SCS are outlined in Table 16, along with the project's consistency with them.

Table 16. Project Consistency with the SCAG 2016 RTP/SCS

RTP/SCS Measure	Project Consistency
Preserve the Transportation System We Already Have	*Does not apply.* The project would not inhibit SCAG from preserving the existing transportation system.
Expand Our Regional Transit System to Give People More Alternatives to Driving Alone	*Does not apply.* The project would not inhibit SCAG from expanding the regional transportation system.
Expand Passenger Rail	*Does not apply.* The project would not inhibit SCAG from expanding the passenger rail system.
Improve Highway and Arterial Capacity	*Does not apply.* The project would not inhibit SCAG from improving highway and arterial capacity.
Manage Demands on the Transportation System	*Does not apply.* The project would not inhibit SCAG from managing the demands on the transportation system.
Optimize the Performance of the Transportation System	*Does not apply.* The project would not inhibit SCAG from optimizing the performance of the transportation system.
Promoting Walking, Biking and Other Forms of Active Transportation	*Does not apply.* The project would not inhibit SCAG from promoting walking, biking, and other forms of active transportation.
Strengthen the Regional Transportation Network for Goods Movement	*Does not apply.* The project would not inhibit SCAG from strengthening the regional transportation network for goods movement.
Leverage Technology	*Does not apply.* The project would not inhibit SCAG from leveraging technology for the transportation system.
Improve Airport Access	*Does not apply.* The project would not inhibit SCAG from improving airport access.
Focus New Growth Around Transit	*Does not apply.* The project would not inhibit SCAG from focusing new growth around transit corridors.
Improve Air Quality and GHG	*Consistent*. The project would result in criteria air pollutant and GHG emissions during construction and operation that would not exceed the SCAQMD significance thresholds.
Preserve Natural Lands	*Consistent*. The project site is currently developed and not considered natural lands.

Source: SCAG 2016.
Note: SCAG = Southern California Association of Governments; RTP/SCS = Regional Transportation Plan and Sustainable Communities Strategy; GHG = greenhouse gas.

As shown in Table 16, the project would not conflict with the goals within SCAG's 2016 RTP/SCS. On May 7, 2020, SCAG's Regional Council adopted Connect SoCal (2020–2045 Regional Transportation Plan/Sustainable Communities Strategy) for federal transportation conformity purposes only. The Regional Council approved the Connect SoCal in its entirety on September 3, 2020.

Connect SoCal is a long-range visioning plan that builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. It charts a path toward a more mobile, sustainable, and prosperous region by

making connections between transportation networks, between planning strategies, and between the people whose collaboration can improve the quality of life for Southern Californians. Because the project is not growth inducing, this type of consistency analysis does not apply. However, the major goals of Connect SoCal are outlined in Table 17, along with the project's consistency with them.

Table 17. Project Consistency with the SCAG Connect SoCal RTP/SCS

RTP/SCS Measure	Project Consistency
Encourage regional economic prosperity and global competitiveness.	*Does not apply.* The project would not inhibit SCAG from encouraging regional economic prosperity and global competitiveness.
Improve mobility, accessibility, reliability, and travel safety for people and goods.	*Does not apply.* The project would not inhibit SCAG from improving mobility, accessibility, reliability, and travel safety for people and goods.
Enhance the preservation, security, and resilience of the regional transportation system.	*Does not apply.* The project would not inhibit SCAG from enhancing the resilience of the regional transportation system.
Increase person and goods movement and travel choices within the transportation system.	*Does not apply.* The project would not inhibit SCAG from increasing person and goods movement and travel choices within the transportation system.
Reduce greenhouse gas emissions and improve air quality.	*Consistent*. The project would result in criteria air pollutant and GHG emissions during construction and operation that would not exceed SCAQMD thresholds.
Support healthy and equitable communities.	*Does not apply*. The project would not inhibit SCAG from supporting healthy and equitable communities.
Adapt to a changing climate and support an integrated regional development pattern and transportation network.	*Does not apply*. The project would not inhibit SCAG from adapting to a changing climate and supporting an integrated regional development pattern and transportation network.
Leverage new transportation technologies and data-driven solutions that result in more efficient travel.	*Does not apply.* The project would not inhibit SCAG from leveraging technology for the transportation system.
Encourage development of diverse housing types in areas that are supported by multiple transportation options.	*Does not apply.* The project would not inhibit SCAG from encouraging development of diverse housing types.
Promote conservation of natural and agricultural lands and restoration of habitats.	*Consistent*. The project would not impact natural lands during construction or operation.

Source: SCAG 2020.
Note: SCAG = Southern California Association of Governments; RTP/SCS = Regional Transportation Plan and Sustainable Communities Strategy; GHG = greenhouse gas.

As shown in Table 17, the project would be consistent with most applicable measures within the SCAG Connect SoCal RTP/SCS.

Consistency with CARB's Scoping Plan

Less-than-Significant Impact. The Scoping Plan (approved by CARB in 2008 and updated in 2014 and 2017) provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly

applicable to specific projects, nor is it intended to be used for project-level evaluations.[4] Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-global warming potential GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., Low Carbon Fuel Standard), among others.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32 and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. Table 18 highlights measures that have been, or will be, developed under the 2008 Scoping Plan and presents the project's consistency with Scoping Plan measures. The project would comply with all regulations adopted in furtherance of the Scoping Plan to the extent required by law and to the extent that they are applicable to the project.

Table 18. Project Consistency with 2008 Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Project Potential to Conflict
Transportation Sector		
Advanced Clean Cars	T-1	*No conflict.* The project's employees would purchase vehicles in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase.
Low Carbon Fuel Standard	T-2	*Not applicable.* This is a statewide measure that cannot be implemented by the lead agency. Nonetheless, this standard would be applicable to the fuel used by vehicles that would access the project site (i.e., motor vehicles driven by the project's employees and heavy-duty trucks would use compliant fuels).
Regional Transportation-Related GHG Targets	T-3	*Not applicable.* The project is not related to developing GHG emission reduction targets. To meet the goals of SB 375, the 2016–2040 RTP/SCS is applicable to the project. The project would not preclude the implementation of this strategy.
Advanced Clean Transit	N/A	*Not applicable.* The project would not prevent CARB from implementing this measure.
Last-Mile Delivery	N/A	*Not applicable.* The project would not prevent CARB from implementing this measure.
Reduction in VMT	N/A	*No conflict.* The project would not prevent CARB from implementing this measure.
Vehicle Efficiency Measures 1. Tire Pressure 2. Fuel Efficiency Tire Program 3. Low-Friction Oil 4. Solar-Reflective Automotive Paint and Window Glazing	T-4	*No conflict.* These standards would be applicable to the light-duty vehicles that would access the project site. Motor vehicles driven by the project's employees would maintain proper tire pressure when their vehicles are serviced. The project's employees and customers would replace tires in compliance with CARB vehicle standards that are in effect

[4] The Final Statement of Reasons for the amendments to the State CEQA Guidelines reiterates the statement in the Initial Statement of Reasons that "[t]he Scoping Plan may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009).

Table 18. Project Consistency with 2008 Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Project Potential to Conflict
		at the time of vehicle purchase. Motor vehicles driven by the project's employees would use low-friction oils when their vehicles are serviced. The project's employees and customers would purchase vehicles in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase. In addition, the project would not prevent CARB from implementing this measure.
Ship Electrification at Ports (Shore Power)	T-5	*Not applicable.* The project is not within a Port District and the project would not prevent CARB from implementing this measure.
Goods Movement Efficiency Measures 1. Port Drayage Trucks 2. Transport Refrigeration Units Cold Storage Prohibition 3. Cargo Handling Equipment, Anti-Idling, Hybrid, Electrification 4. Goods Movement Systemwide Efficiency Improvements 5. Commercial Harbor Craft Maintenance and Design Efficiency 6. Clean Ships 7. Vessel Speed Reduction	T-6	*Consistent.* The project would support applicable efficiency measures within this Scoping Plan measure including increasing efficiency of goods movement.
Heavy-Duty Vehicle GHG Emission Reduction • Tractor-Trailer GHG Regulation • Heavy-Duty Greenhouse Gas Standards for New Vehicle and Engines (Phase I)	T-7	*No conflict.* Heavy-duty vehicles would be required to comply with CARB GHG reduction measures. In addition, the project would not prevent CARB from implementing this measure.
Medium- and Heavy-Duty Vehicle Hybridization Voucher Incentive project	T-8	*No conflict.* The project medium- and heavy-duty vehicles (e.g., delivery trucks) could take advantage of the vehicle hybridization action, which would reduce GHG emissions through increased fuel efficiency. In addition, the project would not prevent CARB from implementing this measure.
Medium and Heavy-Duty GHG Phase 2	N/A	*Not applicable.* The project would not prevent CARB from implementing this measure.
High-Speed Rail	T-9	*Not applicable.* The project does not include rail and would not prevent CARB from implementing this measure.
Electricity **and Natural Gas Sector**		
Energy Efficiency Measures (Electricity)	E-1	*No conflict.* The project would comply with the current Title 24 Building Energy Efficiency Standards. In addition, the project would not prevent CARB from implementing this measure.
Energy Efficiency (Natural Gas)	CR-1	*No conflict.* The project would comply with the current Title 24 Building Energy Efficiency Standards. In addition, the project would not prevent CARB from implementing this measure.

Table 18. Project Consistency with 2008 Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Project Potential to Conflict
Solar Water Heating (California Solar Initiative Thermal Program)	CR-2	*No conflict.* The project would include solar water heating where feasible.
Combined Heat and Power	E-2	*Not applicable.* The project would not prevent CARB from implementing this measure.
Renewables Portfolio Standard (33% by 2020)	E-3	*No conflict*. The electricity used by the project would benefit from reduced GHG emissions resulting from increased use of renewable energy sources.
Renewables Portfolio Standard (50% by 2050)	N/A	*No conflict*. The electricity used by the project would benefit from reduced GHG emissions resulting from increased use of renewable energy sources.
SB 1 Million Solar Roofs (California Solar Initiative, New Solar Home Partnership, Public Utility Programs) and Earlier Solar Programs	E-4	*Not applicable.* The project would not prevent CARB from implementing this measure.
Water Sector		
Water Use Efficiency	W-1	*Not applicable.* The project would not prevent CARB from implementing this measure.
Water Recycling	W-2	*Not applicable.* The project would not prevent CARB from implementing this measure.
Water System Energy Efficiency	W-3	*Not applicable.* This is applicable for the transmission and treatment of water, but it is not applicable for the project. The project would not prevent CARB from implementing this measure.
Reuse Urban Runoff	W-4	*Not applicable.* The project would not prevent CARB from implementing this measure.
Renewable Energy Production	W-5	*Not applicable.* Applicable for wastewater treatment systems. In addition, the project would not prevent CARB from implementing this measure.
Green Buildings		
State Green Building Initiative: Leading the Way with State Buildings (Greening New and Existing State Buildings)	GB-1	*No conflict.* The project would be required to be constructed in compliance with state or local green building standards in effect at the time of building construction.
Green Building Standards Code (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	*No conflict*. The project's buildings would meet green building standards that are in effect at the time of design and construction.
Beyond Code: Voluntary Programs at the Local Level (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	*No conflict*. The project's buildings would meet green building standards that are in effect at the time of design and construction.
Greening Existing Buildings (Greening Existing Homes and Commercial Buildings)	GB-1	*No conflict.* This is applicable for existing buildings only; it is not applicable for portions of the project except as future standards may become applicable to existing buildings.
Industry Sector		
Energy Efficiency and Co-Benefits Audits for Large Industrial Sources	I-1	*Not applicable.* The project would not prevent CARB from implementing this measure.

Table 18. Project Consistency with 2008 Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Project Potential to Conflict
Oil and Gas Extraction GHG Emission Reduction	I-2	*Not applicable.* The project would not prevent CARB from implementing this measure.
Reduce GHG Emissions by 20% in Oil Refinery Sector	N/A	*Not applicable.* The project would not prevent CARB from implementing this measure.
GHG Emissions Reduction from Natural Gas Transmission and Distribution	I-3	*Not applicable.* The project would not prevent CARB from implementing this measure.
Refinery Flare Recovery Process Improvements	I-4	*Not applicable.* The project would not prevent CARB from implementing this measure.
Work with the Local Air Districts to Evaluate Amendments to Their Existing Leak Detection and Repair Rules for Industrial Facilities to Include Methane Leaks	I-5	*Not applicable.* The project would not prevent CARB from implementing this measure.
Recycling and Waste Management Sector		
Landfill Methane Control Measure	RW-1	*Not applicable.* The project would not prevent CARB from implementing this measure.
Increasing the Efficiency of Landfill Methane Capture	RW-2	*Not applicable.* The project would not prevent CARB from implementing this measure.
Mandatory Commercial Recycling	RW-3	*No conflict.* During both construction and operation of the project, the project would comply with all state regulations related to solid waste generation, storage, and disposal, including the California Integrated Waste Management Act, as amended.
Increase Production and Markets for Compost and Other Organics	RW-3	*Not applicable.* The project would not prevent CARB from implementing this measure.
Anaerobic/Aerobic Digestion	RW-3	*Not applicable.* The project would not prevent CARB from implementing this measure.
Extended Producer Responsibility	RW-3	*Not applicable.* The project would not prevent CARB from implementing this measure.
Environmentally Preferable Purchasing	RW-3	*Not applicable.* The project would not prevent CARB from implementing this measure.
Forests Sector		
Sustainable Forest Target	F-1	*Not applicable.* The project would not prevent CARB from implementing this measure.
High Global Warming Potential Gases Sector		
Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-professional Servicing	H-1	*No conflict.* The project's employees would be prohibited from performing air conditioning repairs and would be required to use professional servicing.
SF_6 Limits in Non-utility and Non-semiconductor Applications	H-2	*Not applicable.* The project would not prevent CARB from implementing this measure.
Reduction of Perfluorocarbons (PFCs) in Semiconductor Manufacturing	H-3	*Not applicable.* The project would not prevent CARB from implementing this measure.

Table 18. Project Consistency with 2008 Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Project Potential to Conflict
Limit High GWP Use in Consumer Products	H-4	*No conflict.* The project's employees would use consumer products that would comply with the regulations that are in effect at the time of manufacture.
Air Conditioning Refrigerant Leak Test During Vehicle Smog Check	H-5	*No conflict*. Motor vehicles driven by the project's employees and customers would comply with the leak test requirements during smog checks.
Stationary Equipment Refrigerant Management Program – Refrigerant Tracking/Reporting/Repair Program	H-6	*Not applicable.* The project would not prevent CARB from implementing this measure.
Stationary Equipment Refrigerant Management Program – Specifications for Commercial and Industrial Refrigeration	H-6	*Not applicable.* The project would not prevent CARB from implementing this measure.
SF_6 Leak Reduction Gas Insulated Switchgear	H-6	*Not applicable.* The project would not prevent CARB from implementing this measure.
40% Reduction in Methane and Hydrofluorocarbon (HFC) Emissions	N/A	*Not applicable.* The project would not prevent CARB from implementing this measure.
50% Reduction in Black Carbon Emissions	N/A	*Not applicable.* The project would not prevent CARB from implementing this measure.
Agriculture Sector		
Methane Capture at Large Dairies	A-1	*Not applicable.* The project would not prevent CARB from implementing this measure.

Notes: GHG = greenhouse gas; CARB = California Air Resources Board; SB = Senate Bill; RTP/SCS = Regional Transportation Plan and Sustainable Communities Strategy; VMT = vehicle miles traveled; N/A = not applicable; GWP = Global Warming Potential; SF_6 = sulfur hexafluoride.

Based on the analysis in Table 18, the project would be not conflict with the applicable strategies and measures in the 2008 Scoping Plan.

The 2017 Scoping Plan Update reflects the 2030 target of a 40% reduction below 1990 levels codified by SB 32. Table 19 evaluates the project's potential to conflict with the 2017 Scoping Plan recommended actions.

Table 19. Project Consistency with 2017 Scoping Plan Climate Change Policies and Measures

Recommend Action Summary	Lead Agencies	Project Potential to Conflict
Implement SB 350 by 2030 • Increase Renewable Portfolio Standard • Establish annual targets for statewide energy efficiency • Reduce GHG emissions in the electricity sector	CPUC, CEC, CARB	*No conflict.* This action is directed towards policymakers and would not be directly applicable to the project. Nonetheless, the project would improve energy efficiency and reduce electricity-related GHG emissions when replacing older buildings and systems with newer, more efficient buildings and systems.
Implement Mobile Source Strategy (Cleaner Technology and Fuels) • Increase zero emission and plug-in hybrid electric vehicles	CARB, CalSTA, SGC, Caltrans CEC, OPR, Local agencies	*No conflict.* The project's employees would operate vehicles that comply with applicable CARB regulations for cleaner technology and fuels.

Table 19. Project Consistency with 2017 Scoping Plan Climate Change Policies and Measures

Recommend Action Summary	Lead Agencies	Project Potential to Conflict
• Increase GHG stringency on light-duty vehicles beyond Advanced Clean Cars • Medium- and heavy-duty GHG Phase 2 • Innovative Clean Transit • Last Mile Delivery • Further reduce VMT through SB 375 and regional Sustainable Communities Strategy		
Increase stringency of SB 375 Sustainable Communities Strategy (2035 targets)	CARB	*No conflict.* This action is directed towards policymakers and would not be directly applicable to the project.
Adjust performance measures used to select and design transportation facilities by 2019	CalSTA and SGC, OPR, CARB, GoBiz, IBank, DOF, CTC, Caltrans	*No conflict.* The action is directed towards CARB and Caltrans.
Develop pricing policies to support low-GHG transportation (e.g., low-emission vehicle zones for heavy duty, road user, parking pricing, transit discounts) by 2019	CalSTA, Caltrans, CTC, OPR/SGC, CARB	*No conflict.* This action is directed towards policymakers and would not be directly applicable to the project.
Implement California Sustainable Freight Action Plan	CalSTA, CalEPA, CNRA, CARB, Caltrans, CEC, GoBiz	*No conflict.* The project would provide a regional hub for goods movement connecting the ports with the arterial goods distribution system.
Adopt a Low Carbon Fuel Standard with a carbon intensity reduction of 18%	CARB	*No conflict.* This action is directed towards CARB and would not be directly applicable to the project. In addition, the project would not result in an increase in operational vehicle trips.
Implement the Short-Lived Climate Pollutant Strategy by 2030	CARB, CalRecycle, CDFA, SWRCB, Local air districts	*No conflict.* The project would be required to comply with the Short-Lived Climate Pollutant Strategy to the extent it is applicable.
Develop regulations and programs to support organic waste landfill reduction goals in the Short-Lived Climate Pollutant Strategy and SB 1383 by 2019	CARB, CalRecycle, CDFA, SWRCB, Local air districts	*No conflict.* This action is not within the purview of this project.
Implement the post-2020 Cap-and-Trade Program with declining annual caps	CARB	*No conflict.* The project is not subject to the California Cap-and-Trade Program.
Develop Integrated Natural and Working Lands Implementation Plan to secure California's land base as a net carbon sink by 2018	CNRA and departments within, CDFA, CalEPA, CARB	*No conflict.* This action is not within the purview of this project. In addition, the project would not result in land use conversion that would reduce carbon storage.
Establish a carbon accounting framework for natural and working lands as described in SB 859 by 2018	CARB	*No conflict.* This action is not within the purview of this project.
Implement Forest Carbon Plan	CNRA, CAL FIRE, CalEPA and departments within	*No conflict.* This action is not within the purview of this project. In addition, the project components are located within developed

Table 19. Project Consistency with 2017 Scoping Plan Climate Change Policies and Measures

Recommend Action Summary	Lead Agencies	Project Potential to Conflict
		urban areas and would not affect forested areas.
Identify and expand funding and financing mechanisms to support GHG reductions across all sectors.	State Agencies and Local Agencies	*No conflict.* This action is not within the purview of this project.

Source: CARB 2017.
Notes: SB = Senate Bill; GHG = greenhouse gas; CPUC = California Public Utilities Commission; CEC = California Energy Commission; CARB = California Air Resources Board; VMT = vehicle miles traveled; CalSTA = California State Transportation Agency; SGC = Strategic Growth Council; Caltrans = California Department of Transportation; OPR = Governor's Office of Planning and Research; GoBiz = Governor's Office of Business and Economic Development; IBank = California Infrastructure Economic Development Bank; DOF = Department of Finance; CTC = California Transportation Commission; CalEPA = California Environmental Protection Agency; CNRA = California Natural Resources Agency; CalRecycle = California Department of Resources Recycling and Recovery; CDFA = California Department of Food and Agriculture; SWRCB = State Water Resources Control Board; CAL FIRE = California Department of Forestry and Fire Protection.

Based on the analysis in Table 19, the project would not conflict with the applicable climate change policies and measures in the 2017 Scoping Plan.

Consistency with EO S-3-05 and SB 32

Less-than-Significant Impact. This section evaluates whether the GHG emissions trajectory after project completion would impede the attainment of the 2030 and 2050 GHG reduction goals identified in EOs B-30-15 and S-3-05.

- **EO S-3-05.** This EO establishes the following goals: GHG emissions should be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050.
- **SB 32.** This bill establishes for a statewide GHG emissions reduction target whereby CARB, in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, shall ensure that statewide GHG emissions are reduced to at least 40% below 1990 levels by December 31, 2030.

To begin, CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update to the Climate Change Scoping Plan that "California is on track to meet the near-term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32" (CARB 2014). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, the First Update to the Climate Change Scoping Plan states the following (CARB 2014):

> This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80% below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions.

In other words, CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, EO B-30-15, and EO S-3-05. This is confirmed in the 2017 Scoping Plan, which states (CARB 2017):

> The Scoping Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while identifying new, technologically feasible and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities.

As previously discussed, total project emissions, including operation and amortized construction, would not exceed the SCAQMD significance threshold of 3,000 MT CO_2e per year. As such, the project (without mitigation) would not generate GHG emissions that may interfere with the implementation of GHG reduction goals for 2030 and 2050. Impacts would be less than significant.

3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
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?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e) For a project located within 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 result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

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. Construction of the project would include removal of the majority of existing structures and features at the facility, site grading, and construction of a new drinking water storage reservoir, support structures, temporary cellular tower, and subsurface water lines and electrical utilities. Site development would also include landscaping and stormwater management features.

Hazardous materials at the existing facilities include a diesel emergency generator with a 120-gallon fuel reservoir (CalEPA 2021), and asbestos-containing materials (NEC 2020) within the existing structures. Should demolition activities occur without proper removal and disposal of these hazardous materials, a hazard could be created through transport and disposal of these hazardous materials. The diesel generator would be removed prior to demolition activities, and remaining diesel would be removed and transported off site in accordance with federal, state, and local regulations, as well as safety data sheet recommendations, pertaining to handling and transportation of diesel fuel. Asbestos-containing materials would be abated and disposed of prior to demolition activities in accordance with federal, state, and local regulations, including SCAQMD Rule 1403.

Hazardous materials that may be used during construction and demolition activities of the project include gasoline, diesel fuel, oil, lubricants, grease, welding gases, solvents, and paints. These materials would be used and stored in designated construction staging areas within the boundaries of the project site and would be transported, handled, and disposed of in accordance with all applicable federal, state, and local laws and regulations. The use of these materials for their intended purpose would not pose a significant risk to the public or environment. Hazardous wastes accumulated during project construction will be recycled, when possible, at a licensed off-site recycling facility. Empty containers for such materials (e.g., drums and totes) may also be returned to vendors, if possible. Hazardous waste that cannot be recycled would be transported by a licensed hazardous waste hauler using a Uniform Hazardous Waste Manifest and disposed of at an appropriately permitted facility. The use of these substances is subject to applicable federal, state, and local health and safety laws and regulations that are intended to minimize health risk to the public associated with hazardous materials. With adherence to federal, state, and local laws, rules, and regulations, construction of the project would not create a significant hazard to the public or environment during routine transport, use or disposal of hazardous materials, and impacts during construction would be less than significant.

Once operational, sodium hypochlorite and aqueous ammonia would be used for water treatment, and an emergency diesel generator with a belly tank would be installed. Maintenance of the system may require use of minor amounts of hazardous materials, such as solvents, paints, and adhesives. Use of these products would be in accordance with requirements and recommendations in the safety data sheets and would be managed in accordance with federal, state, and local laws and regulations. As required by state and local regulations, storage of hazardous materials would be reported to the local regulatory agency (Orange County Health Care Agency) and a hazardous material business plan would be completed and submitted for the project site. IRWD would be required to prepare or update their existing hazardous materials inventory, an emergency response/contingency plan, and Aboveground Petroleum Storage Act documentation pursuant to Emergency Planning and Community Right to Know Act and Aboveground Petroleum Storage Act for operations. The Consolidated Emergency Response/Contingency Plan identifies procedures for containing spills, releases, fires, or explosions, and prevents associated harm to persons, property, and the environment; facility evacuation; arrangements for emergency services; emergency equipment, its location, and capabilities; and employee training on operations and hazards. In addition, the spill prevention, control, and countermeasure plan related to oil spills would identify location of oils storage containers, oil spill controls, methods for inspection and testing, and emergency procedures and notification.

Water treatment permits would be obtained and followed in accordance with federal, state, and local laws and regulations. As such, with adherence to federal, state, and local laws, rules, and regulations, operation of the project would not create a significant hazard to the public or environment during routine transport, use or disposal of hazardous materials, and impacts during construction would be less than significant.

b) Would the project 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?

Less-than-Significant Impact. As discussed in Section 3.9(a), on-site hazardous materials, including diesel fuel and asbestos-containing materials are present within the existing facilities. Demolition and construction without proper removal of these materials could cause an accidental release of hazardous materials. However, removal of these materials prior to demolition would occur in accordance with federal, state, and local laws and regulations, and would follow safety protocol outlined in the appropriate safety data sheets. Hazardous materials required for construction would be used following all appropriate federal, state, and local laws, rules, and regulations, thereby reducing the potential for an accidental release to the environment. Additionally, hazardous materials required during construction would not likely be stored on site in such quantities that a significant release would occur.

As part of the project, an existing septic tank and sewer manhole would be removed during construction, and soils surrounding the manhole may need to be removed and/or remediated. This soil removal and remediation does not appear to be associated with the presence of hazardous materials. If required, removal and remediation of the former septic system would be done so in accordance with state and local regulations.

With adherence to applicable federal, state, and local laws, rules and regulations, construction of the project would not create a significant hazard to the public or environment by creating a reasonably foreseeable upset or accident condition, and impacts would be less than significant.

Also as discussed in Section 3.9(a), operation of the project would require storage and use of sodium hypochlorite, aqueous ammonia, and diesel fuel. These materials would be stored in accordance with all applicable federal, state, and local laws, rules, and regulations, which require the use of proper storage

containers, secondary containment, and implementation of spill prevention measures. The spill prevention and emergency planning documentation required by regulatory authority would prescribe procedures for spill prevention, response, and reporting such that foreseeable releases would not cause a significant impact. With adherence to applicable federal, state, and local laws, rules and regulations, operation of the project would not create a significant hazard to the public or environment by creating a reasonably foreseeable upset or accident condition, and impacts would be less than significant.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. There are no existing or proposed schools located within 0.25 miles of the project site. The nearest school is the Silverado Children's Center, a daycare center located approximately 0.30 miles southeast of the project site. Therefore, the project would not create hazardous emissions or handle hazardous materials near a school, and no impact would occur.

d) Would the project 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?

No Impact. The project site is not located on a Cortese List site, as defined by Government Code Section 65962.5, nor is the project site located on a hazardous materials release site otherwise identified by a regulatory agency (SWRCB 2021; DTSC 2021; CalEPA 2021). The nearest regulated hazardous materials site is the Silverado Canyon Disposal Station 9, which is a closed solid waste disposal site located on the western side of the intersection of Santiago Canyon Road and Silverado Canyon Drive, approximately 0.12 miles west of the project site. Based on a review of historical aerial photographs (NETR 2021), the landfill extended westward of the intersection and was operational from approximately 1948 through the 1980s. The site is now a pine tree farm. A recent site inspection report conducted by the California Integrated Waste Management Board (CIWMB 2004) noted the closed solid waste site was a former burn dump; therefore, no health risk due to migrating landfill gas exists, and past surface monitoring presented no evidence of landfill gas. There are no other indications that this site has impacted the environmental conditions of the project site. As such, the project site would not be located on a hazardous materials site, and no impact would occur.

e) For a project located within 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 result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact. The project site is not located within an airport land use plan or within 2 miles of a public use airport. Therefore, the project would not result in excessive noise or safety hazards, and no impact would occur.

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

Less-than-Significant Impact. The Emergency Management Division (EMD) of the Orange County Sheriff's Department (OCSD) provides emergency management and preparedness services to the unincorporated areas of the County and the Orange County Operational Area (OA), and supports the emergency response efforts of incorporated cities (OCSD 2021). Additionally, the EMD is responsible for developing, maintaining,

and distributing the Unified County of Orange and Orange County Operational Area Emergency Operations Plan. The Emergency Operations Plan (EOP) provides guidance and procedures for the County and the County as the OA to prepare for and respond to natural, technological, conflict-related, and human-caused incidents creating situations requiring a coordinated response. The EOP identifies wildfire as a significant threat to the County (County of Orange 2019).

The Orange County Emergency Operations Center (EOC) functions as the communication and coordination center for emergency response and disaster preparedness in the County and OA. It also assists in coordination and communication between Mutual Aid Coordinators and the state Office of Emergency Services during County-wide and state-wide emergency response and recovery operations (OCSD 2021). In the event of an emergency, the EOC gathers, analyzes, and disseminates information, ensuring coordinated emergency response and evacuation. The OCSD EMD provides resources during a disaster, including a public information map that displays areas under evacuation orders and emergency evacuation routes. Depending on the location of the disaster, evacuation routes may change. AlertOC is the County's regional public mass notification system, which is used to notify those who live and work in Orange County of important information during emergency events, including disaster notifications and evacuation notices (County of Orange 2019).

The Modjeska, Silverado, Trabuco, Williams Canyon Evacuation Plan is an evacuation plan for the communities in the project area containing information for residents regarding emergency preparedness, safe refuge locations, large animal evacuation staging areas, possible road closure check points, and assembly point locations. In the event of an emergency, EMD would establish evacuation routes.

The project has the potential to create temporary lane closures and bicycle lane closures during project construction, which involves the installation of new pipelines that would connect to existing pipelines within Santiago Canyon Road and Silverado Canyon Road. Such construction activities may temporarily decrease vehicle lane capacity. However, any lane or driveway closures would be coordinated with the County of Orange and all local emergency service providers as part of the encroachment permit process, which sets forth requirements for traffic control measures to be implemented, including measures to preserve access in the event of an emergency. Once constructed, the majority of the project components would be located within the existing facility boundaries. Therefore, the project would not result in substantial road closures or blockages that would interfere with emergency evacuation routes. Further, in the event of an emergency, IRWD would comply with all instructions and guidance provided by OCSD, the EOC, or other public agencies tasked with emergency response, and the project would not interfere with the County's emergency response plan.

Given that the project would not impair an adopted emergency response plan or emergency evacuation plan and would improve local emergency response, impacts would be less than significant.

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

Less-than-Significant. As discussed below, impacts associated with wildland fires would be less than significant.

Construction

Project construction would introduce potential ignition sources to the project site, including the use of vehicles and heavy machinery, accidental human-caused ignitions, and the potential for sparks during welding activities or other hot work. Project construction would be conducted in accordance with local and state regulations governing fire prevention and safety. The County Municipal Code has adopted the 2019 California Fire Code with local amendments. In addition to compliance with regulatory requirements, IRWD's construction contractors would implement standard best management practices to minimize fire risks. For example, IRWD would require that spark arrestors on construction and maintenance equipment be in good working order. Construction contractors would be empowered to limit or pause construction activities when fire risk is high, such as during Red Flag Warnings and High to Extreme Fire Danger days. Additionally, the existing pump station and reservoir would be kept in service during construction. As such, a water source would be immediately available in the event of a fire, and contractors would be required to have access to functional fire extinguishers at all times and be trained in their proper use. Implementation of these measures would result in a less-than-significant impact related to the potential for construction-related fires.

Operation

As discussed in further detail in Section 3.20, Wildfire, the project site is located in a very high fire hazard severity zone. However, the project involves the replacement of an existing facility, and would be designed to function as a remotely operated drinking water storage and conveyance facility. A nominal number of employees would be on-site during maintenance and inspection activities. Moreover, design and operation of the project would be required to comply with OCFA requirements, including preparation of a fire master plan (Guideline B-09) and compliance with guidelines for activities in hazardous fire areas (Guideline B-09a) as well as the 2019 California Fire Code and Title 14 of the California Code of Regulations. OCFA guidelines and state regulations for development in fire hazard areas would ensure fire safety, including, but not limited to, requirements for site access, vegetation clearance and defensible space, ignition-resistant construction methods and materials, and adequate water supply. All proposed structures would be designed to meet the fire hardening requirements outlined in the IRWD Facility Fire Protection Improvements Report (RRM 2008), and in accordance with the current edition of the California Fire and Building Codes. Additionally, the standby emergency generator would comply with the 2019 California Fire Code 324.1 – OCFA Amendment, which requires that equipment or devices within wildland areas that generate heat or sparks be setback at least 30 feet from combustible vegetation.

Additionally, the project would be equipped with a SCADA communication antenna, which would provide IRWD with the ability to monitor and control all operational parameters of the facility. In the event of an equipment malfunction, IRWD would be notified immediately, and appropriate emergency measures would be taken, including, but not limited to, contacting local fire agencies.

Upon completion of project construction, site landscaping would be installed to stabilize slopes. Landscaping would consist of a variety of drought-tolerant plants, shrubs, and trees similar to the surrounding natural environment and would not include any highly flammable vegetation.

With implementation of standard measures to reduce fire risk, compliance with local and state regulations related to fire safety, and upon OCFA's review and approval of the fire master plan, impacts would be less than significant.

3.10 Hydrology and Water Quality

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

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less-than-Significant Impact. Construction of the proposed project would include earthwork activities that could potentially result in erosion and sedimentation, which could subsequently degrade downstream receiving waters and violate water quality standards. Substances such as oils, fuels, paints, and solvents may be inadvertently spilled on the project site and subsequently conveyed via stormwater to nearby drainages, watersheds, and groundwater. The project site is larger than 1 acre, and the project is therefore subject to

the requirements of the National Pollutant Discharge Elimination System Construction General Permit issued by the Santa Ana Regional Water Quality Control Board. The permit requires the implementation of stormwater controls and development of a SWPPP to minimize the amount of sediment and other pollutants from being discharged in stormwater runoff during construction, as well as various temporary BMPs designed to prevent erosion and siltation, as well as the off-site conveyance of various on-site constituents. Similar to surface water quality, groundwater quality would be protected during project construction through BMPs required by the National Pollutant Discharge Elimination System permit. BMPs would include spill prevention and cleanup guidelines, dewatering operations guidelines, and stormwater run-off prevention. These BMPs would protect the groundwater from contamination by construction activities.

As stated in the Preliminary Design Report prepared for the project, because IRWD is recognized as a Special District, it is exempt from having to complete a water quality management report. Nonetheless, the project involves the deployment of BMPs to address water quality. As described in the Preliminary Design Report, a series of catch basins would capture surface flows and route them to a biofiltration system for attenuation and treatment (Tetra Tech 2021). The system would be consistent with the North Orange County Municipal Separate Storm Sewer System Permit and the Orange County Technical Guidance Document for Project Water Quality Management Plans.

Therefore, impacts associated with surface or ground water quality would be less than significant.

b) Would the project 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. The project involves the demolition of existing water storage and conveyance infrastructure at IRWD's Fleming Reservoir and Pump Station facility and the construction of a new reservoir and pump station that is appropriately sized to meet IRWD operational performance and safety standards. Over 50% of IRWD's overall water supply comes from local groundwater wells in the Orange County Groundwater Basin (Basin), and the Irvine and Lake Forest Sub-basins. IRWD is an operator of groundwater-producing facilities in the main portion of the Basin and the Sub-basins (IRWD 2016). While IRWD receives about half its water supply from local groundwater wells, the project itself would not substantially increase the use of groundwater supplies as the project would enhance the existing facility's ability to supply maximum daily water demands. Additionally, the project site is not located within a groundwater basin (DWR 2021); thus, the site is not expected to be a significant source for groundwater recharge. Upon completion of construction, all disturbed surfaces would be stabilized and restored to initial condition. The project would include permeable landscaped areas that would allow for water to percolate into the ground. Thus, the proposed project would not significantly interfere with groundwater recharge of the site. Impacts would be less than significant.

c) Would the project 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 which would:

i) result in substantial erosion or siltation on or off site;

Less-than-Significant Impact. Excavation and ground-disturbing activities during project construction could potentially leave loose soil exposed to the erosive forces of rainfall and high winds, which would increase the potential for soil erosion and loss of topsoil. Adequate drainage on the project

site is critical in reducing potential soil erosion or the loss of topsoil. IRWD would prepare and implement a SWPPP, which would include construction BMPs to control erosion and sediment during construction activities. With adherence to the SWPPP and associated construction BMPs related to erosion and sediment control, construction-related impacts to soil erosion and the loss of topsoil would remain below a level of significance. Upon completion of construction, all disturbed surfaces would be stabilized and restored to initial condition.

As discussed previously, the project would primarily manage stormwater via a series of catch basins that would capture surface flows and route them to a biofiltration system for attenuation and treatment. Excess flows would be routed off-site underneath Santiago Canyon Road and into an Orange County Public Works earthen storm drain channel. While the project is not anticipated to significantly increase stormwater flows, the discharge of flows into the earthen channel could potentially result in erosion. To address this issue, the outlet would be constructed with rip rap and a small concrete headwall. Flows that are not captured by the catch basins and biofiltration system would be routed via v-ditches toward rip rap located near Santiago Canyon Road and Silverado Canyon Road prior flowing onto these streets. Given that the project would not significantly increase the volume of stormwater exiting the project site and that the project would feature components to address on- and off-site erosion, impacts would be less than significant.

Therefore, it is not anticipated that the proposed project would result in substantial soil erosion or significant losses in topsoil. Impacts would be less than significant.

ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;

and

iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

Less-than-Significant Impact. As discussed in Section 3.10(b), upon completion of construction the project site would largely resemble the existing site conditions. Given the minimal increase in new pervious surfaces, it is not anticipated that the project would significantly increase the amount of stormwater on the project site. Nonetheless, the project would manage stormwater flows via a series of catch basins to capture surface flows and route them to a biofiltration system for attenuation and treatment (Tetra Tech 2021). Excess flows would be routed off-site underneath Santiago Canyon Road and into an Orange County Public Works earthen storm drain channel. Given the nominal increase in stormwater flows resulting from the project and given that the project would include a system to capture and attenuate flows, it is anticipated that the existing stormwater system would be able to accommodate flows from the project. Therefore, impacts would be less than significant.

iv) impede or redirect flood flows?

Less-than-Significant Impact. The project would not alter any natural waterways or drainages. As part of the project, catch basins and gutters would be installed to maintain surface runoff flows that are similar to existing conditions. Additionally, per the Federal Emergency Management Agency

flood maps, the project site is located in an area with minimal flood hazard (FEMA 2021). Therefore, impacts associated with impeding or redirecting flood flows would be less than significant.

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

Less-than-Significant Impact. Seiches are large waves generated in enclosed bodies of water in response to ground shaking. The closest body of water to the project site is Irvine Lake, located approximately 2.6 miles northwest of the site. However, the hilly terrain dividing the project site from Irvine Lake makes potential impacts associated with seiche highly unlikely. Tsunamis are large waves generated in large bodies of water by fault displacement or major ground movement. Based on the inland location of the project site, tsunamis do not pose a hazard to the proposed project. Additionally, per the Federal Emergency Management Agency flood maps, the project site is located in an area with minimal flood hazard (FEMA 2021). Further, the proposed project would implement BMPs to ensure flows from the project site would not release pollutants into downstream receiving waters. Therefore, impacts associated with risk of release of pollutants due to project inundation in a flood hazard, tsunami, or seiche zone would be less than significant.

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

Less-than-Significant Impact. The proposed project would comply with regional and local regulations requiring preparation of an SWPPP and would not obstruct existing water quality control plans or groundwater sustainable management plans. In addition, the proposed project is not considered a suitable site for groundwater recharge and would not introduce new impervious areas over a significant groundwater recharge zone. Therefore, impacts associated with conflict with a water quality control plan or sustainable groundwater management plan would be less than significant.

3.11 Land Use and Planning

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. LAND USE AND PLANNING – Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒

a) Would the project physically divide an established community?

No Impact. The physical division of an established community is typically associated with the construction of a linear feature, such as a major highway or railroad tracks, which would impair mobility within an existing community or between a community and an outlying area. The proposed project would be located entirely

within IRWD's existing Fleming Reservoir and Pump Station site and would not physically divide an established community. Therefore, no impact would occur.

b) Would the project 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?

No Impact. The project site is located within unincorporated Orange County and has an A1 General Agricultural zoning designation on the County's General Plan. However, the project, as a facility involving the storage and transmission of water, is exempt from the provisions of the County of Orange Zoning Code. Notwithstanding, the project would only involve the replacement of equipment and structures within the general footprint of the existing Fleming Reservoir and Pump Station facility and would not result in a change in the use of the project site. Therefore, no impacts would occur.

3.12 Mineral Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES – 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

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. According to the County of Orange General Plan Resource Element, there are several aggregate resources areas within Orange County, including the Santa Ana River, Lower Santiago Creek, Upper Santiago Creek, San Juan Creek, and Arroyo Trabuco (County of Orange 2005). Although the project site is near the Santiago Creek, aggregate resource areas are not located within the vicinity of the project site (County of Orange 2005). The project site is not currently used for mineral resource purposes and is not zoned for mining purposes. Therefore, no impacts to regionally valuable mineral resources would occur.

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 previously discussed in Section 3.12(a), there are several aggregate resource areas in Orange County. However, the project site is not identified as being located on or near a locally important mineral resource recovery site. Therefore, no impact to a mineral resource recovery site would occur.

3.13 Noise

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. NOISE – 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 the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
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?	☐	☐	☐	☒

Noise and Vibration Characteristics

Noise

Noise is defined as unwanted sound. Sound may be described in terms of level or amplitude (measured in decibels [dB]), frequency or pitch (measured in hertz [hz] or cycles per second), and duration (measured in seconds or minutes). The standard unit of measurement of the amplitude of sound is the decibel. Because the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale is used to relate noise to human sensitivity. The A-weighted dB (dBA) scale performs this compensation by discriminating against low and very high frequencies in a manner approximating the sensitivity of the human ear. Several descriptors of noise (noise metrics) exist to help predict average community reactions to the adverse effects of environmental noise, including traffic-generated noise, on a community. These descriptors include the energy-equivalent noise level over a given period (L_{eq}), the statistical sound level (L_{xx}, where "xx" is a cumulative percentage of time within the measurement period for which the indicated level is exceeded), the day–night average noise level (L_{dn}), and the Community Noise Equivalent Level (CNEL). Table 20 provides examples of A-weighted noise levels from common indoor and outdoor sound sources. In general, human sound perception is such that a change in sound level of 3 dB is barely noticeable; a change of 5 dB is clearly noticeable; and a change of 10 dB is perceived as doubling or halving the sound level.

Table 20. Typical Sound Levels in the Environment and Industry

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
—	110	Rock band
Jet flyover at 300 meters (1,000 feet)	100	—
Gas lawn mower at 1 meter (3 feet)	90	—
Diesel truck at 15 meters (50 feet), at 80 kilometers per hour (50 mph)	80	Food blender at 1 meter (3 feet) Garbage disposal at 1 meter (3 feet)
Noisy urban area, daytime gas lawn mower at 30 meters (100 feet)	70	Vacuum cleaner at 3 meters (10 feet)
Commercial area Heavy traffic at 90 meters (300 feet)	60	Normal speech at 1 meter (3 feet)
Quiet urban daytime	50	Large business office Dishwasher, next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime	30	Library
Quiet rural nighttime	20	Bedroom at night, concert hall (background)
—	10	Broadcast/recording studio
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Caltrans 2013.
Note: dBA = A-weighted decibel.

L_{eq} is a sound level energy-averaged over a specified period (typically no less than 15 minutes for environmental studies, but can be any defined duration). L_{eq} is a single numerical value that represents a constant value equivalent to the amount of variable sound energy received by a receptor during a time interval. For example, a 1-hour L_{eq} measurement would represent the average amount of energy contained in all the noise that occurred in that hour. L_{eq} is an effective noise descriptor because of its ability to assess the total time-varying effects of noise on sensitive receptors.

Unlike the L_{eq} metrics, L_{dn} and CNEL metrics always represent 24-hour periods. L_{dn} and CNEL also differ from L_{eq} because they apply a time-weighted factor designed to emphasize noise events that occur during the evening and nighttime hours (when speech and sleep disturbance is of more concern). "Time weighted" refers to the fact that L_{dn} and CNEL penalize noise that occurs during certain sensitive periods. In the case of CNEL, noise occurring during the daytime (7:00 a.m.–7:00 p.m.) receives no penalty. Noise during the evening (7:00 p.m.–10:00 p.m.) is penalized by adding 5 dB, while nighttime (10:00 p.m.–7:00 a.m.) noise is penalized by adding 10 dB. L_{dn} differs from CNEL in that the daytime period is defined as 7:00 a.m.–10:00 p.m., thus eliminating the evening period. L_{dn} and CNEL are the predominant criteria used to measure roadway noise affecting residential receptors. These two metrics generally differ from one another by no more than 0.5 dB to 1 dB and, as such, are often treated as equivalent to one another.

Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Under the right conditions or settings, groundborne vibration can be a serious concern, causing buildings to shake and rumbling sounds to be heard inside structures (resulting from said vibrations causing oscillations in surfaces or masses that then act as sound radiators). In contrast to noise, however, vibration is not a common environmental problem. It is unusual for vibration from sources such as buses

and trucks to be perceptible, even in locations close to major roads. Some common sources of vibration are trains, buses on rough roads, and construction activities, such as blasting, pile driving, and heavy earthmoving equipment.

Several different methods are used to quantify vibration. Peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. PPV is most frequently used to describe potential vibration impacts to buildings and is usually measured in inches per second (ips). The root mean square amplitude is most frequently used to describe the effect of vibration on the human body and is defined as the average of the squared amplitude of the signal. Decibel notation is commonly used to measure root mean square vibration velocity and expressed as "VdB" with respect to a reference vibration velocity level. Akin to sound decibels, the decibel notation acts to compress the range of numbers required to describe vibration.

High levels of vibration may risk damage to buildings or fragile materials within. Most people consider vibration to be an annoyance that can affect concentration or disturb sleep. In addition, high levels of vibration can interfere with processes or equipment that is highly sensitive to vibration (e.g., operation of electron microscopes or lithography). Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible.

Environmental Settings

Sensitive Receptors

Noise- and vibration-sensitive land uses are typically locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Unless already described as such by the County of Orange, residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would typically be considered noise and vibration sensitive and may warrant unique measures for protection from intruding noise. Sensitive receptors in the vicinity of the proposed project site include library (Library of the Canyons) and pre-school (Silverado Children's Center) uses southeast of the project, located along East Santiago Canyon Road. Additionally, residential land uses are located west of the library, across East Santiago Canyon Road. These receptors represent the nearest noise-sensitive land uses with the potential to be impacted by construction or operation of the proposed project.

Existing Noise Conditions

Sound pressure level (SPL) measurements were conducted in the vicinity of the project site on February 3, 2021, to characterize the existing or "baseline" (i.e., pre-project) outdoor ambient noise levels. Table 21 provides the locations, dates, and times the noise measurements were taken. The noise measurements were taken using a SoftdB Piccolo sound level meter equipped with a 0.5-inch, pre-polarized condenser microphone with pre-amplifier. The sound level meter meets the current American National Standards Institute standard for a Type 2 (General Grade) sound level meter. The accuracy of the sound level meter was verified using a field calibrator before and after the measurements, and the measurements were conducted with the microphone positioned approximately 5 feet above the ground.

Table 21. Measured Baseline Noise Levels

Receptors	Location	Date	Time	L_{eq} (dBA)	L_{max} (dBA)
ST1	Southeast of project site, adjacent to Library of the Canyons at 7531 East Santiago Canyon Road	2/3/2021	09:20 a.m.–09:35 a.m.	69.4	84.8
ST2	Southeast of project site, adjacent to ATT Utility Building at 7511 East Santiago Canyon Road	2/3/2021	09:49 a.m.–10:04 a.m.	67.6	83.6
ST3	North of project site, adjacent to Silverado Canyon Road	2/3/2021	10:12 a.m.–10:27 a.m.	65.5	85.7
ST4	South of project site, adjacent to East Santiago Canyon Road	2/3/2021	10:36 a.m.–10:51 a.m.	70.0	82.9
ST5	Southeast of project site, adjacent to Silverado Children's Center at 7525 East Santiago Canyon Road	2/3/2021	11:00 a.m.–11:15 a.m.	56.6	74.2

Source: Appendix D.
Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibels; L_{max} = maximum sound level during the measurement interval.

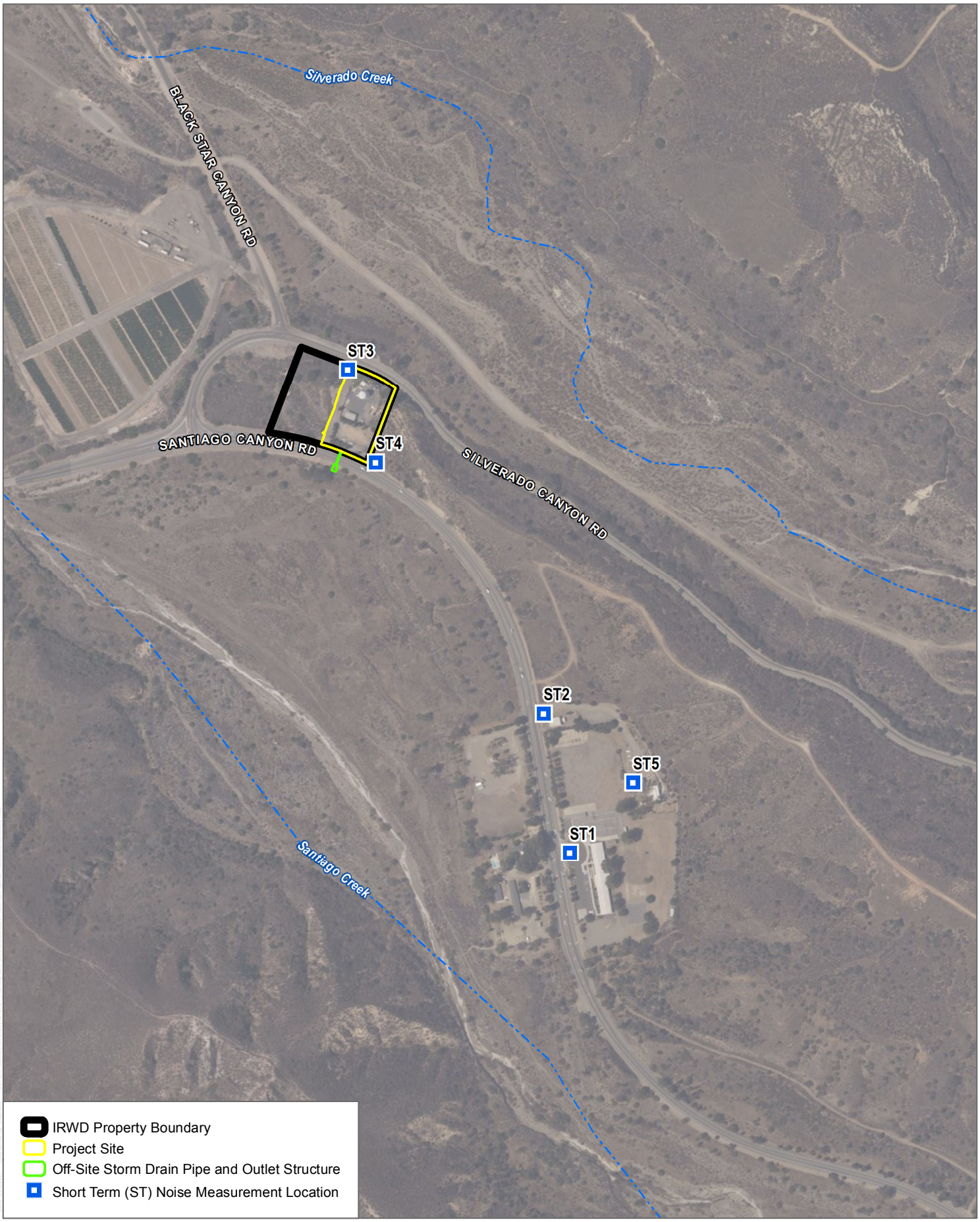
Five short-term noise measurement locations (ST) were conducted in the vicinity of the project site, as shown in Figure 9, Noise Measurement Locations. The measured L_{eq} and maximum noise levels are provided in Table 21. The field noise measurement data sheets are provided in Appendix D. The primary noise sources at the sites identified in Table 21 consisted of traffic on local and distant roadways; other, secondary noise sources included distant aircraft noise, bird song, and distant conversations. Distinct secondary noises included an operating backup generator at the utility building near ST2, as well as children in school buildings near ST5. As shown in Table 21, the measured sound levels ranged from approximately 57 dBA L_{eq} at ST5 to approximately 70 dBA L_{eq} at ST4.

Applicable Regulations and Standards

Federal

There are no federal noise regulations applicable to the project. However, various federal agencies have established rules and guidelines addressing noise and vibration. For example, the Federal Transit Administration (FTA) offers guidance on the estimation of construction noise levels from a construction project site in its *Transit Noise and Vibration Impact Assessment* guidance manual (FTA 2018). It also provides suggested thresholds that include no more than 80 dBA L_{eq} (over an 8-hour period) as received at a residential land use. However, since the County of Orange provides construction noise regulations, this analysis does not adopt the 80 dBA $L_{eq8\text{-}h}$ for quantitative construction noise impact assessment.

With respect to vibration, the same above-mentioned manual from the FTA provides guidance for the assessment of vibration impacts on people (i.e., potential annoyance), building damage risk, and disruption of vibration-sensitive processes. Vibration impact criteria suggested by the FTA vary both with the frequency of vibration event occurrence and the sensitivity of the building or process that may be exposed to groundborne vibration. By way of example, a modern commercial building constructed from reinforced concrete or steel would have a vibration impact threshold of 0.5 ips peak particle velocity (PPV), while a non-engineered timber or masonry structure more akin to a typical single-family or multifamily residence may have a more stringent 0.2 ips PPV vibration impact criteria against which project-attributed vibration due to construction could be assessed for the nearest such receptors in the surrounding community.



SOURCE: Bing Maps 2021; USGS NHD 2021

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0 250 500 Feet

FIGURE 9

Noise Measurement Locations

Fleming Zone 8 Reservoir and Pump Station Improvements Project

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State

California Department of Transportation Guidance

Groundborne vibration information related to construction/heavy equipment activities has been collected by the California Department of Transportation (Caltrans) and appears in its Transportation and construction Vibration Guidance Manual (Caltrans 2020). This Caltrans guidance indicates that continuous/intermittent vibrations (such as from construction activity) with approximately 0.1 ips PPV may be characterized as "strongly perceptible" and may be considered annoying to occupants of affected buildings (Caltrans 2020).

Government Code Section 65302(g)

California Government Code Section 65302(g) requires the preparation of a Noise Element in a general plan, which shall identify and appraise the noise problems in the community. The Noise Element shall recognize the guidelines adopted by the Office of Noise Control in the State Department of Health Services and shall quantify, to the extent practicable, current and projected noise levels for major noise sources such as highways and freeways, primary arterials and major local streets, rail lines, airports, and industrial plants.

California General Plan Guidelines

The California General Plan Guidelines, published by the Governor's Office of Planning and Research (OPR), provides guidance for the acceptability of specific land use types within areas of specific noise exposure. OPR guidelines are advisory in nature. Local jurisdictions have the responsibility to set specific noise standards based on local conditions.

Local

Orange County Code

The Noise Ordinance included in Division 6 – Noise Control of the Orange County Code provides noise standards and noise control guidelines for construction activities, as described below.

The County Code designates the entire territory of Orange County, including incorporated and unincorporated territory, as "Noise Zone 1." According to Section 4-6-5 – Exterior Noise Standards, noise level standards would be 55 dBA L_{eq} between the hours of 7:00 a.m. and 10:00 p.m., and 50 dBA L_{eq} between the hours of 10:00 p.m. and 7:00 a.m. within Noise Zone 1.

Construction Noise Exemption

In Section 4-6-7 – Special Provisions, the County exempts noise sources associated with construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday.

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?

Short-Term Construction Noise

Less-than-Significant Impact. Noise generated by project construction equipment would include a combination of heavy equipment including dozers, front end loaders, backhoes, concrete mixers, and air compressors that, when combined, can reach relatively high levels. The number and mix of construction equipment would likely vary during the following phases: site preparation, grading, building construction, paving, and architectural coating.

With the noise sources identified above (and using the same specific construction equipment assumptions as used for the air quality analysis (Section 3.3), a noise analysis was performed using a method emulating a model developed by the Federal Highway Administration called the Roadway Construction Noise Model (RCNM) (FHWA 2008). Input variables for RCNM consist of the receiver/land use types, the equipment type (e.g., backhoe, crane, truck), the number of equipment pieces, the duty cycle (aka "acoustical usage factor") for each piece of equipment (i.e., percentage of each time period the equipment typically is in operation at full power), and the distance between the construction noise source and the sensitive receiver. The RCNM has default duty-cycle values for the various pieces of equipment, which were derived from an extensive study of typical construction activity patterns. Those default duty-cycle values were used for this construction noise analysis.

Table 22 provides a summary of the construction noise levels by each phase at the nearest noise-sensitive receptor locations. The input and output data are provided in Appendix D. Noise-sensitive land uses in the vicinity of the project include a library, pre-school, and residences south–southeast of the proposed project; construction noise levels at other receivers further away from the project site would be less.

Table 22. Construction Noise Model Results Summary

Construction Phase	Construction Noise at Representative Receiver Distances (L_{eq} [dBA])	
	Library Southeast of Project (approx. 1,770 feet away)	*Pre-school Southeast of Project (approx. 1,650 feet away)*
Phase 1		
Site Demolition	48.6	49.2
Interim Grading and Shoring	53.8	54.4
Tank Construction	53.7	54.3
Pump Station, RMS Facility, and Storage Building	49.8	50.4
Vault Construction, Site and Electrical Improvements	49.9	50.5
Phase 2		
Site Demolition	48.6	49.2
Building Construction and Sewer Tank Installation	48.9	49.5

Source: Appendix D.
Notes: L_{eq} = equivalent noise level; dBA = A-weighted decibel.

As shown in Table 22, construction noise levels at the nearest noise-sensitive land uses (library and school to the southeast) are estimated to range from approximately 49 dBA L_{eq} during the demolition phase to approximately 54 dBA L_{eq} during the grading and shoring phases.

As discussed previously, County Code Section 4-6-7 does not permit construction noise that would create a noise disturbance between the hours of 8:00 p.m. and 7:00 a.m. The proposed project would not conduct noisy construction activities between the hours of 8:00 p.m. and 7:00 a.m., and the estimated noise levels would be well below the FTA's advisory noise standard of 80 dBA $L_{eq8\text{-}hr}$. Furthermore, the estimated noise levels from construction would be lower than the ambient daytime measurements conducted at nearby noise-sensitive uses. Therefore, noise from project construction would be less than significant.

Project-Generated Off-Site Traffic Noise

Less-than-Significant Impact. The proposed project anticipates construction work to generate approximately 102 daily construction trips to and from the site. Based on the County's 2019 Traffic Flow Map (OCTA 2019), this would not be considered a significant increase to existing conditions on East Santiago Canyon Road. Project construction trips would increase traffic noise levels at nearby sensitive receptors by less than 1 dB (see Appendix D). Therefore, project-generated traffic noise from worker trips would be less than significant.

Project-Generated Off-Site Operation Noise

Less-than-Significant Impact. Upon completion of construction, the proposed project would primarily serve as a remotely operated drinking water storage and conveyance facility. Similar to the existing conditions, IRWD staff would occasionally visit the site for routine maintenance or in the event of an emergency. Additionally, the facility's existing administration building is currently used as a remote operations center for IRWD staff during an emergency. Upon completion of proposed construction, the proposed pump station structure, which will feature an operations room, would continue to provide IRWD staff with a space for coordination in the event of an emergency in the Santiago Canyon Area. Pumps, motors, compresors, and other ancillary equipment would continue to be operated on site within the pump station. Currently, the pump station is located outdoors. The project would replace this pump station with an indoor pump station, thereby providing substantial noise attenuation compared to the existing conditions.

To evaluate the noise levels that would be generated by the project's operational activities, an excel-based noise model was used to predict sound levels at identified locations, including proximate sensitive receivers. The model uses the published sound level for each piece of equipment; standard outdoor distance attenuation rates for point sources and hard-site conditions (which would result in a conservative analysis) applied to the distance between each equipment location and the receiver locations; and, the logarithmic sum of individual equipment noise levels at each receiver point. Predicted noise levels are presented in Table 23 and shown on Figure 10, Predicted Operational Noise.

Table 23. Predicted Operational Noise Levels

Aggregate Operating Equipment	Receiver (location notes)	Average Noise Level (dBA L_{eq})
Fleming Zone 8 Reservoir and Pump Station	ST1 (near library)	24.5
	ST2 (north of ST1 by approximately 500 feet)	27.7
	ST3 (northern corner of project site)	49.6
	ST4 (southern corner of project site)	44.5
	ST5 (school)	25.1

Source: Appendix D.
Notes: L_{eq} = equivalent noise level; dBA = A-weighted decibel.

As shown in Table 23, operational noise levels are expected to range from approximately 25 dBA L_{eq} to 50 dBA L_{eq} at the nearest noise sensitive receptors. Operational noise levels would be well below ambient noise levels and would also comply with the County's noise standards of 55 dBA L_{eq} between the hours of 7:00 a.m. and 10:00 p.m., and 50 dBA L_{eq} between the hours of 10:00 p.m. and 7:00 a.m. Therefore, project-generated operation noise would not represent a durable significant increase in the outdoor ambient noise level, and on such grounds be considered less than significant.

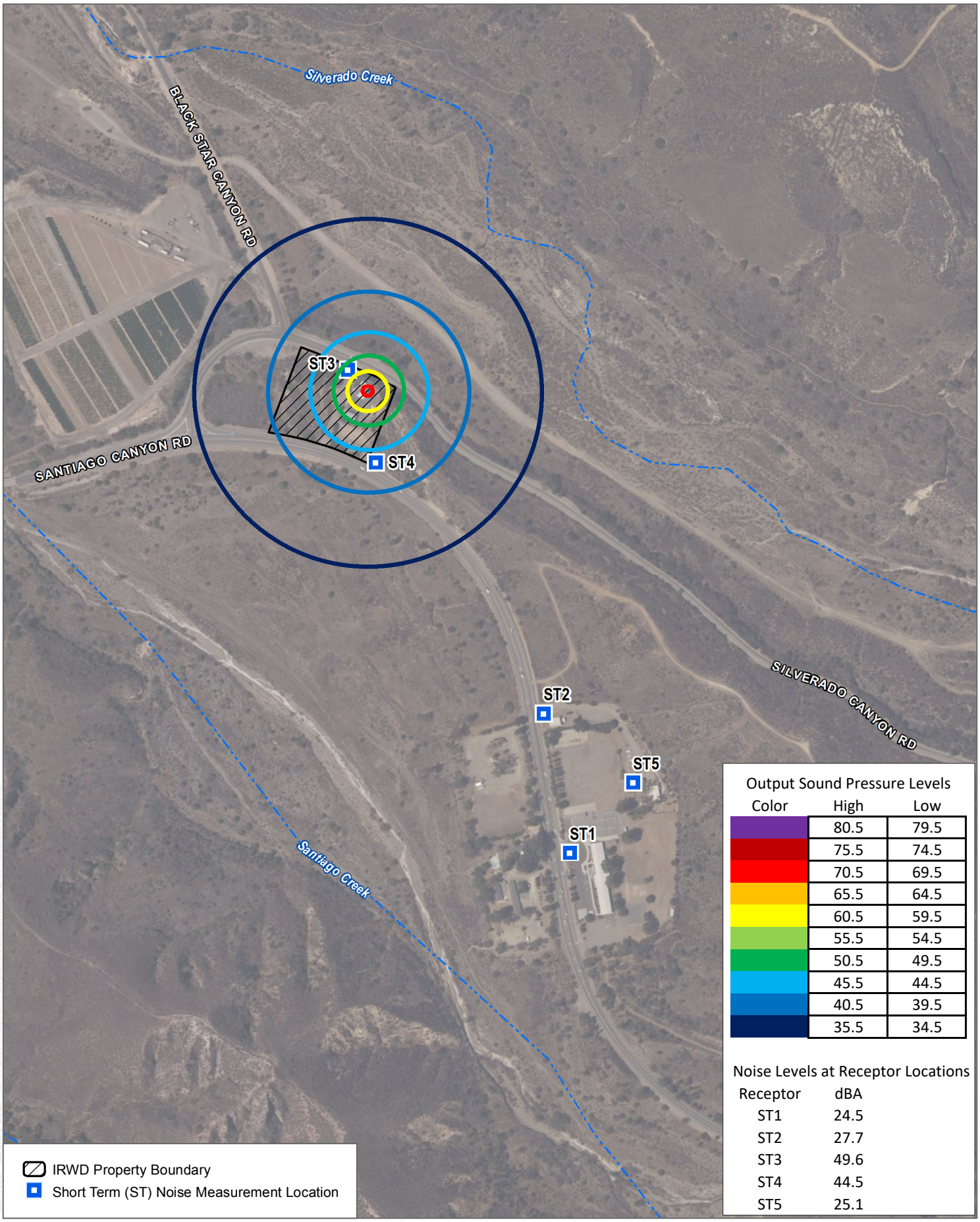
b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less-than-Significant Impact. The main concern associated with groundborne vibration is annoyance; however, in extreme cases, vibration can cause damage to buildings, particularly those that are old or otherwise fragile. Some common sources of groundborne vibration are trains and construction activities such as blasting, pile-driving, and heavy earth-moving equipment. The primary source of groundborne vibration occurring as part of the proposed project is construction activity.

The heavier pieces of expected project construction equipment, such as large bulldozers or hoe rams, would register up to approximately 0.089 inches per second PPV at a distance of 25 feet per FTA guidance (FTA 2018).

Groundborne vibration is typically attenuated over relatively short distances. At the nearest existing noise/vibration-sensitive use distance to the nearest construction area (approximately 1,650 feet) and with the anticipated construction equipment, the vibration level would be approximately 0.0002 inches per second PPV and less than the Caltrans guidance standard of 0.1 inches per second PPV. At a distance of 1,650 feet, vibration levels from heavy equipment would be well below the 0.1 inches per second PPV and would comply with the Caltrans threshold. There would not be significant groundborne vibration impacts associated with annoyance.

Therefore, the major concern with construction vibration is related to building damage. Construction vibration as a result of the proposed project would not result in structural building damage, which typically occurs at vibration levels of 0.5 inches per second PPV or greater for buildings of reinforced-concrete, steel, or timber construction. Impacts related to groundborne vibration would be less than significant.



SOURCE: Bing Maps 2021; USGS NHD 2021

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FIGURE 10

Predicted Operational Noise

Fleming Zone 8 Reservoir and Pump Station Improvements Project

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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?

No Impact. The project site is not located within 2 miles of any public airport, nor is it located within the boundaries of any airport land use plans. Therefore, the project would not expose or result in excessive noise for people residing or working in the project area, and no impact would occur.

3.14 Population and Housing

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. POPULATION AND HOUSING – Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

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

Less-than-Significant Impact. The project involves the replacement of existing water storage and conveyance infrastructure at IRWD's Fleming Reservoir and Pump Station facility. While the Project would increase the capacity of the existing facilities, the project's primary purpose is to bring the existing facility into compliance with current IRWD criteria and operational requirements for potable and fire water storage. Additionally, implementation of the project would allow IRWD to demolish outdated facilities that are structurally deficient and contain hazardous building materials (see Section 3.9, Hazards and Hazardous Materials) and replace those facilities with modern facilities that meet current building codes and seismic safety requirements. As such, the project is intended to meet current water demands for the current service area and would not include a component that would generate population growth, and as such, would not be considered growth inducing. Therefore, impacts associated with substantial unplanned population growth would be less than significant.

b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. The project would be located at IRWD's Fleming Reservoir and Pump Station facility. As such, no housing currently exists on the project site. Therefore, housing would not be displaced, and no impact would occur.

3.15 Public Services

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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:

Fire protection?

No Impact. The project consists of improvements to the existing Fleming Reservoir and Pump Station facility. The project would not induce population growth nor result in the addition of housing, schools, or other community facilities that might require fire protection (see Section 3.14(a), Population and Housing). During construction of the project, temporary construction and staging areas would be located within Santiago Canyon Road and Silverado Canyon Road. However, any lane or driveway closures would be coordinated with the County of Orange and all local emergency service providers as part of the Encroachment Permit process for construction within County streets (i.e., south side of Santiago Canyon Road), which sets forth requirements for traffic control measures to be implemented, including measures to preserve access in the case of an emergency. Safety measures would be implemented as part of the management plan during construction, and the configuration and safety of the local transportation network would not be permanently affected. As such, construction of the project would not change local fire protection response times or affect demand for fire protection services in the project area. Therefore, impacts associated with fire protection services would not occur.

Police protection?

No Impact. The project consists of improvements to the existing Fleming Reservoir and Pump Station facility. The project would not induce population growth nor result in the addition of housing, schools, or other community facilities that might require police protection (see Section 3.14(a), Population and Housing). During construction of the project, temporary construction and staging areas would be located within Santiago Canyon Road and Silverado Canyon Road. However, any lane or driveway closures would be coordinated with the County of Orange and all local emergency service providers as part of the Encroachment Permit process for construction within County streets (i.e., south side of Santiago Canyon Road), which sets forth requirements for traffic control measures to be implemented, including measures to preserve access in the case of an emergency. Safety measures would be implemented as part of the management plan during construction, and the configuration and safety of the local transportation network would not be permanently affected. As such, construction of the project would not change local police protection response times or affect demand for police protection services in the project area. Therefore, impacts associated with police protection services would not occur.

Schools?

No Impact. The project would not involve a housing component that would result in population growth and increased demands on existing schools within the area. Therefore, no impact to schools would occur.

Parks?

No Impact. The project would not involve a housing component or increase employment that would result in population growth necessitating the need for additional parks or increase the use of nearby parks. Therefore, no impacts to parks would occur.

Other public facilities?

No Impact. The project would not involve a housing component or increase employment opportunities that would result in population growth within the City. Therefore, additional demands on other public facilities, such as library or health care services would not occur as a result of project implementation, and no impact would occur.

3.16 Recreation

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. RECREATION				
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?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

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 proposed project would not involve a housing component or substantially increase employment opportunities within the area; thus, the project would not increase the use of existing neighborhood and regional parks or other recreational facilities. No impact would occur.

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

No Impact. The proposed project would not include recreational facilities. Additionally, the proposed project would not affect existing recreational resources or require the need for new or expanded recreational facilities. Therefore, no impact would occur.

3.17 Transportation

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

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

Less-than-Significant Impact. The majority of the project components are proposed within the existing Fleming Reservoir and Pump Station facility; thus, construction activities would primarily be located within the boundaries of the facility. However, the project has the potential to create temporary lane closures and bicycle lane closure during installation of new pipelines that would connect to existing pipelines within Santiago Canyon Road and Silverado Canyon Road, which may increase congestion during peak travel times due to a decrease of vehicle lane capacity. Any potential lane closures would be coordinated with area residents and businesses to provide proper access. In addition, IRWD would obtain an Encroachment Permit from the County of Orange for work in County streets (i.e., south side of Santiago Canyon Road), and would be required to prepare a traffic control plan to minimize impacts to the roadway. With implementation of the traffic control plan, construction impacts would be less than significant.

Once operational, the project would be unmanned, would generate only intermittent operations and maintenance vehicle trips, and would not introduce an incompatible use onto the local circulation system. Given the project's nominal trip generation over the course of the year, the project would not result in any impacts to the circulation system. Additionally, the project does not involve any activities that would conflict with non-vehicular modes of transportation. Impacts due to operation of the project would therefore be less than significant.

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

No Impact. CEQA Guidelines Section 15064.3 subdivision (b) sets forth specific criteria for determining the significance of transportation impacts. Subdivision (b) pertains to land use projects and describes factors that may indicate whether the amount of a land use project's vehicle miles traveled may be significant or not. Project-related traffic would be limited predominantly to a relatively small number of temporary trips during the construction period and occasional trips for maintenance purposes. Because the project is not a land use project and would not generate substantial vehicle miles traveled, the project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). No impact would result.

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)?

Less-than-Significant Impact. Access to the project would be provided by existing roadways, and the project would not involve permanent alteration of existing roadways, nor would it require incompatible vehicular access. As discussed previously, the project has the potential to create temporary lane closures and bicycle lane closures during installation of pipelines within Santiago Canyon Road and Silverado Canyon Road, which may increase hazards to users of those facilities. Heavy machinery would also be used during construction of the project; however, operation of all construction machinery would be conducted in accordance with the procedures set forth within the project's traffic control plan as required by the County. IRWD would obtain an Encroachment Permit from the County and would be required to prepare a traffic control plan to minimize impacts to area roadways. With implementation of the traffic control plan, the project's increase in potential hazards would be less than significant.

d) Would the project result in inadequate emergency access?

Less-than-Significant Impact. As discussed previously, the majority of the project components are proposed within the existing Fleming Reservoir and Pump Station facility; thus, construction activities would primarily be located within the boundaries of the facility. However, the project has the potential to create temporary lane closures and bicycle lane closure during installation of new pipelines that would connect to existing pipelines within Santiago Canyon Road and Silverado Canyon Road, which may increase congestion during peak travel times due to a decrease of vehicle lane capacity. However, any lane or driveway closures would be coordinated with the County of Orange and all local emergency service providers as part of the Encroachment Permit process, which sets forth requirements for traffic control measures to be implemented, including measures to preserve access in the case of an emergency. Once constructed, the majority of the project components would be located within the existing Fleming Reservoir and Pump Station facility. Additionally, pipelines would be below the surface of the roadways. Thus, the project would not impair or interfere with the applicable emergency access. Impacts would be less than significant.

3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. TRIBAL CULTURAL RESOURCES				
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) 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	☐	☐	☒	☐
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. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☐	☐	☒	☐

Assembly Bill 52 Consultation

The project is subject to compliance with AB 52 (California Public Resources Code Section 21074), which requires consideration of impacts to tribal cultural resources as part of the CEQA process, and that the lead agency notify California Native American Tribal representatives (that have requested notification) who are traditionally or culturally affiliated with the geographic area of the proposed project. All NAHC-listed California Native American

Tribal representatives that have requested project notification pursuant to AB 52 were sent letters by IRWD on February 25, 2021, via certified mailing and email. Only two Tribal entities have requested notification from the IRWD, the Gabrieleno Band of Mission Indians - Kizh Nation (Kizh Nation) and the Juaneno Band of Mission Indians – Acjachemen Nation (Acjachemen Nation). The notification letter to the Kizh Nation and the Acjachemen Nation contained a project description, outline of AB 52 timing, an invitation to consult, a project location map, and contact information for the appropriate lead agency representative. Table 24 summarizes the results of the AB 52 process for the project.

Table 24. Assembly Bill 52 Native American Heritage Commission–Listed Native American Contacts

Native American Tribal Representatives	Response Received
Andrew Salas, Chairman Gabrieleno Band of Mission Indians - Kizh Nation	March 9, 2021 Response received from Savannah Salas via email. Ms. Salas requests formal consultation March 31, 2021 Consultation between Chairman Salas and Matt Teutinex of the Kizh Nation and from IRWD were Jo Ann Corey, IRWD CEQA Lead, Rich Mori, Jacob Moeder, and Natalie Palacio, was conducted via a conference call. During the consultation, IRWD explained the purpose of the project and stated that the proposed project would occur within a fully developed site. IRWD shared the negative Sacred Lands File results with the Kizh Nation and requested that the Kizh Nation provide any information they may have about the Sacred Lands File for IRWD's administrative record. In response to IRWD's inquiry, the Kizh Nation confirmed that there are no known cultural resources within the project site and further confirmed that there are no known tribal homesteads within the project site. Kizh Nation agreed to provide IRWD with their known tribal cultural resources for the area and any information regarding possible nearby Sacred Lands File. No additional record has been provided to date and IRWD has concluded consultation. IRWD provided written meeting notes to Kizh Nation, which documented the March 31, 2021 consultation.
Joyce Stanfield Perry, Tribal Manager Juaneno Band of Mission Indians – Acjachemen Nation	No response to IRWD's notification letter has been received to date. Given that the 30-day period to respond and request consultation for the project has closed, IRWD, acting in good faith and after a reasonable effort, has concluded that consultation is complete.

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:

i) 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)?

Less-than-Significant Impact. As described under Section 3.5 of this document, a CHRIS records search and NAHC SLF search were conducted for the project site. The CHRIS and NAHC SLF results did not identify cultural resources within the project site. SCCIC records also indicate that the 23 previous cultural resources investigations have been conducted within one-mile of the proposed project site between 1973 and 2015. Of the 23 previous studies, six intersect/overlap of the project site; the entirety of the project site has been subjected to previous investigations. No cultural resources were identified within the project site as a result of the previous investigations. Therefore, the project would not adversely affect tribal cultural resources that are listed or eligible for listing in the state or local register. Impacts would be less than significant.

ii) 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. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Less-than-Significant Impact The project is subject to compliance with AB 52 (California Public Resources Code 21074), which requires consideration of impacts to tribal cultural resources as part of the CEQA process and requires lead agencies to provide notification of proposed projects to California Native American Tribal representatives that have requested such notifications. As previously discussed above, only one California Native American Tribal entity has requested to consult pursuant to AB 52, the Gabrieleno Band of Mission Indians - Kizh Nation (Kizh Nation) (see Table 24). Consultation between IRWD and the Kizh Nation was conducted on March 31, 2021, via a conference call. Tribal cultural resources have not been identified through tribal consultation under AB 52, and IRWD has not identified any tribal cultural resources within the project site that would warrant discretionary designation of a resource as a tribal cultural resource. Notwithstanding, implementation of MM-CUL-1 and MM-CUL-2 (discussed in Section 3.5, Cultural Resources) would further reduce the already less-than-significant potential for impacts to cultural resources to occur, should any resources be located within the site's subsurface. Therefore, impacts would be less than significant.

3.19 Utilities and Service Systems

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS – 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?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider, which 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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

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.

Water Facilities

The proposed project would not generate water supply demand. As addressed in Section 3.14(a), the proposed project would not generate population growth and thus, would not require additional water supplies. The proposed project would improve the storage and pump redundancy at the Fleming Reservoir and Pump Station facility to increase drinking water storage and delivery capabilities to the entire Santiago Canyon Area. Project components include a new 1.3 MG prestressed concrete drinking water storage reservoir, which would be constructed on the southern portion of the site. Additionally, a new enclosed pump station structure would be constructed on the northeastern portion of the site. New underground

pipelines would be installed throughout the site, including new pipelines that would connect to existing pipelines within Santiago Canyon Road and Silverado Canyon Road. These water facilities are included within the project analyzed herein. As such, any potential environmental impacts related to these components of the proposed project are already accounted for in this IS/MND as part of the impact assessment conducted for the entirety of the project. No impacts beyond those already discussed would occur. Therefore, impacts related to the relocation or expansion of construction of new or expanded water facilities would be less than significant.

Wastewater Facilities

The pump station building would include an operations room with a restroom. Because sewer service is unavailable in the area, an underground sewer holding tank would be installed on-site. The proposed sewer holding tank would be sized to provide holding capacity for normal operations and during a fire event as an emergency operational control. This tank would be emptied by a certified pumping company with tanker trucks and disposed of in accordance with applicable regulatory requirements. Therefore, the project would not require the construction of new or expanded wastewater facilities and impacts would be less than significant.

Stormwater Drainage Facilities

Under the proposed conditions, a series of catch basins would capture surface flows and route them to a biofiltration system for attenuation and treatment (Tetra Tech 2021). The system would be appropriately consistent with the North Orange County Municipal Separate Storm Sewer System Permit and the Orange County Technical Guidance Document for Project Water Quality Management Plans. Additionally, at the pump station building, a v-ditch would be constructed at the top of the retaining wall and would discharge water towards Silverado Canyon Road with riprap and to the existing channel on the north side of Santiago Canyon Road. Thus, the proposed project would be expected to handle stormwater flows generated by the project.

Therefore, impacts related to the relocation or expansion of construction of new or expanded stormwater drainage facilities would be less than significant

Electric Power Facilities

SCE currently provides two existing electrical service lines at the site, primarily through pole-mounted transformers and power poles. As part of the project, SCE would modify the overhead lines and install a new pad-mounted transformer. Additionally, the existing 150 kW standby diesel generator would be replaced with a new, 350 kW standby diesel generator for emergency use. These project components are included within the project analyzed herein. As such, any potential environmental impacts related to these components of the proposed project are already accounted for in this IS/MND as part of the impact assessment conducted for the entirety of the project. No impacts beyond those already discussed would occur. Therefore, impacts related to the relocation or expansion of construction of new or expanded electric power facilities would be less than significant.

Natural Gas

Natural gas is not anticipated to be required during construction of the proposed project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed below under the “petroleum” subsection. Any minor amounts of natural gas that may be consumed as a result of project

construction would have a negligible contribution to the project's overall energy consumption. At buildout, the proposed project would not use natural gas for operational activities. On-site energy usage would be derived solely from electricity use and petroleum consumption. Therefore, the proposed project would not result in wasteful, inefficient, or unnecessary natural gas consumption during operations. Therefore, impacts related to the relocation or expansion of construction of new or expanded natural gas facilities would be less than significant.

Telecommunication Facilities

Under existing conditions, the facility currently contains an AT&T monopole cellular telecommunication tower . As part of the project, the cellular tower would be removed and a temporary, portable tower may be installed in its stead. Upon completion of construction, AT&T may elect to install a permanent replacement tower on site under a new lease arrangement with IRWD. Additionally, the project would involve the installation of a SCADA system which would be used to provide IRWD with real-time controls of equipment at the facility. These project components are included within the project analyzed herein. As such, any potential environmental impacts related to these components of the proposed project are already accounted for in this IS/MND as part of the impact assessment conducted for the entirety of the project. No impacts beyond those already discussed would occur. Therefore, impacts related to the relocation or expansion of construction of new or expanded telecommunication facilities would be less than significant.

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?

Less-than-Significant Impact. During operation, water usage would be temporary and minimal for watering the project site and other needs. Once operational, the project itself would not increase the use of supplies as the project would primarily enhance the existing facility's ability to supply existing maximum daily water demands. As such, the proposed project would not require new or additional sources of water, and impacts associated with water supplies would be less than significant.

c) Would the project result in a determination by the wastewater treatment provider, which 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?

Less-than-Significant Impact. As discussed in Section 3.19(a), the facility does not have sewer service. Because sewer service is unavailable in the area, an underground sewer holding tank would be installed on-site. The proposed sewer holding tank would be sized to provide holding capacity for normal operations and during a fire event as an emergency operational control. The sewer holding tank would be serviced by a pumping company with tanker trucks ranging from 3,000 to 5,000-gallon capacity. Wastewater would eventually be hauled off for treatment at IRWD's Michelson Water Recycling Plant (MWRP). IRWD's MWRP has a capacity of approximately 28 million gallons per day. Wastewater generated by the project would be minimal and in the context of IRWD's existing capacity, would represent in inconsequential amount. Thus, IRWD facilities would have adequate capacity to treat wastewater produced from the project. As such, wastewater generated as a result of the project would be adequately served by the wastewater facilities. Therefore, impacts would be less than significant.

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. Implementation of the proposed project would generate solid waste in the form of construction and demolition debris that will need to be hauled off site and disposed of in a landfill by IRWD's construction contractors. Waste generated during construction of the project would be properly disposed of in accordance with the waste disposal requirements of the County's Frank R. Bowerman Landfill (Bowerman Landfill). The Bowerman Landfill has a remaining capacity of 205,000,000 cubic yards and a maximum permitted throughput of 11,500 tons per day (CalRecycle 2019). Additionally, under AB 939, the Integrated Waste Management Act of 1989, local jurisdictions are required to develop source reduction, reuse, recycling, and composting programs to reduce the amount of solid waste entering landfills. Local jurisdictions are mandated to divert at least 50% of their solid waste generation into recycling.

It is not anticipated that the project would increase the number of employees at the facility. As such, waste generated during operation of the project is expected to be similar to waste currently produced on site. Therefore, given that the amount waste produced by the project would be similar to existing conditions and the remaining capacity and permitted throughput of Bowerman Landfill, it is anticipated that the landfill would have sufficient capacity to accommodate the minimal amount of project-related waste. Therefore, impacts would be less than significant.

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

Less-than-Significant Impact. As discussed in Section 3.19(d), waste generated during construction of the project would be properly disposed of in accordance with the waste disposal requirements of Bowerman Landfill. All collection, transportation, and disposal of solid waste generated by the proposed project would comply with all applicable federal, state, and local statutes and regulations. Under AB 939, the Integrated Waste Management Act of 1989, local jurisdictions are required to develop source reduction, reuse, recycling, and composting programs to reduce the amount of solid waste entering landfills. Local jurisdictions are mandated to divert at least 50% of their solid waste generation into recycling. Therefore, impacts would be less than significant.

3.20 Wildfire

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XX. WILDFIRE – 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?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐

The project site is located in a very high fire hazard severity zone (VHFHSZ) within a State Responsibility Area (CAL FIRE 2007a). The County General Plan Safety Element, Figure IX-1, also establishes the project area as a VH FHSZ (County of Orange 2005). As such, the following analysis addresses the potential project impacts related to wildfire.

a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

Less-than-Significant Impact. The EMD of the Orange County Sheriff's Department (OCSD) provides emergency management and preparedness services to the unincorporated areas of the County and the Orange County OA and supports the emergency response efforts of incorporated cities (OCSD 2021). Additionally, the EMD is responsible for developing, maintaining, and distributing the Unified County of Orange and Orange County Operational Area EOP. The EOP provides guidance and procedures for the County and the County as the OA to prepare for and respond to natural, technological, conflict-related, and human-caused incidents creating situations requiring a coordinated response. The EOP identifies wildfire as a significant threat to the County (County of Orange 2019).

The Orange County EOC functions as the communication and coordination center for emergency response and disaster preparedness in the County. It also assists in coordination and communication between Mutual Aid Coordinators and the state Office of Emergency Services during County-wide and state-wide emergency response and recovery operations (OCSD 2021). In the event of an emergency, the EOC gathers, analyzes, and disseminates information, ensuring coordinated emergency response and evacuation. The OCSD EMD provides resources during a disaster, including a public information map that displays areas under evacuation orders and emergency evacuation routes. Depending on the location of the disaster, evacuation routes may change. AlertOC is the County's regional public mass notification system, which is used to notify those who live and work in Orange County of important information during emergency events, including disaster notifications and evacuation notices (County of Orange 2019).

The Modjeska, Silverado, Trabuco, Williams Canyon Evacuation Plan is an evacuation plan for the communities in the project area containing information for residents regarding emergency preparedness, safe refuge locations, large animal evacuation staging areas, possible road closure check points, and assembly point locations. In the event of an emergency, EMD would establish evacuation routes.

As previously discussed in Section 3.17, Transportation, construction activities would primarily be located within the boundaries of the existing Fleming Reservoir and Pump Station facility. However, the project has the potential to create temporary lane closures and bicycle lane closures during project construction, which involves the installation of new pipelines that would connect to existing pipelines within Santiago Canyon Road and Silverado Canyon Road. Such construction activities may temporarily decrease vehicle lane capacity. However, any lane or driveway closures would be coordinated with the County of Orange and all local emergency service providers as part of the encroachment permit process, which sets forth requirements for traffic control measures to be implemented, including measures to preserve access in the event of an emergency. Once constructed, the majority of the proposed project components would be located within the existing facility boundaries. Therefore, the project would not result in substantial road closures or blockages that would interfere with emergency evacuation routes. Further, in the event of an emergency, IRWD would comply with all instructions and guidance provided by OCSD, the EOC, or other public agencies tasked with emergency response, and the project would not interfere with the County's emergency response plan.

Given that the project would not impair an adopted emergency response plan or emergency evacuation plan and would improve local emergency response, impacts would be less than significant.

b) Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less-than-Significant. The project site is located in a Very High Fire Hazard Severity Zone (VHFHSZ), which has been designated by the California Department of Forestry and Fire Protection (CAL FIRE) based on factors such as fuel, terrain/slope, weather and other relevant factors (CAL FIRE 2007b). In addition to the project's location in a fire-prone area of Southern California, the project site and surrounding area are topographically diverse, with slope gradients ranging from moderate to steep. The predominant wind direction in the project area varies throughout the year. From early February through mid-November, the prevailing wind direction is from the west, and from mid-November to early February the prevailing wind direction is from the east (WeatherSpark 2021). Over the past 5 years, average wind speed in the project area is approximately 8.7 miles per hour (mph) with maximum wind gusts averaging 52 mph (WRCC 2021). The project area is subject to seasonal Santa Ana winds, which typically present the highest fire danger. Sustained wind speeds recorded during the recent fires exceeded 70 mph with wind gusts reach up to 95 mph during extreme conditions (Childs and Brackett 2020).

Construction

Construction of the project would not substantially alter on-site slopes or influence prevailing winds or other factors that could exacerbate wildfire risk. However, project construction would introduce potential ignition sources to the project site, including the use of vehicles and heavy machinery, accidental human-caused ignitions, and the potential for sparks during welding activities or other hot work. Project construction would be conducted in accordance with local and state regulations governing fire prevention and safety. The

County Municipal Code has adopted the 2019 California Fire Code with local amendments. In addition to compliance with regulatory requirements, IRWD's construction contractors would implement standard best management practices to minimize fire risks. For example, IRWD would require that spark arrestors on construction and maintenance equipment be in good working order. Construction contractors would be empowered to limit or pause construction activities when fire risk is high, such as during Red Flag Warnings and High to Extreme Fire Danger days. Additionally, the existing pump station and reservoir would be kept in service during construction. As such, a water source would be immediately available in the event of a fire, and contractors would be required to have access to functional fire extinguishers at all times and be trained in their proper use. Implementation of these measures would result in a less-than-significant impact related to the potential for construction-related fires.

Operation

Design and operation would be required to comply with OCFA requirements, including preparation of a fire master plan (Guideline B-09) and compliance with guidelines for activities in hazardous fire areas (Guideline B-09a) as well as the 2019 California Fire Code and Title 14 of the California Code of Regulations. OCFA guidelines and state regulations for development in fire hazard areas would ensure fire safety, including, but not limited to, requirements for site access, vegetation clearance and defensible space, ignition-resistant construction methods and materials, and adequate water supply. All proposed structures would be designed to meet the fire hardening requirements outlined in the IRWD Facility Fire Protection Improvements Report (RRM 2008), and in accordance with the current edition of the California Fire and Building Codes. Additionally, the standby emergency generator would comply with the 2019 California Fire Code 324.1 – OCFA Amendment, which requires that equipment or devices within wildland areas that generate heat or sparks be setback at least 30 feet from combustible vegetation.

Additionally, the project would be equipped with a SCADA communication antenna, which would provide IRWD with the ability to monitor and control all operational parameters of the facility. In the event of an equipment malfunction, IRWD would be notified immediately, and appropriate emergency measures would be taken, including, but not limited to, contacting local fire agencies.

Upon completion of project construction, site landscaping would be installed to stabilize slopes. Landscaping would consist of a variety of drought-tolerant plants, shrubs, and trees similar to the surrounding natural environment. While the plant palette has not been selected yet for landscape design, no highly flammable plant materials will be included in future landscape plans for the project.

With implementation of standard measures to reduce fire risk, compliance with local and state regulations related to fire safety, and upon OCFA's review and approval of the fire master plan, the project would not exacerbate wildfire risks. Further, the project would be designed to function as a remotely operated drinking water storage and conveyance facility, and employees would not be on site at all times. IRWD staff would occasionally visit the site for routine maintenance or in the event of an emergency. As such, despite its location in a fire hazard area, the project would not expose project occupants to pollutant concentrations or the uncontrolled spread of a wildfire. Impacts would be less than significant.

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?

Less-than-Significant. The project would involve the construction and operation of new facilities within the existing Fleming Reservoir and Pump Station facility. While the majority of project construction would occur within the boundaries of the existing facility, off-site construction would consist of the installation of new underground pipelines that would connect to existing pipelines within Santiago Canyon Road and Silverado Canyon Road. Additionally, there are currently two pole-mounted SCE electrical service lines at the site. As part of the project, SCE would modify the overhead lines and install a new pad-mounted transformer. The project would also involve the widening and re-grading of the existing site access road to 28 feet wide with slopes that allow emergency vehicles access in accordance with requirements set forth by OCFA for roads within wildfire hazard areas. Thus, the project would provide improved access for fire apparatus and emergency vehicles. Construction of associated infrastructure would be conducted in accordance with local and state regulations governing fire safety, as discussed above in Section 3.20b. Additionally, IRWD's construction contractors would implement standard best management practices to minimize fire risks.

Construction and operation of the project would not directly require new or expanded infrastructure other than that which is planned as part of the project. As discussed in Section 3.19, Utilities, no new utility connections, water/wastewater facilities, or other service utilities would be required for the project. Given that the activities involved with installation or maintenance of associated infrastructure would require ground disturbance and the use of heavy machinery associated with trenching, grading, site work, and other construction and maintenance activities, the installation of related infrastructure could potentially result in temporary or ongoing impacts to the environment. However, the installation and maintenance of associated infrastructure have been analyzed herein. As such, any potential temporary or ongoing environmental impacts related to these components of the proposed project have been accounted for and analyzed as part of the impact assessment conducted for the entirety of the project. Additionally, the project would be required to comply with all regulatory requirements and mitigation measures outlined within this IS/MND for the purposes of mitigating impacts associated with trenching, grading, site work, and the use of heavy machinery. No adverse physical effects beyond those already disclosed and mitigated would occur as a result of implementation of the project's associated infrastructure. Therefore, with implementation standard measures to reduce fire risk and compliance with regulatory requirements, the installation and maintenance of associated infrastructure would not exacerbate wildfire risk or result in impacts to the environment beyond those already disclosed throughout this document, and impacts would be less than significant.

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?

Less-than-Significant Impact. The California Geological Survey regulatory maps determined that the project site is located in an area susceptible to landslides (CGS 2019b). However, the Geotechnical Report prepared for the project (Leighton 2020) determined that the project site is not susceptible to the occurrence of seismically induced landslides. Further, there are no known landslides that have occurred on or adjacent to the project site (CGS 2019b). The project does not include activities that would induce post-fire slope instability, such as prescribed burning for vegetation maintenance. However, as discussed in Section 2.3, Environmental Setting, the project area was recently subject to wildfires in October and December 2020, when the Silverado and Bond fires burned through the Santa Ana Mountains, including immediately around the project site. As a result, the majority of existing vegetation surrounding the project site

was lost to incineration. Vegetation plays a vital role in maintaining existing drainage patterns and the stability of soils. Plant roots stabilize the soil, and leaves, stems, and branches intercept and slow water, allowing it to more effectively percolate into the soil. Removal of surface vegetation reduces the ability of the soil surface to absorb rainwater, and can allow for increased runoff that may include large amounts of debris and mud flows. If hydrophobic conditions exist post-fire, the rate of surface water runoff is increased since water percolation into the soil is reduced. The potential for surface runoff and debris flows therefore increases significantly for areas recently burned by large wildfires (Moench and Fusaro 2012).

The project site and surrounding area are topographically diverse, with slope gradients ranging from moderate to steep. Slope failures, mudflows, and landslides are common in areas where steep hillsides and embankments are present, and such conditions would be exacerbated in a post-fire environment where vegetative cover has been removed. Given the project site's location in a VHFHSZ and recent wildfires in the surrounding area, construction workers, project occupants (e.g., public safety personnel situated in the operations room), and structures could be exposed to downslope or downstream flooding or landslides as a result of post-fire conditions. Based on field surveys conducted by Dudek in May 2021, vegetation has begun to regenerate since the 2020 wildfires, thereby aiding in stabilizing surrounding slopes. Further, construction workers would be on site temporarily, and during project operations IRWD staff would occasionally visit the site for routine maintenance or in the event of an emergency. As such, people would not be on the project site at all times, and the risk of exposing people to significant risks associated with runoff, post-fire slope instability, or drainage changes would be minimized.

Construction activities could result in changes to drainage patterns and slope stabilization. Caution must be used to avoid causing erosion, ground and slope instability, or water runoff. Soils would be stabilized during project construction with adherence to the project SWPPP and associated construction BMPs related to erosion and sediment control. Upon completion of construction, all disturbed surfaces would be stabilized and restored to initial condition, and landscaping would be provided around the facility to stabilize the slopes. Additionally, a series of catch basins would be installed that would capture surface flows and route them to a biofiltration system for attenuation and treatment, thereby reducing runoff from the project site. Therefore, with implementation of construction BMPs to minimize soil erosion and runoff, impacts to slope instability would be reduced to a less-than-significant level.

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XXI. 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?	☐	☒	☐	☐
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)?	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

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 with Mitigation Incorporated. As described throughout this IS/MND, with the incorporation of the identified mitigation measures, the project would not degrade the quality of the environment; would not substantially reduce the habitats of fish or wildlife species; would not cause a fish or wildlife population to drop below self-sustaining levels; would not threaten to eliminate a plant or animal; and would not eliminate important examples of major periods of California history or prehistory. Therefore, impacts would be less than significant with mitigation incorporated.

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 with Mitigation Incorporated. When evaluating cumulative impacts, it is important to remain consistent with Section 15064(h) of the CEQA Guidelines, which states that an EIR must be prepared if the cumulative impact may be significant and the project's incremental effect, though individually limited, is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

Alternatively, a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable through mitigation measures set forth in an MND or if the project will comply with the requirements in a previously approved plan or mitigation program that provides specific requirements that will avoid or substantially lessen the cumulative impact within the geographic area in which the project is located.

The proposed project would potentially result in project-related impacts to biological resources, cultural resources, geological resources, and tribal cultural resources impacts that could be potentially significant without the incorporation of mitigation. Thus, when coupled with biological resources, cultural resources, geological resources, and tribal cultural resources impacts related to the implementation of other related projects throughout the broader project area, the project would potentially result in cumulative-level impacts if these significant impacts are left unmitigated.

However, with the incorporation of mitigation identified herein, the project's impacts to cultural resources, geological resources, and tribal cultural resources would be reduced to less-than-significant levels and would not considerably contribute to cumulative impacts in the greater project region. In addition, these other related projects would presumably be bound by their applicable lead agency to (1) comply with the all applicable federal, state, and local regulatory requirements; and (2) incorporate all feasible mitigation measures, consistent with CEQA, to further ensure that their potentially cumulative impacts would be reduced to less-than-significant levels.

Although cumulative impacts are always possible, the project, by incorporating all mitigation measures outlined herein, would reduce its contribution to any such cumulative impacts to less than cumulatively considerable; therefore, the project would result in individually limited, but not cumulatively considerable, less-than-significant impacts with mitigation incorporated.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less-than-Significant Impact with Mitigation Incorporated. As evaluated throughout this IS/MND, with incorporation of mitigation identified herein, all environmental impacts associated with the project would be reduced to less-than-significant levels. Thus, the project would not directly or indirectly cause substantial adverse effects on human beings. Impacts would be less than significant with mitigation incorporated.

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4 References and Preparers

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Appendix A

Air Quality and Greenhouse Gas Emission Calculations

Table of Contents

Fleming Tank and Pump Station Improvements Project

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	534	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - In accordance with 2019 SCE Sustainability Report.

Land Use - Surrogate land use for estimating emissions.

Construction Phase - Based on applicant provided information.

Off-road Equipment - Based on applicant provided data.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Grading - Based on applicant provided information.

Trips and VMT - Based on applicant provided information.

On-road Fugitive Dust - CalEEMod defaults.

Vehicle Trips - No increase in operational mobile sources.

Consumer Products - CalEEMod defaults.

Landscape Equipment - No landscaping.

Energy Use - No net energy increase over existing.

Water And Wastewater - No increase in water use over existing.

Solid Waste - No increase in solid waste.

Construction Off-road Equipment Mitigation - In accordance with SCAQMD Rule 403.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	100.00	140.00
tblConstructionPhase	NumDays	2.00	40.00
tblConstructionPhase	NumDays	100.00	65.00

tblConstructionPhase	NumDays	5.00	90.00
tblConstructionPhase	NumDays	100.00	30.00
tblConstructionPhase	NumDays	10.00	15.00
tblConstructionPhase	NumDays	100.00	51.00
tblConstructionPhase	PhaseEndDate	6/28/2022	10/13/2022
tblConstructionPhase	PhaseEndDate	2/8/2022	3/31/2022
tblConstructionPhase	PhaseStartDate	2/9/2022	4/1/2022
tblConstructionPhase	PhaseStartDate	2/5/2022	2/4/2022
tblEnergyUse	LightingElect	2.93	0.00
tblEnergyUse	NT24E	5.02	0.00
tblEnergyUse	NT24NG	17.13	0.00
tblEnergyUse	T24E	2.20	0.00
tblEnergyUse	T24NG	15.36	0.00
tblGrading	MaterialImported	0.00	300.00
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors

tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	4.00	2.00
tblOffRoadEquipment	UsageHours	1.00	4.00

tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	6.00	1.00
tblOffRoadEquipment	UsageHours	4.00	2.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	2.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	702.44	534
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	1.24	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	32.00
tblTripsAndVMT	HaulingTripNumber	0.00	76.00
tblTripsAndVMT	HaulingTripNumber	0.00	80.00
tblTripsAndVMT	HaulingTripNumber	0.00	40.00
tblTripsAndVMT	HaulingTripNumber	0.00	40.00
tblTripsAndVMT	HaulingTripNumber	0.00	50.00
tblTripsAndVMT	HaulingTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00

tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	10.00	8.00
tblTripsAndVMT	WorkerTripNumber	0.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	0.00	8.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	10.00	8.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	231,250.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0436	0.4747	0.3419	1.1000e-003	0.0946	0.0155	0.1102	0.0418	0.0144	0.0562	0.0000	100.8035	100.8035	0.0162	0.0000	101.2083
2023	0.0130	0.1237	0.1406	4.6000e-004	0.0171	3.4800e-003	0.0206	4.6400e-003	3.2800e-003	7.9300e-003	0.0000	42.4771	42.4771	4.5500e-003	0.0000	42.5907
Maximum	**0.0436**	**0.4747**	**0.3419**	**1.1000e-003**	**0.0946**	**0.0155**	**0.1102**	**0.0418**	**0.0144**	**0.0562**	**0.0000**	**100.8035**	**100.8035**	**0.0162**	**0.0000**	**101.2083**

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					
2022	0.0436	0.4747	0.3419	1.1000e-003	0.0593	0.0155	0.0749	0.0234	0.0144	0.0378	0.0000	100.8035	100.8035	0.0162	0.0000	101.2082
2023	0.0130	0.1237	0.1406	4.6000e-004	0.0171	3.4800e-003	0.0206	4.6400e-003	3.2800e-003	7.9300e-003	0.0000	42.4770	42.4770	4.5500e-003	0.0000	42.5907
Maximum	**0.0436**	**0.4747**	**0.3419**	**1.1000e-003**	**0.0593**	**0.0155**	**0.0749**	**0.0234**	**0.0144**	**0.0378**	**0.0000**	**100.8035**	**100.8035**	**0.0162**	**0.0000**	**101.2082**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**31.61**	**0.00**	**27.02**	**39.71**	**0.00**	**28.74**	**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	1-21-2022	4-20-2022	0.2294	0.2294
2	4-21-2022	7-20-2022	0.1009	0.1009
3	7-21-2022	10-20-2022	0.1024	0.1024
4	10-21-2022	1-20-2023	0.1004	0.1004
5	1-21-2023	4-20-2023	0.0487	0.0487
6	4-21-2023	7-20-2023	0.0413	0.0413
7	7-21-2023	9-30-2023	0.0288	0.0288
		Highest	0.2294	0.2294

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	4.0800e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
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	**4.0800e-003**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

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	4.0800e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
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	**4.0800e-003**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

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

3.0 Construction Detail

Construction Phase

Fleming Tank and Pump Station Improvements Project - South Coast AQMD Air District, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Demolition (Phase 1)	Demolition	1/21/2022	2/3/2022	5	10	
2	Interim Grading and Shoring	Grading	2/4/2022	3/31/2022	5	40	
3	Tank Construction	Building Construction	4/1/2022	10/13/2022	5	140	
4	Pump Station, RMS Facility, and Storage Building	Building Construction	10/14/2022	1/12/2023	5	65	
5	Vault Construction Site Improvements, and Electrical Improvements	Paving	1/13/2023	5/18/2023	5	90	
6	Startup & Testing	Building Construction	5/19/2023	6/29/2023	5	30	
7	Site Demolition (Phase 2)	Demolition	6/30/2023	7/20/2023	5	15	
8	Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Building Construction	7/21/2023	9/29/2023	5	51	

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
Vault Construction Site Improvements, and Electrical Improvements	Cement and Mortar Mixers	1	1.00	9	0.56
Site Demolition (Phase 2)	Concrete/Industrial Saws	0	8.00	81	0.73
Site Demolition (Phase 1)	Concrete/Industrial Saws	0	8.00	81	0.73
Interim Grading and Shoring	Concrete/Industrial Saws	0	8.00	81	0.73
Tank Construction	Cranes	1	2.00	231	0.29
Tank Construction	Forklifts	0	6.00	89	0.20

Pump Station, RMS Facility, and Storage Building	Cranes	1	2.00	231	0.29
Startup & Testing	Cranes	0	4.00	231	0.29
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Cranes	0	4.00	231	0.29
Site Demolition (Phase 1)	Rubber Tired Dozers	0	1.00	247	0.40
Interim Grading and Shoring	Rubber Tired Dozers	1	4.00	247	0.40
Tank Construction	Tractors/Loaders/Backhoes	1	1.00	97	0.37
Site Demolition (Phase 1)	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Interim Grading and Shoring	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Pump Station, RMS Facility, and Storage Building	Forklifts	0	6.00	89	0.20
Startup & Testing	Forklifts	0	6.00	89	0.20
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Forklifts	0	6.00	89	0.20
Vault Construction Site Improvements, and Electrical Improvements	Pavers	0	7.00	130	0.42
Vault Construction Site Improvements, and Electrical Improvements	Rollers	0	7.00	80	0.38
Site Demolition (Phase 2)	Rubber Tired Dozers	0	1.00	247	0.40
Pump Station, RMS Facility, and Storage Building	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Startup & Testing	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Tractors/Loaders/Backhoes	1	1.00	97	0.37
Site Demolition (Phase 2)	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Vault Construction Site Improvements, and Electrical Improvements	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Site Demolition (Phase 1)	Excavators	1	6.00	158	0.38
Interim Grading and Shoring	Graders	1	3.00	187	0.41
Interim Grading and Shoring	Excavators	1	4.00	158	0.38
Tank Construction	Excavators	1	1.00	158	0.38

Tank Construction	Air Compressors	1	1.00	78	0.48
Pump Station, RMS Facility, and Storage Building	Air Compressors	1	1.00	78	0.48
Pump Station, RMS Facility, and Storage Building	Cement and Mortar Mixers	1	3.00	9	0.56
Vault Construction Site Improvements, and Electrical Improvements	Air Compressors	1	1.00	78	0.48
Vault Construction Site Improvements, and Electrical Improvements	Paving Equipment	1	1.00	132	0.36
Site Demolition (Phase 2)	Excavators	1	3.00	158	0.38
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Air Compressors	1	1.00	78	0.48
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Cement and Mortar Mixers	1	1.00	9	0.56

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Demolition (Phase 1)	2	8.00	6.00	32.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Pump Station, RMS Facility, and Storage B	4	12.00	10.00	40.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Interim Grading and Shoring	4	8.00	6.00	76.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Tank Construction	4	12.00	10.00	80.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Startup & Testing	0	6.00	6.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Construct Storage Building, and Install Di	3	8.00	6.00	40.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Demolition (Phase 2)	2	8.00	6.00	50.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Vault Construction Site Improvements, an	4	8.00	6.00	40.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Demolition (Phase 1) - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.6000e-004	8.7600e-003	0.0150	2.0000e-005		4.3000e-004	4.3000e-004		4.0000e-004	4.0000e-004	0.0000	2.0426	2.0426	6.6000e-004	0.0000	2.0591
Total	**9.6000e-004**	**8.7600e-003**	**0.0150**	**2.0000e-005**		**4.3000e-004**	**4.3000e-004**		**4.0000e-004**	**4.0000e-004**	**0.0000**	**2.0426**	**2.0426**	**6.6000e-004**	**0.0000**	**2.0591**

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	1.1000e-004	3.8500e-003	8.7000e-004	1.0000e-005	2.8000e-004	1.0000e-005	2.9000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	1.1806	1.1806	8.0000e-005	0.0000	1.1826
Vendor	9.0000e-005	2.9000e-003	7.2000e-004	1.0000e-005	2.2000e-004	1.0000e-005	2.2000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.8078	0.8078	5.0000e-005	0.0000	0.8090
Worker	2.0000e-004	1.5000e-004	1.6800e-003	1.0000e-005	5.9000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4938	0.4938	1.0000e-005	0.0000	0.4941
Total	**4.0000e-004**	**6.9000e-003**	**3.2700e-003**	**3.0000e-005**	**1.0900e-003**	**2.0000e-005**	**1.1100e-003**	**3.0000e-004**	**2.0000e-005**	**3.2000e-004**	**0.0000**	**2.4821**	**2.4821**	**1.4000e-004**	**0.0000**	**2.4856**

3.2 Site Demolition (Phase 1) - 2022

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	9.6000e-004	8.7600e-003	0.0150	2.0000e-005		4.3000e-004	4.3000e-004		4.0000e-004	4.0000e-004	0.0000	2.0426	2.0426	6.6000e-004	0.0000	2.0591
Total	**9.6000e-004**	**8.7600e-003**	**0.0150**	**2.0000e-005**		**4.3000e-004**	**4.3000e-004**		**4.0000e-004**	**4.0000e-004**	**0.0000**	**2.0426**	**2.0426**	**6.6000e-004**	**0.0000**	**2.0591**

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	1.1000e-004	3.8500e-003	8.7000e-004	1.0000e-005	2.8000e-004	1.0000e-005	2.9000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	1.1806	1.1806	8.0000e-005	0.0000	1.1826
Vendor	9.0000e-005	2.9000e-003	7.2000e-004	1.0000e-005	2.2000e-004	1.0000e-005	2.2000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.8078	0.8078	5.0000e-005	0.0000	0.8090
Worker	2.0000e-004	1.5000e-004	1.6800e-003	1.0000e-005	5.9000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4938	0.4938	1.0000e-005	0.0000	0.4941
Total	**4.0000e-004**	**6.9000e-003**	**3.2700e-003**	**3.0000e-005**	**1.0900e-003**	**2.0000e-005**	**1.1100e-003**	**3.0000e-004**	**2.0000e-005**	**3.2000e-004**	**0.0000**	**2.4821**	**2.4821**	**1.4000e-004**	**0.0000**	**2.4856**

3.3 Interim Grading and Shoring - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0642	0.0000	0.0642	0.0335	0.0000	0.0335	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0143	0.1535	0.0926	2.0000e-004		6.7400e-003	6.7400e-003		6.2000e-003	6.2000e-003	0.0000	17.7772	17.7772	5.7500e-003	0.0000	17.9210
Total	**0.0143**	**0.1535**	**0.0926**	**2.0000e-004**	**0.0642**	**6.7400e-003**	**0.0710**	**0.0335**	**6.2000e-003**	**0.0397**	**0.0000**	**17.7772**	**17.7772**	**5.7500e-003**	**0.0000**	**17.9210**

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	2.7000e-004	9.1400e-003	2.0700e-003	3.0000e-005	6.5000e-004	3.0000e-005	6.8000e-004	1.8000e-004	2.0000e-005	2.0000e-004	0.0000	2.8038	2.8038	1.9000e-004	0.0000	2.8086
Vendor	3.4000e-004	0.0116	2.8900e-003	3.0000e-005	8.7000e-004	2.0000e-005	8.9000e-004	2.5000e-004	2.0000e-005	2.7000e-004	0.0000	3.2311	3.2311	1.9000e-004	0.0000	3.2358
Worker	8.0000e-004	5.9000e-004	6.7300e-003	2.0000e-005	2.3600e-003	2.0000e-005	2.3800e-003	6.3000e-004	2.0000e-005	6.4000e-004	0.0000	1.9750	1.9750	5.0000e-005	0.0000	1.9763
Total	**1.4100e-003**	**0.0213**	**0.0117**	**8.0000e-005**	**3.8800e-003**	**7.0000e-005**	**3.9500e-003**	**1.0600e-003**	**6.0000e-005**	**1.1100e-003**	**0.0000**	**8.0099**	**8.0099**	**4.3000e-004**	**0.0000**	**8.0207**

3.3 Interim Grading and Shoring - 2022

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					0.0289	0.0000	0.0289	0.0151	0.0000	0.0151	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0143	0.1535	0.0926	2.0000e-004		6.7400e-003	6.7400e-003		6.2000e-003	6.2000e-003	0.0000	17.7772	17.7772	5.7500e-003	0.0000	17.9210
Total	**0.0143**	**0.1535**	**0.0926**	**2.0000e-004**	**0.0289**	**6.7400e-003**	**0.0356**	**0.0151**	**6.2000e-003**	**0.0213**	**0.0000**	**17.7772**	**17.7772**	**5.7500e-003**	**0.0000**	**17.9210**

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	2.7000e-004	9.1400e-003	2.0700e-003	3.0000e-005	6.5000e-004	3.0000e-005	6.8000e-004	1.8000e-004	2.0000e-005	2.0000e-004	0.0000	2.8038	2.8038	1.9000e-004	0.0000	2.8086
Vendor	3.4000e-004	0.0116	2.8900e-003	3.0000e-005	8.7000e-004	2.0000e-005	8.9000e-004	2.5000e-004	2.0000e-005	2.7000e-004	0.0000	3.2311	3.2311	1.9000e-004	0.0000	3.2358
Worker	8.0000e-004	5.9000e-004	6.7300e-003	2.0000e-005	2.3600e-003	2.0000e-005	2.3800e-003	6.3000e-004	2.0000e-005	6.4000e-004	0.0000	1.9750	1.9750	5.0000e-005	0.0000	1.9763
Total	**1.4100e-003**	**0.0213**	**0.0117**	**8.0000e-005**	**3.8800e-003**	**7.0000e-005**	**3.9500e-003**	**1.0600e-003**	**6.0000e-005**	**1.1100e-003**	**0.0000**	**8.0099**	**8.0099**	**4.3000e-004**	**0.0000**	**8.0207**

3.4 Tank Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0121	0.1200	0.1025	2.1000e-004		5.5400e-003	5.5400e-003		5.1700e-003	5.1700e-003	0.0000	18.2307	18.2307	5.1300e-003	0.0000	18.3589
Total	**0.0121**	**0.1200**	**0.1025**	**2.1000e-004**		**5.5400e-003**	**5.5400e-003**		**5.1700e-003**	**5.1700e-003**	**0.0000**	**18.2307**	**18.2307**	**5.1300e-003**	**0.0000**	**18.3589**

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	9.6200e-003	2.1800e-003	3.0000e-005	6.9000e-004	3.0000e-005	7.1000e-004	1.9000e-004	3.0000e-005	2.1000e-004	0.0000	2.9514	2.9514	2.0000e-004	0.0000	2.9564
Vendor	2.0100e-003	0.0677	0.0169	1.9000e-004	5.0500e-003	1.3000e-004	5.1800e-003	1.4600e-003	1.3000e-004	1.5800e-003	0.0000	18.8481	18.8481	1.1000e-003	0.0000	18.8757
Worker	4.1900e-003	3.0800e-003	0.0353	1.1000e-004	0.0124	9.0000e-005	0.0125	3.3000e-003	8.0000e-005	3.3800e-003	0.0000	10.3689	10.3689	2.6000e-004	0.0000	10.3753
Total	**6.4800e-003**	**0.0804**	**0.0544**	**3.3000e-004**	**0.0182**	**2.5000e-004**	**0.0184**	**4.9500e-003**	**2.4000e-004**	**5.1700e-003**	**0.0000**	**32.1684**	**32.1684**	**1.5600e-003**	**0.0000**	**32.2074**

3.4 Tank Construction - 2022

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	0.0121	0.1200	0.1025	2.1000e-004		5.5400e-003	5.5400e-003		5.1700e-003	5.1700e-003	0.0000	18.2307	18.2307	5.1300e-003	0.0000	18.3589
Total	**0.0121**	**0.1200**	**0.1025**	**2.1000e-004**		**5.5400e-003**	**5.5400e-003**		**5.1700e-003**	**5.1700e-003**	**0.0000**	**18.2307**	**18.2307**	**5.1300e-003**	**0.0000**	**18.3589**

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	9.6200e-003	2.1800e-003	3.0000e-005	6.9000e-004	3.0000e-005	7.1000e-004	1.9000e-004	3.0000e-005	2.1000e-004	0.0000	2.9514	2.9514	2.0000e-004	0.0000	2.9564
Vendor	2.0100e-003	0.0677	0.0169	1.9000e-004	5.0500e-003	1.3000e-004	5.1800e-003	1.4600e-003	1.3000e-004	1.5800e-003	0.0000	18.8481	18.8481	1.1000e-003	0.0000	18.8757
Worker	4.1900e-003	3.0800e-003	0.0353	1.1000e-004	0.0124	9.0000e-005	0.0125	3.3000e-003	8.0000e-005	3.3800e-003	0.0000	10.3689	10.3689	2.6000e-004	0.0000	10.3753
Total	**6.4800e-003**	**0.0804**	**0.0544**	**3.3000e-004**	**0.0182**	**2.5000e-004**	**0.0184**	**4.9500e-003**	**2.4000e-004**	**5.1700e-003**	**0.0000**	**32.1684**	**32.1684**	**1.5600e-003**	**0.0000**	**32.2074**

3.5 Pump Station, RMS Facility, and Storage Building - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3400e-003	0.0515	0.0406	8.0000e-005		2.3800e-003	2.3800e-003		2.2300e-003	2.2300e-003	0.0000	7.1344	7.1344	1.8900e-003	0.0000	7.1818
Total	**5.3400e-003**	**0.0515**	**0.0406**	**8.0000e-005**		**2.3800e-003**	**2.3800e-003**		**2.2300e-003**	**2.2300e-003**	**0.0000**	**7.1344**	**7.1344**	**1.8900e-003**	**0.0000**	**7.1818**

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	4.1400e-003	9.4000e-004	1.0000e-005	3.3000e-004	1.0000e-005	3.4000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	1.2714	1.2714	9.0000e-005	0.0000	1.2735
Vendor	8.0000e-004	0.0271	6.7500e-003	8.0000e-005	2.0200e-003	5.0000e-005	2.0700e-003	5.8000e-004	5.0000e-005	6.3000e-004	0.0000	7.5392	7.5392	4.4000e-004	0.0000	7.5503
Worker	1.6700e-003	1.2300e-003	0.0141	5.0000e-005	4.9600e-003	4.0000e-005	5.0000e-003	1.3200e-003	3.0000e-005	1.3500e-003	0.0000	4.1476	4.1476	1.0000e-004	0.0000	4.1501
Total	**2.5900e-003**	**0.0325**	**0.0218**	**1.4000e-004**	**7.3100e-003**	**1.0000e-004**	**7.4100e-003**	**1.9900e-003**	**9.0000e-005**	**2.0800e-003**	**0.0000**	**12.9582**	**12.9582**	**6.3000e-004**	**0.0000**	**12.9739**

3.5 Pump Station, RMS Facility, and Storage Building - 2022

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	5.3400e-003	0.0515	0.0406	8.0000e-005		2.3800e-003	2.3800e-003		2.2300e-003	2.2300e-003	0.0000	7.1344	7.1344	1.8900e-003	0.0000	7.1817
Total	**5.3400e-003**	**0.0515**	**0.0406**	**8.0000e-005**		**2.3800e-003**	**2.3800e-003**		**2.2300e-003**	**2.2300e-003**	**0.0000**	**7.1344**	**7.1344**	**1.8900e-003**	**0.0000**	**7.1817**

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	4.1400e-003	9.4000e-004	1.0000e-005	3.3000e-004	1.0000e-005	3.4000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	1.2714	1.2714	9.0000e-005	0.0000	1.2735
Vendor	8.0000e-004	0.0271	6.7500e-003	8.0000e-005	2.0200e-003	5.0000e-005	2.0700e-003	5.8000e-004	5.0000e-005	6.3000e-004	0.0000	7.5392	7.5392	4.4000e-004	0.0000	7.5503
Worker	1.6700e-003	1.2300e-003	0.0141	5.0000e-005	4.9600e-003	4.0000e-005	5.0000e-003	1.3200e-003	3.0000e-005	1.3500e-003	0.0000	4.1476	4.1476	1.0000e-004	0.0000	4.1501
Total	**2.5900e-003**	**0.0325**	**0.0218**	**1.4000e-004**	**7.3100e-003**	**1.0000e-004**	**7.4100e-003**	**1.9900e-003**	**9.0000e-005**	**2.0800e-003**	**0.0000**	**12.9582**	**12.9582**	**6.3000e-004**	**0.0000**	**12.9739**

3.5 Pump Station, RMS Facility, and Storage Building - 2023

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	8.1000e-004	7.6200e-003	6.4500e-003	1.0000e-005		3.4000e-004	3.4000e-004		3.2000e-004	3.2000e-004	0.0000	1.1469	1.1469	3.0000e-004	0.0000	1.1545
Total	**8.1000e-004**	**7.6200e-003**	**6.4500e-003**	**1.0000e-005**		**3.4000e-004**	**3.4000e-004**		**3.2000e-004**	**3.2000e-004**	**0.0000**	**1.1469**	**1.1469**	**3.0000e-004**	**0.0000**	**1.1545**

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	4.3000e-004	1.4000e-004	0.0000	2.7000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.1962	0.1962	1.0000e-005	0.0000	0.1966
Vendor	1.0000e-004	3.2300e-003	9.7000e-004	1.0000e-005	3.2000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	1.1757	1.1757	6.0000e-005	0.0000	1.1772
Worker	2.5000e-004	1.8000e-004	2.1000e-003	1.0000e-005	8.0000e-004	1.0000e-005	8.0000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.6417	0.6417	1.0000e-005	0.0000	0.6421
Total	**3.6000e-004**	**3.8400e-003**	**3.2100e-003**	**2.0000e-005**	**1.3900e-003**	**1.0000e-005**	**1.4000e-003**	**3.7000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**2.0136**	**2.0136**	**8.0000e-005**	**0.0000**	**2.0158**

3.5 Pump Station, RMS Facility, and Storage Building - 2023

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	8.1000e-004	7.6200e-003	6.4500e-003	1.0000e-005		3.4000e-004	3.4000e-004		3.2000e-004	3.2000e-004	0.0000	1.1469	1.1469	3.0000e-004	0.0000	1.1545
Total	**8.1000e-004**	**7.6200e-003**	**6.4500e-003**	**1.0000e-005**		**3.4000e-004**	**3.4000e-004**		**3.2000e-004**	**3.2000e-004**	**0.0000**	**1.1469**	**1.1469**	**3.0000e-004**	**0.0000**	**1.1545**

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	4.3000e-004	1.4000e-004	0.0000	2.7000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.1962	0.1962	1.0000e-005	0.0000	0.1966
Vendor	1.0000e-004	3.2300e-003	9.7000e-004	1.0000e-005	3.2000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	1.1757	1.1757	6.0000e-005	0.0000	1.1772
Worker	2.5000e-004	1.8000e-004	2.1000e-003	1.0000e-005	8.0000e-004	1.0000e-005	8.0000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.6417	0.6417	1.0000e-005	0.0000	0.6421
Total	**3.6000e-004**	**3.8400e-003**	**3.2100e-003**	**2.0000e-005**	**1.3900e-003**	**1.0000e-005**	**1.4000e-003**	**3.7000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**2.0136**	**2.0136**	**8.0000e-005**	**0.0000**	**2.0158**

3.6 Vault Construction Site Improvements, and Electrical Improvements - 2023

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	4.4200e-003	0.0380	0.0546	8.0000e-005		1.9000e-003	1.9000e-003		1.7900e-003	1.7900e-003	0.0000	7.2361	7.2361	1.7800e-003	0.0000	7.2806
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.4200e-003**	**0.0380**	**0.0546**	**8.0000e-005**		**1.9000e-003**	**1.9000e-003**		**1.7900e-003**	**1.7900e-003**	**0.0000**	**7.2361**	**7.2361**	**1.7800e-003**	**0.0000**	**7.2806**

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	9.0000e-005	3.0900e-003	9.9000e-004	1.0000e-005	3.4000e-004	1.0000e-005	3.5000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	1.4172	1.4172	9.0000e-005	0.0000	1.4195
Vendor	5.8000e-004	0.0194	5.8200e-003	7.0000e-005	1.9500e-003	2.0000e-005	1.9700e-003	5.6000e-004	2.0000e-005	5.8000e-004	0.0000	7.0539	7.0539	3.7000e-004	0.0000	7.0632
Worker	1.6900e-003	1.1900e-003	0.0140	5.0000e-005	5.3200e-003	4.0000e-005	5.3600e-003	1.4100e-003	3.0000e-005	1.4500e-003	0.0000	4.2780	4.2780	1.0000e-004	0.0000	4.2805
Total	**2.3600e-003**	**0.0237**	**0.0208**	**1.3000e-004**	**7.6100e-003**	**7.0000e-005**	**7.6800e-003**	**2.0600e-003**	**6.0000e-005**	**2.1300e-003**	**0.0000**	**12.7492**	**12.7492**	**5.6000e-004**	**0.0000**	**12.7633**

3.6 Vault Construction Site Improvements, and Electrical Improvements - 2023

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	4.4200e-003	0.0380	0.0546	8.0000e-005		1.9000e-003	1.9000e-003		1.7900e-003	1.7900e-003	0.0000	7.2361	7.2361	1.7800e-003	0.0000	7.2806
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.4200e-003**	**0.0380**	**0.0546**	**8.0000e-005**		**1.9000e-003**	**1.9000e-003**		**1.7900e-003**	**1.7900e-003**	**0.0000**	**7.2361**	**7.2361**	**1.7800e-003**	**0.0000**	**7.2806**

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	9.0000e-005	3.0900e-003	9.9000e-004	1.0000e-005	3.4000e-004	1.0000e-005	3.5000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	1.4172	1.4172	9.0000e-005	0.0000	1.4195
Vendor	5.8000e-004	0.0194	5.8200e-003	7.0000e-005	1.9500e-003	2.0000e-005	1.9700e-003	5.6000e-004	2.0000e-005	5.8000e-004	0.0000	7.0539	7.0539	3.7000e-004	0.0000	7.0632
Worker	1.6900e-003	1.1900e-003	0.0140	5.0000e-005	5.3200e-003	4.0000e-005	5.3600e-003	1.4100e-003	3.0000e-005	1.4500e-003	0.0000	4.2780	4.2780	1.0000e-004	0.0000	4.2805
Total	**2.3600e-003**	**0.0237**	**0.0208**	**1.3000e-004**	**7.6100e-003**	**7.0000e-005**	**7.6800e-003**	**2.0600e-003**	**6.0000e-005**	**2.1300e-003**	**0.0000**	**12.7492**	**12.7492**	**5.6000e-004**	**0.0000**	**12.7633**

3.7 Startup & Testing - 2023

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9000e-004	6.4600e-003	1.9400e-003	2.0000e-005	6.5000e-004	1.0000e-005	6.6000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	2.3513	2.3513	1.2000e-004	0.0000	2.3544
Worker	4.2000e-004	3.0000e-004	3.4900e-003	1.0000e-005	1.3300e-003	1.0000e-005	1.3400e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.0695	1.0695	2.0000e-005	0.0000	1.0701
Total	**6.1000e-004**	**6.7600e-003**	**5.4300e-003**	**3.0000e-005**	**1.9800e-003**	**2.0000e-005**	**2.0000e-003**	**5.4000e-004**	**2.0000e-005**	**5.5000e-004**	**0.0000**	**3.4208**	**3.4208**	**1.4000e-004**	**0.0000**	**3.4245**

3.7 Startup & Testing - 2023

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

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9000e-004	6.4600e-003	1.9400e-003	2.0000e-005	6.5000e-004	1.0000e-005	6.6000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	2.3513	2.3513	1.2000e-004	0.0000	2.3544
Worker	4.2000e-004	3.0000e-004	3.4900e-003	1.0000e-005	1.3300e-003	1.0000e-005	1.3400e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.0695	1.0695	2.0000e-005	0.0000	1.0701
Total	**6.1000e-004**	**6.7600e-003**	**5.4300e-003**	**3.0000e-005**	**1.9800e-003**	**2.0000e-005**	**2.0000e-003**	**5.4000e-004**	**2.0000e-005**	**5.5000e-004**	**0.0000**	**3.4208**	**3.4208**	**1.4000e-004**	**0.0000**	**3.4245**

3.8 Site Demolition (Phase 2) - 2023

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	1.1000e-003	0.0101	0.0176	3.0000e-005		5.0000e-004	5.0000e-004		4.6000e-004	4.6000e-004	0.0000	2.3083	2.3083	7.5000e-004	0.0000	2.3270
Total	**1.1000e-003**	**0.0101**	**0.0176**	**3.0000e-005**		**5.0000e-004**	**5.0000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**2.3083**	**2.3083**	**7.5000e-004**	**0.0000**	**2.3270**

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	3.8600e-003	1.2300e-003	2.0000e-005	4.3000e-004	1.0000e-005	4.4000e-004	1.2000e-004	1.0000e-005	1.2000e-004	0.0000	1.7715	1.7715	1.2000e-004	0.0000	1.7744
Vendor	1.0000e-004	3.2300e-003	9.7000e-004	1.0000e-005	3.2000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	1.1757	1.1757	6.0000e-005	0.0000	1.1772
Worker	2.8000e-004	2.0000e-004	2.3300e-003	1.0000e-005	8.9000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.7130	0.7130	2.0000e-005	0.0000	0.7134
Total	**5.0000e-004**	**7.2900e-003**	**4.5300e-003**	**4.0000e-005**	**1.6400e-003**	**2.0000e-005**	**1.6600e-003**	**4.5000e-004**	**2.0000e-005**	**4.6000e-004**	**0.0000**	**3.6602**	**3.6602**	**2.0000e-004**	**0.0000**	**3.6650**

3.8 Site Demolition (Phase 2) - 2023

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	1.1000e-003	0.0101	0.0176	3.0000e-005		5.0000e-004	5.0000e-004		4.6000e-004	4.6000e-004	0.0000	2.3083	2.3083	7.5000e-004	0.0000	2.3270
Total	**1.1000e-003**	**0.0101**	**0.0176**	**3.0000e-005**		**5.0000e-004**	**5.0000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**2.3083**	**2.3083**	**7.5000e-004**	**0.0000**	**2.3270**

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	3.8600e-003	1.2300e-003	2.0000e-005	4.3000e-004	1.0000e-005	4.4000e-004	1.2000e-004	1.0000e-005	1.2000e-004	0.0000	1.7715	1.7715	1.2000e-004	0.0000	1.7744
Vendor	1.0000e-004	3.2300e-003	9.7000e-004	1.0000e-005	3.2000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	1.1757	1.1757	6.0000e-005	0.0000	1.1772
Worker	2.8000e-004	2.0000e-004	2.3300e-003	1.0000e-005	8.9000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.7130	0.7130	2.0000e-005	0.0000	0.7134
Total	**5.0000e-004**	**7.2900e-003**	**4.5300e-003**	**4.0000e-005**	**1.6400e-003**	**2.0000e-005**	**1.6600e-003**	**4.5000e-004**	**2.0000e-005**	**4.6000e-004**	**0.0000**	**3.6602**	**3.6602**	**2.0000e-004**	**0.0000**	**3.6650**

3.9 Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank - 2023

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	1.4800e-003	0.0116	0.0158	2.0000e-005		5.9000e-004	5.9000e-004		5.7000e-004	5.7000e-004	0.0000	2.1033	2.1033	3.6000e-004	0.0000	2.1123
Total	**1.4800e-003**	**0.0116**	**0.0158**	**2.0000e-005**		**5.9000e-004**	**5.9000e-004**		**5.7000e-004**	**5.7000e-004**	**0.0000**	**2.1033**	**2.1033**	**3.6000e-004**	**0.0000**	**2.1123**

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	9.0000e-005	3.0900e-003	9.9000e-004	1.0000e-005	3.4000e-004	1.0000e-005	3.5000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	1.4172	1.4172	9.0000e-005	0.0000	1.4195
Vendor	3.3000e-004	0.0110	3.3000e-003	4.0000e-005	1.1000e-003	1.0000e-005	1.1200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	3.9972	3.9972	2.1000e-004	0.0000	4.0025
Worker	9.6000e-004	6.8000e-004	7.9200e-003	3.0000e-005	3.0100e-003	2.0000e-005	3.0300e-003	8.0000e-004	2.0000e-005	8.2000e-004	0.0000	2.4242	2.4242	6.0000e-005	0.0000	2.4256
Total	**1.3800e-003**	**0.0148**	**0.0122**	**8.0000e-005**	**4.4500e-003**	**4.0000e-005**	**4.5000e-003**	**1.2100e-003**	**4.0000e-005**	**1.2500e-003**	**0.0000**	**7.8387**	**7.8387**	**3.6000e-004**	**0.0000**	**7.8477**

3.9 Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank - 2023

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	1.4800e-003	0.0116	0.0158	2.0000e-005		5.9000e-004	5.9000e-004		5.7000e-004	5.7000e-004	0.0000	2.1033	2.1033	3.6000e-004	0.0000	2.1123
Total	**1.4800e-003**	**0.0116**	**0.0158**	**2.0000e-005**		**5.9000e-004**	**5.9000e-004**		**5.7000e-004**	**5.7000e-004**	**0.0000**	**2.1033**	**2.1033**	**3.6000e-004**	**0.0000**	**2.1123**

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	9.0000e-005	3.0900e-003	9.9000e-004	1.0000e-005	3.4000e-004	1.0000e-005	3.5000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	1.4172	1.4172	9.0000e-005	0.0000	1.4195
Vendor	3.3000e-004	0.0110	3.3000e-003	4.0000e-005	1.1000e-003	1.0000e-005	1.1200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	3.9972	3.9972	2.1000e-004	0.0000	4.0025
Worker	9.6000e-004	6.8000e-004	7.9200e-003	3.0000e-005	3.0100e-003	2.0000e-005	3.0300e-003	8.0000e-004	2.0000e-005	8.2000e-004	0.0000	2.4242	2.4242	6.0000e-005	0.0000	2.4256
Total	**1.3800e-003**	**0.0148**	**0.0122**	**8.0000e-005**	**4.4500e-003**	**4.0000e-005**	**4.5000e-003**	**1.2100e-003**	**4.0000e-005**	**1.2500e-003**	**0.0000**	**7.8387**	**7.8387**	**3.6000e-004**	**0.0000**	**7.8477**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	18.50	10.10	7.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.550151	0.042593	0.202457	0.116946	0.015037	0.005825	0.021699	0.034933	0.002123	0.001780	0.004876	0.000710	0.000868

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	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			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.0800e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	4.0800e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.6100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**4.0700e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.6100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**4.0700e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	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			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	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			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Fleming Tank and Pump Station Improvements Project

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	534	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Fleming Tank and Pump Station Improvements Project - South Coast AQMD Air District, Summer

Project Characteristics - In accordance with 2019 SCE Sustainability Report.

Land Use - Surrogate land use for estimating emissions.

Construction Phase - Based on applicant provided information.

Off-road Equipment - Based on applicant provided data.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Grading - Based on applicant provided information.

Trips and VMT - Based on applicant provided information.

On-road Fugitive Dust - CalEEMod defaults.

Vehicle Trips - No increase in operational mobile sources.

Consumer Products - CalEEMod defaults.

Landscape Equipment - No landscaping.

Energy Use - No net energy increase over existing.

Water And Wastewater - No increase in water use over existing.

Solid Waste - No increase in solid waste.

Construction Off-road Equipment Mitigation - In accordance with SCAQMD Rule 403.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	100.00	140.00
tblConstructionPhase	NumDays	2.00	40.00
tblConstructionPhase	NumDays	100.00	65.00

tblConstructionPhase	NumDays	5.00	90.00
tblConstructionPhase	NumDays	100.00	30.00
tblConstructionPhase	NumDays	10.00	15.00
tblConstructionPhase	NumDays	100.00	51.00
tblConstructionPhase	PhaseEndDate	6/28/2022	10/13/2022
tblConstructionPhase	PhaseEndDate	2/8/2022	3/31/2022
tblConstructionPhase	PhaseStartDate	2/9/2022	4/1/2022
tblConstructionPhase	PhaseStartDate	2/5/2022	2/4/2022
tblEnergyUse	LightingElect	2.93	0.00
tblEnergyUse	NT24E	5.02	0.00
tblEnergyUse	NT24NG	17.13	0.00
tblEnergyUse	T24E	2.20	0.00
tblEnergyUse	T24NG	15.36	0.00
tblGrading	MaterialImported	0.00	300.00
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors

Fleming Tank and Pump Station Improvements Project - South Coast AQMD Air District, Summer

tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	4.00	2.00
tblOffRoadEquipment	UsageHours	1.00	4.00

tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	6.00	1.00
tblOffRoadEquipment	UsageHours	4.00	2.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	2.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	702.44	534
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	1.24	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	32.00
tblTripsAndVMT	HaulingTripNumber	0.00	76.00
tblTripsAndVMT	HaulingTripNumber	0.00	80.00
tblTripsAndVMT	HaulingTripNumber	0.00	40.00
tblTripsAndVMT	HaulingTripNumber	0.00	40.00
tblTripsAndVMT	HaulingTripNumber	0.00	50.00
tblTripsAndVMT	HaulingTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00

tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	10.00	8.00
tblTripsAndVMT	WorkerTripNumber	0.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	0.00	8.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	10.00	8.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	231,250.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	0.7865	8.7155	5.2338	0.0144	3.4083	0.3401	3.7484	1.7304	0.3130	2.0434	0.0000	1,430.0762	1,430.0762	0.3402	0.0000	1,438.5806
2023	0.2598	2.5317	2.9662	8.6600e-003	0.3153	0.0782	0.3935	0.0844	0.0734	0.1577	0.0000	886.5485	886.5485	0.1379	0.0000	889.9947
Maximum	**0.7865**	**8.7155**	**5.2338**	**0.0144**	**3.4083**	**0.3401**	**3.7484**	**1.7304**	**0.3130**	**2.0434**	**0.0000**	**1,430.0762**	**1,430.0762**	**0.3402**	**0.0000**	**1,438.5806**

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					
2022	0.7865	8.7155	5.2338	0.0144	1.6424	0.3401	1.9825	0.8082	0.3130	1.1212	0.0000	1,430.0762	1,430.0762	0.3402	0.0000	1,438.5806
2023	0.2598	2.5317	2.9662	8.6600e-003	0.3153	0.0782	0.3935	0.0844	0.0734	0.1577	0.0000	886.5485	886.5485	0.1379	0.0000	889.9947
Maximum	**0.7865**	**8.7155**	**5.2338**	**0.0144**	**1.6424**	**0.3401**	**1.9825**	**0.8082**	**0.3130**	**1.1212**	**0.0000**	**1,430.0762**	**1,430.0762**	**0.3402**	**0.0000**	**1,438.5806**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**47.43**	**0.00**	**42.64**	**50.82**	**0.00**	**41.90**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-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
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-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	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-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
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Demolition (Phase 1)	Demolition	1/21/2022	2/3/2022	5	10	
2	Interim Grading and Shoring	Grading	2/4/2022	3/31/2022	5	40	
3	Tank Construction	Building Construction	4/1/2022	10/13/2022	5	140	
4	Pump Station, RMS Facility, and Storage Building	Building Construction	10/14/2022	1/12/2023	5	65	
5	Vault Construction Site Improvements, and Electrical Improvements	Paving	1/13/2023	5/18/2023	5	90	
6	Startup & Testing	Building Construction	5/19/2023	6/29/2023	5	30	
7	Site Demolition (Phase 2)	Demolition	6/30/2023	7/20/2023	5	15	
8	Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Building Construction	7/21/2023	9/29/2023	5	51	

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

Fleming Tank and Pump Station Improvements Project - South Coast AQMD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Vault Construction Site Improvements, and Electrical Improvements	Cement and Mortar Mixers	1	1.00	9	0.56
Site Demolition (Phase 2)	Concrete/Industrial Saws	0	8.00	81	0.73
Site Demolition (Phase 1)	Concrete/Industrial Saws	0	8.00	81	0.73
Interim Grading and Shoring	Concrete/Industrial Saws	0	8.00	81	0.73
Tank Construction	Cranes	1	2.00	231	0.29
Tank Construction	Forklifts	0	6.00	89	0.20
Pump Station, RMS Facility, and Storage Building	Cranes	1	2.00	231	0.29
Startup & Testing	Cranes	0	4.00	231	0.29
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Cranes	0	4.00	231	0.29
Site Demolition (Phase 1)	Rubber Tired Dozers	0	1.00	247	0.40
Interim Grading and Shoring	Rubber Tired Dozers	1	4.00	247	0.40
Tank Construction	Tractors/Loaders/Backhoes	1	1.00	97	0.37
Site Demolition (Phase 1)	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Interim Grading and Shoring	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Pump Station, RMS Facility, and Storage Building	Forklifts	0	6.00	89	0.20
Startup & Testing	Forklifts	0	6.00	89	0.20
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Forklifts	0	6.00	89	0.20
Vault Construction Site Improvements, and Electrical Improvements	Pavers	0	7.00	130	0.42
Vault Construction Site Improvements, and Electrical Improvements	Rollers	0	7.00	80	0.38
Site Demolition (Phase 2)	Rubber Tired Dozers	0	1.00	247	0.40
Pump Station, RMS Facility, and Storage Building	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Startup & Testing	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Tractors/Loaders/Backhoes	1	1.00	97	0.37

Site Demolition (Phase 2)	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Vault Construction Site Improvements, and Electrical Improvements	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Site Demolition (Phase 1)	Excavators	1	6.00	158	0.38
Interim Grading and Shoring	Graders	1	3.00	187	0.41
Interim Grading and Shoring	Excavators	1	4.00	158	0.38
Tank Construction	Excavators	1	1.00	158	0.38
Tank Construction	Air Compressors	1	1.00	78	0.48
Pump Station, RMS Facility, and Storage Building	Air Compressors	1	1.00	78	0.48
Pump Station, RMS Facility, and Storage Building	Cement and Mortar Mixers	1	3.00	9	0.56
Vault Construction Site Improvements, and Electrical Improvements	Air Compressors	1	1.00	78	0.48
Vault Construction Site Improvements, and Electrical Improvements	Paving Equipment	1	1.00	132	0.36
Site Demolition (Phase 2)	Excavators	1	3.00	158	0.38
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Air Compressors	1	1.00	78	0.48
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Cement and Mortar Mixers	1	1.00	9	0.56

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Demolition (Phase 1)	2	8.00	6.00	32.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Pump Station, RMS Facility, and Storage B	4	12.00	10.00	40.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Interim Grading and Shoring	4	8.00	6.00	76.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Tank Construction	4	12.00	10.00	80.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Startup & Testing	0	6.00	6.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Construct Storage Building, and Install Di	3	8.00	6.00	40.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Demolition (Phase 2)	2	8.00	6.00	50.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Vault Construction Site Improvements, an	4	8.00	6.00	40.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Demolition (Phase 1) - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1930	1.7516	3.0008	4.6500e-003		0.0870	0.0870		0.0800	0.0800		450.3212	450.3212	0.1456		453.9623
Total	**0.1930**	**1.7516**	**3.0008**	**4.6500e-003**		**0.0870**	**0.0870**		**0.0800**	**0.0800**		**450.3212**	**450.3212**	**0.1456**		**453.9623**

3.2 Site Demolition (Phase 1) - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0221	0.7480	0.1694	2.4200e-003	0.0559	2.1600e-003	0.0581	0.0153	2.0600e-003	0.0174		262.3216	262.3216	0.0174		262.7563
Vendor	0.0169	0.5713	0.1369	1.6900e-003	0.0439	1.1300e-003	0.0451	0.0127	1.0800e-003	0.0137		180.0659	180.0659	0.0101		180.3186
Worker	0.0400	0.0260	0.3665	1.1500e-003	0.1204	8.4000e-004	0.1213	0.0319	7.8000e-004	0.0327		114.4547	114.4547	2.8500e-003		114.5260
Total	**0.0789**	**1.3454**	**0.6728**	**5.2600e-003**	**0.2203**	**4.1300e-003**	**0.2244**	**0.0599**	**3.9200e-003**	**0.0638**		**556.8421**	**556.8421**	**0.0304**		**557.6010**

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	0.1930	1.7516	3.0008	4.6500e-003		0.0870	0.0870		0.0800	0.0800	0.0000	450.3212	450.3212	0.1456		453.9623
Total	**0.1930**	**1.7516**	**3.0008**	**4.6500e-003**		**0.0870**	**0.0870**		**0.0800**	**0.0800**	**0.0000**	**450.3212**	**450.3212**	**0.1456**		**453.9623**

3.2 Site Demolition (Phase 1) - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0221	0.7480	0.1694	2.4200e-003	0.0559	2.1600e-003	0.0581	0.0153	2.0600e-003	0.0174		262.3216	262.3216	0.0174		262.7563
Vendor	0.0169	0.5713	0.1369	1.6900e-003	0.0439	1.1300e-003	0.0451	0.0127	1.0800e-003	0.0137		180.0659	180.0659	0.0101		180.3186
Worker	0.0400	0.0260	0.3665	1.1500e-003	0.1204	8.4000e-004	0.1213	0.0319	7.8000e-004	0.0327		114.4547	114.4547	2.8500e-003		114.5260
Total	**0.0789**	**1.3454**	**0.6728**	**5.2600e-003**	**0.2203**	**4.1300e-003**	**0.2244**	**0.0599**	**3.9200e-003**	**0.0638**		**556.8421**	**556.8421**	**0.0304**		**557.6010**

3.3 Interim Grading and Shoring - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.2107	0.0000	3.2107	1.6767	0.0000	1.6767			0.0000			0.0000
Off-Road	0.7166	7.6740	4.6298	0.0101		0.3369	0.3369		0.3099	0.3099		979.8022	979.8022	0.3169		987.7244
Total	**0.7166**	**7.6740**	**4.6298**	**0.0101**	**3.2107**	**0.3369**	**3.5476**	**1.6767**	**0.3099**	**1.9867**		**979.8022**	**979.8022**	**0.3169**		**987.7244**

3.3 Interim Grading and Shoring - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0131	0.4441	0.1006	1.4400e-003	0.0332	1.2800e-003	0.0345	9.1000e-003	1.2300e-003	0.0103		155.7534	155.7534	0.0103		156.0116
Vendor	0.0169	0.5713	0.1369	1.6900e-003	0.0439	1.1300e-003	0.0451	0.0127	1.0800e-003	0.0137		180.0659	180.0659	0.0101		180.3186
Worker	0.0400	0.0260	0.3665	1.1500e-003	0.1204	8.4000e-004	0.1213	0.0319	7.8000e-004	0.0327		114.4547	114.4547	2.8500e-003		114.5260
Total	**0.0699**	**1.0415**	**0.6040**	**4.2800e-003**	**0.1976**	**3.2500e-003**	**0.2008**	**0.0537**	**3.0900e-003**	**0.0568**		**450.2740**	**450.2740**	**0.0233**		**450.8562**

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					1.4448	0.0000	1.4448	0.7545	0.0000	0.7545			0.0000			0.0000
Off-Road	0.7166	7.6740	4.6298	0.0101		0.3369	0.3369		0.3099	0.3099	0.0000	979.8022	979.8022	0.3169		987.7244
Total	**0.7166**	**7.6740**	**4.6298**	**0.0101**	**1.4448**	**0.3369**	**1.7817**	**0.7545**	**0.3099**	**1.0645**	**0.0000**	**979.8022**	**979.8022**	**0.3169**		**987.7244**

3.3 Interim Grading and Shoring - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0131	0.4441	0.1006	1.4400e-003	0.0332	1.2800e-003	0.0345	9.1000e-003	1.2300e-003	0.0103		155.7534	155.7534	0.0103		156.0116
Vendor	0.0169	0.5713	0.1369	1.6900e-003	0.0439	1.1300e-003	0.0451	0.0127	1.0800e-003	0.0137		180.0659	180.0659	0.0101		180.3186
Worker	0.0400	0.0260	0.3665	1.1500e-003	0.1204	8.4000e-004	0.1213	0.0319	7.8000e-004	0.0327		114.4547	114.4547	2.8500e-003		114.5260
Total	**0.0699**	**1.0415**	**0.6040**	**4.2800e-003**	**0.1976**	**3.2500e-003**	**0.2008**	**0.0537**	**3.0900e-003**	**0.0568**		**450.2740**	**450.2740**	**0.0233**		**450.8562**

3.4 Tank Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1734	1.7135	1.4640	2.9800e-003		0.0791	0.0791		0.0739	0.0739		287.0849	287.0849	0.0807		289.1032
Total	**0.1734**	**1.7135**	**1.4640**	**2.9800e-003**		**0.0791**	**0.0791**		**0.0739**	**0.0739**		**287.0849**	**287.0849**	**0.0807**		**289.1032**

3.4 Tank Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.9400e-003	0.1336	0.0303	4.3000e-004	9.9800e-003	3.9000e-004	0.0104	2.7400e-003	3.7000e-004	3.1000e-003		46.8431	46.8431	3.1100e-003		46.9208
Vendor	0.0281	0.9522	0.2282	2.8100e-003	0.0732	1.8800e-003	0.0751	0.0211	1.8000e-003	0.0229		300.1098	300.1098	0.0169		300.5311
Worker	0.0599	0.0391	0.5497	1.7200e-003	0.1806	1.2700e-003	0.1819	0.0479	1.1700e-003	0.0491		171.6820	171.6820	4.2800e-003		171.7891
Total	**0.0920**	**1.1248**	**0.8082**	**4.9600e-003**	**0.2639**	**3.5400e-003**	**0.2674**	**0.0717**	**3.3400e-003**	**0.0750**		**518.6349**	**518.6349**	**0.0242**		**519.2409**

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	0.1734	1.7135	1.4640	2.9800e-003		0.0791	0.0791		0.0739	0.0739	0.0000	287.0849	287.0849	0.0807		289.1032
Total	**0.1734**	**1.7135**	**1.4640**	**2.9800e-003**		**0.0791**	**0.0791**		**0.0739**	**0.0739**	**0.0000**	**287.0849**	**287.0849**	**0.0807**		**289.1032**

3.4 Tank Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.9400e-003	0.1336	0.0303	4.3000e-004	9.9800e-003	3.9000e-004	0.0104	2.7400e-003	3.7000e-004	3.1000e-003		46.8431	46.8431	3.1100e-003		46.9208
Vendor	0.0281	0.9522	0.2282	2.8100e-003	0.0732	1.8800e-003	0.0751	0.0211	1.8000e-003	0.0229		300.1098	300.1098	0.0169		300.5311
Worker	0.0599	0.0391	0.5497	1.7200e-003	0.1806	1.2700e-003	0.1819	0.0479	1.1700e-003	0.0491		171.6820	171.6820	4.2800e-003		171.7891
Total	**0.0920**	**1.1248**	**0.8082**	**4.9600e-003**	**0.2639**	**3.5400e-003**	**0.2674**	**0.0717**	**3.3400e-003**	**0.0750**		**518.6349**	**518.6349**	**0.0242**		**519.2409**

3.5 Pump Station, RMS Facility, and Storage Building - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1906	1.8378	1.4505	2.9800e-003		0.0850	0.0850		0.0797	0.0797		280.8690	280.8690	0.0746		282.7330
Total	**0.1906**	**1.8378**	**1.4505**	**2.9800e-003**		**0.0850**	**0.0850**		**0.0797**	**0.0797**		**280.8690**	**280.8690**	**0.0746**		**282.7330**

3.5 Pump Station, RMS Facility, and Storage Building - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.2400e-003	0.1439	0.0326	4.7000e-004	0.0121	4.1000e-004	0.0125	3.2700e-003	4.0000e-004	3.6600e-003		50.4465	50.4465	3.3400e-003		50.5301
Vendor	0.0281	0.9522	0.2282	2.8100e-003	0.0732	1.8800e-003	0.0751	0.0211	1.8000e-003	0.0229		300.1098	300.1098	0.0169		300.5311
Worker	0.0599	0.0391	0.5497	1.7200e-003	0.1806	1.2700e-003	0.1819	0.0479	1.1700e-003	0.0491		171.6820	171.6820	4.2800e-003		171.7891
Total	**0.0923**	**1.1351**	**0.8105**	**5.0000e-003**	**0.2659**	**3.5600e-003**	**0.2695**	**0.0723**	**3.3700e-003**	**0.0756**		**522.2383**	**522.2383**	**0.0245**		**522.8502**

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	0.1906	1.8378	1.4505	2.9800e-003		0.0850	0.0850		0.0797	0.0797	0.0000	280.8690	280.8690	0.0746		282.7330
Total	**0.1906**	**1.8378**	**1.4505**	**2.9800e-003**		**0.0850**	**0.0850**		**0.0797**	**0.0797**	**0.0000**	**280.8690**	**280.8690**	**0.0746**		**282.7330**

3.5 Pump Station, RMS Facility, and Storage Building - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.2400e-003	0.1439	0.0326	4.7000e-004	0.0121	4.1000e-004	0.0125	3.2700e-003	4.0000e-004	3.6600e-003		50.4465	50.4465	3.3400e-003		50.5301
Vendor	0.0281	0.9522	0.2282	2.8100e-003	0.0732	1.8800e-003	0.0751	0.0211	1.8000e-003	0.0229		300.1098	300.1098	0.0169		300.5311
Worker	0.0599	0.0391	0.5497	1.7200e-003	0.1806	1.2700e-003	0.1819	0.0479	1.1700e-003	0.0491		171.6820	171.6820	4.2800e-003		171.7891
Total	**0.0923**	**1.1351**	**0.8105**	**5.0000e-003**	**0.2659**	**3.5600e-003**	**0.2695**	**0.0723**	**3.3700e-003**	**0.0756**		**522.2383**	**522.2383**	**0.0245**		**522.8502**

3.5 Pump Station, RMS Facility, and Storage Building - 2023

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	0.1797	1.6930	1.4339	2.9800e-003		0.0760	0.0760		0.0713	0.0713		280.9506	280.9506	0.0743		282.8091
Total	**0.1797**	**1.6930**	**1.4339**	**2.9800e-003**		**0.0760**	**0.0760**		**0.0713**	**0.0713**		**280.9506**	**280.9506**	**0.0743**		**282.8091**

3.5 Pump Station, RMS Facility, and Storage Building - 2023

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	2.8000e-003	0.0931	0.0297	4.5000e-004	0.0614	1.7000e-004	0.0616	0.0154	1.7000e-004	0.0155		48.4454	48.4454	3.0800e-003		48.5223
Vendor	0.0209	0.7102	0.2057	2.7200e-003	0.0732	8.7000e-004	0.0741	0.0211	8.3000e-004	0.0219		291.1378	291.1378	0.0148		291.5077
Worker	0.0564	0.0354	0.5079	1.6600e-003	0.1806	1.2300e-003	0.1819	0.0479	1.1400e-003	0.0490		165.2816	165.2816	3.8600e-003		165.3782
Total	**0.0801**	**0.8386**	**0.7432**	**4.8300e-003**	**0.3153**	**2.2700e-003**	**0.3175**	**0.0844**	**2.1400e-003**	**0.0865**		**504.8648**	**504.8648**	**0.0217**		**505.4082**

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	0.1797	1.6930	1.4339	2.9800e-003		0.0760	0.0760		0.0713	0.0713	0.0000	280.9506	280.9506	0.0743		282.8091
Total	**0.1797**	**1.6930**	**1.4339**	**2.9800e-003**		**0.0760**	**0.0760**		**0.0713**	**0.0713**	**0.0000**	**280.9506**	**280.9506**	**0.0743**		**282.8091**

3.5 Pump Station, RMS Facility, and Storage Building - 2023

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	2.8000e-003	0.0931	0.0297	4.5000e-004	0.0614	1.7000e-004	0.0616	0.0154	1.7000e-004	0.0155		48.4454	48.4454	3.0800e-003		48.5223
Vendor	0.0209	0.7102	0.2057	2.7200e-003	0.0732	8.7000e-004	0.0741	0.0211	8.3000e-004	0.0219		291.1378	291.1378	0.0148		291.5077
Worker	0.0564	0.0354	0.5079	1.6600e-003	0.1806	1.2300e-003	0.1819	0.0479	1.1400e-003	0.0490		165.2816	165.2816	3.8600e-003		165.3782
Total	**0.0801**	**0.8386**	**0.7432**	**4.8300e-003**	**0.3153**	**2.2700e-003**	**0.3175**	**0.0844**	**2.1400e-003**	**0.0865**		**504.8648**	**504.8648**	**0.0217**		**505.4082**

3.6 Vault Construction Site Improvements, and Electrical Improvements - 2023

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	0.0982	0.8448	1.2135	1.8700e-003		0.0422	0.0422		0.0399	0.0399		177.2539	177.2539	0.0436		178.3433
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0982**	**0.8448**	**1.2135**	**1.8700e-003**		**0.0422**	**0.0422**		**0.0399**	**0.0399**		**177.2539**	**177.2539**	**0.0436**		**178.3433**

3.6 Vault Construction Site Improvements, and Electrical Improvements - 2023

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	2.0300e-003	0.0672	0.0214	3.2000e-004	7.7700e-003	1.2000e-004	7.8900e-003	2.1300e-003	1.2000e-004	2.2500e-003		34.9883	34.9883	2.2200e-003		35.0439
Vendor	0.0125	0.4261	0.1234	1.6300e-003	0.0439	5.2000e-004	0.0445	0.0127	5.0000e-004	0.0131		174.6827	174.6827	8.8800e-003		174.9046
Worker	0.0376	0.0236	0.3386	1.1100e-003	0.1204	8.2000e-004	0.1212	0.0319	7.6000e-004	0.0327		110.1877	110.1877	2.5700e-003		110.2521
Total	**0.0522**	**0.5169**	**0.4834**	**3.0600e-003**	**0.1721**	**1.4600e-003**	**0.1736**	**0.0467**	**1.3800e-003**	**0.0481**		**319.8588**	**319.8588**	**0.0137**		**320.2006**

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	0.0982	0.8448	1.2135	1.8700e-003		0.0422	0.0422		0.0399	0.0399	0.0000	177.2539	177.2539	0.0436		178.3433
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0982**	**0.8448**	**1.2135**	**1.8700e-003**		**0.0422**	**0.0422**		**0.0399**	**0.0399**	**0.0000**	**177.2539**	**177.2539**	**0.0436**		**178.3433**

3.6 Vault Construction Site Improvements, and Electrical Improvements - 2023

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	2.0300e-003	0.0672	0.0214	3.2000e-004	7.7700e-003	1.2000e-004	7.8900e-003	2.1300e-003	1.2000e-004	2.2500e-003		34.9883	34.9883	2.2200e-003		35.0439
Vendor	0.0125	0.4261	0.1234	1.6300e-003	0.0439	5.2000e-004	0.0445	0.0127	5.0000e-004	0.0131		174.6827	174.6827	8.8800e-003		174.9046
Worker	0.0376	0.0236	0.3386	1.1100e-003	0.1204	8.2000e-004	0.1212	0.0319	7.6000e-004	0.0327		110.1877	110.1877	2.5700e-003		110.2521
Total	**0.0522**	**0.5169**	**0.4834**	**3.0600e-003**	**0.1721**	**1.4600e-003**	**0.1736**	**0.0467**	**1.3800e-003**	**0.0481**		**319.8588**	**319.8588**	**0.0137**		**320.2006**

3.7 Startup & Testing - 2023

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	0.0000	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**

3.7 Startup & Testing - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0125	0.4261	0.1234	1.6300e-003	0.0439	5.2000e-004	0.0445	0.0127	5.0000e-004	0.0131		174.6827	174.6827	8.8800e-003		174.9046
Worker	0.0282	0.0177	0.2539	8.3000e-004	0.0903	6.2000e-004	0.0909	0.0240	5.7000e-004	0.0245		82.6408	82.6408	1.9300e-003		82.6891
Total	**0.0408**	**0.4438**	**0.3774**	**2.4600e-003**	**0.1343**	**1.1400e-003**	**0.1354**	**0.0366**	**1.0700e-003**	**0.0377**		**257.3235**	**257.3235**	**0.0108**		**257.5937**

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	0.0000	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**

3.7 Startup & Testing - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0125	0.4261	0.1234	1.6300e-003	0.0439	5.2000e-004	0.0445	0.0127	5.0000e-004	0.0131		174.6827	174.6827	8.8800e-003		174.9046
Worker	0.0282	0.0177	0.2539	8.3000e-004	0.0903	6.2000e-004	0.0909	0.0240	5.7000e-004	0.0245		82.6408	82.6408	1.9300e-003		82.6891
Total	**0.0408**	**0.4438**	**0.3774**	**2.4600e-003**	**0.1343**	**1.1400e-003**	**0.1354**	**0.0366**	**1.0700e-003**	**0.0377**		**257.3235**	**257.3235**	**0.0108**		**257.5937**

3.8 Site Demolition (Phase 2) - 2023

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	0.1468	1.3515	2.3434	3.5000e-003		0.0665	0.0665		0.0612	0.0612		339.2656	339.2656	0.1097		342.0087
Total	**0.1468**	**1.3515**	**2.3434**	**3.5000e-003**		**0.0665**	**0.0665**		**0.0612**	**0.0612**		**339.2656**	**339.2656**	**0.1097**		**342.0087**

3.8 Site Demolition (Phase 2) - 2023

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	0.0152	0.5041	0.1608	2.4200e-003	0.0582	9.3000e-004	0.0592	0.0160	8.9000e-004	0.0169		262.4125	262.4125	0.0167		262.8293
Vendor	0.0125	0.4261	0.1234	1.6300e-003	0.0439	5.2000e-004	0.0445	0.0127	5.0000e-004	0.0131		174.6827	174.6827	8.8800e-003		174.9046
Worker	0.0376	0.0236	0.3386	1.1100e-003	0.1204	8.2000e-004	0.1212	0.0319	7.6000e-004	0.0327		110.1877	110.1877	2.5700e-003		110.2521
Total	**0.0653**	**0.9538**	**0.6228**	**5.1600e-003**	**0.2226**	**2.2700e-003**	**0.2249**	**0.0605**	**2.1500e-003**	**0.0627**		**547.2830**	**547.2830**	**0.0281**		**547.9860**

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	0.1468	1.3515	2.3434	3.5000e-003		0.0665	0.0665		0.0612	0.0612	0.0000	339.2656	339.2656	0.1097		342.0087
Total	**0.1468**	**1.3515**	**2.3434**	**3.5000e-003**		**0.0665**	**0.0665**		**0.0612**	**0.0612**	**0.0000**	**339.2656**	**339.2656**	**0.1097**		**342.0087**

3.8 Site Demolition (Phase 2) - 2023

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	0.0152	0.5041	0.1608	2.4200e-003	0.0582	9.3000e-004	0.0592	0.0160	8.9000e-004	0.0169		262.4125	262.4125	0.0167		262.8293
Vendor	0.0125	0.4261	0.1234	1.6300e-003	0.0439	5.2000e-004	0.0445	0.0127	5.0000e-004	0.0131		174.6827	174.6827	8.8800e-003		174.9046
Worker	0.0376	0.0236	0.3386	1.1100e-003	0.1204	8.2000e-004	0.1212	0.0319	7.6000e-004	0.0327		110.1877	110.1877	2.5700e-003		110.2521
Total	**0.0653**	**0.9538**	**0.6228**	**5.1600e-003**	**0.2226**	**2.2700e-003**	**0.2249**	**0.0605**	**2.1500e-003**	**0.0627**		**547.2830**	**547.2830**	**0.0281**		**547.9860**

3.9 Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank - 2023

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	0.0582	0.4552	0.6193	9.7000e-004		0.0231	0.0231		0.0223	0.0223		90.9196	90.9196	0.0157		91.3110
Total	**0.0582**	**0.4552**	**0.6193**	**9.7000e-004**		**0.0231**	**0.0231**		**0.0223**	**0.0223**		**90.9196**	**90.9196**	**0.0157**		**91.3110**

3.9 Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank - 2023

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	3.5700e-003	0.1186	0.0378	5.7000e-004	0.0137	2.2000e-004	0.0139	3.7600e-003	2.1000e-004	3.9700e-003		61.7441	61.7441	3.9200e-003		61.8422
Vendor	0.0125	0.4261	0.1234	1.6300e-003	0.0439	5.2000e-004	0.0445	0.0127	5.0000e-004	0.0131		174.6827	174.6827	8.8800e-003		174.9046
Worker	0.0376	0.0236	0.3386	1.1100e-003	0.1204	8.2000e-004	0.1212	0.0319	7.6000e-004	0.0327		110.1877	110.1877	2.5700e-003		110.2521
Total	**0.0537**	**0.5683**	**0.4998**	**3.3100e-003**	**0.1781**	**1.5600e-003**	**0.1796**	**0.0483**	**1.4700e-003**	**0.0498**		**346.6146**	**346.6146**	**0.0154**		**346.9989**

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	0.0582	0.4552	0.6193	9.7000e-004		0.0231	0.0231		0.0223	0.0223	0.0000	90.9196	90.9196	0.0157		91.3110
Total	**0.0582**	**0.4552**	**0.6193**	**9.7000e-004**		**0.0231**	**0.0231**		**0.0223**	**0.0223**	**0.0000**	**90.9196**	**90.9196**	**0.0157**		**91.3110**

3.9 Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank - 2023

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	3.5700e-003	0.1186	0.0378	5.7000e-004	0.0137	2.2000e-004	0.0139	3.7600e-003	2.1000e-004	3.9700e-003		61.7441	61.7441	3.9200e-003		61.8422
Vendor	0.0125	0.4261	0.1234	1.6300e-003	0.0439	5.2000e-004	0.0445	0.0127	5.0000e-004	0.0131		174.6827	174.6827	8.8800e-003		174.9046
Worker	0.0376	0.0236	0.3386	1.1100e-003	0.1204	8.2000e-004	0.1212	0.0319	7.6000e-004	0.0327		110.1877	110.1877	2.5700e-003		110.2521
Total	**0.0537**	**0.5683**	**0.4998**	**3.3100e-003**	**0.1781**	**1.5600e-003**	**0.1796**	**0.0483**	**1.4700e-003**	**0.0498**		**346.6146**	**346.6146**	**0.0154**		**346.9989**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	18.50	10.10	7.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.550151	0.042593	0.202457	0.116946	0.015037	0.005825	0.021699	0.034933	0.002123	0.001780	0.004876	0.000710	0.000868

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					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	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	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Fleming Tank and Pump Station Improvements Project

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	534	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - In accordance with 2019 SCE Sustainability Report.

Land Use - Surrogate land use for estimating emissions.

Construction Phase - Based on applicant provided information.

Off-road Equipment - Based on applicant provided data.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Grading - Based on applicant provided information.

Trips and VMT - Based on applicant provided information.

On-road Fugitive Dust - CalEEMod defaults.

Vehicle Trips - No increase in operational mobile sources.

Consumer Products - CalEEMod defaults.

Landscape Equipment - No landscaping.

Energy Use - No net energy increase over existing.

Water And Wastewater - No increase in water use over existing.

Solid Waste - No increase in solid waste.

Construction Off-road Equipment Mitigation - In accordance with SCAQMD Rule 403.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	100.00	140.00
tblConstructionPhase	NumDays	2.00	40.00
tblConstructionPhase	NumDays	100.00	65.00

tblConstructionPhase	NumDays	5.00	90.00
tblConstructionPhase	NumDays	100.00	30.00
tblConstructionPhase	NumDays	10.00	15.00
tblConstructionPhase	NumDays	100.00	51.00
tblConstructionPhase	PhaseEndDate	6/28/2022	10/13/2022
tblConstructionPhase	PhaseEndDate	2/8/2022	3/31/2022
tblConstructionPhase	PhaseStartDate	2/9/2022	4/1/2022
tblConstructionPhase	PhaseStartDate	2/5/2022	2/4/2022
tblEnergyUse	LightingElect	2.93	0.00
tblEnergyUse	NT24E	5.02	0.00
tblEnergyUse	NT24NG	17.13	0.00
tblEnergyUse	T24E	2.20	0.00
tblEnergyUse	T24NG	15.36	0.00
tblGrading	MaterialImported	0.00	300.00
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors

Fleming Tank and Pump Station Improvements Project - South Coast AQMD Air District, Winter

tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	4.00	2.00
tblOffRoadEquipment	UsageHours	1.00	4.00

tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	6.00	1.00
tblOffRoadEquipment	UsageHours	4.00	2.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	2.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	702.44	534
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	1.24	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	32.00
tblTripsAndVMT	HaulingTripNumber	0.00	76.00
tblTripsAndVMT	HaulingTripNumber	0.00	80.00
tblTripsAndVMT	HaulingTripNumber	0.00	40.00
tblTripsAndVMT	HaulingTripNumber	0.00	40.00
tblTripsAndVMT	HaulingTripNumber	0.00	50.00
tblTripsAndVMT	HaulingTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00

tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	10.00	8.00
tblTripsAndVMT	WorkerTripNumber	0.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	0.00	8.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	10.00	8.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	231,250.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	0.7921	8.7217	5.2160	0.0142	3.4083	0.3402	3.7485	1.7304	0.3131	2.0435	0.0000	1,415.0095	1,415.0095	0.3411	0.0000	1,423.5368
2023	0.2674	2.5321	2.9482	8.4900e-003	0.3153	0.0783	0.3935	0.0844	0.0734	0.1578	0.0000	870.0165	870.0165	0.1388	0.0000	873.4859
Maximum	**0.7921**	**8.7217**	**5.2160**	**0.0142**	**3.4083**	**0.3402**	**3.7485**	**1.7304**	**0.3131**	**2.0435**	**0.0000**	**1,415.0095**	**1,415.0095**	**0.3411**	**0.0000**	**1,423.5368**

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					
2022	0.7921	8.7217	5.2160	0.0142	1.6424	0.3402	1.9826	0.8082	0.3131	1.1213	0.0000	1,415.0095	1,415.0095	0.3411	0.0000	1,423.5368
2023	0.2674	2.5321	2.9482	8.4900e-003	0.3153	0.0783	0.3935	0.0844	0.0734	0.1578	0.0000	870.0165	870.0165	0.1388	0.0000	873.4859
Maximum	**0.7921**	**8.7217**	**5.2160**	**0.0142**	**1.6424**	**0.3402**	**1.9826**	**0.8082**	**0.3131**	**1.1213**	**0.0000**	**1,415.0095**	**1,415.0095**	**0.3411**	**0.0000**	**1,423.5368**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**47.43**	**0.00**	**42.63**	**50.82**	**0.00**	**41.89**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-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
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-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	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-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
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Demolition (Phase 1)	Demolition	1/21/2022	2/3/2022	5	10	
2	Interim Grading and Shoring	Grading	2/4/2022	3/31/2022	5	40	
3	Tank Construction	Building Construction	4/1/2022	10/13/2022	5	140	
4	Pump Station, RMS Facility, and Storage Building	Building Construction	10/14/2022	1/12/2023	5	65	
5	Vault Construction Site Improvements, and Electrical Improvements	Paving	1/13/2023	5/18/2023	5	90	
6	Startup & Testing	Building Construction	5/19/2023	6/29/2023	5	30	
7	Site Demolition (Phase 2)	Demolition	6/30/2023	7/20/2023	5	15	
8	Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Building Construction	7/21/2023	9/29/2023	5	51	

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

Fleming Tank and Pump Station Improvements Project - South Coast AQMD Air District, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Vault Construction Site Improvements, and Electrical Improvements	Cement and Mortar Mixers	1	1.00	9	0.56
Site Demolition (Phase 2)	Concrete/Industrial Saws	0	8.00	81	0.73
Site Demolition (Phase 1)	Concrete/Industrial Saws	0	8.00	81	0.73
Interim Grading and Shoring	Concrete/Industrial Saws	0	8.00	81	0.73
Tank Construction	Cranes	1	2.00	231	0.29
Tank Construction	Forklifts	0	6.00	89	0.20
Pump Station, RMS Facility, and Storage Building	Cranes	1	2.00	231	0.29
Startup & Testing	Cranes	0	4.00	231	0.29
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Cranes	0	4.00	231	0.29
Site Demolition (Phase 1)	Rubber Tired Dozers	0	1.00	247	0.40
Interim Grading and Shoring	Rubber Tired Dozers	1	4.00	247	0.40
Tank Construction	Tractors/Loaders/Backhoes	1	1.00	97	0.37
Site Demolition (Phase 1)	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Interim Grading and Shoring	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Pump Station, RMS Facility, and Storage Building	Forklifts	0	6.00	89	0.20
Startup & Testing	Forklifts	0	6.00	89	0.20
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Forklifts	0	6.00	89	0.20
Vault Construction Site Improvements, and Electrical Improvements	Pavers	0	7.00	130	0.42
Vault Construction Site Improvements, and Electrical Improvements	Rollers	0	7.00	80	0.38
Site Demolition (Phase 2)	Rubber Tired Dozers	0	1.00	247	0.40
Pump Station, RMS Facility, and Storage Building	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Startup & Testing	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Tractors/Loaders/Backhoes	1	1.00	97	0.37

Site Demolition (Phase 2)	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Vault Construction Site Improvements, and Electrical Improvements	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Site Demolition (Phase 1)	Excavators	1	6.00	158	0.38
Interim Grading and Shoring	Graders	1	3.00	187	0.41
Interim Grading and Shoring	Excavators	1	4.00	158	0.38
Tank Construction	Excavators	1	1.00	158	0.38
Tank Construction	Air Compressors	1	1.00	78	0.48
Pump Station, RMS Facility, and Storage Building	Air Compressors	1	1.00	78	0.48
Pump Station, RMS Facility, and Storage Building	Cement and Mortar Mixers	1	3.00	9	0.56
Vault Construction Site Improvements, and Electrical Improvements	Air Compressors	1	1.00	78	0.48
Vault Construction Site Improvements, and Electrical Improvements	Paving Equipment	1	1.00	132	0.36
Site Demolition (Phase 2)	Excavators	1	3.00	158	0.38
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Air Compressors	1	1.00	78	0.48
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Cement and Mortar Mixers	1	1.00	9	0.56

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Demolition (Phase 1)	2	8.00	6.00	32.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Pump Station, RMS Facility, and Storage B	4	12.00	10.00	40.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Interim Grading and Shoring	4	8.00	6.00	76.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Tank Construction	4	12.00	10.00	80.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Startup & Testing	0	6.00	6.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Construct Storage Building, and Install Di	3	8.00	6.00	40.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Demolition (Phase 2)	2	8.00	6.00	50.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Vault Construction Site Improvements, an	4	8.00	6.00	40.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Demolition (Phase 1) - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1930	1.7516	3.0008	4.6500e-003		0.0870	0.0870		0.0800	0.0800		450.3212	450.3212	0.1456		453.9623
Total	**0.1930**	**1.7516**	**3.0008**	**4.6500e-003**		**0.0870**	**0.0870**		**0.0800**	**0.0800**		**450.3212**	**450.3212**	**0.1456**		**453.9623**

3.2 Site Demolition (Phase 1) - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0227	0.7560	0.1814	2.3800e-003	0.0559	2.1900e-003	0.0581	0.0153	2.1000e-003	0.0174		257.4283	257.4283	0.0181		257.8808
Vendor	0.0177	0.5703	0.1522	1.6400e-003	0.0439	1.1600e-003	0.0451	0.0127	1.1100e-003	0.0138		175.3469	175.3469	0.0108		175.6171
Worker	0.0444	0.0285	0.3262	1.0700e-003	0.1204	8.4000e-004	0.1213	0.0319	7.8000e-004	0.0327		107.0124	107.0124	2.6500e-003		107.0786
Total	**0.0847**	**1.3549**	**0.6599**	**5.0900e-003**	**0.2203**	**4.1900e-003**	**0.2245**	**0.0599**	**3.9900e-003**	**0.0639**		**539.7875**	**539.7875**	**0.0316**		**540.5765**

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	0.1930	1.7516	3.0008	4.6500e-003		0.0870	0.0870		0.0800	0.0800	0.0000	450.3212	450.3212	0.1456		453.9623
Total	**0.1930**	**1.7516**	**3.0008**	**4.6500e-003**		**0.0870**	**0.0870**		**0.0800**	**0.0800**	**0.0000**	**450.3212**	**450.3212**	**0.1456**		**453.9623**

3.2 Site Demolition (Phase 1) - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0227	0.7560	0.1814	2.3800e-003	0.0559	2.1900e-003	0.0581	0.0153	2.1000e-003	0.0174		257.4283	257.4283	0.0181		257.8808
Vendor	0.0177	0.5703	0.1522	1.6400e-003	0.0439	1.1600e-003	0.0451	0.0127	1.1100e-003	0.0138		175.3469	175.3469	0.0108		175.6171
Worker	0.0444	0.0285	0.3262	1.0700e-003	0.1204	8.4000e-004	0.1213	0.0319	7.8000e-004	0.0327		107.0124	107.0124	2.6500e-003		107.0786
Total	**0.0847**	**1.3549**	**0.6599**	**5.0900e-003**	**0.2203**	**4.1900e-003**	**0.2245**	**0.0599**	**3.9900e-003**	**0.0639**		**539.7875**	**539.7875**	**0.0316**		**540.5765**

3.3 Interim Grading and Shoring - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.2107	0.0000	3.2107	1.6767	0.0000	1.6767			0.0000			0.0000
Off-Road	0.7166	7.6740	4.6298	0.0101		0.3369	0.3369		0.3099	0.3099		979.8022	979.8022	0.3169		987.7244
Total	**0.7166**	**7.6740**	**4.6298**	**0.0101**	**3.2107**	**0.3369**	**3.5476**	**1.6767**	**0.3099**	**1.9867**		**979.8022**	**979.8022**	**0.3169**		**987.7244**

3.3 Interim Grading and Shoring - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0135	0.4489	0.1077	1.4100e-003	0.0332	1.3000e-003	0.0345	9.1000e-003	1.2500e-003	0.0103		152.8480	152.8480	0.0108		153.1167
Vendor	0.0177	0.5703	0.1522	1.6400e-003	0.0439	1.1600e-003	0.0451	0.0127	1.1100e-003	0.0138		175.3469	175.3469	0.0108		175.6171
Worker	0.0444	0.0285	0.3262	1.0700e-003	0.1204	8.4000e-004	0.1213	0.0319	7.8000e-004	0.0327		107.0124	107.0124	2.6500e-003		107.0786
Total	**0.0755**	**1.0477**	**0.5862**	**4.1200e-003**	**0.1976**	**3.3000e-003**	**0.2009**	**0.0537**	**3.1400e-003**	**0.0568**		**435.2073**	**435.2073**	**0.0242**		**435.8124**

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					1.4448	0.0000	1.4448	0.7545	0.0000	0.7545			0.0000			0.0000
Off-Road	0.7166	7.6740	4.6298	0.0101		0.3369	0.3369		0.3099	0.3099	0.0000	979.8022	979.8022	0.3169		987.7244
Total	**0.7166**	**7.6740**	**4.6298**	**0.0101**	**1.4448**	**0.3369**	**1.7817**	**0.7545**	**0.3099**	**1.0645**	**0.0000**	**979.8022**	**979.8022**	**0.3169**		**987.7244**

3.3 Interim Grading and Shoring - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0135	0.4489	0.1077	1.4100e-003	0.0332	1.3000e-003	0.0345	9.1000e-003	1.2500e-003	0.0103		152.8480	152.8480	0.0108		153.1167
Vendor	0.0177	0.5703	0.1522	1.6400e-003	0.0439	1.1600e-003	0.0451	0.0127	1.1100e-003	0.0138		175.3469	175.3469	0.0108		175.6171
Worker	0.0444	0.0285	0.3262	1.0700e-003	0.1204	8.4000e-004	0.1213	0.0319	7.8000e-004	0.0327		107.0124	107.0124	2.6500e-003		107.0786
Total	**0.0755**	**1.0477**	**0.5862**	**4.1200e-003**	**0.1976**	**3.3000e-003**	**0.2009**	**0.0537**	**3.1400e-003**	**0.0568**		**435.2073**	**435.2073**	**0.0242**		**435.8124**

3.4 Tank Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1734	1.7135	1.4640	2.9800e-003		0.0791	0.0791		0.0739	0.0739		287.0849	287.0849	0.0807		289.1032
Total	**0.1734**	**1.7135**	**1.4640**	**2.9800e-003**		**0.0791**	**0.0791**		**0.0739**	**0.0739**		**287.0849**	**287.0849**	**0.0807**		**289.1032**

3.4 Tank Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.0500e-003	0.1350	0.0324	4.2000e-004	9.9800e-003	3.9000e-004	0.0104	2.7400e-003	3.7000e-004	3.1100e-003		45.9693	45.9693	3.2300e-003		46.0501
Vendor	0.0295	0.9505	0.2537	2.7400e-003	0.0732	1.9400e-003	0.0752	0.0211	1.8500e-003	0.0229		292.2449	292.2449	0.0180		292.6952
Worker	0.0665	0.0427	0.4894	1.6100e-003	0.1806	1.2700e-003	0.1819	0.0479	1.1700e-003	0.0491		160.5186	160.5186	3.9700e-003		160.6179
Total	**0.1001**	**1.1283**	**0.7754**	**4.7700e-003**	**0.2639**	**3.6000e-003**	**0.2675**	**0.0717**	**3.3900e-003**	**0.0751**		**498.7327**	**498.7327**	**0.0252**		**499.3632**

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	0.1734	1.7135	1.4640	2.9800e-003		0.0791	0.0791		0.0739	0.0739	0.0000	287.0849	287.0849	0.0807		289.1032
Total	**0.1734**	**1.7135**	**1.4640**	**2.9800e-003**		**0.0791**	**0.0791**		**0.0739**	**0.0739**	**0.0000**	**287.0849**	**287.0849**	**0.0807**		**289.1032**

3.4 Tank Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.0500e-003	0.1350	0.0324	4.2000e-004	9.9800e-003	3.9000e-004	0.0104	2.7400e-003	3.7000e-004	3.1100e-003		45.9693	45.9693	3.2300e-003		46.0501
Vendor	0.0295	0.9505	0.2537	2.7400e-003	0.0732	1.9400e-003	0.0752	0.0211	1.8500e-003	0.0229		292.2449	292.2449	0.0180		292.6952
Worker	0.0665	0.0427	0.4894	1.6100e-003	0.1806	1.2700e-003	0.1819	0.0479	1.1700e-003	0.0491		160.5186	160.5186	3.9700e-003		160.6179
Total	**0.1001**	**1.1283**	**0.7754**	**4.7700e-003**	**0.2639**	**3.6000e-003**	**0.2675**	**0.0717**	**3.3900e-003**	**0.0751**		**498.7327**	**498.7327**	**0.0252**		**499.3632**

3.5 Pump Station, RMS Facility, and Storage Building - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1906	1.8378	1.4505	2.9800e-003		0.0850	0.0850		0.0797	0.0797		280.8690	280.8690	0.0746		282.7330
Total	**0.1906**	**1.8378**	**1.4505**	**2.9800e-003**		**0.0850**	**0.0850**		**0.0797**	**0.0797**		**280.8690**	**280.8690**	**0.0746**		**282.7330**

3.5 Pump Station, RMS Facility, and Storage Building - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.3600e-003	0.1454	0.0349	4.6000e-004	0.0121	4.2000e-004	0.0125	3.2700e-003	4.0000e-004	3.6700e-003		49.5054	49.5054	3.4800e-003		49.5925
Vendor	0.0295	0.9505	0.2537	2.7400e-003	0.0732	1.9400e-003	0.0752	0.0211	1.8500e-003	0.0229		292.2449	292.2449	0.0180		292.6952
Worker	0.0665	0.0427	0.4894	1.6100e-003	0.1806	1.2700e-003	0.1819	0.0479	1.1700e-003	0.0491		160.5186	160.5186	3.9700e-003		160.6179
Total	**0.1004**	**1.1387**	**0.7779**	**4.8100e-003**	**0.2659**	**3.6300e-003**	**0.2696**	**0.0723**	**3.4200e-003**	**0.0757**		**502.2688**	**502.2688**	**0.0255**		**502.9055**

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	0.1906	1.8378	1.4505	2.9800e-003		0.0850	0.0850		0.0797	0.0797	0.0000	280.8690	280.8690	0.0746		282.7330
Total	**0.1906**	**1.8378**	**1.4505**	**2.9800e-003**		**0.0850**	**0.0850**		**0.0797**	**0.0797**	**0.0000**	**280.8690**	**280.8690**	**0.0746**		**282.7330**

3.5 Pump Station, RMS Facility, and Storage Building - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.3600e-003	0.1454	0.0349	4.6000e-004	0.0121	4.2000e-004	0.0125	3.2700e-003	4.0000e-004	3.6700e-003		49.5054	49.5054	3.4800e-003		49.5925
Vendor	0.0295	0.9505	0.2537	2.7400e-003	0.0732	1.9400e-003	0.0752	0.0211	1.8500e-003	0.0229		292.2449	292.2449	0.0180		292.6952
Worker	0.0665	0.0427	0.4894	1.6100e-003	0.1806	1.2700e-003	0.1819	0.0479	1.1700e-003	0.0491		160.5186	160.5186	3.9700e-003		160.6179
Total	**0.1004**	**1.1387**	**0.7779**	**4.8100e-003**	**0.2659**	**3.6300e-003**	**0.2696**	**0.0723**	**3.4200e-003**	**0.0757**		**502.2688**	**502.2688**	**0.0255**		**502.9055**

3.5 Pump Station, RMS Facility, and Storage Building - 2023

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	0.1797	1.6930	1.4339	2.9800e-003		0.0760	0.0760		0.0713	0.0713		280.9506	280.9506	0.0743		282.8091
Total	**0.1797**	**1.6930**	**1.4339**	**2.9800e-003**		**0.0760**	**0.0760**		**0.0713**	**0.0713**		**280.9506**	**280.9506**	**0.0743**		**282.8091**

3.5 Pump Station, RMS Facility, and Storage Building - 2023

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	2.8900e-003	0.0935	0.0312	4.4000e-004	0.0614	1.8000e-004	0.0616	0.0154	1.7000e-004	0.0155		47.5480	47.5480	3.1800e-003		47.6276
Vendor	0.0220	0.7069	0.2246	2.6500e-003	0.0732	9.0000e-004	0.0741	0.0211	8.6000e-004	0.0219		283.6318	283.6318	0.0157		284.0243
Worker	0.0628	0.0387	0.4513	1.5500e-003	0.1806	1.2300e-003	0.1819	0.0479	1.1400e-003	0.0490		154.5302	154.5302	3.5800e-003		154.6197
Total	**0.0877**	**0.8391**	**0.7071**	**4.6400e-003**	**0.3153**	**2.3100e-003**	**0.3176**	**0.0844**	**2.1700e-003**	**0.0865**		**485.7100**	**485.7100**	**0.0225**		**486.2716**

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	0.1797	1.6930	1.4339	2.9800e-003		0.0760	0.0760		0.0713	0.0713	0.0000	280.9506	280.9506	0.0743		282.8091
Total	**0.1797**	**1.6930**	**1.4339**	**2.9800e-003**		**0.0760**	**0.0760**		**0.0713**	**0.0713**	**0.0000**	**280.9506**	**280.9506**	**0.0743**		**282.8091**

3.5 Pump Station, RMS Facility, and Storage Building - 2023

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	2.8900e-003	0.0935	0.0312	4.4000e-004	0.0614	1.8000e-004	0.0616	0.0154	1.7000e-004	0.0155		47.5480	47.5480	3.1800e-003		47.6276
Vendor	0.0220	0.7069	0.2246	2.6500e-003	0.0732	9.0000e-004	0.0741	0.0211	8.6000e-004	0.0219		283.6318	283.6318	0.0157		284.0243
Worker	0.0628	0.0387	0.4513	1.5500e-003	0.1806	1.2300e-003	0.1819	0.0479	1.1400e-003	0.0490		154.5302	154.5302	3.5800e-003		154.6197
Total	**0.0877**	**0.8391**	**0.7071**	**4.6400e-003**	**0.3153**	**2.3100e-003**	**0.3176**	**0.0844**	**2.1700e-003**	**0.0865**		**485.7100**	**485.7100**	**0.0225**		**486.2716**

3.6 Vault Construction Site Improvements, and Electrical Improvements - 2023

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	0.0982	0.8448	1.2135	1.8700e-003		0.0422	0.0422		0.0399	0.0399		177.2539	177.2539	0.0436		178.3433
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0982**	**0.8448**	**1.2135**	**1.8700e-003**		**0.0422**	**0.0422**		**0.0399**	**0.0399**		**177.2539**	**177.2539**	**0.0436**		**178.3433**

3.6 Vault Construction Site Improvements, and Electrical Improvements - 2023

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	2.0900e-003	0.0675	0.0226	3.2000e-004	7.7700e-003	1.3000e-004	7.8900e-003	2.1300e-003	1.2000e-004	2.2500e-003		34.3402	34.3402	2.3000e-003		34.3977
Vendor	0.0132	0.4242	0.1348	1.5900e-003	0.0439	5.4000e-004	0.0445	0.0127	5.2000e-004	0.0132		170.1791	170.1791	9.4200e-003		170.4146
Worker	0.0419	0.0258	0.3008	1.0300e-003	0.1204	8.2000e-004	0.1212	0.0319	7.6000e-004	0.0327		103.0201	103.0201	2.3900e-003		103.0798
Total	**0.0572**	**0.5175**	**0.4582**	**2.9400e-003**	**0.1721**	**1.4900e-003**	**0.1736**	**0.0467**	**1.4000e-003**	**0.0481**		**307.5394**	**307.5394**	**0.0141**		**307.8921**

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	0.0982	0.8448	1.2135	1.8700e-003		0.0422	0.0422		0.0399	0.0399	0.0000	177.2539	177.2539	0.0436		178.3433
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0982**	**0.8448**	**1.2135**	**1.8700e-003**		**0.0422**	**0.0422**		**0.0399**	**0.0399**	**0.0000**	**177.2539**	**177.2539**	**0.0436**		**178.3433**

3.6 Vault Construction Site Improvements, and Electrical Improvements - 2023

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	2.0900e-003	0.0675	0.0226	3.2000e-004	7.7700e-003	1.3000e-004	7.8900e-003	2.1300e-003	1.2000e-004	2.2500e-003		34.3402	34.3402	2.3000e-003		34.3977
Vendor	0.0132	0.4242	0.1348	1.5900e-003	0.0439	5.4000e-004	0.0445	0.0127	5.2000e-004	0.0132		170.1791	170.1791	9.4200e-003		170.4146
Worker	0.0419	0.0258	0.3008	1.0300e-003	0.1204	8.2000e-004	0.1212	0.0319	7.6000e-004	0.0327		103.0201	103.0201	2.3900e-003		103.0798
Total	**0.0572**	**0.5175**	**0.4582**	**2.9400e-003**	**0.1721**	**1.4900e-003**	**0.1736**	**0.0467**	**1.4000e-003**	**0.0481**		**307.5394**	**307.5394**	**0.0141**		**307.8921**

3.7 Startup & Testing - 2023

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	0.0000	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**

3.7 Startup & Testing - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0132	0.4242	0.1348	1.5900e-003	0.0439	5.4000e-004	0.0445	0.0127	5.2000e-004	0.0132		170.1791	170.1791	9.4200e-003		170.4146
Worker	0.0314	0.0193	0.2256	7.7000e-004	0.0903	6.2000e-004	0.0909	0.0240	5.7000e-004	0.0245		77.2651	77.2651	1.7900e-003		77.3098
Total	**0.0446**	**0.4435**	**0.3604**	**2.3600e-003**	**0.1343**	**1.1600e-003**	**0.1354**	**0.0366**	**1.0900e-003**	**0.0377**		**247.4441**	**247.4441**	**0.0112**		**247.7244**

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	0.0000	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**

3.7 Startup & Testing - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0132	0.4242	0.1348	1.5900e-003	0.0439	5.4000e-004	0.0445	0.0127	5.2000e-004	0.0132		170.1791	170.1791	9.4200e-003		170.4146
Worker	0.0314	0.0193	0.2256	7.7000e-004	0.0903	6.2000e-004	0.0909	0.0240	5.7000e-004	0.0245		77.2651	77.2651	1.7900e-003		77.3098
Total	**0.0446**	**0.4435**	**0.3604**	**2.3600e-003**	**0.1343**	**1.1600e-003**	**0.1354**	**0.0366**	**1.0900e-003**	**0.0377**		**247.4441**	**247.4441**	**0.0112**		**247.7244**

3.8 Site Demolition (Phase 2) - 2023

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	0.1468	1.3515	2.3434	3.5000e-003		0.0665	0.0665		0.0612	0.0612		339.2656	339.2656	0.1097		342.0087
Total	**0.1468**	**1.3515**	**2.3434**	**3.5000e-003**		**0.0665**	**0.0665**		**0.0612**	**0.0612**		**339.2656**	**339.2656**	**0.1097**		**342.0087**

3.8 Site Demolition (Phase 2) - 2023

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	0.0156	0.5065	0.1692	2.3700e-003	0.0582	9.6000e-004	0.0592	0.0160	9.2000e-004	0.0169		257.5518	257.5518	0.0172		257.9829
Vendor	0.0132	0.4242	0.1348	1.5900e-003	0.0439	5.4000e-004	0.0445	0.0127	5.2000e-004	0.0132		170.1791	170.1791	9.4200e-003		170.4146
Worker	0.0419	0.0258	0.3008	1.0300e-003	0.1204	8.2000e-004	0.1212	0.0319	7.6000e-004	0.0327		103.0201	103.0201	2.3900e-003		103.0798
Total	**0.0707**	**0.9564**	**0.6048**	**4.9900e-003**	**0.2226**	**2.3200e-003**	**0.2249**	**0.0605**	**2.2000e-003**	**0.0627**		**530.7510**	**530.7510**	**0.0291**		**531.4773**

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	0.1468	1.3515	2.3434	3.5000e-003		0.0665	0.0665		0.0612	0.0612	0.0000	339.2656	339.2656	0.1097		342.0087
Total	**0.1468**	**1.3515**	**2.3434**	**3.5000e-003**		**0.0665**	**0.0665**		**0.0612**	**0.0612**	**0.0000**	**339.2656**	**339.2656**	**0.1097**		**342.0087**

3.8 Site Demolition (Phase 2) - 2023

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	0.0156	0.5065	0.1692	2.3700e-003	0.0582	9.6000e-004	0.0592	0.0160	9.2000e-004	0.0169		257.5518	257.5518	0.0172		257.9829
Vendor	0.0132	0.4242	0.1348	1.5900e-003	0.0439	5.4000e-004	0.0445	0.0127	5.2000e-004	0.0132		170.1791	170.1791	9.4200e-003		170.4146
Worker	0.0419	0.0258	0.3008	1.0300e-003	0.1204	8.2000e-004	0.1212	0.0319	7.6000e-004	0.0327		103.0201	103.0201	2.3900e-003		103.0798
Total	**0.0707**	**0.9564**	**0.6048**	**4.9900e-003**	**0.2226**	**2.3200e-003**	**0.2249**	**0.0605**	**2.2000e-003**	**0.0627**		**530.7510**	**530.7510**	**0.0291**		**531.4773**

3.9 Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank - 2023

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	0.0582	0.4552	0.6193	9.7000e-004		0.0231	0.0231		0.0223	0.0223		90.9196	90.9196	0.0157		91.3110
Total	**0.0582**	**0.4552**	**0.6193**	**9.7000e-004**		**0.0231**	**0.0231**		**0.0223**	**0.0223**		**90.9196**	**90.9196**	**0.0157**		**91.3110**

3.9 Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank - 2023

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	3.6800e-003	0.1192	0.0398	5.6000e-004	0.0137	2.3000e-004	0.0139	3.7600e-003	2.2000e-004	3.9700e-003		60.6004	60.6004	4.0600e-003		60.7019
Vendor	0.0132	0.4242	0.1348	1.5900e-003	0.0439	5.4000e-004	0.0445	0.0127	5.2000e-004	0.0132		170.1791	170.1791	9.4200e-003		170.4146
Worker	0.0419	0.0258	0.3008	1.0300e-003	0.1204	8.2000e-004	0.1212	0.0319	7.6000e-004	0.0327		103.0201	103.0201	2.3900e-003		103.0798
Total	**0.0587**	**0.5691**	**0.4754**	**3.1800e-003**	**0.1781**	**1.5900e-003**	**0.1797**	**0.0483**	**1.5000e-003**	**0.0498**		**333.7996**	**333.7996**	**0.0159**		**334.1962**

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	0.0582	0.4552	0.6193	9.7000e-004		0.0231	0.0231		0.0223	0.0223	0.0000	90.9196	90.9196	0.0157		91.3110
Total	**0.0582**	**0.4552**	**0.6193**	**9.7000e-004**		**0.0231**	**0.0231**		**0.0223**	**0.0223**	**0.0000**	**90.9196**	**90.9196**	**0.0157**		**91.3110**

3.9 Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank - 2023

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	3.6800e-003	0.1192	0.0398	5.6000e-004	0.0137	2.3000e-004	0.0139	3.7600e-003	2.2000e-004	3.9700e-003		60.6004	60.6004	4.0600e-003		60.7019
Vendor	0.0132	0.4242	0.1348	1.5900e-003	0.0439	5.4000e-004	0.0445	0.0127	5.2000e-004	0.0132		170.1791	170.1791	9.4200e-003		170.4146
Worker	0.0419	0.0258	0.3008	1.0300e-003	0.1204	8.2000e-004	0.1212	0.0319	7.6000e-004	0.0327		103.0201	103.0201	2.3900e-003		103.0798
Total	**0.0587**	**0.5691**	**0.4754**	**3.1800e-003**	**0.1781**	**1.5900e-003**	**0.1797**	**0.0483**	**1.5000e-003**	**0.0498**		**333.7996**	**333.7996**	**0.0159**		**334.1962**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	18.50	10.10	7.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.550151	0.042593	0.202457	0.116946	0.015037	0.005825	0.021699	0.034933	0.002123	0.001780	0.004876	0.000710	0.000868

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					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	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	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Fleming Tank and Pump Station Improvements Project LST

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	534	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - In accordance with 2019 SCE Sustainability Report.

Land Use - Surrogate land use for estimating emissions.

Construction Phase - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided data.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Trips and VMT - LST, no mobile sources.

On-road Fugitive Dust - CalEEMod defaults.

Grading - Based on applicant provided information.

Vehicle Trips - No increase in operational mobile sources.

Consumer Products - CalEEMod defaults.

Landscape Equipment - No landscaping.

Energy Use - No net energy increase over existing.

Water And Wastewater - No increase in water use over existing.

Solid Waste - No increase in solid waste.

Construction Off-road Equipment Mitigation - In accordance with SCAQMD Rule 403.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	100.00	140.00
tblConstructionPhase	NumDays	100.00	65.00
tblConstructionPhase	NumDays	100.00	30.00

tblConstructionPhase	NumDays	100.00	51.00
tblConstructionPhase	NumDays	10.00	15.00
tblConstructionPhase	NumDays	2.00	40.00
tblConstructionPhase	NumDays	5.00	90.00
tblEnergyUse	LightingElect	2.93	0.00
tblEnergyUse	NT24E	5.02	0.00
tblEnergyUse	NT24NG	17.13	0.00
tblEnergyUse	T24E	2.20	0.00
tblEnergyUse	T24NG	15.36	0.00
tblGrading	MaterialImported	0.00	300.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	6.00	1.00
tblOffRoadEquipment	UsageHours	4.00	2.00
tblOffRoadEquipment	UsageHours	4.00	2.00
tblOffRoadEquipment	UsageHours	1.00	4.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	7.00	2.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	702.44	534
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	1.24	0.00
tblTripsAndVMT	HaulingTripNumber	38.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00

tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	231,250.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	0.7166	7.6758	4.6237	0.0101	3.2107	0.3369	3.5476	1.6767	0.3099	1.9866	0.0000	979.3147	979.3147	0.3167	0.0000	987.2329
2023	0.1797	1.6930	2.3373	3.5000e-003	0.0000	0.0760	0.0760	0.0000	0.0713	0.0713	0.0000	338.3279	338.3279	0.1094	0.0000	341.0634
Maximum	**0.7166**	**7.6758**	**4.6237**	**0.0101**	**3.2107**	**0.3369**	**3.5476**	**1.6767**	**0.3099**	**1.9866**	**0.0000**	**979.3147**	**979.3147**	**0.3167**	**0.0000**	**987.2329**

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					
2022	0.7166	7.6758	4.6237	0.0101	1.4448	0.3369	1.7817	0.7545	0.3099	1.0644	0.0000	979.3147	979.3147	0.3167	0.0000	987.2329
2023	0.1797	1.6930	2.3373	3.5000e-003	0.0000	0.0760	0.0760	0.0000	0.0713	0.0713	0.0000	338.3279	338.3279	0.1094	0.0000	341.0634
Maximum	**0.7166**	**7.6758**	**4.6237**	**0.0101**	**1.4448**	**0.3369**	**1.7817**	**0.7545**	**0.3099**	**1.0644**	**0.0000**	**979.3147**	**979.3147**	**0.3167**	**0.0000**	**987.2329**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**55.00**	**0.00**	**48.73**	**55.00**	**0.00**	**44.81**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-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
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-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	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-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
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Demolition (Phase 1)	Demolition	1/21/2022	2/3/2022	5	10	
2	Interim Grading and Shoring	Grading	2/4/2022	3/31/2022	5	40	
3	Tank Construction	Building Construction	4/1/2022	10/13/2022	5	140	
4	Pump Station, RMS Facility, and Storage Building	Building Construction	10/14/2022	1/12/2023	5	65	
5	Vault Construction Site Improvements, and Electrical Improvements	Paving	1/13/2023	5/18/2023	5	90	
6	Startup & Testing	Building Construction	5/19/2023	6/29/2023	5	30	
7	Site Demolition (Phase 2)	Demolition	6/30/2023	7/20/2023	5	15	
8	Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Building Construction	7/21/2023	9/29/2023	5	51	

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

Fleming Tank and Pump Station Improvements Project LST - South Coast AQMD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Demolition (Phase 1)	Concrete/Industrial Saws	0	8.00	81	0.73
Site Demolition (Phase 1)	Excavators	1	6.00	158	0.38
Site Demolition (Phase 1)	Rubber Tired Dozers	0	1.00	247	0.40
Site Demolition (Phase 1)	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Interim Grading and Shoring	Concrete/Industrial Saws	0	8.00	81	0.73
Interim Grading and Shoring	Excavators	1	4.00	158	0.38
Interim Grading and Shoring	Graders	1	3.00	187	0.41
Interim Grading and Shoring	Rubber Tired Dozers	1	4.00	247	0.40
Interim Grading and Shoring	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Tank Construction	Air Compressors	1	1.00	78	0.48
Tank Construction	Cranes	1	2.00	231	0.29
Tank Construction	Excavators	1	1.00	158	0.38
Tank Construction	Forklifts	0	6.00	89	0.20
Tank Construction	Tractors/Loaders/Backhoes	1	1.00	97	0.37
Pump Station, RMS Facility, and Storage Building	Air Compressors	1	1.00	78	0.48
Pump Station, RMS Facility, and Storage Building	Cement and Mortar Mixers	1	3.00	9	0.56
Pump Station, RMS Facility, and Storage Building	Cranes	1	2.00	231	0.29
Pump Station, RMS Facility, and Storage Building	Forklifts	0	6.00	89	0.20
Pump Station, RMS Facility, and Storage Building	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Vault Construction Site Improvements, and Electrical Improvements	Air Compressors	1	1.00	78	0.48
Vault Construction Site Improvements, and Electrical Improvements	Cement and Mortar Mixers	1	1.00	9	0.56
Vault Construction Site Improvements, and Electrical Improvements	Pavers	0	7.00	130	0.42
Vault Construction Site Improvements, and Electrical Improvements	Paving Equipment	1	1.00	132	0.36
Vault Construction Site Improvements, and Electrical Improvements	Rollers	0	7.00	80	0.38

Vault Construction Site Improvements, and Electrical Improvements	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Startup & Testing	Cranes	0	4.00	231	0.29
Startup & Testing	Forklifts	0	6.00	89	0.20
Startup & Testing	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Demolition (Phase 2)	Concrete/Industrial Saws	0	8.00	81	0.73
Site Demolition (Phase 2)	Excavators	1	3.00	158	0.38
Site Demolition (Phase 2)	Rubber Tired Dozers	0	1.00	247	0.40
Site Demolition (Phase 2)	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Air Compressors	1	1.00	78	0.48
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Cement and Mortar Mixers	1	1.00	9	0.56
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Cranes	0	4.00	231	0.29
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Forklifts	0	6.00	89	0.20
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Tractors/Loaders/Backhoes	1	1.00	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
Site Demolition (Phase 1)	2	0.00	0.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Interim Grading and Shoring	4	0.00	0.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Tank Construction	4	0.00	0.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Pump Station, RMS Facility, and Storage B	4	0.00	0.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Vault Construction Site Improvements an	4	0.00	0.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Startup & Testing	0	0.00	0.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Demolition (Phase 2)	2	0.00	0.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Construct Storage Building, and Install Di	3	0.00	0.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Demolition (Phase 1) - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1930	1.7516	3.0008	4.6500e-003		0.0870	0.0870		0.0800	0.0800		450.3212	450.3212	0.1456		453.9623
Total	**0.1930**	**1.7516**	**3.0008**	**4.6500e-003**		**0.0870**	**0.0870**		**0.0800**	**0.0800**		**450.3212**	**450.3212**	**0.1456**		**453.9623**

3.2 Site Demolition (Phase 1) - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated 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	0.1930	1.7516	3.0008	4.6500e-003		0.0870	0.0870		0.0800	0.0800	0.0000	450.3212	450.3212	0.1456		453.9623
Total	**0.1930**	**1.7516**	**3.0008**	**4.6500e-003**		**0.0870**	**0.0870**		**0.0800**	**0.0800**	**0.0000**	**450.3212**	**450.3212**	**0.1456**		**453.9623**

3.2 Site Demolition (Phase 1) - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.3 Interim Grading and Shoring - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.2107	0.0000	3.2107	1.6767	0.0000	1.6767			0.0000			0.0000
Off-Road	0.7166	7.6758	4.6237	0.0101		0.3369	0.3369		0.3099	0.3099		979.3147	979.3147	0.3167		987.2329
Total	**0.7166**	**7.6758**	**4.6237**	**0.0101**	**3.2107**	**0.3369**	**3.5476**	**1.6767**	**0.3099**	**1.9866**		**979.3147**	**979.3147**	**0.3167**		**987.2329**

3.3 Interim Grading and Shoring - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated 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					1.4448	0.0000	1.4448	0.7545	0.0000	0.7545			0.0000			0.0000
Off-Road	0.7166	7.6758	4.6237	0.0101		0.3369	0.3369		0.3099	0.3099	0.0000	979.3147	979.3147	0.3167		987.2329
Total	**0.7166**	**7.6758**	**4.6237**	**0.0101**	**1.4448**	**0.3369**	**1.7817**	**0.7545**	**0.3099**	**1.0644**	**0.0000**	**979.3147**	**979.3147**	**0.3167**		**987.2329**

3.3 Interim Grading and Shoring - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.4 Tank Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1732	1.7124	1.4620	2.9700e-003		0.0791	0.0791		0.0738	0.0738		286.7724	286.7724	0.0806		288.7882
Total	**0.1732**	**1.7124**	**1.4620**	**2.9700e-003**		**0.0791**	**0.0791**		**0.0738**	**0.0738**		**286.7724**	**286.7724**	**0.0806**		**288.7882**

3.4 Tank Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated 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	0.1732	1.7124	1.4620	2.9700e-003		0.0791	0.0791		0.0738	0.0738	0.0000	286.7724	286.7724	0.0806		288.7882
Total	**0.1732**	**1.7124**	**1.4620**	**2.9700e-003**		**0.0791**	**0.0791**		**0.0738**	**0.0738**	**0.0000**	**286.7724**	**286.7724**	**0.0806**		**288.7882**

3.4 Tank Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.5 Pump Station, RMS Facility, and Storage Building - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1906	1.8378	1.4505	2.9800e-003		0.0850	0.0850		0.0797	0.0797		280.8690	280.8690	0.0746		282.7330
Total	**0.1906**	**1.8378**	**1.4505**	**2.9800e-003**		**0.0850**	**0.0850**		**0.0797**	**0.0797**		**280.8690**	**280.8690**	**0.0746**		**282.7330**

3.5 Pump Station, RMS Facility, and Storage Building - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated 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	0.1906	1.8378	1.4505	2.9800e-003		0.0850	0.0850		0.0797	0.0797	0.0000	280.8690	280.8690	0.0746		282.7330
Total	**0.1906**	**1.8378**	**1.4505**	**2.9800e-003**		**0.0850**	**0.0850**		**0.0797**	**0.0797**	**0.0000**	**280.8690**	**280.8690**	**0.0746**		**282.7330**

3.5 Pump Station, RMS Facility, and Storage Building - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.5 Pump Station, RMS Facility, and Storage Building - 2023

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	0.1797	1.6930	1.4339	2.9800e-003		0.0760	0.0760		0.0713	0.0713		280.9506	280.9506	0.0743		282.8091
Total	**0.1797**	**1.6930**	**1.4339**	**2.9800e-003**		**0.0760**	**0.0760**		**0.0713**	**0.0713**		**280.9506**	**280.9506**	**0.0743**		**282.8091**

3.5 Pump Station, RMS Facility, and Storage Building - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated 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	0.1797	1.6930	1.4339	2.9800e-003		0.0760	0.0760		0.0713	0.0713	0.0000	280.9506	280.9506	0.0743		282.8091
Total	**0.1797**	**1.6930**	**1.4339**	**2.9800e-003**		**0.0760**	**0.0760**		**0.0713**	**0.0713**	**0.0000**	**280.9506**	**280.9506**	**0.0743**		**282.8091**

3.5 Pump Station, RMS Facility, and Storage Building - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.6 Vault Construction Site Improvements, and Electrical Improvements - 2023

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	0.0985	0.8475	1.2178	1.8700e-003		0.0423	0.0423		0.0400	0.0400		177.9251	177.9251	0.0438		179.0199
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0985**	**0.8475**	**1.2178**	**1.8700e-003**		**0.0423**	**0.0423**		**0.0400**	**0.0400**		**177.9251**	**177.9251**	**0.0438**		**179.0199**

3.6 Vault Construction Site Improvements, and Electrical Improvements - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated 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	0.0985	0.8475	1.2178	1.8700e-003		0.0423	0.0423		0.0400	0.0400	0.0000	177.9251	177.9251	0.0438		179.0199
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0985**	**0.8475**	**1.2178**	**1.8700e-003**		**0.0423**	**0.0423**		**0.0400**	**0.0400**	**0.0000**	**177.9251**	**177.9251**	**0.0438**		**179.0199**

3.6 Vault Construction Site Improvements, and Electrical Improvements - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.7 Startup & Testing - 2023

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	0.0000	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**

3.7 Startup & Testing - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated 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	0.0000	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**

3.7 Startup & Testing - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.8 Site Demolition (Phase 2) - 2023

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	0.1464	1.3486	2.3373	3.5000e-003		0.0663	0.0663		0.0610	0.0610		338.3279	338.3279	0.1094		341.0634
Total	**0.1464**	**1.3486**	**2.3373**	**3.5000e-003**		**0.0663**	**0.0663**		**0.0610**	**0.0610**		**338.3279**	**338.3279**	**0.1094**		**341.0634**

3.8 Site Demolition (Phase 2) - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated 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	0.1464	1.3486	2.3373	3.5000e-003		0.0663	0.0663		0.0610	0.0610	0.0000	338.3279	338.3279	0.1094		341.0634
Total	**0.1464**	**1.3486**	**2.3373**	**3.5000e-003**		**0.0663**	**0.0663**		**0.0610**	**0.0610**	**0.0000**	**338.3279**	**338.3279**	**0.1094**		**341.0634**

3.8 Site Demolition (Phase 2) - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.9 Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank - 2023

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	0.0582	0.4552	0.6193	9.7000e-004		0.0231	0.0231		0.0223	0.0223		90.9196	90.9196	0.0157		91.3110
Total	**0.0582**	**0.4552**	**0.6193**	**9.7000e-004**		**0.0231**	**0.0231**		**0.0223**	**0.0223**		**90.9196**	**90.9196**	**0.0157**		**91.3110**

3.9 Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated 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	0.0582	0.4552	0.6193	9.7000e-004		0.0231	0.0231		0.0223	0.0223	0.0000	90.9196	90.9196	0.0157		91.3110
Total	**0.0582**	**0.4552**	**0.6193**	**9.7000e-004**		**0.0231**	**0.0231**		**0.0223**	**0.0223**	**0.0000**	**90.9196**	**90.9196**	**0.0157**		**91.3110**

3.9 Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	18.50	10.10	7.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.550151	0.042593	0.202457	0.116946	0.015037	0.005825	0.021699	0.034933	0.002123	0.001780	0.004876	0.000710	0.000868

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					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	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	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Fleming Tank and Pump Station Improvements Project LST

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	534	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - In accordance with 2019 SCE Sustainability Report.

Land Use - Surrogate land use for estimating emissions.

Construction Phase - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided data.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Trips and VMT - LST, no mobile sources.

On-road Fugitive Dust - CalEEMod defaults.

Grading - Based on applicant provided information.

Vehicle Trips - No increase in operational mobile sources.

Consumer Products - CalEEMod defaults.

Landscape Equipment - No landscaping.

Energy Use - No net energy increase over existing.

Water And Wastewater - No increase in water use over existing.

Solid Waste - No increase in solid waste.

Construction Off-road Equipment Mitigation - In accordance with SCAQMD Rule 403.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	100.00	140.00
tblConstructionPhase	NumDays	100.00	65.00
tblConstructionPhase	NumDays	100.00	30.00

Fleming Tank and Pump Station Improvements Project LST - South Coast AQMD Air District, Winter

tblConstructionPhase	NumDays	100.00	51.00
tblConstructionPhase	NumDays	10.00	15.00
tblConstructionPhase	NumDays	2.00	40.00
tblConstructionPhase	NumDays	5.00	90.00
tblEnergyUse	LightingElect	2.93	0.00
tblEnergyUse	NT24E	5.02	0.00
tblEnergyUse	NT24NG	17.13	0.00
tblEnergyUse	T24E	2.20	0.00
tblEnergyUse	T24NG	15.36	0.00
tblGrading	MaterialImported	0.00	300.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	6.00	1.00
tblOffRoadEquipment	UsageHours	4.00	2.00
tblOffRoadEquipment	UsageHours	4.00	2.00
tblOffRoadEquipment	UsageHours	1.00	4.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	7.00	2.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	702.44	534
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	1.24	0.00
tblTripsAndVMT	HaulingTripNumber	38.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00

tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	231,250.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	0.7166	7.6758	4.6237	0.0101	3.2107	0.3369	3.5476	1.6767	0.3099	1.9866	0.0000	979.3147	979.3147	0.3167	0.0000	987.2329
2023	0.1797	1.6930	2.3373	3.5000e-003	0.0000	0.0760	0.0760	0.0000	0.0713	0.0713	0.0000	338.3279	338.3279	0.1094	0.0000	341.0634
Maximum	**0.7166**	**7.6758**	**4.6237**	**0.0101**	**3.2107**	**0.3369**	**3.5476**	**1.6767**	**0.3099**	**1.9866**	**0.0000**	**979.3147**	**979.3147**	**0.3167**	**0.0000**	**987.2329**

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					
2022	0.7166	7.6758	4.6237	0.0101	1.4448	0.3369	1.7817	0.7545	0.3099	1.0644	0.0000	979.3147	979.3147	0.3167	0.0000	987.2329
2023	0.1797	1.6930	2.3373	3.5000e-003	0.0000	0.0760	0.0760	0.0000	0.0713	0.0713	0.0000	338.3279	338.3279	0.1094	0.0000	341.0634
Maximum	**0.7166**	**7.6758**	**4.6237**	**0.0101**	**1.4448**	**0.3369**	**1.7817**	**0.7545**	**0.3099**	**1.0644**	**0.0000**	**979.3147**	**979.3147**	**0.3167**	**0.0000**	**987.2329**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**55.00**	**0.00**	**48.73**	**55.00**	**0.00**	**44.81**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-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
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-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	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-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
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Demolition (Phase 1)	Demolition	1/21/2022	2/3/2022	5	10	
2	Interim Grading and Shoring	Grading	2/4/2022	3/31/2022	5	40	
3	Tank Construction	Building Construction	4/1/2022	10/13/2022	5	140	
4	Pump Station, RMS Facility, and Storage Building	Building Construction	10/14/2022	1/12/2023	5	65	
5	Vault Construction Site Improvements, and Electrical Improvements	Paving	1/13/2023	5/18/2023	5	90	
6	Startup & Testing	Building Construction	5/19/2023	6/29/2023	5	30	
7	Site Demolition (Phase 2)	Demolition	6/30/2023	7/20/2023	5	15	
8	Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Building Construction	7/21/2023	9/29/2023	5	51	

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

Fleming Tank and Pump Station Improvements Project LST - South Coast AQMD Air District, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Demolition (Phase 1)	Concrete/Industrial Saws	0	8.00	81	0.73
Site Demolition (Phase 1)	Excavators	1	6.00	158	0.38
Site Demolition (Phase 1)	Rubber Tired Dozers	0	1.00	247	0.40
Site Demolition (Phase 1)	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Interim Grading and Shoring	Concrete/Industrial Saws	0	8.00	81	0.73
Interim Grading and Shoring	Excavators	1	4.00	158	0.38
Interim Grading and Shoring	Graders	1	3.00	187	0.41
Interim Grading and Shoring	Rubber Tired Dozers	1	4.00	247	0.40
Interim Grading and Shoring	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Tank Construction	Air Compressors	1	1.00	78	0.48
Tank Construction	Cranes	1	2.00	231	0.29
Tank Construction	Excavators	1	1.00	158	0.38
Tank Construction	Forklifts	0	6.00	89	0.20
Tank Construction	Tractors/Loaders/Backhoes	1	1.00	97	0.37
Pump Station, RMS Facility, and Storage Building	Air Compressors	1	1.00	78	0.48
Pump Station, RMS Facility, and Storage Building	Cement and Mortar Mixers	1	3.00	9	0.56
Pump Station, RMS Facility, and Storage Building	Cranes	1	2.00	231	0.29
Pump Station, RMS Facility, and Storage Building	Forklifts	0	6.00	89	0.20
Pump Station, RMS Facility, and Storage Building	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Vault Construction Site Improvements, and Electrical Improvements	Air Compressors	1	1.00	78	0.48
Vault Construction Site Improvements, and Electrical Improvements	Cement and Mortar Mixers	1	1.00	9	0.56
Vault Construction Site Improvements, and Electrical Improvements	Pavers	0	7.00	130	0.42
Vault Construction Site Improvements, and Electrical Improvements	Paving Equipment	1	1.00	132	0.36
Vault Construction Site Improvements, and Electrical Improvements	Rollers	0	7.00	80	0.38

Vault Construction Site Improvements, and Electrical Improvements	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Startup & Testing	Cranes	0	4.00	231	0.29
Startup & Testing	Forklifts	0	6.00	89	0.20
Startup & Testing	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Demolition (Phase 2)	Concrete/Industrial Saws	0	8.00	81	0.73
Site Demolition (Phase 2)	Excavators	1	3.00	158	0.38
Site Demolition (Phase 2)	Rubber Tired Dozers	0	1.00	247	0.40
Site Demolition (Phase 2)	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Air Compressors	1	1.00	78	0.48
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Cement and Mortar Mixers	1	1.00	9	0.56
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Cranes	0	4.00	231	0.29
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Forklifts	0	6.00	89	0.20
Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank	Tractors/Loaders/Backhoes	1	1.00	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
Site Demolition (Phase 1)	2	0.00	0.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Interim Grading and Shoring	4	0.00	0.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Tank Construction	4	0.00	0.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Pump Station, RMS Facility, and Storage B	4	0.00	0.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Vault Construction Site Improvements an	4	0.00	0.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Startup & Testing	0	0.00	0.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Demolition (Phase 2)	2	0.00	0.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Construct Storage Building, and Install Di	3	0.00	0.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Demolition (Phase 1) - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1930	1.7516	3.0008	4.6500e-003		0.0870	0.0870		0.0800	0.0800		450.3212	450.3212	0.1456		453.9623
Total	**0.1930**	**1.7516**	**3.0008**	**4.6500e-003**		**0.0870**	**0.0870**		**0.0800**	**0.0800**		**450.3212**	**450.3212**	**0.1456**		**453.9623**

3.2 Site Demolition (Phase 1) - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated 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	0.1930	1.7516	3.0008	4.6500e-003		0.0870	0.0870		0.0800	0.0800	0.0000	450.3212	450.3212	0.1456		453.9623
Total	**0.1930**	**1.7516**	**3.0008**	**4.6500e-003**		**0.0870**	**0.0870**		**0.0800**	**0.0800**	**0.0000**	**450.3212**	**450.3212**	**0.1456**		**453.9623**

3.2 Site Demolition (Phase 1) - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.3 Interim Grading and Shoring - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.2107	0.0000	3.2107	1.6767	0.0000	1.6767			0.0000			0.0000
Off-Road	0.7166	7.6758	4.6237	0.0101		0.3369	0.3369		0.3099	0.3099		979.3147	979.3147	0.3167		987.2329
Total	**0.7166**	**7.6758**	**4.6237**	**0.0101**	**3.2107**	**0.3369**	**3.5476**	**1.6767**	**0.3099**	**1.9866**		**979.3147**	**979.3147**	**0.3167**		**987.2329**

3.3 Interim Grading and Shoring - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated 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					1.4448	0.0000	1.4448	0.7545	0.0000	0.7545			0.0000			0.0000
Off-Road	0.7166	7.6758	4.6237	0.0101		0.3369	0.3369		0.3099	0.3099	0.0000	979.3147	979.3147	0.3167		987.2329
Total	**0.7166**	**7.6758**	**4.6237**	**0.0101**	**1.4448**	**0.3369**	**1.7817**	**0.7545**	**0.3099**	**1.0644**	**0.0000**	**979.3147**	**979.3147**	**0.3167**		**987.2329**

3.3 Interim Grading and Shoring - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.4 Tank Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1732	1.7124	1.4620	2.9700e-003		0.0791	0.0791		0.0738	0.0738		286.7724	286.7724	0.0806		288.7882
Total	**0.1732**	**1.7124**	**1.4620**	**2.9700e-003**		**0.0791**	**0.0791**		**0.0738**	**0.0738**		**286.7724**	**286.7724**	**0.0806**		**288.7882**

3.4 Tank Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated 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	0.1732	1.7124	1.4620	2.9700e-003		0.0791	0.0791		0.0738	0.0738	0.0000	286.7724	286.7724	0.0806		288.7882
Total	**0.1732**	**1.7124**	**1.4620**	**2.9700e-003**		**0.0791**	**0.0791**		**0.0738**	**0.0738**	**0.0000**	**286.7724**	**286.7724**	**0.0806**		**288.7882**

3.4 Tank Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.5 Pump Station, RMS Facility, and Storage Building - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1906	1.8378	1.4505	2.9800e-003		0.0850	0.0850		0.0797	0.0797		280.8690	280.8690	0.0746		282.7330
Total	**0.1906**	**1.8378**	**1.4505**	**2.9800e-003**		**0.0850**	**0.0850**		**0.0797**	**0.0797**		**280.8690**	**280.8690**	**0.0746**		**282.7330**

3.5 Pump Station, RMS Facility, and Storage Building - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated 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	0.1906	1.8378	1.4505	2.9800e-003		0.0850	0.0850		0.0797	0.0797	0.0000	280.8690	280.8690	0.0746		282.7330
Total	**0.1906**	**1.8378**	**1.4505**	**2.9800e-003**		**0.0850**	**0.0850**		**0.0797**	**0.0797**	**0.0000**	**280.8690**	**280.8690**	**0.0746**		**282.7330**

3.5 Pump Station, RMS Facility, and Storage Building - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.5 Pump Station, RMS Facility, and Storage Building - 2023

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	0.1797	1.6930	1.4339	2.9800e-003		0.0760	0.0760		0.0713	0.0713		280.9506	280.9506	0.0743		282.8091
Total	**0.1797**	**1.6930**	**1.4339**	**2.9800e-003**		**0.0760**	**0.0760**		**0.0713**	**0.0713**		**280.9506**	**280.9506**	**0.0743**		**282.8091**

3.5 Pump Station, RMS Facility, and Storage Building - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated 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	0.1797	1.6930	1.4339	2.9800e-003		0.0760	0.0760		0.0713	0.0713	0.0000	280.9506	280.9506	0.0743		282.8091
Total	**0.1797**	**1.6930**	**1.4339**	**2.9800e-003**		**0.0760**	**0.0760**		**0.0713**	**0.0713**	**0.0000**	**280.9506**	**280.9506**	**0.0743**		**282.8091**

3.5 Pump Station, RMS Facility, and Storage Building - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.6 Vault Construction Site Improvements, and Electrical Improvements - 2023

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	0.0985	0.8475	1.2178	1.8700e-003		0.0423	0.0423		0.0400	0.0400		177.9251	177.9251	0.0438		179.0199
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0985**	**0.8475**	**1.2178**	**1.8700e-003**		**0.0423**	**0.0423**		**0.0400**	**0.0400**		**177.9251**	**177.9251**	**0.0438**		**179.0199**

3.6 Vault Construction Site Improvements, and Electrical Improvements - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated 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	0.0985	0.8475	1.2178	1.8700e-003		0.0423	0.0423		0.0400	0.0400	0.0000	177.9251	177.9251	0.0438		179.0199
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0985**	**0.8475**	**1.2178**	**1.8700e-003**		**0.0423**	**0.0423**		**0.0400**	**0.0400**	**0.0000**	**177.9251**	**177.9251**	**0.0438**		**179.0199**

3.6 Vault Construction Site Improvements, and Electrical Improvements - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.7 Startup & Testing - 2023

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	0.0000	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**

3.7 Startup & Testing - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated 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	0.0000	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**

3.7 Startup & Testing - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.8 Site Demolition (Phase 2) - 2023

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	0.1464	1.3486	2.3373	3.5000e-003		0.0663	0.0663		0.0610	0.0610		338.3279	338.3279	0.1094		341.0634
Total	**0.1464**	**1.3486**	**2.3373**	**3.5000e-003**		**0.0663**	**0.0663**		**0.0610**	**0.0610**		**338.3279**	**338.3279**	**0.1094**		**341.0634**

3.8 Site Demolition (Phase 2) - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated 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	0.1464	1.3486	2.3373	3.5000e-003		0.0663	0.0663		0.0610	0.0610	0.0000	338.3279	338.3279	0.1094		341.0634
Total	**0.1464**	**1.3486**	**2.3373**	**3.5000e-003**		**0.0663**	**0.0663**		**0.0610**	**0.0610**	**0.0000**	**338.3279**	**338.3279**	**0.1094**		**341.0634**

3.8 Site Demolition (Phase 2) - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.9 Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank - 2023

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	0.0582	0.4552	0.6193	9.7000e-004		0.0231	0.0231		0.0223	0.0223		90.9196	90.9196	0.0157		91.3110
Total	**0.0582**	**0.4552**	**0.6193**	**9.7000e-004**		**0.0231**	**0.0231**		**0.0223**	**0.0223**		**90.9196**	**90.9196**	**0.0157**		**91.3110**

3.9 Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated 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	0.0582	0.4552	0.6193	9.7000e-004		0.0231	0.0231		0.0223	0.0223	0.0000	90.9196	90.9196	0.0157		91.3110
Total	**0.0582**	**0.4552**	**0.6193**	**9.7000e-004**		**0.0231**	**0.0231**		**0.0223**	**0.0223**	**0.0000**	**90.9196**	**90.9196**	**0.0157**		**91.3110**

3.9 Construct Storage Building, and Install Diesel Storage Tank and Sewer Holding Tank - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	18.50	10.10	7.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.550151	0.042593	0.202457	0.116946	0.015037	0.005825	0.021699	0.034933	0.002123	0.001780	0.004876	0.000710	0.000868

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					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	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	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Emergency Generator Emissions

	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O	CO_2e
	lb/day									
Existing	0.20	2.28	1.32	0.00	0.08	0.08	288.16	0.03	0.00	290.03
Project	0.23	3.27	3.04	0.01	0.03	0.03	664.02	0.04	0.01	666.81
Net	0.03	0.99	1.72	0.00	-0.05	-0.05	375.86	0.01	0.00	376.78
	ton/year						MT/year			
Existing	0.02	0.23	0.13	0.00	0.01	0.01	28.82	0.00	0.00	29.00
Project	0.02	0.33	0.30	0.00	0.00	0.00	66.40	0.00	0.00	66.68
Net	0.00	0.10	0.17	0.00	0.00	0.00	37.59	0.00	0.00	37.68

Emission Factors
(g/bhp-hr)

Existing								
VOC	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**CH_4**	**N_2O**
0.3996	4.5	2.6	0.0055	0.15	0.15	568.299	0.054	0.007855
Project								
0.1998	2.8	2.6	0.0055	0.0225	0.0225	568.299	0.035	0.005091

Notes:

Existing 230 horsepower

Assumes existing generator meets EPA Tier 2 standards.

Project 530 horsepower

Project proposes the use of a Tier 3 engine with a CARB Level 3 diesel particulate filter.

In accordance with SCAQMD Rule 1470, engines can operate up to 200 hours per year.

Appendix B

Biological Resources Report

27372 CALLE ARROYO
SAN JUAN CAPISTRANO, CALIFORNIA 92675
T 949.450.2525 F 949.450.2626

May 28, 2021 10101

Jo Ann Corey
Environmental Compliance Analyst
Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, California 92618

Subject: Biological Resources Assessment for the Fleming Zone 8 Reservoir and Pump Station Improvements Project, Orange County, California

Dear Ms. Corey:

This letter documents the biological resources assessment conducted by Dudek for the Fleming Zone 8 Reservoir and Pump Station Improvements Project (Project), located in the Santiago Canyon area of unincorporated Orange County, California. Pursuant to the California Environmental Quality Act (CEQA) statute Section 21067 and CEQA Guidelines Article 4 and Section 15367, Irvine Ranch Water District (IRWD) is the lead agency responsible for the preparation of the environmental documentation and for the approval of the Project.

1 Project Location and Description

The Project site is located at IRWD's existing Fleming Reservoir and Pump Station facility, which is located approximately 500 feet east of the intersection of Santiago Canyon Road and Silverado Canyon Road, in the Santiago Canyon area of unincorporated Orange County, California (Figure 1). The Project site is in Section 12 of public land survey system (PLSS) Township 5 South, Range 8 West as shown on the El Toro and Black Canyon Star, CA 7.5-minute USGS Quadrangles. The surrounding area is a combination of agricultural land and natural areas. The Project site is located in the Irvine Ranch Natural Area, and a short distance to the east is the Cleveland National Forest. The Limestone Canyon Natural Preserve is across the road to the southwest, and the Black Star Canyon Wilderness Park surrounds the Project site. The Project site is located within the A-1 (Agricultural use) zoning district in an unincorporated area. Specifically, the Project site includes one parcel located at 7431 Santiago Canyon Road (Assessor Parcel Number 576-013-02).

The parcel contains the Fleming Zone 8 Reservoir and Pump Station, which includes a reservoir and office, as well as two buildings and several structures. The property is bisected by a paved driveway. The west half of the property is vacant and undeveloped (Figure 2).

The existing site currently contains a 150,000 gallon-steel drinking water storage reservoir, a pump station, support structures, and associated equipment, and is the only source of water service for IRWD's approximately 2,500 customers within Santiago Canyon, Silverado Canyon, Williams Canyon and Modjeska Canyon (collectively known as the Santiago Canyon Area). IRWD has identified that improvements to the facilities are needed to ensure that the facilities are capable of supplying maximum daily water demands.

Implementation of the Project would improve the reliability of IRWD's drinking water storage and conveyance facilities in this part of IRWD's service area. Major Project components would include:

- Demolition of the existing aboveground 150,000-gallon steel reservoir, pump station, administration and storage buildings.
- Construction of an aboveground 1.3 million-gallon (MG) prestressed concrete reservoir and associated pipelines.
- Construction of a new, pump station, equipped with three, approximately 660 gallon per minute pumps that will be enclosed within a masonry block building and will include a dedicated electrical room and dedicated operations room with a restroom.
- Construction of a replacement storage building.
- Construction of a masonry block building for the disinfection facilities, which will include sodium hypochlorite and aqueous ammonia storage and feed systems.
- Replacement of an existing 150-kilowatt (kW) standby diesel generator with a new, 350kW standby diesel generator to provide power to the facilities during both planned and unplanned electrical service outages.
- Improvements to the existing site electrical service and installation of new controls and telemetry equipment, including installation of an antenna on top of the tank for radio communications and equipment control.

Installation of site improvements including a modified access road, fencing, retaining walls, two motorized swing gates, and landscaping. The project will also include the installation of new pipelines, located in the access road, which will extend into Santiago Canyon Road and Silverado Canyon Road.

In addition to the Project components discussed above, the Project includes an off-site connection to the Carlton earthen storm drain, located south of Santiago Canyon Road and south of the existing Fleming Reservoir and Pump Station facility, near an existing storm drain outlet owned by the County of Orange Public Works. This work would entail the placement of rip rap and possible small concrete headwall.

2 Regulatory Context

The project site is also located within the boundaries of the Orange County Central and Coastal Subregion Habitat Conservation Plan and Natural Community Conservation Plan (HCP/NCCP; County of Orange 1996). The HCP/NCCP is a planning and policy document designed to protect and manage habitat supporting a broad range of plant and animal populations within the Central and Coastal Subregion of Orange County. The HCP/NCCP creates a subregional habitat reserve system (Reserve) and implements a coordinated program to manage biological resources within the Reserve. According to the HCP/NCCP, the project site is located outside of the reserve space and is mapped as urban land (R.J. Meade Consulting 1996; see Figure 1). The area surrounding the Project site is located within a conservation easement while the Project site is designated as "not a part" of the easement and as "urban". The off-site storm drainpipe and outlet structure are located partially within the conservation easement and HCP/NCCP Reserve. Special linkages and habitat Reserves are mapped in the immediate area of the project site.

3 Methods and Survey Limitations

Data regarding biological resources present within the Project Area were obtained through a review of pertinent literature and through field reconnaissance; both are described in detail below.

3.1 Literature Review

Sensitive biological resources present or potentially present on site were identified through a literature search using the following sources: CDFW (2021a, 2021b, 2021c, 2021d) and the California Native Plant Society (CNPS) *Inventory of Rare and Endangered Plants* (CNPS 2021). General information regarding wildlife species present in the region was obtained from CDFW (2021e) and American Ornithologists' Union (AOU 2020) for birds, Wilson and Reeder (2005) for mammals, Crother (2017) for reptiles and amphibians, and North American Butterfly Association (NABA 2018) or San Diego Natural History Museum (SDNHM 2002) for butterflies. Plant identification was made with reference to the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2021).

3.2 Soil Survey Review

According to the NRCS Web Soil Survey (USDA 2021), the Project site occurs within the Orange County and part of Riverside County, California (CA678). Four soil types are mapped for the entire Project site including, Cieneba sandy loam, 30 to 75% slopes, eroded, Gambino gravelly clay loam 15 to 50% slopes, and Myford sandy loam 9 to 30% slopes and Soboba gravelly loamy sand, 0 to 5% slopes; however, Cieneba sandy loam characterizes the majority of the site.

3.3 Biological Reconnaissance

Dudek biologist Tommy Molioo conducted a general biological reconnaissance of the Project site on May 5, 2021. The survey was conducted from 9:00am to 10:30am; weather conditions were favorable with clear skies, wind speeds from 1 to 2 miles per hour, and a temperature of 66° Fahrenheit (°F). All native and naturalized plant species encountered in the Project site were identified and recorded. The potential for special-status plant and wildlife species to occur within the Project site was evaluated based on the vegetation communities and soils present. Dudek used CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2009) and *Methods used to Survey the Vegetation of Orange County Parks and Open Space Areas and the Irvine Company Property* (Jones and Stokes 1993), to map the entire Project site. Vegetation communities and land covers were delineated to the vegetation alliance level, and where appropriate the association level. Some modifications, such as the *List of Vegetation Alliances and Associations* (CDFW 2010), also referred to as the Natural Communities List, and *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986, and Oberbauer update 2008), were incorporated to accommodate the lack of conformity of the observed communities to those included in these references.

Dudek also conducted an assessment for the presence of aquatic resources potentially subject to regulatory agency jurisdiction, including searching for the presence of drainage features and topographic features and soils that could support standing water.

A focused rare plant survey was conducted by Dudek restoration ecologist Charles Adams on May 20, 2021. The survey was conducted from 9:36am to 1:14pm; weather conditions were favorable with clear skies, wind speeds from 0 to 4 miles per hour, and a temperature range of 61° to 64° Fahrenheit (°F). Before conducting the survey, Dudek botanists conducted reference population checks to confirm the focal species were in bloom and identifiable.

The survey area included the Project site and a 100-foot buffer.

4 Results

4.1 Vegetation Communities and Land Covers

The Project site contains mostly developed land and disturbed habitat, with planted landscaping consisting of a mix of native and non-native species, associated with the existing reservoir facility. The southern portion of the survey area occurs south of Santiago Canyon Road in a disturbed area that contains an existing corrugated metal culvert. The northern portion of the survey area contains a portion of the paved Silverado Canyon Road, and high quality native coastal sage scrub vegetation north of the road. The eastern portion of the survey area contains mostly non-native vegetation dominated by short-podded mustard (*Hirschfeldia incana*) and red brome (*Bromus rubens*). The western portion of the survey area was burned during the Silverado Fire in October and November 2020. Remnants of burned laurel sumac (*Malosma laurina*) shrubs were observed in this area with new sprouts of deerweed (*Acmispon glaber*) and short-podded mustard. Prior to the fire, the native vegetation within the western portion of the survey area would have been of relatively high quality and did not show evidence of previous disturbance beyond what is utilized for the existing reservoir and pump station. These vegetation communities and land covers listed and quantified in Table 1 and are described in further detail below.

Table 1. Impacts to Vegetation Communities and Land Cover Types within the Project Site

Vegetation Community/Land Cover Type	Study Area (acres)
Native Vegetation Communities	
Coast Live Oak Woodland	0.21
Mixed Coastal Sage Scrub	0.33
Mixed Coastal Sage Scrub (disturbed)	0.82
Non-Natural Communities and Land Covers	
Disturbed Habitat	0.34
Ornamental Landscaping	0.53
Ruderal Grassland	1.06
Urban/Developed	1.65
Total	**4.92**

4.1.1 Native Vegetation Communities

Mixed Coastal Sage Scrub. Mixed scrub (coastal sage scrub) is dominated by an even mix of each four or more of California buckwheat (*Eriogonum fasciculatum*), sage (*Salvia* spp.), bush sunflower (*Encelia califomica*), laurel sumac, monkeyflower (*Mimulus* spp)., and cactus (*Opuntia* spp.). California sagebrush (*Artemisia califomica*) can occur but is not an important species in this community. Other species observed within this community on the survey area include but are not limited to: deerweed, coyote brush (*Baccharis pilularis*), Menzies's golden bush (*Isocoma menziesii*), and toyon (*Heteromeles arbutifolia*). Mixed coastal sage scrub was mapped for the northern portion of the survey area, north of Silverado Canyon Road.

Mixed Coastal Sage Scrub (disturbed). This vegetation community has been called out separately in this report due to the existing disturbance observed on the western portion of the survey area from the previous Silverado Fire that burned the mixed coastal sage scrub vegetation that was previously undisturbed. Prior to the Silverado Fire in 2020, the vegetation within this distinct community would be similar to what is described above for mixed coastal sage scrub. Currently, the condition of this disturbed mixed coastal sage scrub consists of scorched bare ground, burnt laurel sumac, with resprouts of deerweed, and short-podded mustard.

Coast Live Oak Woodland. Coast live oak woodland is dominated by coast live oak (*Quercus agrifolia*) with associated shrubs such as scrub oak (*Quercus berberidifolia*), buckthorn (*Rhamnus ilicifolia*), toyon, Ribes spp., blue elderberry (*Sambucus mexicana*), snowberry (*Symphoricarpos* spp.), and poison oak (*Toxicodendron diversilobum*). The herbaceous layer is composed of goldenrod (*Solidago califomica*), blue wildrye (*Elymus glaucus*), giant wildrye (*Leymus condensatus*), melic grass (*Melica* spp.), starwort (*Stellaria* spp.), spring beauty (*Claytonia* spp.), ripgut brome (*Bromus diandrus*), man-root (*Marah* spp.), nightshade (*Solanum* spp.), and eucrypta (*Eucrypta crysantha*). It is found in foothills throughout Orange County, including the Gypsum-Fremont Canyon area, Lorna Ridge, Santa Ana Mountains, Rancho Mission Viejo, and the Talega Reserve area. A very small stand of coast live oak woodland occurs in the southern portion of the survey area, south of Santiago Canyon Road.

4.1.2 Non-Natural Communities and Land Covers

Ruderal Grassland. Ruderal grassland (ruderal) consists of early successional grassland dominated by pioneering herbaceous plants that readily colonized disturbed ground. Ruderal grassland is dominated by many grassland species and species of the genera Centaurea, Brassica, Malva, Salsola, Eremocarpus, Amarantlzus, Atriplex. Ruderal grassland occurs scattered throughout the county at any site that has been disturbed by either natural or human causes. Ruderal grassland is mapped for the eastern and southern portions of the survey area in areas dominated by red brome, ripgut brome, and short-podded mustard.

Ornamental Landscaping. Ornamental landscaping (parks and ornamental plantings) consists of introduced trees, shrubs, flowers, and turf grass. Ornamental landscaping occurs in greenbelts, parks, and horticultural plantings throughout the county. Ornamental landscaping is mapped for the vegetation planted around the existing reservoir facility that includes a mix of native and non-native tree and ground cover species such as pine (*Pinus* sp.), blue elderberry (*Sambucus nigra* ssp. *caerulea*), Peruvian pepper tree (*Schinus molle*), river red gum (*Eucalpytus camaldulensis*), and hottentot fig (*Carpobrotus edulis*).

Disturbed Habitat. Disturbed or barren (cleared or graded) areas either lack vegetation or are dominated by a sparse cover of ruderal vegetation, such as Maltese star thistle (*Centaurea melitensis*), wild oats (*Avena fatua*), black mustard (*Brassica nigra*), spiny sowthistle (*Sonchus asper*), and prickly lettuce (*Lactuca serriola*). The disturbed or barren mapping unit refers to areas that lack vegetation but still retain a pervious surface, or that are dominated by a sparse cover of ruderal vegetation. Disturbed habitat is mapped immediately adjacent to the existing reservoir facility and Santiago Canyon Road.

Developed mapping unit. Developed land typically includes areas that have been constructed upon and do not contain any naturally occurring vegetation. These areas are generally characterized as graded land with asphalt and concrete placed upon it. Developed areas mapped for the Project site include the existing reservoir facility and paved Santiago Canyon Road and Silverado Canyon Road. No vegetation was observed within developed areas on the survey area.

4.2 Wildlife

The Project site consists of native scrub vegetation, in an undeveloped portion of southern Orange County, and therefore wildlife observed within the Project site contains a mix of species typically observed in native upland habitats. Wildlife use was limited during the reconnaissance. Bird species detected include spotted towhee (*Pipilo maculatus*), California quail (*Callipepla californica*), common raven (*Corvus corax*), house finch (*Haemorhous mexicanus*), song sparrow (*Melospiza melodia*), mourning dove (*Zenaida macroura*), lesser goldfinch (*Spinus psaltria*), and Anna's hummingbird (*Calypte anna*). No active bird nests were observed during the field visit; however, the Project site could support nesting migratory birds. No mammal species were observed during the survey but species expected to occur include, California ground squirrel (*Otospermophilus beecheyi*) and desert cottontail (*Sylvilagus audubonii*). No amphibian, reptile, or fish species were observed within the Project site, however reptile species expected to occur include the western fence lizard (*Sceloporus occidentalis*). Details regarding the potential for special-status species to occur within the Project site are discussed further below.

4.3 Special-Status Plant Species

Special-status plants include those listed, or candidates for listing, as threatened or endangered by USFWS or CDFW, or species identified as rare by CNPS (particularly California Rare Plant Rank (CRPR) 1A – Presumed extinct in California; CRPR 1B – Rare, threatened, or endangered throughout its range; and CRPR 2 – Rare or Endangered in California, more common elsewhere). A total of 73 special-status plant species were reported in the CNDDB, USFWS, and CNPS databases as occurring in the vicinity of the Project site. For each species evaluated, a determination was made regarding the potential for the species to occur on site based on information gathered during the field reconnaissance, including the location of the site, habitats present, current site conditions, and past and present land use.

Of the 73 special-status plant species listed in the CNDDB, CNPS, and USFWS (2021) databases as occurring in the vicinity of the Project site, 19 species were determined to have no potential to occur within the Project site based on an evaluation of species ranges/elevation and known habitat preferences. Another 51 were determined to have a low potential to occur and three were determined to have a moderate potential to occur. Those three species include: Catalina Mariposa Lily (*Calochortus catalinae*), Plummer's mariposa lily (*Calochortus plummerae*) and Many-stemmed dudleya (*Dudleya multicaulis*). However, none of these species were observed on the Project site during the focused rare plant survey conducted in spring 2021.

4.4 Special-Status Wildlife Species

Special-status wildlife include those listed, or candidates for listing, as threatened or endangered by USFWS or CDFW, or designated as a Species of Special Concern by CDFW. A total of 82 special-status wildlife species were reported in the CNDDB and USFWS databases as occurring in the vicinity of the Project site. For each species evaluated, a determination was made regarding the potential use of the site based on information gathered during the field reconnaissance, known habitat preferences, and knowledge of their relative distributions in the area.

Of the 82 special-status wildlife species listed in the CNDDB and USFWS databases as occurring in the vicinity of the Project site, 35 species were determined to have no potential to occur within the Project site based on an evaluation of species ranges/elevation and known habitat preferences. A total of 47 special-status species were determined to have a potential to occur due to suitable habitat within the Project site and of those 47, 8 were determined to have a moderate to high potential to occur. These species include: orange-throated whiptail (*Aspidoscelis hyperythra*), San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*), red diamondback rattlesnake (*Crotalus ruber*), Blainville's horned lizard (*Phrynosoma blainvillii*), coast patch-nosed snake (*Salvadora hexalepis virgultea*), grasshopper sparrow (*Ammodramus savannarum*), coastal California gnatcatcher (*Polioptila californica californica*), and Crotch bumble bee (*Bombus crotchii*). All of these species are covered under the HCP/NCCP except for San Diegan tiger whiptail and Crotch bumble bee. While these species may occur in the larger area of suitable native habitat adjacent to the work area, the potential for species occurrence with the very limited impact area is exceedingly small. The suitability of the site to support these species would not be reduced by implementation of the project. Therefore, potential impacts to these species from direct mortality or loss of habitat is less than significant.

Additionally, USFWS-designated critical habitat for the federally-threatened and state-endangered arroyo toad (*Anaxyrus californicus*) overlaps with the project site (USFWS 2020). Suitable habitat for this species occurs within the adjacent Santiago Creek and Silverado Creek located outside of the project site boundary. Additionally, the project site lacks primary constituent elements to support this species as there are no drainages or floodplains within the project site. Furthermore, the potential for arroyo toad to utilize upland habitats on the project site for aestivation (i.e., burrowing dormant period of life cycle) is low given the roadway that separates the project site from suitable floodplain habitat and general low suitability of the habitat onsite. Therefore, this species does not have a potential to occur on the project site due to lack of suitable habitat, it will not be impacted by the project and impacts within critical habitat would not adversely affect the species.

None of these species were observed during the biological reconnaissance in spring 2021.

4.5 Jurisdictional Aquatic Resources

The Project site is situated between Silverado Creek to the northeast and Santiago Creek to the southwest. The Project site does not support any riparian/wetland vegetation communities nor were any tributaries to these two creeks observed during the surveys. The southern portion of the project site features updates to an existing outlet structure. This outlet does not currently connect to a natural or man-made drainage feature and instead sheet flows to the south towards Santiago Creek. There is also a roadside drainage ditch along the northern portion of Santiago Canyon Road that controls road runoff. There is no connectivity to any tributaries or creeks, and the ditch does not provide habitat. Therefore, the Project site does not support jurisdictional aquatic resources.

5 Impacts

Improvements to the existing Fleming Reservoir and Pump Station facility would primarily occur within the existing developed footprint (Figure 2 and Table 2). This impact analysis assumes that typical construction Best Management Practices (BMPs) will be implemented including delineation of the project construction limits with fencing or other clearly identifiable markings to avoid the potential for impacts outside of the construction limits, as well as typical storm water pollution prevention controls.

A minor impact to disturbed coastal sage scrub (67 square feet [sq ft.]) would occur along the western edge of the Project site. This impact is located outside of the NCCP/HCP Reserve within take authorized "Urban" designated lands. In addition, installation of the off-site storm drain would result in impacts to the understory of coast live oak woodland (149 sq ft.) and ruderal grassland. The off-site storm drain impacts (total 615 sq. ft) traverse the NCCP/HCP Reserve (356 sq ft.), take authorized "Urban" designated lands, and a portion of a Conservation Easement coded as "authorized take" (156 sq ft.).

Table 2. Impacts to Vegetation Communities and Land Cover Types within the Project Site

Vegetation Community/Land Cover Type	Study Area (acres)	Impacts (acres)			
		Conservation Easement	Reserve	Urban	Total
Native Vegetation Communities					
Coast Live Oak Woodland	0.21	--	0.003	--	0.003
Mixed Coastal Sage Scrub	0.33	--	--	--	--
Mixed Coastal Sage Scrub (disturbed)	0.82	--	--	0.002	0.002
Non-Natural Communities and Land Covers					
Disturbed Habitat	0.34	--	--	0.291	0.291
Ornamental Landscaping	0.53	--	--	0.400	0.400
Ruderal Grassland	1.06	0.001	0.005	0.139	0.145
Urban/Developed	1.65	0.002	--	0.662	0.664
Total	**4.92**	**0.003**	**0.008**	**1.494**	**1.505**

Although impacts to coastal sage scrub, even when located outside the NCCP/HCP Reserve typically require mitigation through the deduction of Non-Reserve Take Allocation credits, these credits are recorded in one-tenth (0.1) or one-hundredth (0.01) of an acre increments. The project-related impacts are so minimal (0.002 acre) any deduction would not affect the Non-Reserve Take Allocation ledger. This level of impact is considered *de minimus*, would not have any appreciable effect on the integrity of habitat in the area or region, and for these reasons is considered less than significant.

Although a minor portion of the impacts associated with the stormdrain outfall would occur within the Reserve, these impacts are compatible with Reserve uses and act to minimize potential adverse indirect impacts from uncontrolled drainage runoff. Similar to the impacts to coastal sage scrub the impacts to the Reserve and

understory of coast live oak woodland are *de minimus* in size, would not have any appreciable effect on the integrity of habitat in the area or region, and for these reasons is considered less than significant.

Impacts to other non-native habitats or land covers do not require mitigation and are adequately offset by IRWD's participation as a landowner in the NCCP/HCP which has resulted in conservation of like habitats within the Reserve.

In addition, the NCCP/HCP identifies certain construction-related minimization measures to assure that development/construction within areas recommended to be authorized for incidental take of coastal sage scrub (including allowed uses within the Reserve System) be undertaken in a manner that minimizes impacts on gnatcatchers presently using or in close proximity to the habitat to be converted. These minimization measures would also be expected to benefit other Identified coastal sage scrub species. For participating landowners, each landowner will comply with the "construction-related minimization measures" as part of compliance with the landowner's individual Section 10(a) permit pursuant to the Implementation Agreement. However, these construction-related measures pertain to development/construction that occurs within areas of existing coastal sage scrub and other substantial stands of native habitat. The project site only supports very minimal extent of native habitat and therefore measures such as flushing birds out of small areas of impacted habitat would not meaningfully minimize impacts due to the low potential for birds to occur in these small areas during construction. Other measures such as fencing/marking the limits of work and dust control are consider typical construction practices and would be implemented by IRWD. Given that the project would be consistent with the NCCP/HCP and be constructed using typical construction best management practices that ensure that only minimal effects to NCCP/HCP-covered species and habitat would occur, impacts would be less than significant.

As described in Section 4.4, three special-status plant species were identified in the literature review as potentially occurring in the Project vicinity and surrounding areas. None of these species were observed within the Project site during the focused rare plant survey conducted in spring 2021. Therefore, the proposed project would not result in impacts to special-status plant species.

No special-status wildlife species were observed during the biological reconnaissance surveys. In addition, the site is still recovering from the fire which occurred in October and November 2020 and does not provide the vegetation coverage that would support these species. However, impacts to active nesting birds and/or harassment of active nesting coastal California gnatcatcher would be considered significant without implementation of MM-BIO-1 and MM-BIO-2 (see Section 6). Impacts to special-status wildlife species from the loss of habitat are mitigated through conformance with the NCCP/HCP which provide conservation of multiple species and associated habitats.

6 Mitigation

The following mitigation measures will be implemented to reduce impacts to native habitat and special-status wildlife to less than significant.

MM-BIO-1 Coastal California Gnatcatcher Pre-construction Surveys

If project construction must commence during the coastal California gnatcatcher breeding season (February 15 – July 30), a pre-construction survey (in accordance with U.S. Fish and Wildlife Service presence/absence survey protocol) shall be conducted by a permitted biologist to determine the presence/absence of gnatcatchers within 300 feet of

the project site prior to the start of construction. If an active coastal California gnatcatcher nest is determined to be present, additional avoidance measures will be required to minimize impacts to the maximum extent feasible, such as such as limiting construction within 300-feet of occupied habitat and delaying work within this buffer until nesting activity is completed. The permitted biologist may also recommend other measures reduce the buffer, which may include, but are not limited to, erection of sound barriers (e.g., noise blankets), erection of visual barriers (e.g., hay bales), or full-time monitoring by a qualified biologist.

MM-BIO-2 Nesting Bird Surveys and Avoidance of Active Nests

If project construction must commence between February 1 and September 1, a qualified biologist shall conduct a nesting bird survey within 5 days of commencement of construction activities to confirm the absence of nesting birds. If active nesting of birds is observed within 100 feet (ft) (500 ft for raptors) of the designated construction area during surveys, the biologist, in consultation with Irvine Ranch Water District, will determine suitable buffers around the active nests (e.g., a minimum of 50 ft for passerines and 250 ft for raptors). The buffer areas must be avoided until the nests are no longer occupied and the juvenile birds can survive independently from the nests. The qualified biologist may also recommend other measures to reduce the size of the buffer, which may include, but are not limited to, erection of sound barriers (e.g., noise blankets), erection of visual barriers (e.g., hay bales), or full-time monitoring by a qualified biologist.

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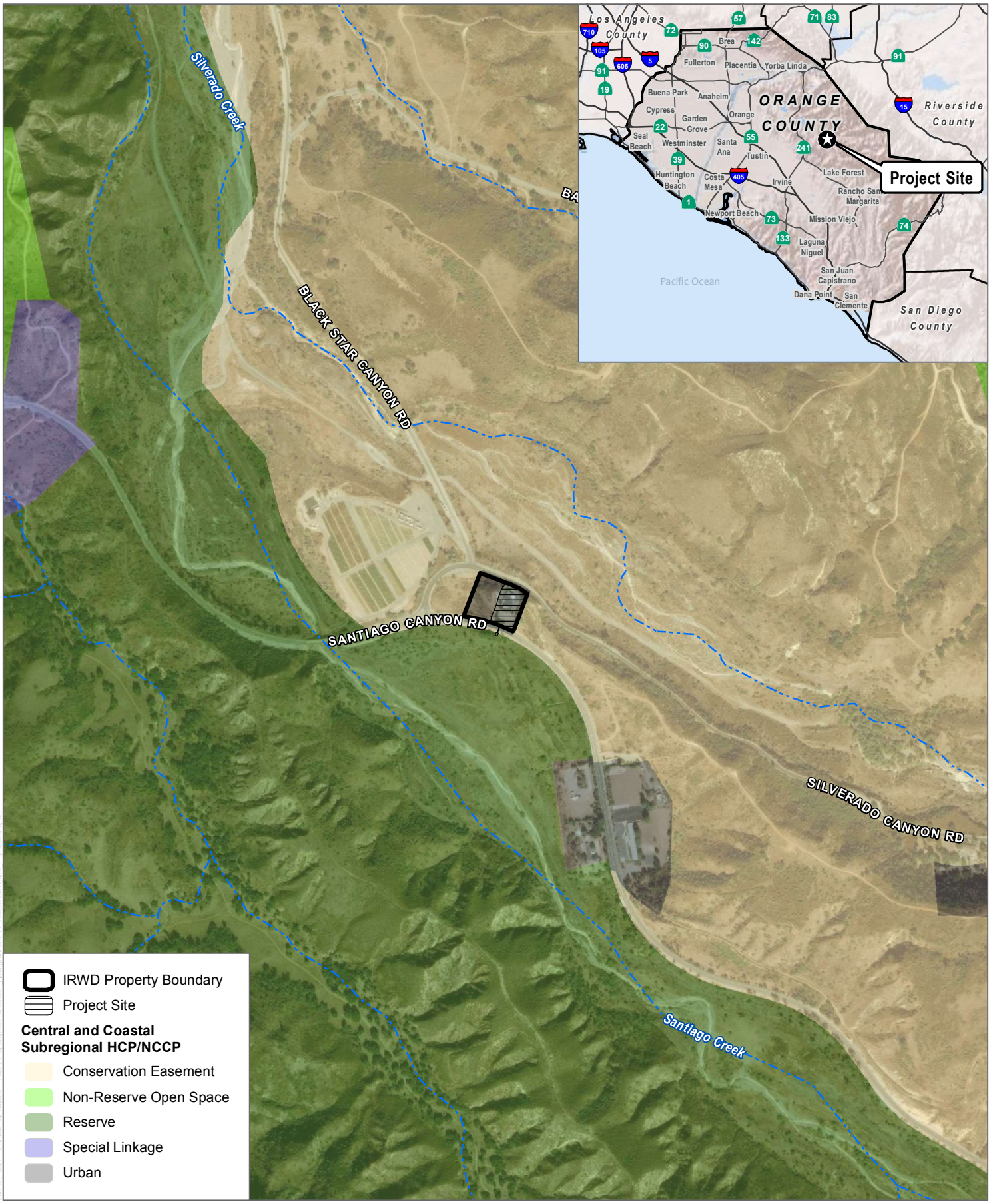


SOURCE: Esri World Imagery 2019; NHD 2021; County of Orange 1996

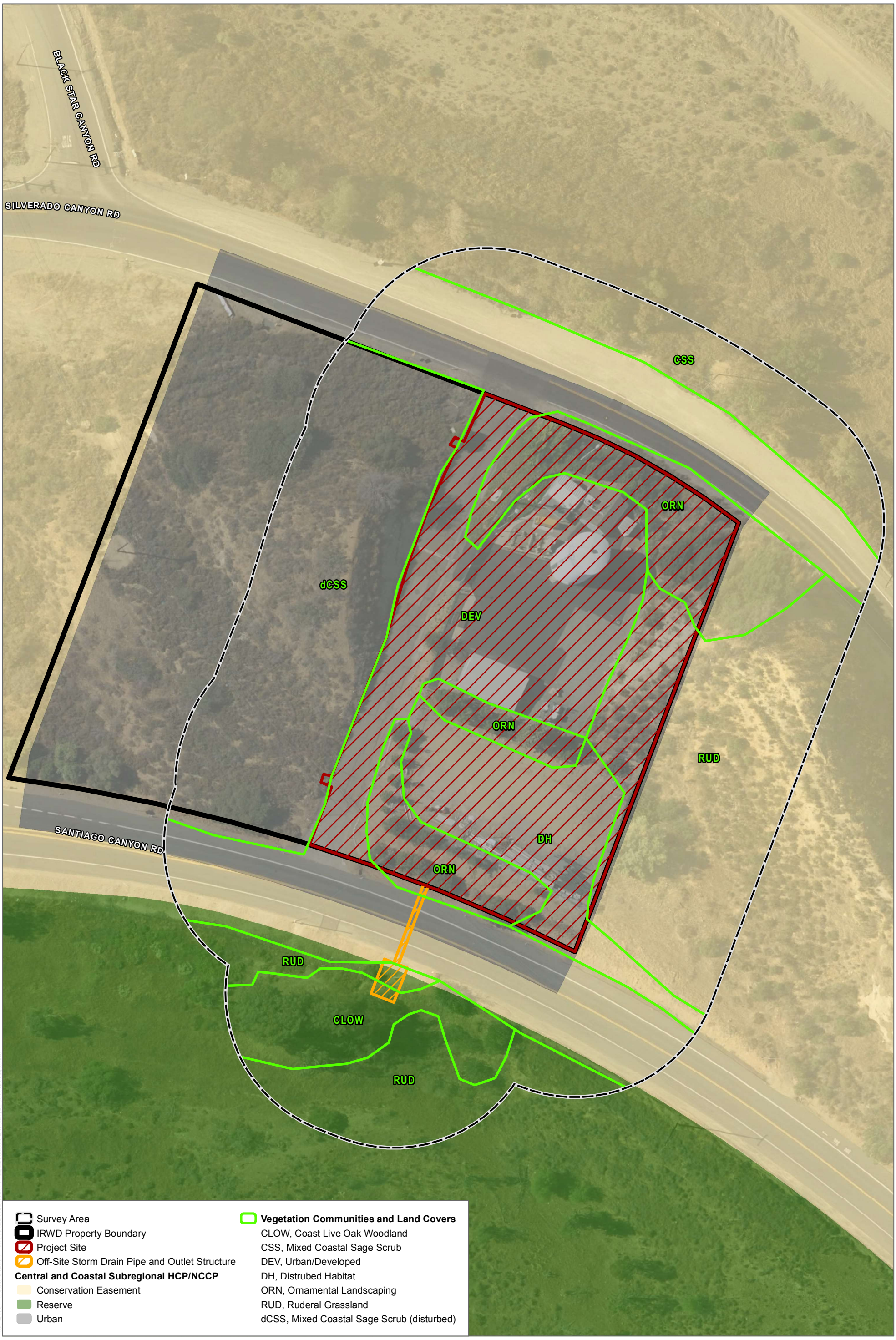
DUDEK

0 500 1,000 Feet
0 150 300 Meters
1:12,000

FIGURE 1

Project Location

Fleming Zone 8 Reservoir and Pump Station Improvements Project



SOURCE: Esri World Imagery 2019; County of Orange 1996

DUDEK

0 30 60 Feet

FIGURE 2

Impacts - Biological Resources

Fleming Zone 8 Reservoir and Pump Station Improvements Project

Appendix C-1

Historic Resources Technical Report

HISTORICAL RESOURCES TECHNICAL REPORT FOR FLEMING ZONE 8 RESERVOIR AND PUMP STATION IMPROVEMENTS PROJECT, ORANGE COUNTY, CALIFORNIA

Prepared for:

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Executive Summary

Dudek was retained by the Irvine Ranch Water District (IRWD) to prepare a Historical Resources Technical Report for the proposed Fleming Zone 8 Reservoir and Pump Station Improvements Project (Project) in the Santiago Canyon area of unincorporated Orange County. As currently planned, the proposed Project consists of the following: demolition of the current reservoir, pump station, and associated buildings; construction of a new reservoir, pump station, storage building, and associated pipelines and utilities. Associated ground disturbing improvements include a new access road, fencing, retaining wall, gates, and landscaping.

This report includes a pedestrian survey of the Project site by a qualified architectural historian; building development, and archival research; development of an appropriate historic context for the Project site; and recordation and evaluation of one built environment resource over 45 years old for historical significance and integrity in consideration of National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) designation criteria. This report was prepared in conformance with California Environmental Quality Act (CEQA) Guidelines Section 15064.5 for historical resources, and all applicable local guidelines and regulations.

The Fleming Zone 8 Reservoir and Pump Station, located at 7431 Santiago Canyon Road (APN 576-013-02), does not appear eligible under any NRHP or CRHR designation criteria due to a lack of significant historical associations and architectural merit. Therefore, the reservoir and pump station is not considered an historical resource for the purposes of CEQA. Therefore, the Project would result in a less than significant impact to historical resources under CEQA.

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1 Introduction

Dudek was retained by the Irvine Ranch Water District (IRWD, District) to prepare an Historical Resources Technical Report for the proposed Fleming Zone 8 Reservoir and Pump Station Improvements Project (Project) in the Santiago Canyon area of unincorporated Orange County. This report includes the results of a pedestrian survey of the Project site by a qualified architectural historian; building development and archival research; development of an appropriate historic context for the Project site; and recordation and evaluation of one built environment resource over 45 years old (Fleming Zone 8 Reservoir and Pump Station) for historical significance and integrity in consideration of National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR) and local designation criteria. This report was prepared in conformance with California Environmental Quality Act (CEQA) Guidelines Section 15064.5 for historical resources.

1.1 Project Location and Description

Project Location

The Project site is located near the junction of Silverado Canyon Road and East Santiago Canyon Road (State Highway 18) in unincorporated Orange County, California. The surrounding area is a combination of agricultural land and natural areas. The 2.9-acre site is located in the Irvine Ranch Natural Area, and a short distance to the east is the Cleveland National Forest. The Limestone Canyon Natural Preserve is across the road to the southwest, and the Black Star Canyon Wilderness Park is located to the Northeast. The Project site is located within the A-1 (Agricultural use) zoning district in an unincorporated area. Specifically, the Project site includes one parcel (Figure 1. Project Location) located at 7431 Santiago Canyon Road (APN 576-013-02).

The parcel contains the Fleming Zone 8 Reservoir and Pump Station, which includes a reservoir and office building over 45 years old, as well as two buildings and several structures that are less than 45 years old. The property is bisected by a paved driveway. The west half of the property is vacant.

Project Description

IRWD is proposing to implement the Fleming Zone 8 Reservoir and Pump Station Improvements Project (Project). The proposed Project would be located at IRWD's existing Fleming Reservoir and Pump Station facility, which is located approximately 500 feet east of the intersection of Santiago Canyon Road and Silverado Canyon Road, in the Santiago Canyon area of unincorporated Orange County. The existing site currently contains a 150,000 gallon-steel drinking water storage reservoir, a pump station, support structures, and associated equipment, and is the only source of water service for IRWD's approximately 2,500 customers within Santiago Canyon, Silverado Canyon, Williams Canyon and Modjeska Canyon (collectively known as the Santiago Canyon Area). IRWD has identified that improvements to the facilities are needed to ensure that the facilities are capable of supplying maximum daily water demands.

Implementation of the Project would improve the reliability of IRWD's drinking water storage and conveyance facilities in this part of IRWD's service area. Major Project components would include:

- Demolition of the existing aboveground 150,000-gallon steel reservoir, pump station, administration and storage building.
- Construction of an aboveground 1.3 million-gallon (MG) prestressed concrete reservoir and associated pipelines.
- Construction of a new, pump station, equipped with three, approximately 600 gallon per minute pumps that will be enclosed within a masonry block building and will include a dedicated electrical room and dedicated operations room with a restroom.
- Construction of a replacement storage building.
- Construction of a masonry block building for the disinfection facilities, which will include sodium hypochlorite and aqueous ammonia storage and feed systems.
- Replacement of an existing 150-kilowatt (kW) standby diesel generator with a new, 350kW standby diesel generator to provide power to the facilities during both planned and unplanned electrical service outages.
- Installation of a 1,000-gallon diesel fuel storage tank and dispensing system.
- Improvements to the existing site electrical service and installation of new controls and telemetry equipment, including installation of an antenna on top of the tank for radio communications and equipment control.
- Installation of site improvements including a modified access road, fencing, retaining walls, two motorized swing gates, and landscaping. · Installation of new pipelines, located in the access road, which will extend into Santiago Canyon Road and Silverado Canyon Road.

SOURCE: Bing Maps 2021; USGS NHD 2021

DUDEK

0 315 630 Feet

FIGURE 1

Project Location

Fleming Zone 8 Reservoir and Pump Station Improvements Project

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1.2 Project Personnel

This report and associated property significance evaluation was prepared by Dudek Architectural Historians Adrienne Donovan Boyd, MSHP and Kate Kaiser, MSHP. Ms. Kaiser also completed the built environment field work. This report was reviewed by for quality assurance/quality control by Dudek Principal Architectural Historian Samantha Murray, MA. Resumes for all key personnel are provided in Appendix A, Preparers Qualifications.

1.3 Regulatory Setting

Federal

National Register of Historic Places

While there is no federal nexus for this project, the subject property was evaluated in consideration of NRHP designation criteria. The NRHP is the United States' official list of districts, sites, buildings, structures, and objects worthy of preservation. Overseen by the National Park Service, under the U.S. Department of the Interior, the NRHP was authorized under the National Historic Preservation Act, as amended. Its listings encompass all National Historic Landmarks, as well as historic areas administered by the National Park Service.

NRHP guidelines for the evaluation of historic significance were developed to be flexible and to recognize the accomplishments of all who have made significant contributions to the nation's history and heritage. Its criteria are designed to guide state and local governments, federal agencies, and others in evaluating potential entries in the NRHP. For a property to be listed in or determined eligible for listing, it must be demonstrated to possess integrity and to meet at least one of the following criteria:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
B. That are associated with the lives of persons significant in our past; or
C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
D. That have yielded, or may be likely to yield, information important in prehistory or history.

Integrity is defined in NRHP guidance, "How to Apply the National Register Criteria," as "the ability of a property to convey its significance. To be listed in the NRHP, a property must not only be shown to be significant under the NRHP criteria, but it also must have integrity" (NPS 1997). NRHP guidance further asserts that properties be completed at least 50 years ago to be considered for eligibility. Properties completed fewer than 50 years before evaluation must be proven to be "exceptionally important" (criteria consideration to be considered for listing.

State

California Register of Historical Resources

In California, the term "historical resource" includes but is not limited to "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (California Public Resources Code Section 5020.1(j)). In 1992, the California legislature established the CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (California Public Resources Code Section 5024.1(a)). The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, enumerated below. According to California Public Resources Code Section 5024.1(c) (1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. Is associated with the lives of persons important in our past.
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
4. Has yielded, or may be likely to yield, information important in prehistory or history.

In order to understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see 14 CCR 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

California Environmental Quality Act

As described further below, the following CEQA statutes and CEQA Guidelines are of relevance to the analysis of archaeological, historical, and tribal cultural resources:

1. California Public Resources Code Section 21083.2(g) defines "unique archaeological resource."
2. California Public Resources Code Section 21084.1 and CEQA Guidelines Section 15064.5(a) define "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource." It also defines the circumstances when a project would materially impair the significance of an historical resource.
3. California Public Resources Code Section 21074(a) defines "tribal cultural resources."

4. California Public Resources Code Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
5. California Public Resources Code Sections 21083.2(b)-(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (California Public Resources Code Section 21084.1; CEQA Guidelines Section 15064.5(b)). An "historical resource" is any site listed or eligible for listing in the CRHR. The CRHR listing criteria are intended to examine whether the resource in question: (a) is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; (b) is associated with the lives of persons important in our past; (c) embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or (d) has yielded, or may be likely to yield, information important in pre-history or history.

The term "historical resource" also includes any site described in a local register of historic resources or identified as significant in a historical resources survey (meeting the requirements of California Public Resources Code Section 5024.1(q)).

CEQA also applies to "unique archaeological resources." California Public Resources Code Section 21083.2(g) defines a "unique archaeological resource" as any archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

All historical resources and unique archaeological resources – as defined by statute – are presumed to be historically or culturally significant for purposes of CEQA (California Public Resources Code Section 21084.1; CEQA Guidelines Section 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (California Public Resources Code Section 21084.1; CEQA Guidelines Section 15064.5(a)). A site or resource that does not meet the definition of "historical resource" or "unique archaeological resource" is not considered significant under CEQA and need not be analyzed further (California Public Resources Code Section 21083.2(a); CEQA Guidelines Section 15064.5(c)(4)).

Under CEQA and significant cultural impact results from a "substantial adverse change in the significance of an historical resource [including a unique archaeological resource]" due to the "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines Section 15064.5(b)(1); California Public Resources Code Section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project:

1. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
2. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
3. Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

Local

Silverado-Modjeska Specific Plan

The Project site is located within the boundary of the Silverado-Modjeska Specific Plan (SILMOD; Orange County Board of Supervisors 1977:ii), which is a policy document for the defined areas of Modjeska Canyon, Williams Canyon, Silverado Canyon, Baker Canyon, and Black Star Canyon. The SILMOD Plan was adopted by the Orange County Board of Supervisors in 1977 and interprets and details many general plan policies with specific reference to the conditions of the Silverado-Modjeska area. Generally, the SILMOD Plan places an emphasis on maintaining low densities within the canyon areas and preserving the beauty and integrity of the natural terrain and vegetation (Orange County Board of Supervisors 1977). While the Project is exempt from local planning and zoning laws due to its status as a water storage and conveyance facility carried out by a Special District, the SILMOD Plan does not provide any specific zoning designations for the site.

Orange County General Plan

The Orange County General Plan primarily focuses on the unincorporated areas of Orange County (OCGP 2015: III-1). The plan includes nine elements addressing Land Use, Transportation, Public Services and Facilities, Resources, Recreation, Noise, Safety, Housing and Growth Management. Chapter III: Land Use includes official County policies on the location and character of land uses necessary for orderly growth and development. Historical resources are included in the Open Space Reserve (OSR) overlay, which identifies lands of scenic and natural attraction, and areas of ecological, cultural, historical, and recreational significance that are permanently preserved as and restricted to open space and compatible uses. The Project site is surrounded by zone A1, General Agricultural and Rural Residential.

Orange County Historical Commission

Additionally, the Orange County Historical Commission, a citizen advisory board, was established by the Board of Supervisors in 1973 (OCHC 2021). The Historical Commission's role is to advise the Board of Supervisors' and County agencies regarding these matters. The duties of the commission include:

- Identify and promote the preservation and use of buildings, sites, structures, objects, and districts of importance in Orange County.
- Stimulate and encourage financial and partnership support for projects in the public and private sectors.
- Coordinate countywide programs and act as a liaison among local organizations.
- Advise and aid the public and private sectors in meeting museum needs.
- Promote research, writing and publication of Orange County history and related subjects.
- Develop and maintain a central file of Orange County historical resources for public use.
- Encourage and facilitate cooperation among local historical societies and organizations.

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2 Background Research

2.1 Building Development and Archival Research

Building development and archival research were conducted for the Project site in an effort to establish a thorough and accurate historic context for the significance evaluations and to confirm the building development history of the Project site.

Documents on File with IRWD

IRWD provided Dudek with a file of reports and drawings associated with the site. Several architectural drawings were available from 1963, 1964 and 1977. Table 1, below, summarizes reports that were provided by IRWD.

Table 1. Documents and Drawings Provided by IRWD

Document Identification	Authors	Year	Title
Architectural Drawings	John Toups	c. 1963-1964	Santiago County Water District: Phase II Reservoir and Booster Site (Santiago County Water District 1964)
Architectural Drawings	Robert Bein, William Frost & Associates	1977	Manning and Fleming Pump Stations
Architectural Drawings	AT&T	Unknown	AT&T Antenna Configuration Plans, date unknown
RRM Design Group Project # 11359	RRM Design Group	2008	IRWD Facility Fire Protection Improvements Report
None	Stantec	2017	Draft-Hydraulic Model and Supply Analysis of the Existing and Future Santiago Area Distribution system
NEC Project Number: 20-0116	National Econ Corporation	2020	Demolition Asbestos and Lead Based Paint Inspection and Site Assessment
Tetra Tech Project # 200-09368-20001	Tetra Tech	2020	Fleming Zone 8 Tank and Zone 8 to 9 Booster Pump Station Improvement Project
None	Unknown	2018-2020	Fleming Pump Station Energy Use
Architectural Drawing	Unknown	2020	Fleming Septic
51-11910 R	Unknown	Unknown	Specifications for the standby diesel engine driven generating system

Orange County Public Works

Dudek contacted the Orange County Public Works-Development Services/Building Safety Division through the MyOCeServices.ocgov.com web portal and requested information pertaining to the Project site. The Development Services/Building and Safety division maintains records pertaining to building permits and development services. The request was filed on February 9, 2021. On February 10, 2021, Orange County Development Services and

Building Safety emailed attachments with seven Non-Residential Building Permit Summaries, three Clearance Histories, and two Electrical Permit Summaries. The pertinent information from these files were incorporated into the site description.

Orange County Archives

Dudek contacted the Orange County Archives on February 9, 2021, for any information pertaining to the Project site and the water district. The archives responded on the same day. On February 10, the County archivist emailed a chain of title for the Project site as well as several additional sources. The information obtained from the archives was incorporated into the historic context.

Orange County Historical Society

Dudek contacted the Orange County Historical Society for information about the Project site on February 9, 2021. The Orange County Historical Society replied on February 9, 2021, with information pertaining to their Covid-19 related closure closed due to the ongoing "stay at home' orders put in place by California Governor. Additionally, they reiterated they do not have access to the historical collections and archives and most requests cannot be filled until after the "stay at home" ordered is lifted.

Historical Newspaper Search

Dudek reviewed historical newspapers covering the Project site history and general Orange County history to understand the history and development of the area surrounding the Project site. All information obtained from the historical newspaper search was incorporated into the historic context.

Historic Maps

Historic maps, including county plat maps, and USGS topographic maps, were examined to determine the likelihood of encountering built environment resources on the Project site. Given the rural nature of the Project site, there are no Sanborn maps for the area.

The Project site is located on the Lomas de Santiago Land Grant in Eastern Orange County, California. An 1889 Orange County Map shows the Santiago Canyon Road passes by the Project site and the Santa Clara Coal Mine is found to the east along Silverado Canyon Road. Both roads noted on the map follow generally the same alignment as found today. Another map, from 1921, depicts the Project site at the junction of Santiago and Silverado Canyons, but lacks enough detail from which to draw historical information (Orange County Archives 1889, 1921).

Historical Aerial Photographs

A review of historical aerial photographs for the area surrounding the Project site was conducted as part of the archival research effort from the following years: 1946, 1948, 1952, 1966, 1967, 1980, 1994, 2002, 2003, 2006, 2007, 2009, 2010, 2011, 2013, and 2016. Table 2 discusses observations and findings from these available aerials (NETR 2020; Google Earth Historic Satellite 2021).

Table 2. Historical Aerial Photograph Review of Project Site

Photograph Year	Observations and Findings
1946	The first available aerial of the Project site is a 1946 photograph which shows the junction of Santiago Canyon Road and Silverado Canyon Road in roughly the same alignment as they appear today. A smaller road, Black Star Canyon Road, can also be seen at this time branching off from Silverado Canyon Road and trending to the northwest. A second, smaller dirt road circles through the Project site, starting at Santiago Canyon Road, curving to the northwest, and then turning to the southeast and running parallel to Silverado Canyon Road. All the land surrounding the Project site appears undeveloped or farming-oriented, and no buildings are visible within the Project site. A creek alignment is visible along the south side of Silverado Canyon Road. To the southeast of the site, along Santiago Canyon Road, is a cluster of buildings.
1948	No discernible changes to the Project site, but the area to the northwest appears to have been cleared for agricultural or livestock uses and the building cluster to the southeast shows a planted orchard.
1952	The primary change noted in 1952 is the roads: Silverado Canyon Road, Santiago Canyon Road, and Black Star Canyon Road all appear more defined, while the road that circles through the Project site has faded considerably.
1966	The reservoir structure is visible in the Project site by 1966. Several changes to the immediate area are visible. The access road that currently bisects the Project site is visible and the road that circled the Project site is still visible, but no longer appears to connect to Santiago Canyon Road, instead ending in the Project Site. Irvine Mesa Road, to the southeast of the Project site is visible in mostly in the same alignment it follows today. The land to the west of Silverado Canyon Road is developed for some agricultural or livestock use, with several water holding areas visible. The buildings and orchard to the southeast are no longer present. To the southeast of the Project site the on the north side of the road, several structures are visible, this is the site of the Silverado Elementary School.
1967	No discernible changes.
1980	The Project site changes considerably between 1967 and 1980. The reservoir is still visible, with the addition of two structures to the north and the southeast. The north building is the office and the southeast building appears to be a trailer that was on the site for some time. The road that bisects the Project site appears to have been defined and paved. The road that circled near the Project site now again appears to connect to Santiago Canyon Road, and curves to the north and then southeast to meet Irvine Mesa Road.
1994	By 1994, an additional building is visible on the Project site. It is located to the south of the reservoir, just southwest of the garage building.
2002	This aerial is very high contrast and difficult to see. No obvious changes visible. The same building footprints are visible. It appears the southern portion of the site is being used in some capacity.
2003	No discernible changes.
2006	No discernible changes.
2007	The building located to the southeast of the reservoir tank is visible on the 2006 aerial and is clearly demolished by 2007. The fence line is clearly evident in this aerial. The road to the southeast no longer appears to be in use.
2009	The southern portion of the east lot appears to now have a paved area.
2010	No discernible changes.
2011	No discernible changes.
2013	The generator to the northwest of the reservoir is present starting in March 2013.

Table 2. Historical Aerial Photograph Review of Project Site

Photograph Year	Observations and Findings
2014	No discernible changes to the site
2016	No discernible changes.

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3 Historic Setting

3.1 Historic Period Overview

Post-contact history for the State of California is generally divided into three periods: the Spanish Period (1769–1822), Mexican Period (1822–1848), and American Period (1848–present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period in California begins with the establishment in 1769 of a settlement at San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823. Independence from Spain in 1821 marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican–American War, signals the beginning of the American Period when California became a territory of the United States.

Spanish Period (1769–1822)

Spanish explorers conducted sailing expeditions along the coast of Southern California between the mid-1500s and mid-1700s. In search of the legendary Northwest Passage, Juan Rodríguez Cabrillo stopped in 1542 at present-day San Diego Bay. With his crew, Cabrillo explored the shorelines of present-day Catalina Island as well as San Pedro and Santa Monica Bays. Much of the present California and Oregon coastline was mapped and recorded in the next half-century by Spanish naval officer Sebastián Vizcaíno. Vizcaíno's crew also landed on Santa Catalina Island and at San Pedro and Santa Monica Bays, giving each location its long-standing name. The Spanish crown laid claim to California based on the surveys conducted by Cabrillo and Vizcaíno (Bancroft 1885; Gumprecht 1999).

More than 200 years passed before Spain began the colonization and inland exploration of Alta California. The 1769 overland expedition by Captain Gaspar de Portolá marks the beginning of California's Historic period, occurring just after the king of Spain installed the Franciscan Order to direct religious and colonization matters in assigned territories of the Americas. With a band of 64 soldiers, missionaries, Baja (lower) California Native Americans, and Mexican civilians, Portolá established the Presidio of San Diego, a fortified military outpost, as the first Spanish settlement in Alta California. In July of 1769, while Portolá was exploring Southern California, Franciscan Fr. Junípero Serra founded Mission San Diego de Alcalá at Presidio Hill, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1823 (Bancroft 1885; Gumprecht 1999).

The Portolá expedition first reached the present-day boundaries of Los Angeles in August 1769, thereby becoming the first Europeans to visit the area. Father Crespi named "the campsite by the river Nuestra Señora la Reina de los Angeles de la Porciúncula" or "Our Lady the Queen of the Angeles of the Porciúncula." Two years later, Friar Junípero Serra returned to the valley to establish a Catholic mission, the Mission San Gabriel Arcángel, on September 8, 1771 (Kyle 2002). Mission San Fernando Rey de España was established nearly 30 years later on September 8, 1797.

A major emphasis during the Spanish Period in California was the construction of missions and associated presidios to convert the Native American population to Christianity and integrated communal enterprise. Incentives were also provided to bring settlers to pueblos or towns, but just three pueblos were established during the Spanish Period,

only two of which were successful and grew into California cities (San José and Los Angeles). Several factors kept growth within Alta California to a minimum, including the threat of foreign invasion, political dissatisfaction, and unrest among the indigenous population. After more than a decade of intermittent rebellion and warfare, New Spain (Mexico and the California territory) won independence from Spain in 1821. In 1822, the Mexican legislative body in California ended isolationist policies designed to protect the Spanish monopoly on trade, and decreed California ports open to foreign merchants (Dallas 1955; Kyle 2002).

Mexican Period (1822–1848)

Extensive land grants were established in the interior during the Mexican period, in part to increase the population inland from the more settled coastal areas where the Spanish first concentrated their colonization efforts. The Project site is located in the Ranchos Lomas de Santiago, a Rancho owned by José Antonio Yorba's youngest son, Teodocio Yorba (Figure 2). Yorba was granted Rancho Lomas de Santiago (Ranch of the Hills of St. James) in 1846, just before California was annexed to the United States at the end of the Mexican American War. Yorba filed a United States claim for the land in 1852. The Yorba family was one of the most successful landowners in southern California during the Mexican Period. Beginning in the 1840s and 1850s, the Yorba family had acquired six adjoining ranchos, large land grants given to individuals who had been loyal to the Spanish Crown or later to the newly independent government in Mexico. The Rancho Lomas de Santiago, which encompasses the area of the Project site, was granted by Mexican Governor Pio Pico in 1846 (Nelson 2009:2).

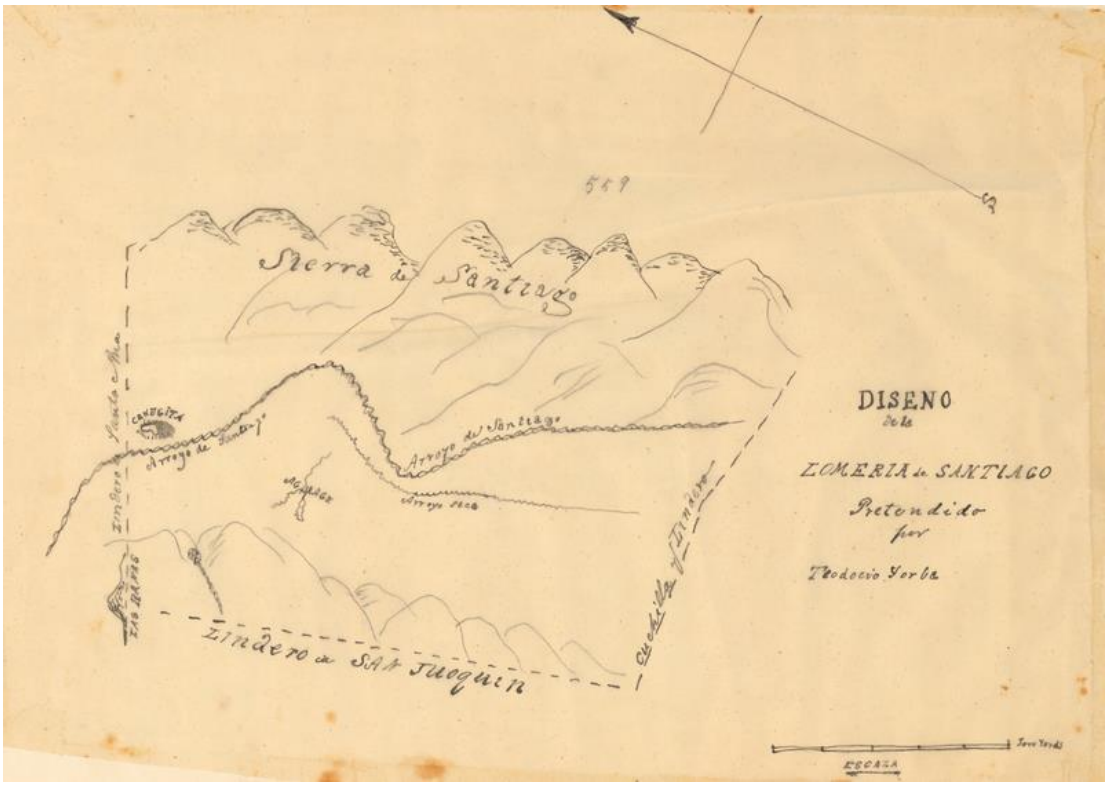

Figure 2. Lomas de Santiago, 1846 (California State Archives, a division of the California Secretary of State's Office)

During the supremacy of the ranchos (1834–1848), landowners largely focused on the cattle industry and devoted large tracts to grazing. Cattle hides became a primary Southern California export, providing a commodity to trade for goods from the east and other areas in the United States and Mexico. The number of non-native inhabitants

increased during this period because of the influx of explorers, trappers, and ranchers associated with the land grants. The rising California population contributed to the introduction and rise of diseases foreign to the Native American population, who had no associated immunities (Dallas 1955).

American Period (1848–Present)

War in 1846 between Mexico and the United States precipitated the Battle of Chino, a clash between resident *Californios* and Americans in the San Bernardino area. The Mexican–American War ended with the Treaty of Guadalupe Hidalgo in 1848, ushering California into its American period. California officially became a state with the Compromise of 1850, which also designated Utah and New Mexico (with present-day Arizona) as U.S. territories (Waugh 2003). Horticulture and livestock, based primarily on cattle as the currency and staple of the rancho system, continued to dominate the Southern California economy through 1850s. The Gold Rush began in 1848, and with the influx of people seeking gold, cattle were no longer desired mainly for their hides but also as a source of meat and other goods. During the 1850s cattle boom, rancho *vaqueros* drove large herds from Southern to Northern California to feed the region's burgeoning mining and commercial boom. The cattle boom ended for Southern California as neighboring states and territories drove herds to Northern California at reduced prices. Operation of the huge ranchos became increasingly difficult, and droughts severely reduced their productivity (Cleland 2005).

3.2 Development of the Irvine Ranch

The Project site is located on the eastern edge of what would become known as the Irvine Ranch, one of the largest, most prosperous agricultural operations in Orange County. The site is located near the base of the Santa Ana Mountains and remains relatively rural. Ownership records are not complete, but histories show William Wolfskill purchased the land in from Teodocio Yorba in c. 1860 to be used for grazing sheep (Nelson 2009:2). Wolfskill was a California pioneer, and a prolific landowner, businessman, and rancher. He is also credited with being one of California's first Valencia orange ranchers (OCHC 1983: Section 8). In 1864, Wolfskill sold the 47,000-acre property to the Benjamin and Thomas Flint, Llewellyn Bixby, and James Irvine (Berumen, pers comm. 2021). Flint and Bixby were also sheep men, who were increasing their land holdings to increase their annual production of wool (Nelson 2009:2).

James Irvine, a pioneer of California agriculture and prosperous San Francisco merchant, purchased the Flint and Bixby shares of the Lomas Santiago in 1876 for $150,000 dollars. This gave Irvine control of approximately 110,000 acres of land in and around the Santa Ana Canyon (Nelson 2009:3). Irvine, an Irishman, came to America in 1846, and lived for a time in New York City. He came to California in 1849, to find his fortunes in the California gold rush. After working in the mines for several years, Irvine began selling merchandise to miners, and eventually established a successful market in San Francisco (*The San Francisco Examiner* 1886:3). James Irvine died in 1886, leaving his estate to his son, James Irvine Jr. George Irvine, James Irvine Sr.'s brother, managed the property until Irvine Jr. came into possession of the estate at the age of 25 (Nelson 2009:2; The Mail 1886:2).

When James Irvine Jr. took over the estate in 1892, he converted the ranch into a "increasingly modern, productive enterprise of field crops, grain and irrigated orchards," which was achieved by digging wells, building reservoirs, and laying pipeline to irrigate the crops (Nelson 2009:3). In 1983, Irvine Jr. began to divert water from the Santiago Creek to an area known as "The Flats" where the property's new ranch house was located. Also, in the 1880s, Irvine Jr. began to lease land to tenant farmers. These farmers grew grain and bean crops that required minimal rainfall and little to no irrigation. Historic aerials from 1946 suggest the Project site was never brought under agricultural use during the Irvine ownership. While the Project site does not appear to have been cultivated, the road through

Santiago Canyon, along the Santiago Creek, that eventually becomes Santiago Canyon Road, is visible on the 1901 topographic map of the area in generally the same orientation as it found today.

The Irvine Company

In 1894, James Irvine Jr. incorporated the Ranch as the Irvine Company and became the company's first president (Brower 2013: xxi). County deeds show the ownership of the Project site land is moved From James Irvine Sr. to the Irvine Company's holdings in 1894 (Berumen, pers comm. 2021). One of James Irvine Jr's first acts as president was to donate 160 acres of land, that had long been a popular pioneer picnic spot, to the State Board of Supervisors. This donation, land northeast of Irvine Lake, became the Irvine Ranch Historic Park, which is now the oldest park in Orange County (OCHC 1983: section 8). Around this same time, in 1889, Orange County formed out of parts of Los Angeles County (Figure 3). When Orange County formed, the Irvine Company owned almost one-fifth of the County's acreage.

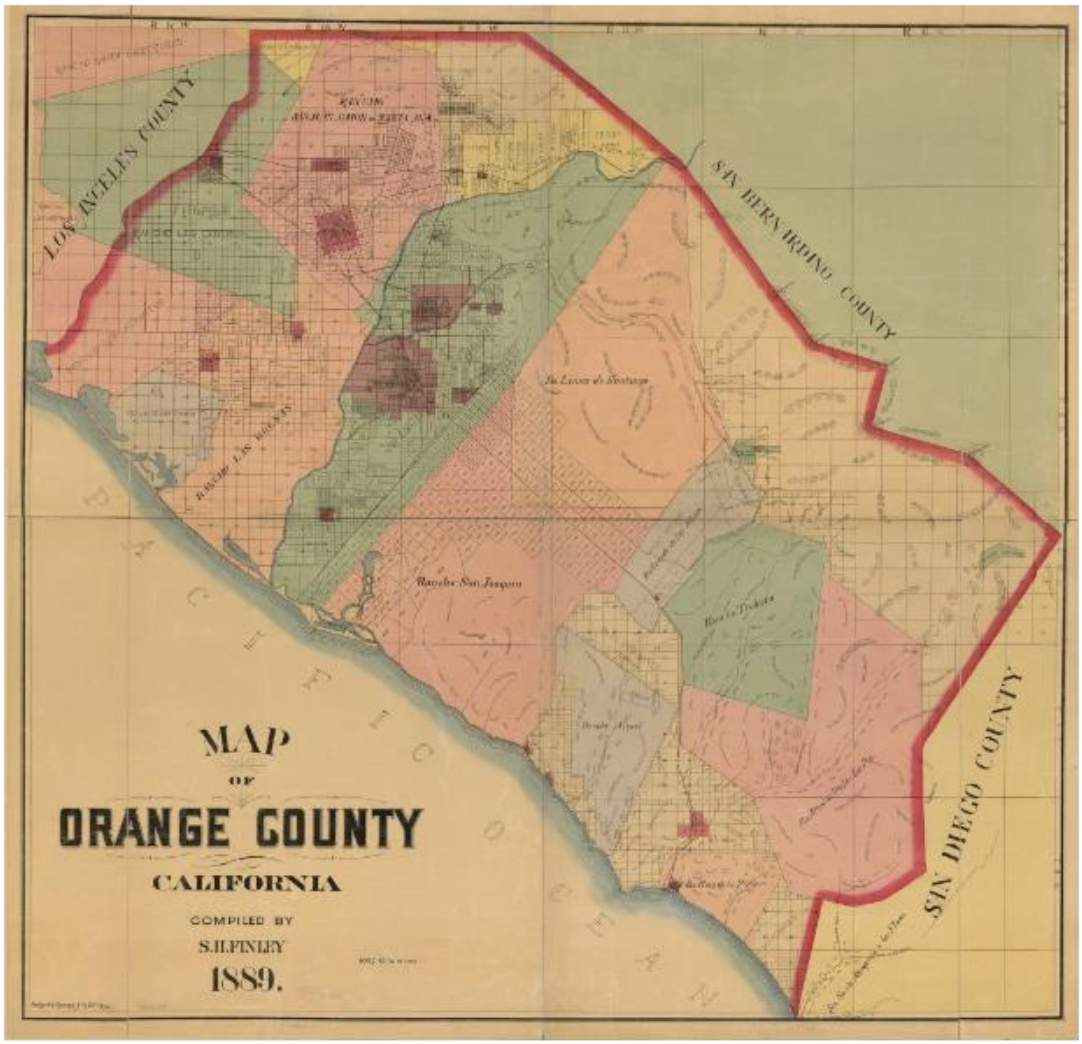

Figure 3. Orange County California Map, 1889. Shows the Ranchos and the growing population areas of Orange County. Compiled by S.H. Finley. Approximate Project Location in red (Library of Congress, Geography and Map Division) (Finley 1889).

Tenants on the Irvine Ranch increased and the land became one of the most productive tracts in California, known for the growing of lima beans, black-eyed peas, barley, oats, sugar beets, olives, walnuts, lemons, and oranges (Santa Ana Daily Register 1915:8). As the tenants on the Irvine property increased, James Irvine Jr. developed an extensive system of wells to irrigate the land (Nelson 2009:7). By 1920, it is estimated that nearly 1,200 wells had been drilled on his acreage and many were running with electric pumps. By 1930, the Irvine Ranch had 31,000 acres of lima beans under cultivation, which was often described as the "largest lima bean field in the world" (Nelson 2009:7).

In 1935, James Irvine III (known as Jase), Irvine Jr.'s oldest son, tragically died of tuberculosis. Jase was on track to be the president of the Irvine Company and his death left James Irvine Jr. distraught and without sound leadership for the future of the company (Brower 2013: xxi). Several years later, in 1937, James Irvine Jr. established the James Irvine Foundation with 51% of the company's stock to be held by the foundation and the other 49% to be distributed to family (Brower 2013: xxii).

Irvine Ranch Water Management Facilities

Ongoing water quality problems and water scarcity made it clear that further work was necessary to irrigate crops at Irvine Ranch. The water conveyance facilities on the Ranch became one of the largest water management systems in Orange County. The first distribution irrigation feature on the Irvine Ranch property was the Irvine Ditch, constructed in 1893 from the Santiago Canyon to the Peters "Flats" (near the present-day location of the Peters Canyon Dam, which is approximately 5.5 miles to the northeast of the Project site). Wells were the primary source of water at the turn of the century, with 1,200 wells constructed in the area, most equipped with electric pumps. These wells allowed for large citrus orchards to be planted starting in 1906 (Nelson 2009: 17).

Irvine began to construct a series of winter water conservation features on the Ranch starting in the 1920s. Water runoff and irrigation rights were a constant struggle between the Irvine, Carpenter, and Serrano Irrigation Districts and the conservation projects were an effort to offset the marked decline in his groundwater system. P. R. Browning was the principle designer of all the Ranch's water conservation facilities except for the Santiago Dam which was designed by A. Kempkey (Nelson 2009:7). The dispute between the competing irrigation districts was eventually settled in 1928, with an agreement between the three litigants that led to the construction of the Santiago Dam and Outlet Tower (Nelson 2009:8). This period also saw the establishment of a massive irrigation system on the site (Brower 2013: xxi). In 1950, there were 4,550 irrigated acres and 33,430 dry farming acreage. Just ten years later, the Irvine company had increased the irrigated acreage to 7,417 acres and dry farming acres accounted for only 16,853 acres (Nelson 2009: 18).

County-wide flood control bonds failed to gather appropriate support in 1929 and 1931, leaving James Irvine Jr. to complete some large-scale water management projects without government support. Flood control created both land security and pooled runoff water for domestic and agricultural uses. Irvine was increasingly worried about water rights, and in 1932 he filed suit against upper basin users to protect the rights to the Santa Ana River (OCWD 2015: 24). The following water conservation projects were completed on the Irvine Ranch Site between 1929 and 1959: Lambert Reservoir (1929); Santiago Dam (1931); Irvine Conservation Dam (1932); Peters Canyon Dam (1931); the High Line Canal (1930s); Laguna Reservoir (1937-38); Bonita Reservoir (1937-38); Little Peters

Reservoir (1940); Sand Canyon Reservoir (1942); Syphon (sometimes spelled Siphon) Canyon Dam (1948-49); and the Rattlesnake Canyon Reservoir (1959) (Nelson 2009:8). In 1970, the construction of the Irvine Lake Pipeline brought water from the Colorado River to the Rattlesnake Canyon Reservoir.

3.3 Consolidation of Orange County Water Districts

While the Irvine Ranch was creating a sophisticated water system for Ranch operations, the rest of Orange County was using a patchwork method of establishing water rights. Early water conveyance developments in Orange County generally organized as groups of property owners that banded together to provide water services through groundwater wells, these co-ops were called "mutuals." The mutuals sold shares of water to landowners based on the number of acres held by each property owner. As metropolitan areas grew it became clear that the current system, collections of property owners, would not be sufficient for the rapidly growing population in Orange County (MWDOC 2017).

In 1928, several southern Orange County cities banded together to form the Metropolitan Water District of Southern California (MWD) with the lofty goal of importing water from the Colorado River. The MWD succeeded in the planning and construction of the Colorado River Aqueduct, which, starting in 1939, brought water from the Colorado River near the Arizona boarder to the east side of the Santa Ana Mountains. This ongoing consolidation of the cooperative system became a necessity as water became Southern California's most precious resource. In 1957, there were an estimated 151 of these mutual water groups remaining in Orange County. By 1963, the Orange County Water District's futures engineer estimated that by 1965, no more than 25 would remain. Postwar population growth further encouraged the consolidation of mutuals and districts and in other areas, growth brought city services within reach of previously rural areas (LAT 1963c:2).

The success of the MWD, and the continued need for more water lead to the formation of several other large districts who hoped to tap into Colorado River water as well as Northern California water from the State Water Project. Developments continued into the 1960s and 1970s to move water through areas in eastern Orange County. The Santiago lateral, completed in 1961, and the East Orange County Feeder Line No, 2, both extended water into the southeast section of the County (LAT 1961a: E:2; LAT 1961b: 52).

Santiago County Water District

The Santiago County Water District (SCWD) was formed in 1962 and was located in the northeast section of Orange County, east of the City of Orange and Tustin. A legal notice ran in the Tustin News, on August 16, 1962 with a notice for the formation of the district and for the election of the directors (Tustin News 1962: 8). Residents in an unincorporated area, banded together and discarded their mutuals to create the SCWD. The district covered 21,450-acres and included Black Star, Silverado, Williams, and Modjeska Canyons (LAT 1964:3). The $1.2 million bonds for the district were approved by voters in July of 1963, with a vote of 308-85 (LAT 1963a:91). The bonds were set to pay for water lines, a share of a new water filtration plant, and water rights in the new Santiago Lateral Aqueduct. The group's goal was to bring Colorado River water into the area with a partnership with the MWD (LAT 1963c:1). This large-scale effort would not have been possible with the smaller water district groupings. When the SCWD formed it included nearly 500-single family residences (LAT 1963b: 12).

In November 1963, the SCWD began construction of their water network, which, at the time, included 21,000 acres, beginning in the foothills of Irvine Lake and extending to the mountains in the Cleveland National Forest (IRWD 2020). The first phase of construction included the laying of pipe in Modjeska Canyon, Silverado Canyon, and on

Santiago Road from the East Orange County Water District's filtration plant and Peters Canyon Reservoir (LAT 1963b: 12). The SCWD obtained ownership of the Project site property on May 6, 1964 (Berumen, pers comm. 2021). In June of 1964, the SCWD, after completing their first large scale projects, turned on water from the Colorado River at the Silverado Days Festival. The new system was ready to serve 4,000 people and was described as an end to the area's dependence on groundwater wells. The District continued to grow and by 2006, it served potable water to approximately 2,500 customers. In July 2006, the SCWD consolidated with the IRWD to lower costs and provide a more diverse water supply (IRWD 2021: SCWD). The SCWD continues to be listed as the Project site parcel owner (Berumen, pers comm. 2021), however when SCWD consolidated with IRWD, IRWD assumed ownership of all SCWD assets, including the Project site parcel.

Irvine Ranch Water District

The IRWD was formed by the Irvine Company in 1961 as a California Special District with headquarters in Irvine. Orange County approved the boundaries of the District in December of 1960, with the District being bound on the west by Newport Avenue, the south by the Santa Ana Marine Corps Air Facility, the east by the Rancho Canada De Los Alisos, and the north by the Coastal Municipal Water District (LAT 1960: R-35). The District's boundaries initially included approximately 60 square miles (IRWD 2021: Liquid News). Initially, the IRWD served mainly agricultural customers, but the quickly growing Orange County population included many residential customers in need of water. The IRWD grew through annexations in the 1960s and 1970s and by 1991, the District provided water to one-sixth of Orange County (LAT 1991: A3).

As water districts became more established, growth continued through consolidation of districts. Between 1997 and 2008, the IRWD consolidated with five other water districts, including the SCWD in 2006. The Project site came under IRWD management at this time. Other districts that joined the IRWD include: Orange Park Acres Mutual Water Company (2008), Los Alisos Water District (2001), Carpenter Irrigation District (2000), and the Santa Ana Height Mutual Water Company in (1997) (IRWD 2021: Consolidations). Today the IRWD serves more than 425,000 residential customers and spans 181 square miles (IRWD 2021: Liquid News).

3.4 History of the Project Site

The Project site was vacant until construction of the Fleming Reservoir circa 1964. Early development is somewhat unclear, as County records show the Irvine Company did not transfer ownership of the property to SCWD until May 6, 1964. Building records indicate the tank was designed in 1963, but the as-built revision appears to be from 1964 (Berumen, pers comm. 2021 and SCWD 1963). Historic newspapers suggest the SCWD began construction of their system in 1963. It seems likely the reservoir construction happened after SCWD took ownership of the property. The site was historically named the Santiago Reservoir and Pumping Station (SCWD 1964). The tank shows on historic as built drawings as a 150,000-gallon tank with a diameter of 28.5 feet and a height of 38 feet (Figure 4). Initial plans show the construction of the north-south access road and a paved area south of the fenced area around the tank (SCWD 1964). The drawings also indicate plans for a fence in generally the same place as the fence is located today. The first available aerial imagery for the Project site is in 1966. At this time, the reservoir and the access road are the only built structures visible on the site. The plans were developed by John Toups, a civil engineer, and the first revisions were dated November 20, 1963 (SCWD 1964).

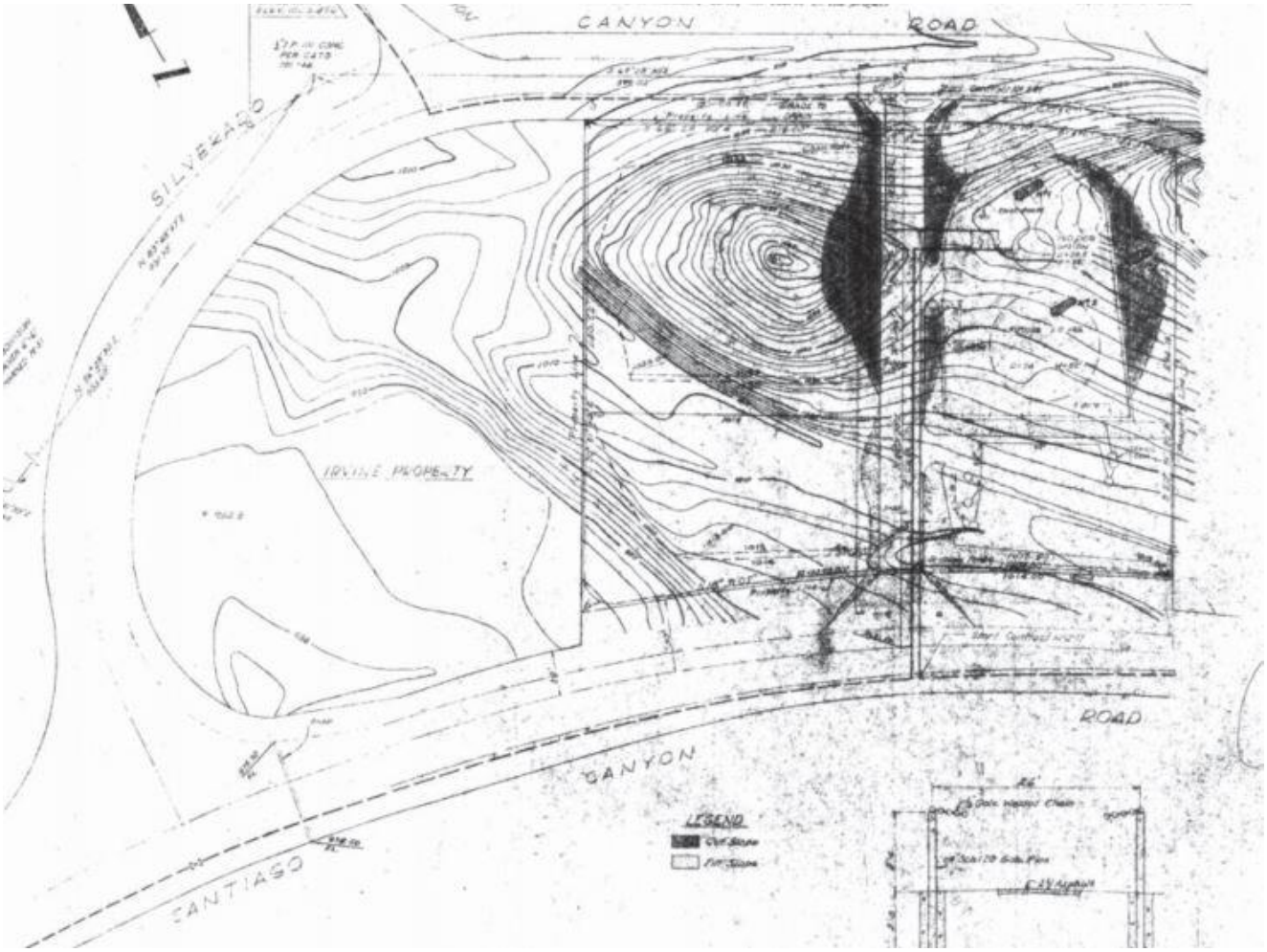

Figure 4. Circa 1964 architectural drawings detail of the Project site. Tank is visible in upper right, large tank to the south was proposed, but was never constructed.

The office building was constructed circa 1968. There were no architectural drawings for this building and aerial imagery first shows the building on the site in 1980. Engineering drawings for a 1977 electrical upgrade are available and show the existing office building in an "L" shape footprint. The footprint is similar to the current layout, but with changes to the north façade roofline and the south façade shed roof awning. The office building is shown as having two sections: the side-gabled section is listed as being 500 square feet and the eastern, front gabled section is 400 square feet. The office building footprint is divided, suggesting the eastern section may be an addition. The drawings also show a 12-foot by 60-foot trailer located southeast of the reservoir tank (Figure 5).

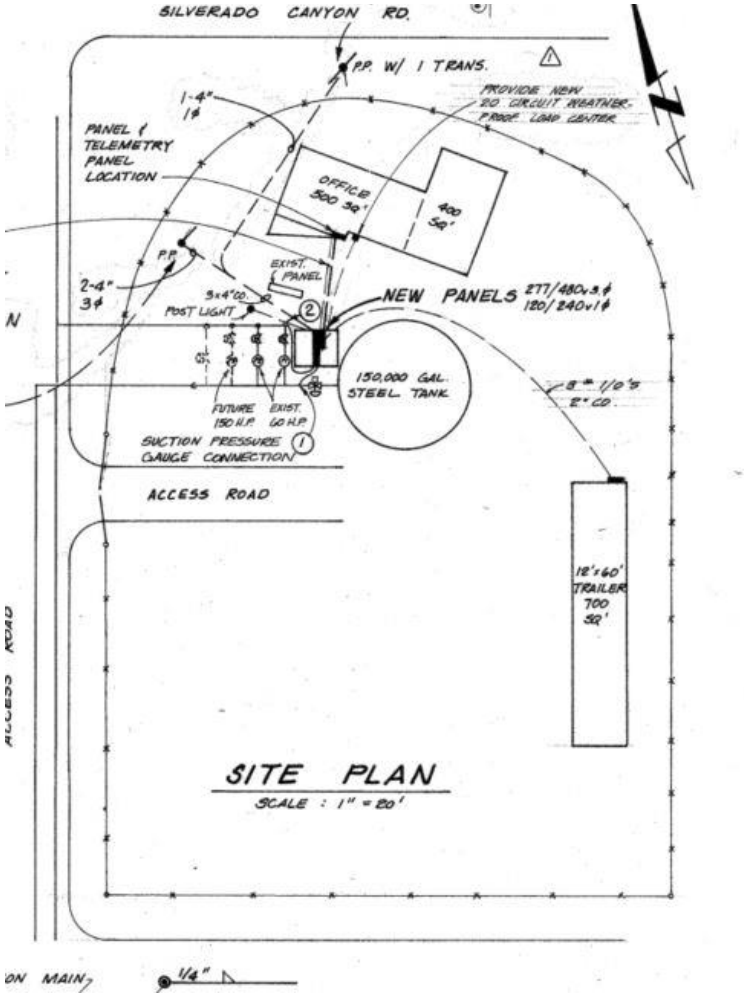

Figure 5. 1977 architectural drawings detail of the Project site. Tank is visible in upper right with office building to the north. The trailer to the south east was visible on aerial images from 1980 to 2009.

In 1980, the reservoir, office, and the trailer noted on the 1977 plan are all visible on the site. The garage building is not visible on the 1994 aerial, but it can be seen after 2002. The trailer on the east side of the site is removed between 2005 and 2009.

Architectural Styles of the Subject Structure

Utilitarian (circa 1860–present)

Utilitarian architecture is simply designed, to meet a specific need. These buildings and structures usually have minimal architectural details and they are often constructed of inexpensive materials. This type of building was common in California throughout history and is commonly found in warehouse, barracks, factories offices, and apartments, among others. These buildings are often constructed of inexpensive material, such as wood, plywood, or concrete, but other materials are also used. There is no defined roof or wall cladding, as the buildings themselves exist to provide a function which often dictates the layout and shape of the building. The style is varied but is often marked by minimal ornamentation; designed to serve a specific function; and constructed of inexpensive, available materials.

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4 Field Survey

4.1 Methods

Dudek Architectural Historian Kate Kaiser, MSHP, conducted a pedestrian survey of the Project site for historic built environment resources on February 3, 2021. The survey entailed walking the Project site, documenting each building with notes and photographs, specifically noting character-defining features, spatial relationships, observed alterations, and examining any historic landscape features on the property.

Dudek documented the fieldwork for historic built environment survey using field notes, digital photography, close-scale field maps, and aerial photographs. Photographs of the subject property were taken with a digital camera. All field notes, photographs, and records related to the current study are on file at Dudek's Pasadena, California office.

4.2 Results

Dudek identified two buildings at the Fleming Zone 8 Reservoir and Pump Station (7431 Santiago Canyon Road) over 45 years old. Section 5, Significance Evaluations, provides a detailed physical description of the entire station and the associated significance evaluation under all applicable national, state, and local designation criteria and integrity requirements.

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5 Significance Evaluation

In order to determine if the proposed Project would impact historical resources under CEQA, the Fleming Zone 8 Reservoir and Pump Station were evaluated for historical significance and integrity in consideration of NRHP, CRHR, and local designation criteria and integrity requirements. A detailed physical description of the property is also provided. State of California Department of Parks and Recreation Series 523 (DPR) forms for these two properties are provided in Appendix B.

5.1 Fleming Zone 8 Reservoir and Pump Station

Property Description

The Fleming Zone 8 Reservoir and Pump Station (7431 Santiago Canyon Road) is sited on a rectangular lot, between Silverado Canyon Road and Santiago Canyon Road approximately 300 feet southeast from the intersection of the two roads. The fenced portion of the site is primarily paved and level. The surrounding terrain is hilly, with the grade generally descending downward to the north and south and sloping upward to the east and west. The lot is divided in half by a paved access road. The western portion of the lot is covered in vegetation. The eastern portion of the lot has a fenced area with the majority of the site's buildings and structures. The fenced area is oval shaped, with a paved area on the south end of the lot (outside of the fenced area) and vegetation is located along the perimeter of the lot. The fenced area contains the reservoir tank, office building, garage, shed, AT&T tower, two generators, a concrete basin, a series of pumps, as well as several landscape features including a memorial stone, a flagpole and several light posts (Figures 6 and 7). The buildings are designed in a utilitarian style, with few architectural details.

A curved, paved path leads from the vehicular gate around the pumps to the front door of the office. A flagpole, vintage generator, several large boulders, and a plaque set in a natural stone is located to the west of the sidewalk. The plaque reads: Dedicated to the Memory of H. Rodger Howell, General Counsel, Santiago County Water District 1962-1983. The vintage generator is set on a large flat boulder, on display. It is inscribed with the words "Oil-Rite, Trademark" on the metal and a small metal plate describes the size and pump number. These decorative elements are surrounded by natural ground cover.

Several buildings and structures on the site were constructed after the historic period. These include a shed, three generators, two shallow concrete basins, a garage, and an AT&T tower. Three generators are currently on the site, a metal, CAT generator, located on a concrete pad to the south of the office building, a second generator is set on a trailer to the south of the pumps, and a third generator on the east side of the fenced area. The shed, located to the east of the office building, is a small square building with a pedestrian door on the south façade. The door is wood, with a metal security screen. The shed has an asphalt composition shingle roof and is clad in T1-11 siding as is found elsewhere on the site. No architectural drawings were available for the shed, but it first shows on aerial imagery in 1994, suggesting it was constructed between 1980 and 1994 (NETR 1980 and 1994).

The AT&T tower and fenced utility area are located on the south side of the fenced area. The fenced utility area is north of the fence and east of the garage. The AT&T Tower is located just south of the fenced utility area, south of the site's fence. The tower has synthetic foliage to look like an evergreen tree.

The two-car garage, located on the south side of the lot, has a shed roof clad in composition shingles. The building is clad in T1-11 plywood siding, with vertical grooves, and ¼' by 1½' lath over the seams. On the primary (north) façade, the building

has a with a cantilevered awning. The roof appears to be covered in metal sheet. On the primary façade of the garage (from east to west) is a single pedestrian door with a metal security door and two vehicle bays, each with a metal, roll-up door. The building appears to be set on a concrete slab foundation. No architectural drawings were available for the shed, but it first shows on aerial imagery in 1994, suggesting it was constructed between 1980 and 1994 (NETR 1980 and 1994).

Figure 6. 7431 Santiago Canyon Road, overview of north side of fenced area, view looking east (IMG_0637).

Figure 7. 7431 Santiago Canyon Road, overview of south side of fenced area, view looking southeast (IMG_6014).

Reservoir (c. 1964)

The reservoir, constructed circa 1964, is roughly centered on the north side of the fenced area. The steel cylinder reservoir is shown on plans to be 32 feet tall, have a 28.5-foot diameter, and holds 150,000 gallons (Figure 8). The structure has a domed roof and the walls are constructed of welded metal panels. A ladder is located on the southwest side. Two metal railings are located on either side of the ladder at the roofs edge. Two high voltage metal utility cabinets are located on the west side of the reservoir.

The pumping system is located west of the reservoir and appears to have been updated. There is a single pipe leading from the base of the reservoir to the west. Four lines connect to the main pipe system and several have electric pumps. Each line has multiple valves, and each is approximately 15 feet from the main line to the point where it moves underground. The main gate on the lateral pumps are inscribed with the words "Mueller, 2360, AWWA, 250W, Fire Main Gate, Valve Listed 588N 200W FM, CHA TN 10 2001."

Identified Alterations

Dudek staff obtained permits for 2004 - present from the Orange County Public Works on February 9, 2021 for 7431 Santiago Canyon Road (APN 576-013-02). A majority of the permits pertained to upgrades and changes with the AT&T cell phone tower at the site. A permit summary from 2018 shows a series of plans were checked but do not suggest changes were made to the structures. No other alteration permits were available. The only noticeable alteration is the updated pump piping. One of the pumps has a 2001 date, suggesting it was installed at some time after 2001. No other modifications were noted.

Figure 8. 7431 Santiago Canyon Road, Reservoir, view looking north (IMG_5995).

Office Building (c. 1968)

The office building, located on the north side of the fenced area, is a single-story building with an irregular plan, constructed circa 1968 (Figures 9 and 10). The office has three clear sections from west to east: a side-gabled

section with a shed roof awning, a smaller side-gabled section, and a front gabled section. The eastern most section's roof is clad in standing seam metal and the awning is clad in asphalt shingles. The center and eastern section of the building are clad in asphalt shingles. The majority of the office building is clad in T1-11 plywood siding, with vertical grooves, and wood lath over the seams. On the primary (south) facade a wood pedestrian door with a metal security screen, is located on the west side of the building. To the east of the door are two four-light, wood, awning style windows. Both windows have security bars making them inoperable. On the center section of the building, on the primary façade, is a single aluminum sliding sash window with security bars. A metal utility box is located on a cement pad adjacent to the building. The foundation is not visible on this section of the building. There are no windows or doors on the eastern section of the primary façade.

The west façade has a single four-light, wood awning window centered on the façade. A horizontal wood board divides the façade. Metal sheet, possible galvanized steel is located above the board and T1-11 plywood below. A vent is located in the gable end. A board-formed, concrete foundation is visible on this façade. The east façade of the building has a second pedestrian door, a utility box, and an aluminum sliding sash window in a wood surround. The north façade has windows on the east and west sections of the building. The west section has two, four-light wood awning windows that match others on this section of the building. The east section has two aluminum sliding sash windows, that match the window on the east façade. The center and east sections are clad in sheet metal and the west portion is clad in T1-11 siding.

Figure 9. 7431 Santiago Canyon Road Office building: South (primary) and west elevation, view looking northeast (IMG_5886)

Figure 10. 7431 Santiago Canyon Road Office building: South (primary) and east facades, view looking northwest (IMG_5895)

Identified Alterations

Dudek staff obtained permits for 2004 – present from the Orange County Public Works on February 9, 2021 for (7431 Santiago Canyon Road (APN 576-013-02). None of the permits showed changes to the office, but several additions were observed during the field survey, including additions to the east and north façades, replacement metal siding on the north and west facades, and the addition of security bars to all of the building's windows and metal security screen doors to both of the building's entryways.

NRHP/CRHR Statement of Significance

Infrastructure such as water distribution systems are most commonly determined significant under Criterion A/1, for their association with events that have made a significant contribution to the broad patterns of our history and/or under Criterion C/3, for distinctive characteristics of a type, period, or method of construction. Water conveyance systems that rise to the level of significance for NRHP listing are typically part of the initial system development or they use innovative technology that fundamentally changed the way these systems were planned or developed. Systems that are more than 45-years old, but are simply an extension of typical system growth, are often not recommended eligible. The Fleming Zone 8 Reservoir and Pump Station, located at 7431 Santiago Canyon Road, does not meet any of the criteria for listing in the NRHP or CRHR, either individually or as part of an existing historic district, as demonstrated below.

Criterion A/1: That are associated with events that have made a significant contribution to the broad patterns of our history.

The evaluation of the reservoir and pump station is based on the historic context of rural, infrastructure development, and the significance the development had on the economic growth and development of the

geographic region. The SCWD, formed in 1962, is part of the natural, ongoing development of water districts and their systems that were needed as the rural population of Orange County grew at a rapid rate after World War II. The development of these water conveyance systems began with increased Euroamerican settlement in the 1850s and continue to be refined and expanded to the present. The reservoir and pump station are not an integral part of a significant local or regional water distribution project. The water conveyance systems in this area are the product of the ongoing expansion of rural water systems and the necessary transition from groundwater wells and their diminished supply. These types of reservoirs and pump stations are of a type ubiquitous throughout California. Mid-century population growth created an ongoing need for reliable water. The Fleming Zone 8 Reservoir and Pump Station does not have a direct association with events that have made a significant contribution to the broad patterns of our history and does not appear eligible under Criterion A of the NRHP or Criterion 1 of the CRHR.

Criterion B/2: That are associated with the lives of persons significant in our past.

To be found eligible under NRHP Criterion B/2 a property must retain sufficient integrity and be directly tied to the important person and the place where the individual conducted or produced the work for which he or she is known. Research indicates that early development of the station is not directly associated with a significant person. Earlier landowners (Yorba and Irvine) were well-known significant figures in Orange County's pioneer history, but the development of the station in the 1960s was much later and the structure is not directly tied to these figures. The Fleming Zone 8 Reservoir and Pump Station was not found to have a significant link to any significant person who was related to the development of the site as part of the SCWD. For these reasons, it does not appear to be eligible for listing in the NRHP under Criterion B or Criterion 2 of the CRHR.

Criterion C/3: That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

The Fleming Zone 8 Reservoir and Pump Station is a local, water conveyance system, constructed in the 1960s to bring water to nearby rural residents. The site does not represent the work of a master architect, engineer, or builder; it does not possess high artistic value; and it does not embody distinctive characteristics of a type, period, or method of construction. It is also not representative of a significant and distinguishable entity whose components may lack individual distinction. Water conveyance systems significant under this criterion often use innovative technology that fundamentally changed the way these systems were planned or developed. This is not the case for the subject site. Furthermore, the elements that comprise the reservoir and pump station are simple utilitarian buildings and structures with little or no distinctive architectural features. Modern utilitarian ancillary buildings and structures were also added to the property after 1984. Lacking significance, the Fleming Zone 8 Reservoir and Pump Station does not appear eligible for listing in the NRHP under Criterion C or CRHR under Criterion 3.

Criterion D/4: That have yielded, or may be likely to yield, information important in prehistory or history.

The Fleming Zone 8 Reservoir and Pump Station is not significant under Criterion D of the NRHP or Criterion 4 of the CRHR as a source, or likely source, of important historical information nor does it appear likely to yield important information about historic construction methods, materials, or technologies.

Integrity Discussion

The Fleming Zone 8 Reservoir and Pump Station has not been moved and therefore retains integrity of location. The station has experienced few modifications resulting in a fair level of integrity of design, materials, and workmanship. The station retains a moderate level of integrity for its association with rural water distribution development and retains some integrity of feeling, as it is still used in the same capacity. Finally, the addition of numerous modern structures and buildings have diminished the station's historic setting. In conclusion, the Fleming Zone 8 Reservoir and Pump Station only retains some integrity of location, design, materials, and workmanship, association, and feeling, but has diminished integrity of setting.

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6 Findings and Conclusions

6.1 Summary of Findings

No historical resources were identified within the Project site as a result of the extensive archival research, field survey, and the property significance evaluation. The Fleming Zone 8 Reservoir and Pump Station located at 7431 Santiago Canyon Road does not appear eligible for the NRHP or the CRHR under any designation criteria due to a lack of significant historical associations and architectural merit. Therefore, the reservoir and pump station are not considered an historical resource for the purposes of CEQA. Further, no potential indirect impacts to historical resources were identified. No management recommendations are needed.

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Appendix A

Preparer's Qualifications

Adrienne Donovan Boyd, MSHP

Architectural Historian

Adrienne Donovan-Boyd (*AY-dree-en DON-uh-vin BOID; she/her*) is an architectural historian with significant experience in Oregon and the Pacific Northwest. Ms. Donovan-Boyd has 15 years' experience in all elements of cultural resources management, including intensive- and reconnaissance-level field investigations, architectural history studies, and historical significance evaluations for compliance projects, the National Register of Historic Places (NRHP), and local landmark designations. She is a very skilled researcher, adept at evaluation of historic properties and an experienced author of historical resources evaluation reports, findings of effect documentation for Sections 106 and 110 of the National Historic Preservation Act, historic context statements, and management plans for historic properties. Ms. Donovan-Boyd meets the Secretary of the Interior's Professional Qualification Standards for architectural history and maintains a strong professional relationship with State Historic Preservation Office staff in Washington and Oregon.

Education

University of Oregon
MS, Historic Preservation, 2009

Portland State University
BA, Community Development, 2006

Qualifications

Meets the Secretary of the Interior's Professional Qualifications Standards

Oregon Department of Transportation: Qualified Cultural Resources Consultant

National Safety Council First Aid/CPR/AED Certification, 2019

Ms. Donovan-Boyd has completed numerous projects requiring compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties. Her recent work at the University of Oregon's The Shire, a John Yeon-designed historic landscape in the Columbia River Gorge National Scenic Area, has focused on completing a cultural landscape report, including preparing a historic context statement, evaluation and analysis, and treatment protocols and procedures. Ms. Donovan-Boyd's National Register Nomination for the mid-century modern Amundsen House in Gresham, Oregon, was recently approved by the State Advisory Committee for Historic Preservation.

Project Experience

Water Resources

Cultural Resources Inventory for the proposed Dungeness Streamflow Restoration Off-Channel Reservoir. 2021. Served as architectural historian for Clallam County's proposed project to restore streamflow along the Dungeness River on two Department of Natural Resources (DNR)-owned parcels. The streamflow restoration design includes excavation of an off-channel reservoir, which will encompass an 88-acre area. The project was funded by a Department of Ecology (ECY)-managed Streamflow Restoration Grant and was therefore subject to the requirements of Washington State Governor's Executive Order 05-05 (EO 05-05). Conducted archival research and co-authored the report with recommended determinations and findings.

Cultural Resources Inventory for The Shire Bays 2 and 3 Restoration Project, Skamania County, Washington; 2019–2020. Served as architectural historian for the University of Oregon's 4-acre project to conduct shoreline and habitat restoration at The Shire property in Skamania County. Worked closely with Inter-Fluve to successfully

complete the project, which was subject to Section 106 (lead agency: FEMA). Conducted archival research, completed fieldwork, and co-authored the report with recommended determinations and findings.

Cultural Resources Inventory, The Shire First Bay Shoreline Restoration Project, Skamania County, Washington. 2018-2019. Served as architectural historian for the University of Oregon's project to conduct shoreline and habitat restoration at The Shire property in Skamania County. The project was subject to Section 106 review (lead agency: Federal Emergency Management Agency). Led the aboveground survey, conducted archival research, and co-authored the report with recommended determinations of eligibility and findings of effect.

Cultural Resources Investigations for the Mouth of the Columbia River South Jetty Rehabilitation Project, Clatsop County, Oregon; 2018. *Architectural Historian* for the ACOE's proposed South Jetty rehabilitation within Fort Stevens State Park. The investigations involved inventorying and evaluating WWII-era battery remains. Coordinated with ACOE and Oregon Parks and Recreation Department (OPRD) staff, evaluated the identified resources, and co-authored the report.

Cultural Resources Services for the U.S. Army Corps of Engineers' Master Planning IDIQ, Portland District, Oregon; 2017–2018. *Architectural Historian* providing cultural resources support for the ACOE Portland District's Master Plan and Integrated Environmental Assessment (EA) for the Mid-Columbia (Bonneville, The Dalles, John Day, and Willow Creek) and the Rogue River (Lost Creek, Elk Creek, and Applegate) basin regions. Coordinated with ACOE staff, attended project meetings, conducted site visit reconnaissance surveys within the Lost Creek Project, co-authored the historic properties management plan for the Lost Creek Project.

Cultural Resources Inventory for the Seestrom Tidelands Project, Coos County, Oregon; 2018. *Architectural Historian* for the Coquille Watershed Association's (CoqWA) project to restore muted tidal flows to over 200 acres of floodplain pastureland along the Coquille River. The project was subject to Section 106 of the NHPA, and the USFWS was the lead agency. Prepared the research design and managed the investigations, which included archival research, archaeological and historic resources pedestrian survey, and the evaluation of both archaeological and above ground cultural resources.

Cultural Resources Inventory for the Bear, Mary's, and Ferris Creeks Restoration Project, Clatsop County, Oregon; 2018. *Architectural Historian* for Columbia River Estuary Study Taskforce's (CREST's) project to restore wetland habitat along three creeks in the Columbia River Estuary, just east of Astoria, Oregon. The project was subject to Section 106 of the NHPA, 36 CFR 800, and BPA was the lead agency. Coauthored the report, completed archival research, historic resources pedestrian survey, and the evaluation of the built environment cultural resources.

Cultural Resources Investigations, Mouth of the Columbia River South Jetty Rehabilitation Project, Clatsop County, Oregon. Served as architectural historian for the ACOE's proposed South Jetty rehabilitation within Fort Stevens State Park. The investigations involved inventorying and evaluating the South Jetty and a historic trails system. Evaluated the identified resources for the NRHP and co-authored the report. (2018)

Lower Snake River Programmatic Environmental Impact Statement; Washington, Oregon, Idaho; ACOE. Researched and reported on historic built environment resources for the cultural resource sections for a programmatic Environmental Impact Statement related to the ACOE sediment management plan. The project area includes the Lower Snake River and four associated sub-basins: Clearwater River, Salmon River, Grande Ronde River, and Hells Canyon Reach of the Snake River. Made eligibility recommendation and co-authored the report.

Kate Kaiser, MSHP

Architectural Historian

Kate Kaiser is an architectural historian with 8 years' professional experience as a cultural resource manager specializing in California Environmental Quality Act (CEQA) compliance, National Historic Preservation Act (NHPA) Section 106 compliance, Historic Resource Evaluation Reports (HRER), Historical Resource Inventories (HRI), Cultural Resource Technical Reports (CRTR), reconnaissance and intensive level surveys, archival research, cultural landscapes, and GIS. Ms. Kaiser meets the Secretary of the Interior's Professional Qualification Standards for architectural history and archaeology.

Education

University of Oregon
MS, Historic Preservation, 2017
Boston University
BA, Archaeology, 2009

Professional Affiliations

Association for Preservation Technology – Southwest
California Preservation Foundation
Vernacular Architecture Forum
Society for California Archaeology

Recent Dudek Project Experience

On-Call Services for Department of Water Resources, State of California (2020-ongoing). Dudek was retained by the State of California Department of Water Resources (DWR) to prepare Historical Resources Technical Reports for various State Water Project (SWP) maintenance projects. Ms. Kaiser has prepared a historical context statement focused on the founding of DWR and the SWP, as well as technical reports and significance evaluations for segments of the California Aqueduct (2021), as well as various storage reservoirs.

Historic Context Statement for Reservoirs, City of San Diego Public Utilities Department, California (2020). Dudek was retained by the City of San Diego Public Utility Department to complete a surey and historic context statement for the City's surface water storage system, including 10 dam complexes and the Dulzura Conduit. Ms. Kaiser served as architectural historian and author of the historic context statement, as well as co-author to individual historic resource reports for the 10 reservoir complexes that contribute to ahistoric district. Dudek also prepared detailed impacts assessments for proposed modification to dams, as required by DSOD. The project involves evaluation of 10 dam complexes and conduit for historical significance in consideration of NRHP, CRHR, and City designation criteria and integrity requirements, and requires extensive archival research and pedestrian survey.

Cultural Resources Assessment for the Brandywine Townhomes Storm Drain Outlet to Carbon Canyon Creek Project, City of Placentia, Orange County, California (2020). Dudek was retained by Brandywine Homes and the U.S. Army Corps of Engineers to complete a cultural resources assessment report for the Carbon Canyon Creek Channel, a flood control channel which extends through Brea, Yorba Linda, and Plancentia before outletting at Miller Basin. The proposed project included the construction of a reinforced concrete pipe storm drain to serve a proposed residential development at 1049 E. Golden Avenue and outlet into the channel. Preparation of the report involved field survey, archival research, historic context development, descriptions of the channel structure, and a historical significance evaluation. Dudek recommended that the channel was ineligible for individual listing in the NRHP, CRHR, or local register but may be eligible as part of a larger Orange County Flood Control District flood control infrastructure system.

Municipal Waterways Maintenance Project CEQA Compliance and USACE permitting- City of San Diego, San Diego County, California. (2020). Dudek developed the Municipal Waterways Maintenance Plan (MWMP) in close coordination with the City of San Diego and prepared a program EIR for the City's on-going stormwater facility maintenance program. The Municipal Waterways Maintenance Plan details the planned maintenance activities,

specific facility maintenance locations, and includes site-specific facility maintenance plans and/or technical summaries for stormwater conveyance channels, ditches, structures, and basins throughout eight watersheds within the City's municipal boundaries. As part of this project, Ms. Kaiser prepared the Historical Resources Technical Report for Alvarado Canyon Creek – Mission Gorge (Facility No. 4-07-011; Mission Gorge 4) Channel Maintenance.

LADWP City Trunkline South Project, Los Angeles Department of Water and Power, California (2019). Served as architectural historian and author of the Cultural Resources Technical Report for the City Trunkline South Project. Preparation of the report involved site recordation, extensive archival research, historic context development, building development descriptions, historical significance evaluations, and DPR forms for each building of the project. The project proposed to replace sections of the pipeline in located in the Coldwater Canyon Road area of the San Fernando Valley. The report analyzed the vibration effects of pipeline replacement and pipe-jacking practices expected as part of the Trunkline project.

LACSD Gardena Pumping Station Project, Sanitation Districts of Los Angeles County, Gardena, California (2019). Served as architectural historian and author of the Cultural Resources Technical Report for the Gardena Pumping Project. Preparation of the report involved site recordation, extensive archival research, historic context development, engineering feature development descriptions, historical significance evaluations, and DPR forms for each building of the project. The project proposed to remove the 1929 pumping plant above and below-ground structures, as well as two adjacent parcels containing commercial buildings (1954, 1957) and replace them with a larger-capacity pumping plant facility.

LADWP De Soto Tanks Project, Los Angeles Department of Water and Power, California (2019). Served as architectural historian and author of the Historic Properties Identification Report for the De Soto Tanks EIR. Preparation of the report involved site recordation, extensive archival research, historic context development, engineering feature development descriptions, historical significance evaluations, and State of California Department of Parks and Recreation Series 523 forms (DPR forms) for each building of the project. The project proposed to remove the 1941 reservoir and associated buildings, and replace them with two modern underground storage tanks, as well as connections to the LADWP Rinaldi Trunk Line and De Soto Trunk Line.

LADWP Tujunga Spreading Grounds Enhancement, Los Angeles Department of Water and Power, California (2018). Served as architectural historian and author of the cultural resources report CEQA-Plus Project. Preparation of the report involved site recordation, extensive archival research, historic context development, engineering feature development descriptions, historical significance evaluations, and State of California Department of Parks and Recreation Series 523 forms (DPR forms) for each building of the project. The evaluation found the property ineligible under all NRHP, CRHR, and Los Angeles Historic-Cultural Monuments designation criteria. The project proposed to modify a U.S. Army Corps of Engineer-owned flood control channel to divert more flood water from the Tujunga Flood Control Channel into the Tujunga Spreading Grounds.

LADWP West Los Angeles District Yard Project, Los Angeles Department of Water and Power, California (2017). Served as architectural historian and author of the cultural resources report. Preparation of the report involved extensive archival research, in-field research, historic context development, building development descriptions, historical significance evaluations, and DPR forms for each building of the project. The evaluation found the property ineligible under all National Register of Historic Places, California Register of Historic Resources, and Los Angeles Historic-Cultural Monuments designation criteria. The project proposed to demolish existing buildings and build new buildings and an underground parking structure.

Samantha Murray, MA

Historic Built Environment Lead / Senior Architectural Historian

Samantha Murray is a senior architectural historian with nearly 15 years' professional experience in in all elements of cultural resources management, including project management, intensive-level field investigations, architectural history studies, and historical significance evaluations in consideration of the California Register of Historical Resources (CRHR), the National Register of Historic Places (NRHP), and local-level evaluation criteria. Ms. Murray has conducted hundreds of historical resource evaluations and developed detailed historic context statements for a multitude of property types and architectural styles, including private residential, commercial, industrial, educational, medical, ranching, mining, airport, and cemetery properties, as well as a variety of engineering structures and objects. She has also provided expertise on numerous projects requiring conformance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

Education

California State University, Los Angeles
MA, Anthropology, 2013

California State University, Northridge
BA, Anthropology, 2003

Professional Affiliations

Society of Architectural Historians

National Trust for Historic Preservation

Registered Professional Archaeologist

Ms. Murray meets the Secretary of the Interior's Professional Qualification Standards for both Architectural History and Archaeology. She is experienced managing multidisciplinary projects in the lines of transportation, transmission and generation, federal land management, land development, state and local government, and the private sector. She has experience preparing environmental compliance documentation in support of projects that fall under the California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA), and Sections 106 and 110 of the National Historic Preservation Act (NHPA). She also prepared numerous Historic Resources Evaluation Reports (HRERs) and Historic Property Survey Reports (HPSRs) for the California Department of Transportation (Caltrans).

Select Project Experience

Cultural Resources Assessment for the Brandywine Townhomes Storm Drain Outlet to Carbon Canyon Creek Project, City of Placentia, Orange County, California (2020). Dudek was retained by Brandywine Homes and the U.S. Army Corps of Engineers to complete a cultural resources assessment report for the Carbon Canyon Creek Channel, a flood control channel which extends through Brea, Yorba Linda, and Placentia before outletting at Miller Basin. The proposed project included the construction of a reinforced concrete pipe storm drain to serve a proposed residential development at 1049 E. Golden Avenue and outlet into the channel. Preparation of the report involved field survey, archival research, historic context development, descriptions of the channel structure, and a historical significance evaluation of the Carbon Canyon Creek Channel. Dudek recommended that the channel was ineligible for listing in the NRHP, CRHR, or as a locally significant resource but may be eligible as part of a larger historic district associated with Orange County Flood Control District flood control infrastructure, when such a district is formally identified or evaluated.

Silverado Canyon Road Over Ladd Creek Bridge Replacement Project, Orange County Public Works, Caltrans District 12, California (2018-2019). Orange County Public Works (OCPW) proposed to remove and replace the existing Silverado Canyon Road as it passes over Ladd Creek on the proposed project at a location slightly east of the intersection of Ladd Canyon Road and Silverado Canyon Road. Caltrans District 12 required preparation of an ASR and HPSR. Ms. Murray developed the project's area of potential effects map, reviewed the project area for historical resources, and assisted with finalizing the HPSR. She also provided QA/QC of all final documents.

The Marriot West Chapman Project, City of Orange, Orange County, California (2018). The project includes the development of a Marriott and Residence Inn hotel at the properties identified as 2920 and 3000 West Chapman Avenue within the City of Orange. The project will involve the removal of an existing Denny's restaurant and the two Motel 6 structures. The City retained Dudek to complete a cultural resources study that involved completion of a CHRIS records search, Native American coordination, archival research, a pedestrian survey of the project area, and review of potential impacts to historic built environment resources. Role: principal architectural historian and QA/QC of final work products.

Fullerton College Facilities Master Plan Program EIR, North Orange County Community College District, City of Fullerton, Orange County, California (2017). The North Orange County Community College District (NOCCCD) undertook a comprehensive improvement and building program to make upgrades and repairs to existing buildings, as well as to construct new facilities to improve the safety and education experience of those attending Fullerton College. The College proposed to implement the Facilities Master Plan to more effectively meet the space needs of the projected on-campus enrollment through the next decade and beyond, while constructing and renovating facilities to meet the District's instructional needs. Ms. Murray co-authored and oversaw the cultural resources study. All buildings and structures on campus over 45 years old and/or or proposed for demolition/substantial alteration as part of the proposed project were photographed, researched, and evaluated in consideration of NRHP, CRHR, and local designation criteria and integrity requirements, and in consideration of potential impacts to historical resources under CEQA. As a result of the significance evaluation, three historic districts and one individually eligible building were identified within the project area. The study also entailed conducting extensive archival and building development research, a records search, Native American coordination, detailed impacts assessment, and development of mitigation measures for project conformance with the Secretary of the Interior's Standards for Rehabilitation.

Cypress College Facilities Master Plan Program EIR, City of Cypress, Orange County, California (2016). The NOCCCD undertook a comprehensive improvement and building program to make upgrades and repairs to existing buildings, as well as to construct new facilities to improve the safety and education experience of those attending Cypress College. The College proposed to implement the Facilities Master Plan to more effectively meet the space needs of the projected on-campus enrollment through the next decade and beyond, while constructing and renovating facilities to meet the District's instructional needs. Ms. Murray authored the cultural resources study for the project, which included a significance evaluation of all 1960s and 1970s buildings on campus proposed for demolition or renovation. As a result of the significance evaluation, including consideration of CRHR evaluation criteria and integrity requirements, the original 1960s–1970s campus appears to be eligible as a historic district under CRHR Criterion 3 for conveying a concentration of planned buildings, structures, and associated elements united aesthetically by their embodiment of the Brutalist style. The study also entailed conducting extensive archival and building development research, a records search, Native American coordination, detailed impacts assessment, and development of mitigation measures for project conformance with the Secretary of the Interior's Standards for Rehabilitation.

Orange County Central Utility Facility Upgrade, County of Orange Public Works, City of Santa Ana, Orange County, California (2014). To further the County's long-term goals of operational safety, improved efficiency, cost effectiveness, and supporting future campus development plans, the proposed Central Utility Facility Upgrade project consisted of improvements and equipment replacements recommended by the Strategic Development Plan for the CUF's original utility systems. Ms. Murray served as architectural historian and archaeologist, and prepared

the cultural resources MND section. As part of this effort Ms. Murray conducted a detailed review of historic resource issues within and around the proposed project area to assess potential impacts to historic buildings and structures. The proposed project involved improvements to 16 buildings located within the Civic Center Campus. As a result of the cultural resources analysis, it was determined that the proposed project would not result in a substantial adverse change to any of the historic-age buildings or the associated Civic Center Plaza walkways/landscaping.

Presentations

***Historical Resources and CEQA: An Overview of Identification, Evaluation, Impacts Assessment, and Mitigation*. Prepared for the Gilroy Historic Heritage Committee. Presented by Samantha Murray, Dudek. May 15, 2019.** Ms. Murray delivered a 1.5-hour PowerPoint presentation to the City of Gilroy's Historic Heritage Committee during one of their monthly public hearings. The presentation provided an overview of the CEQA process, how historical resources are treated under CEQA, as well as the process for identification, evaluation, impacts assessment, and options to consider for mitigation. The presentation also included examples from CEQA Case Law and included an extensive question and answer session with the audience.

***Historical Resources under CEQA*. Prepared for the Orange County Historic Preservation Planner Working Group. Presented by Samantha Murray, Dudek. December 1, 2016.** Ms. Murray delivered a one-hour PowerPoint presentation to the Orange County Historic Preservation Planner Working Group, which included planners from different municipalities in Orange County, regarding the treatment of historical resources under CEQA. Topics of discussion included identification of historical resources, assessing impacts, avoiding or mitigating impacts, overcoming the challenges associated with impacts to historical resources, and developing effective preservation alternatives.

***Knowing What You're Asking For: Evaluation of Historic Resources*. Prepared for Lorman Education Services. Presented by Samantha Murray and Stephanie Standerfer, Dudek. September 19, 2014.** Ms. Murray and Ms. Standerfer delivered a one-hour PowerPoint presentation to paying workshop attendees from various cities and counties in Southern California. The workshop focused on outlining the basics of historical resources under CEQA, and delved into issues/challenges frequently encountered on preservation projects.

Relevant Training

- CEQA and Historic Preservation: A 360 Degree View, CPF, 2015
- Historic Designation and Documentation Workshop, CPF, 2012
- Historic Context Writing Workshop, CPF, 2011
- Section 106 Compliance Training, SWCA, 2010
- CEQA Basics Workshop, SWCA, 2009
- NEPA Basics Workshop, SWCA, 2008
- CEQA, NEPA, and Other Legislative Mandates Workshop, UCLA, 2008

Appendix B

DPR form for 7431 Santiago Canyon Road

State of California ◆ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code Reviewer Date

Page 1 **of** 17 ***Resource Name or #:** (Assigned by recorder) 7431 Santiago Canyon Road
P1. Other Identifier:

*P2. **Location:** ☐ **Not for Publication** ■ **Unrestricted**
*a. **County** Orange **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
*b. **USGS 7.5' Quad** El Toro, CA **Date** 1997 **T** 05S ; **R** 8W ; NE ¼ ■ **of** SW ■ **of Sec** 12 ; San Bernardino **B.M.**
c. Address 7431 Santiago Canyon Road City Silverado Zip 92676
d. UTM: (Give more than one for large and/or linear resources) Zone 11N , 437854 mE/ 3734448 mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate)
APN: 576-013-02

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The Fleming Zone 8 Reservoir and Pump Station (7431 Santiago Canyon Road) is sited on a rectangular lot, between Silverado Canyon Road and Santiago Canyon Road approximately 300 feet southeast from the intersection of the two roads. The fenced portion of the station site is primarily paved and level. The surrounding terrain is hilly, with the grade generally descending downward to the north and south and sloping upward to the east and west. The lot is divided in half by a paved access road.
See Continuation Sheet.
***P3b. Resource Attributes:** (List attributes and codes) HP11. Engineering Structure and HP9 Public utility building

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

***P4. Resources Present:** ■ Building ■ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)
P5b. Description of Photo: (view, date, accession #) Overview of north side of fenced area, view looking east, Dudek

***P6. Date Constructed/Age and Source:** ■ Historic ☐ Prehistoric ☐ Both
Circa 1964 (SCWD 1964)
***P7. Owner and Address:**
Santiago County Water District. P.O. Box 575 Silverado CA 92676-0575
***P8. Recorded by:** (Name, affiliation, and address) Kate Kaiser, Dudek, 38 N Marengo Ave., Pasadena, CA 91101
***P9. Date Recorded:** 2/03/2021
***P10. Survey Type:** (Describe)
Pedestrian
***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")
Historical Resources Technical Report: Fleming Zone 8 Reservoir and Pump Station Improvements Project, Orange County California. 2021. Dudek.

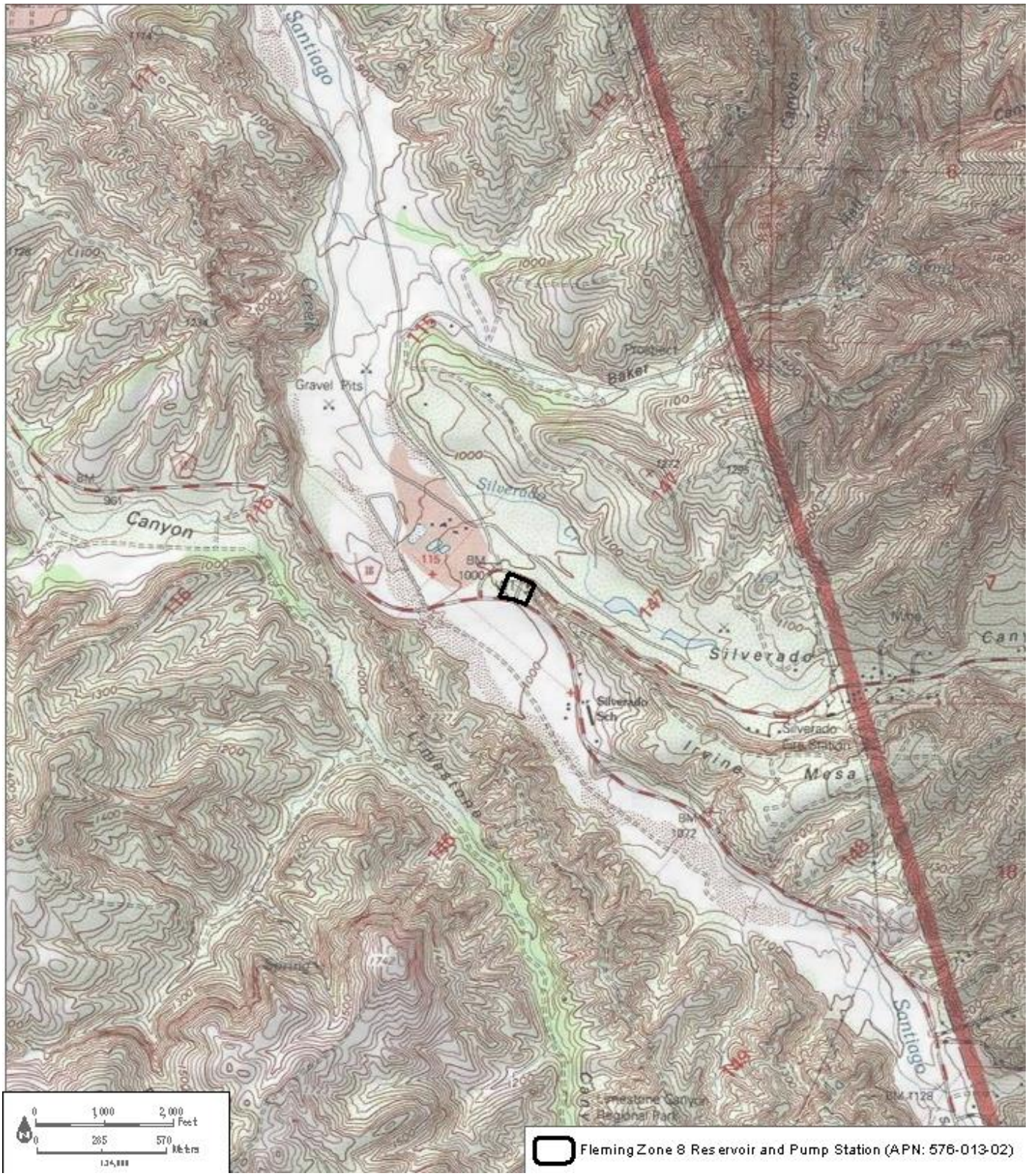
***Attachments:** ☐NONE ■Location Map ■Continuation Sheet ■Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California ◆ Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

 ***Resource Name or #** (Assigned by recorder) 7431 Santiago Canyon Road
***Map Name:** El Toro, California ***Scale:** 1:24,000 ***Date of map:** 1997



State of California ◆ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** (Assigned by recorder) 7431 Santiago Canyon Road
***NRHP Status Code** 6Z
Page 3 **of** 17

B1. Historic Name: Santiago Reservoir and Pumping Station -
B2. Common Name: Fleming Zone 8 Reservoir and Pump Station
B3. Original Use: Reservoir and Pump Station B4. Present Use: Reservoir and Pump Station
***B5. Architectural Style:** Utilitarian
***B6. Construction History:** (Construction date, alterations, and date of alterations)
The reservoir on the subject property was constructed circa 1964 (IRWD 1964). No permits showed changes to the reservoir. The only noticeable alteration is the updated pump piping. One of the pumps has a 2001 date, suggesting it was installed at some time after 2001. No other modifications were noted. Additions were observed to the c. 1968 office building during the field survey. Alterations include additions to the east and north façades, replacement metal siding on the north and west facades, and the addition of security bars to all of the building's windows and metal security screen doors to both of the building's entryways.

***B7. Moved?** ■No □Yes □Unknown **Date:** **Original Location:** ***B8. Related Features:**

B9a. Architect: John Toupe (engineer) b. Builder: unknown
***B10. Significance: Theme** N/A **Area** N/A

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.)

Historical Overview

Mexican Period (1822–1848)
Extensive land grants were established in the interior during the Mexican period, in part to increase the population inland from the more settled coastal areas where the Spanish first concentrated their colonization efforts. The Project site is located in the Ranchos Lomas de Santiago, a Rancho owned by José Antonio Yorba's youngest son, Teodocio Yorba. Yorba was granted Rancho Lomas de Santiago (Ranch of the Hills of St. James) in 1846, just before California was annexed to the United States at the end of the Mexican American War.
See Continuation Sheet.

B11. Additional Resource Attributes: (List attributes and codes)
***B12. References:**

See Continuation Sheet.

B13. Remarks:

***B14. Evaluator:** Adrienne Donovan-Boyd, MSHP
***Date of Evaluation:** February 24, 2021

(This space reserved for official comments.)

(Sketch Map with north arrow required.)

***P3a. Description (continued):**

The western portion of the lot is covered in vegetation. The eastern portion of the lot has a fenced area with the majority of the site's buildings and structures. The fenced area is oval shaped, with a paved area on the south end of the lot (outside of the fenced area) and vegetation is along the perimeter of the lot. The fenced area of the lot contains the reservoir tank, office building, garage, shed, AT&T tower, two generators, a concrete basin, a series of pumps, as well as several landscape features including a memorial stone, a flagpole and several light posts. The buildings are designed in a utilitarian style, with few architectural details.

A curved, paved path leads from the vehicular gate around the pumps to the front door of the office. A flagpole, vintage generator, several large boulders, and a plaque set in a natural stone is located to the west of the sidewalk. The plaque reads: Dedicated to the Memory of H. Rodger Howell, General Counsel, Santiago County Water District 1962-1983. The vintage generator is set on a large flat boulder, on display. It is inscribed with the words "Oil-Rite, Trademark" on the metal and a small metal plate describes the size and pump number. These decorative elements are surrounded by natural ground cover.

Several buildings and structures on the site were constructed after the historic period. These include a shed, three generators, two shallow concrete basins, a garage, and an AT&T tower. Three generators are currently on the site, a metal, CAT generator, located on a concrete pad to the south of the office building, a second generator is set on a trailer to the south of the pumps, and a third generator on the east side of the fenced area. The shed, located to the east of the office building, is a small square building with a pedestrian door on the south façade. The door is wood, with a metal security screen. The shed has an asphalt composition shingle roof and is clad in T1-11 siding as is found elsewhere on the site. No architectural drawings were available for the shed, but it first shows on aerial imagery in 1994, suggesting it was constructed between 1980 and 1994 (NETR 1980 and 1994).

The AT&T tower and fenced utility area are located on the south side of the fenced area. The fenced utility area is north of the fence and east of the garage. The AT&T Tower is located just south of the fenced utility area, south of the site's fence. The tower has synthetic foliage to look like an evergreen tree.

The two-car garage, located on the south side of the lot, has a shed roof clad in composition shingles. The building is clad in T1-11 plywood siding, with vertical grooves, and ¼′ by 1½′ lath over the seams. On the primary (north) façade, the building has a with a cantilevered awning. The roof appears to be covered in metal sheet. On the primary façade of the garage (from east to west) is a single pedestrian door with a metal security door and two vehicle bays, each with a metal, roll-up door. The building appears to be set on a concrete slab foundation. No architectural drawings were available for the shed, but it first shows on aerial imagery in 1994, suggesting it was constructed between 1980 and 1994 (NETR 1980 and 1994).

Reservoir (c. 1964)
The reservoir, constructed in c. 1964, is roughly centered on the north side of the fenced area. The steel cylinder reservoir is shown on plans to be 32 feet tall, have a 28.5-foot diameter, and hold 150,000 gallons (Figure 1). The structure has a domed roof and the walls are constructed of welded metal panels. A ladder is located on the southwest side. Two metal railings are located on either side of the ladder at the roofs edge. Two high voltage metal utility cabinets are located on the west side of the reservoir.

The pumping system is located west of the reservoir and appears to have been updated.

There is a single pipe leading from the base of the reservoir to the west. Four lines connect to the main pipe system and several have electric pumps. Each line has multiple valves, and each is approximately 15 feet from the main line to the point where it moves underground. The main gate on the lateral pumps are inscribed with the words "Mueller, 2360, AWWA, 250W, Fire Main Gate, Valve Listed 588N 200W FM, CHA TN 10 2001".

Office Building (c. 1968)
The office building, located on the north side of the fenced area, is a single-story building with an irregular plan, constructed c. 1968 (Figure 2). The office has three clear sections from west to east: a side-gabled section with a shed roof awning, a smaller side-gabled section, and a front gabled section. The eastern most section's roof is clad in standing seam metal and the awning is clad in asphalt shingles. The center and eastern section of the building are clad in asphalt shingles. The majority of the office building is clad in T1-11 plywood siding, with vertical grooves, and ¼' by 1½' lath over the seams. On the primary (south) facade a wood pedestrian door with a metal security screen, is located on the west side of the building. To the east of the door are two four-light, wood, awning style windows. Both windows have security bars making them inoperable. On the center section of the building, on the primary façade, is a single aluminum sliding sash window with security bars. A metal utility box is located on a cement pad adjacent to the building. The foundation is not visible on this section of the building. There are no windows or doors on the eastern section of the primary façade.

The west façade has a single four-light, wood awning window centered on the façade. A horizontal wood board divides the façade. Metal sheet, possible galvanized steel is located above the board and T1-11 plywood below. A vent is located in the gable end. A board-formed, concrete foundation is visible on this façade. The east façade of the building has a second pedestrian door, a utility box, and an aluminum sliding sash window in a wood surround. The north façade has windows on the east and west sections of the building. The west section has two, four-light wood awning windows that match others on this section of the building. The east section has two aluminum sliding sash windows, that match the window on the east façade. The center and east sections are clad in sheet metal and the west portion is clad in T1-11 siding.

Figure 1. Reservoir, view looking north (IMG_5926)

Figure 2. Office building: South (primary) and west elevation, view looking northeast (IMG_5886)

***B10. Significance (continued):**

Yorba filed a United States claim for the land in 1852. The Yorba family was one of the most successful landowners in southern California during the Mexican Period. Beginning in the 1840s and 1850s, the Yorba family had acquired six adjoining ranchos, large land grants given to individuals who had been loyal to the Spanish Crown or later to the newly independent government in Mexico. The Rancho Lomas de Santiago, which encompasses the

area of the Project site, was granted by Mexican Governor Pio Pico in 1846 (Nelson 2009:2.

During the supremacy of the ranchos (1834–1848), landowners largely focused on the cattle industry and devoted large tracts to grazing. Cattle hides became a primary Southern California export, providing a commodity to trade for goods from the east and other areas in the United States and Mexico. The number of non-native inhabitants increased during this period because of the influx of explorers, trappers, and ranchers associated with the land grants. The rising California population contributed to the introduction and rise of diseases foreign to the Native American population, who had no associated immunities (Dallas 1955).

American Period (1848–Present)

War in 1846 between Mexico and the United States precipitated the Battle of Chino, a clash between resident Californios and Americans in the San Bernardino area. The Mexican–American War ended with the Treaty of Guadalupe Hidalgo in 1848, ushering California into its American period. California officially became a state with the Compromise of 1850, which also designated Utah and New Mexico (with present-day Arizona) as U.S. territories (Waugh 2003). Horticulture and livestock, based primarily on cattle as the currency and staple of the rancho system, continued to dominate the Southern California economy through 1850s. The Gold Rush began in 1848, and with the influx of people seeking gold, cattle were no longer desired mainly for their hides but also as a source of meat and other goods. During the 1850s cattle boom, rancho vaqueros drove large herds from Southern to Northern California to feed the region's burgeoning mining and commercial boom. The cattle boom ended for Southern California as neighboring states and territories drove herds to Northern California at reduced prices. Operation of the huge ranchos became increasingly difficult, and droughts severely reduced their productivity (Cleland 2005).

Development of the Irvine Ranch

The Project site is located on the eastern edge of what would become known as the Irvine Ranch, one of the largest, most prosperous agricultural operations in Orange County. The site is located near the base of the Santa Ana Mountains and remains relatively rural. Ownership records are not complete, but histories show William Wolfskill purchased the land in from Teodocio Yorba in c. 1860 to be used for grazing sheep (Nelson 2009:2). Wolfskill was a California pioneer, and a prolific landowner, businessman, and rancher. He is also credited with being one of California's first Valencia orange ranchers (OCHC 1983: Section 8). In 1864, Wolfskill sold the 47,000-acre property to the Benjamin and Thomas Flint, Llewellyn Bixby, and James Irvine (Berumen, pers comm. 2021). Flint and

Bixby were also sheep men, who were increasing their land holdings to increase their annual projection of wool (Nelson 2009:2).

James Irvine, a pioneer of California agriculture and prosperous San Francisco merchant, purchased the Flint and Bixby shares of the Lomas Santiago in 1876 for $150,000 dollars. This gave Irvine control of approximately 110,000 acres of land in and around the Santa Ana Canyon (Nelson 2009:3). Irvine, an Irishman, came to America in 1846, and lived for a time in New York City. He came to California in 1849, to find his fortunes in the California gold rush. After working in the mines for several years, Irvine began selling merchandise to miners, and eventually established a successful market in San Francisco (The San Francisco Examiner 1886:3). James Irvine died in 1886, leaving his estate to his son, James Irvine Jr. George Irvine, James Irvine Sr.'s brother, managed the property until Irvine Jr. came into possession of the estate at the age of twenty-five (Nelson 2009:2).

When James Irvine Jr. took over the estate in 1892, he converted the ranch into a "increasingly modern, productive enterprise of field crops, grain and irrigated orchards," which was achieved by digging wells, building reservoirs, and laying pipeline to irrigate the crops (Nelson 2009:3). In 1983, Irvine Jr. began to divert water from the Santiago Creek to an area known as "The Flats" where the property's new ranch house was located. Also, in the 1880s, Irvine Jr. began to lease land to tenant farmers. These farmers grew grain and bean crops that required minimal rainfall and little to no irrigation. Historic aerials from 1946 suggest the Project site was never brought under agricultural use during the Irvine ownership. While the Project site does not appear to have been cultivated, the road through Santiago Canyon, along the Santiago Creek, that eventually becomes Santiago Canyon Road, is visible on the 1901 topographic map of the area in generally the same orientation as it found today.

The Irvine Company

In 1894, Irvine Jr. incorporated the Ranch as the Irvine Company and became the company's first president (Brower 2013: xxi). County deeds show the ownership of the Project site land is moved From James Irvine Sr. to the Irvine Company's holdings in 1894 (Berumen, pers comm. 2021). One of Irvine Jr's first acts as president was to donate 160 acres of land, that had long been a popular pioneer picnic spot, to the State Board of Supervisors. This donation, land northeast of Irvine Lake, became the Irvine Ranch Historic Park, which is now the oldest park in Orange County (OCHC 1983: section 8). Around this same time, in 1889, Orange County formed out of parts of Los Angeles County. When Orange County formed, the Irvine Company owned almost one-fifth of the County's acreage.

Tenants on the Irvine Ranch increased and the land became one of the most productive tracts in California, known for the growing of lima beans, black-eyed peas, barley, oats, sugar beets, olives, walnuts, lemons, and oranges (Santa Ana Daily Register 1915:8). As the tenants on the Irvine property increased, Irvine Jr. developed an extensive system

of wells to irrigate the land (Nelson 2009:7). By 1920, it is estimated that nearly 1,200 wells had been drilled on his acreage and many were running with electric pumps. By 1930, the Irvine Ranch had 31,000 acres of Lima Beans under cultivation, which was often described as the "largest Lima Bean field in the world" (Nelson 2009:7).

In 1935, James Irvine III (known as Jase), Irvine Jr.'s oldest son, tragically died of tuberculosis. Jase was on track to be the president of the Irvine Company and his death left Irvine Jr. distraught and without sound leadership for the future of the company (Brower 2013: xxi). Several years later, in 1937, Irvine Jr.'s established the James Irvine Foundation with 51% of the company's stock to be held by the foundation and the other 49% to be distributed to family (Brower 2013: xxii).

Irvine Ranch Water Management Facilities

Ongoing water quality problems and water scarcity made it clear that further work was necessary to irrigate crops at Irvine Ranch. The water conveyance facilities on the Ranch became one of the largest water management systems in Orange County. The first distribution irrigation feature on the Irvine Ranch property was the Irvine Ditch, constructed in 1893 from the Santiago Canyon to the Peters "Flats" (near the present-day location of the Peters Canyon Dam, which is approximately 5.5 miles to the northeast of the Project site). Wells were the primary source of water at the turn of the century, with 1,200 wells constructed in the area, most equipped with electric pumps. These wells allowed for large citrus orchards to be planted starting in 1906 (Nelson 2009: 17).

Irvine began to construct a series of winter water conservation features on the Ranch starting in the 1920s. Water runoff and irrigation rights were a constant struggle between the Irvine, Carpenter, and Serrano Irrigation Districts and the conservation projects were an effort to offset the marked decline in his groundwater system. P. R. Browning was the principle designer of all the Ranch's water conservation facilities except for the Santiago Dam which was designed by A. Kempkey (Nelson 2009:7). The dispute between the competing irrigation districts was eventually settled in 1928, with an agreement between the three litigants that led to the construction of the Santiago Dam and Outlet Tower (Nelson 2009:8). This period also saw the establishment of a massive irrigation system on the site (Brower 2013: xxi). In 1950, there were 4,550 irrigated acres and 33,430 dry farming acreage. Just ten years later, the Irvine company had increased the irrigated acreage to 7,417 acres and dry farming acres accounted for only 16,853 acres (Nelson 2009: 18).

County-wide flood control bonds failed to gather appropriate support in 1929 and 1931, leaving Irvine Jr. to complete some large-scale water management projects without government support. Flood control created both land security and pooled runoff water for domestic and agricultural uses. Irvine was increasingly worried about water rights, and in 1932 he filed suit against upper basin users to protect the rights to the Santa Ana River (OCWD 2015: 24). The following water conservation projects were completed on the

Irvine Ranch Site between 1929 and 1959: Lambert Reservoir (1929); Santiago Dam (1931); Irvine Conservation Dam (1932); Peters Canyon Dam (1931); the High Line Canal (1930s); Laguna Reservoir (1937-38); Bonita Reservoir (1937-38); Little Peters Reservoir (1940); Sand Canyon Reservoir (1942); Syphon (sometimes spelled Siphon) Canyon Dam (1948-49); and the Rattlesnake Canyon Reservoir (1959) (Nelson 2009:8). In 1970, the construction of the Irvine Lake Pipeline brought water from the Colorado River to the Rattlesnake Canyon Reservoir.

Consolidation of Orange County Water Districts

While the Irvine Ranch was creating a sophisticated water system for Ranch operations, the rest of Orange County was using a patchwork method of establishing water rights. Early water conveyance developments in Orange County generally organized as groups of property owners that banded together to provide water services through groundwater wells, these co-ops were called "mutuals." The mutuals sold shares of water to landowners based on the number of acres held by each property owner. As metropolitan areas grew it became clear that the current system, collections of property owners, would not be sufficient for the rapidly growing population in Orange County (MWDOC 2020).

In 1928, several southern Orange County cities banded together to form the Metropolitan Water District of Southern California (MWD) with the lofty goal of importing water from the Colorado River. The MWD succeeded in the planning and construction of the Colorado River Aqueduct, which, starting in 1939, brought water from the Colorado River near the Arizona boarder to the east side of the Santa Ana Mountains. This ongoing consolidation of the cooperative system became a necessity as water became Southern California's most precious resource. In 1957, there were an estimated 151 of these mutual water groups remaining in Orange County. By 1963, the Orange County Water District's futures engineer estimated that by 1965, no more than 25 would remain. Postwar population growth further encouraged the consolidation of mutuals and districts and in other areas, growth brought city services within reach of previously rural areas (LAT 1963c:2).

The success of the MWD, and the continued need for more water lead to the formation of several other large districts who hoped to tap into Colorado River water as well as Northern California water from the State Water Project. Developments continued into the 1960s and 1970s to move water through areas in eastern Orange County. The Santiago lateral, completed in 1961, and the East Orange County Feeder Line No, 2, both extended water into the southeast section of the County (LAT 1961a: E:2).

Santiago County Water District

The Santiago County Water District (SCWD) was formed in 1962 and was located in the northeast section of Orange County, east of the City of Orange and Tustin. A Legal Notice ran in the Tustin News, on August 16, 1962 with a notice for the formation of the district and for the election of the directors (Tustin News 1962: 8). Residents in an

unincorporated area, banded together and discarded their mutuals to create the SCWD. The district covered 21,450-acres and included Black Star, Silverado, Williams, and Modjeska Canyons (LAT 1964:3). The $1.2 million bonds for the district were approved by voters in July of 1963, with a vote of 308-85 (LAT 1963a:91). The bonds were set to pay for water lines, a share of a new water filtration plant, and water rights in the new Santiago Lateral Aqueduct. The group's goal was to bring Colorado River water into the area with a partnership of the MWD (LAT 1963c:1). This large-scale effort would not have been possible with the smaller water district groupings. When the SCWD formed it included nearly 500-single family residences (LAT 1963b: 12).

In November 1963, the SCWD began construction of their water network, which, at the time, included 21,000 acres, beginning in the foothills of Irvine Lake and extending to the mountains in the Cleveland National Forest (IRWD 2020). The first phase of construction included the laying of pipe in Modjeska Canyon, Silverado Canyon, and on Santiago Road from the East Orange County Water District's filtration plant and Peters Canyon Reservoir (LAT 1963b: 12). The SCWD obtained ownership of the Project site property on May 6, 1964 (Berumen, pers comm. 2021). In June of 1964, the SCWD, after completing their first large scale projects, turned on water from the Colorado River at the Silverado Days Festival. The new system was ready to serve 4,000 people and was described as an end to the areas dependence on groundwater wells. The District continued to grow and by 2006, it served potable water to approximately 2,500 customers. In July 2006, the SCWD consolidated with the IRWD to lower costs and provide a more diverse water supply (IRWD 2021: SCWD). The SCWD continues to be listed as the Project site parcel owner (Berumen, pers comm. 2021).

Irvine Ranch Water District

The IRWD was formed by the Irvine Company in 1961 as a California Special District with headquarters in Irvine. Orange County approved the boundaries of the District in December of 1960, with the District being bound on the west by Newport Avenue, the south by the Santa Ana Marine Corps Air Facility, the east by the Rancho Canada De Los Alisos, and the north by the Coastal Municipal Water District (LAT 1960: R-35). The District's boundaries initially included approximately 60 square miles (IRWD 2021: Liquid News). Initially, the IRWD served mainly agricultural customers, but the quickly growing Orange County population included many residential customers in need of water. The IRWD grew through annexations in the 1960s and 1970s and by 1991, the District provided water to one-sixth of Orange County (LAT 1991:A3).

As water districts became more established, growth continued through consolidation of districts. Between 1997 and 2008, the IRWD consolidated with five other water districts, including the SCWD in 2006. The Project site came under IRWD management at this time. Other districts that joined the IRWD include: Orange Park Acres Mutual Water Company (2008), Los Alisos Water District (2001), Carpenter Irrigation District (2000), and the Santa Ana Height Mutual Water Company in (1997) (IRWD 2021: Consolidations). Today the

IRWD serves more than 425,000 residential customers and spans 181 square miles (IRWD 2021: Liquid News).

3.4 History of the Project Site

The Project site was vacant until construction of the Fleming Reservoir in c. 1964. Early development is somewhat unclear, as County records show the Irvine Company did not transfer to the property until May 6, 1964. Building records indicate the tank was designed in 1963, but the as-built revision appears to be from 1964 (Berumen, pers comm. 2021 and SCWD 1963). Historic newspapers suggest the SCWD began construction of their system in 1963. It seems likely the reservoir construction happened after SCWD took ownership of the property. The site was historically named the Santiago Reservoir and Pumping Station (SCWD 1964). The tank shows on historic as built drawings as a 150,000-gallon tank with a diameter of 28.5 feet and a height of 38 feet. Initial plans show the construction of the north-south access road and a paved area south of the fenced area around the tank (SCWD 1964). The drawings also indicate plans for a fence in generally the same place as the fence is located today. The first available aerial imagery for the Project site is in 1966. At this time, the reservoir and the access road are the only built structures visible on the site. The dates are difficult to read on the historic plans, but the plans were developed by John Toups, a civil engineer, and the first revisions were dated November 20, 1963 (SCWD 1964).

The office building was constructed c. 1968. There were no architectural drawings for this building and aerial imagery first shows the building on the site in 1980. Engineering drawings for a 1977 electrical upgrade are available and show the existing office building in an "L" shape footprint. The footprint is similar to the current layout, but with changes to the north façade roofline and the south façade shed roof awning. The office building is shown as having two sections: the side-gabled section is listed as being 500 square feet and the eastern, front gabled section is 400 square feet. The office building footprint is divided, suggesting the eastern section may be an addition. The drawings also show a 12-foot by 60-foot trailer located southeast of the reservoir tank.

In 1980, the reservoir, office, and the trailer noted on the 1977 plan are all visible on the site. The garage building is not visible on the 1994 aerial, but it can be seen after 2002. The trailer on the east side of the site is removed between 2005 and 2009.

Utilitarian (circa 1860–present)

Utilitarian architecture is simply designed, to meet a specific need. These buildings and structures usually have minimal architectural details and they are often constructed of inexpensive materials. This type of building was common in California throughout history and is commonly found in warehouse, barracks, factories offices, and apartments, among others. These buildings are often constructed of inexpensive material, such as wood, plywood, or concrete, but other materials are also used. There is no defined roof

or wall cladding, as the buildings themselves exist to provide a function which often dictates the layout and shape of the building. The style is varied but is often marked by minimal ornamentation; designed to serve a specific function; and constructed of inexpensive, available materials.

NRHP/CRHR Designation Criteria

Criteria A/1: That are associated with events that have made a significant contribution to the broad patterns of our history.

The evaluation of the station is based on the historic context of rural, infrastructure development, and the significance the development had on the economic growth and development of the geographic region. The SCWD, formed in 1962, is part of the natural, ongoing development of systems that were needed as the rural population of Orange County grew at a rapid rate after World War II. The development of these water conveyance systems began with increased Euroamerican settlement in the 1850s and continue to be refined and expanded to the present. The station is not an integral part of a significant local or regional water distribution project. The water conveyance systems in this area are the product of the ongoing expansion of rural water systems and the necessary transition from groundwater wells and their diminished supply. These types of reservoirs and pump stations are of a type ubiquitous throughout California. Mid Century population growth created an ongoing need for reliable water. The Fleming Zone 8 Reservoir and Pump Station does not have a direct association with events that have made a significant contribution to the broad patterns of our history and does not appear eligible under Criterion A of the NRHP or Criterion 1 of the CRHR.

Criterion B/2: That are associated with the lives of persons significant in our past.

To be found eligible under NRHP Criterion B/2 a property must retain sufficient integrity and be directly tied to the important person and the place where the individual conducted or produced the work for which he or she is known. Research indicates that early development of the station is not directly associated with a significant person. Earlier landowners (Yorba and Irvine) were well-known significant figures in Orange County's pioneer history, but the development of the station in the 1960s was much later and the structure is not directly tied to these figures. The Fleming Zone 8 Reservoir and Pump Station was not found to have a significant link to any significant person who was related to the development of the site as part of the SCWD. For these reasons, it does not appear to be eligible for listing in the NRHP under Criterion B or Criterion 2 of the CRHR.

Criterion C/3: That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic

values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

The Fleming Zone 8 Reservoir and Pump Station is a local, water conveyance system, constructed in the 1960s to bring water to nearby rural residents. The site does not represent the work of a master architect, engineer, or builder; it does not possess high artistic value; and it does not embody distinctive characteristics of a type, period, or method of construction. It is also not representative of a significant and distinguishable entity whose components may lack individual distinction. Water conveyance systems significant under this criterion often use innovative technology that fundamentally changed the way these systems were planned or developed. This is not the case for subject station. Furthermore, the elements that comprise the station are simple utilitarian buildings and structures with little or no distinctive architectural features. Modern utilitarian ancillary buildings and structures were also added to the property after 1984. Lacking significance, the Fleming Zone 8 Reservoir and Pump Station does not appear eligible for listing in the NRHP under Criterion C or CRHR under Criterion 3.

Criterion D/4: That have yielded, or may be likely to yield, information important in prehistory or history.

The Fleming Zone 8 Reservoir and Pump Station is not significant under Criterion D of the NRHP or Criterion 4 of the CRHR as a source, or likely source, of important historical information nor does it appear likely to yield important information about historic construction methods, materials, or technologies.

Integrity Discussion

Integrity is defined in NRHP guidance, *How to Apply the National Register Criteria*, as "the ability of a property to convey its significance. To be listed in the NRHP or CRHR, a property must not only be shown to be significant under the established criteria, but it also must have integrity" (NPS 1990). The seven aspects of integrity are location, design, setting, materials, workmanship, feeling, and association.

The Fleming Zone 8 Reservoir and Pump Station has not been moved and therefore retains integrity of location. The station has experienced few modifications resulting in a fair level of integrity of design, materials, and workmanship. The station retains a moderate level of integrity for its association with rural water distribution development and retains some integrity of feeling, as it is still used in the same capacity. Finally, the addition of numerous modern structures and buildings have diminished the station's historic setting. In conclusion, the Fleming Zone 8 Reservoir and Pump Station only retains some integrity of location, design, materials, and workmanship, association, and feeling, but has diminished integrity of setting.

Summary of Evaluation Findings

No historical resources were identified within the Project site as a result of the extensive archival research, field survey, and the property significance evaluation. The Fleming Zone 8 Reservoir and Pump Station located at 7431 Santiago Canyon Road does not appear eligible for the NRHP or the CRHR under any designation criteria due to a lack of significant historical associations and architectural merit. Therefore, the station is not considered an historical resource for the purposes of CEQA. Further, no potential indirect impacts to historical resources were identified. No management recommendations are needed.

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Appendix C-2

Archaeological Resources Technical Report

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Environmental Compliance Analyst
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15600 Sand Canyon Avenue
Irvine, California 92618

Subject: Archaeological Resources Assessment for the Fleming Zone 8 Reservoir and Pump Station Project, Orange County, California

Dear Ms. Corey:

This letter documents the archaeological resources assessment conducted by Dudek for the Fleming Zone 8 Reservoir and Pump Station Improvements Project (Project), located in the Santiago Canyon area of unincorporated Orange County, California. Pursuant to the California Environmental Quality Act (CEQA) statute Section 21067 and CEQA Guidelines Article 4 and Section 15367, Irvine Ranch Water District (IRWD) is the lead agency responsible for the preparation of the environmental documentation and for the approval of the Project.

All cultural resources fieldwork and reporting for the Project has been conducted by staff meeting the Secretary of the Interior's Professional Qualifications Standards. Dudek archaeologist Linda Kry, BA, Registered Archaeologist (RA), is the technical lead, co-authored the report, provided management oversight and recommendations for archaeological resources. Dudek archaeologists, Jennifer De Alba, BA, Kira Archipov, BS, and Adriane Gusick, BA, co-authored portions of the report. Heather McDevitt, MA, Registered Professional Archaeologist (RPA), reviewed the report for quality assurance/quality control. The present study documents the results of a California Historical Resources Information System (CHRIS) records search conducted at the South Central Coast Information Center (SCCIC), a Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search, and an intensive-level archaeological pedestrian survey.

Project Location and Description

The Project site is located at IRWD's existing Fleming Reservoir and Pump Station facility, which is located approximately 500 feet east of the intersection of Santiago Canyon Road and Silverado Canyon Road, in the Santiago Canyon area of unincorporated Orange County, California. The Project site is in Section12 of public land survey system (PLSS) Township 5 South, Range 8 West as shown on the El Toro and Black Canyon Star, CA 7.5-minute USGS Quadrangles (Appendix A: Figure 1). The surrounding area is a combination of agricultural land and natural areas. The approximately 2.9-acre site is located in the Irvine Ranch Natural Area, and a short distance to the east is the Cleveland National Forest. The Limestone Canyon Natural Preserve is across the road to the southwest, and the Black Star Canyon Wilderness Park is located to the Northeast. The Project site is located within the A-1 (Agricultural use) zoning district in an unincorporated area. Specifically, the Project site includes one parcel located at 7431 Santiago Canyon Road (Assessor Parcel Number 576-013-02).

The parcel contains the Fleming Zone 8 Reservoir and Pump Station, which includes a reservoir and office, as well as two buildings and several structures. The property is bisected by a paved driveway. The west half of the property is vacant and undeveloped (Appendix A: Figure 2).

The existing site currently contains a 150,000 gallon-steel drinking water storage reservoir, a pump station, support structures, and associated equipment, and is the only source of water service for IRWD's approximately 2,500 customers within Santiago Canyon, Silverado Canyon, Williams Canyon and Modjeska Canyon (collectively known as the Santiago Canyon Area). IRWD has identified that improvements to the facilities are needed to ensure that the facilities are capable of supplying maximum daily water demands.

Implementation of the Project would improve the reliability of IRWD's drinking water storage and conveyance facilities in this part of IRWD's service area. Major Project components would include:

- Demolition of the existing aboveground 150,000-gallon steel reservoir, pump station, administration and storage building.
- Construction of an aboveground 1.3 million-gallon (MG) prestressed concrete reservoir and associated pipelines.
- Construction of a new, pump station, equipped with three, approximately 600 gallon per minute pumps that will be enclosed within a masonry block building and will include a dedicated electrical room and dedicated operations room with a restroom.
- Construction of a replacement storage building.
- Construction of a masonry block building for the disinfection facilities, which will include sodium hypochlorite and aqueous ammonia storage and feed systems.
- Replacement of an existing 150-kilowatt (kW) standby diesel generator with a new, 350kW standby diesel generator to provide power to the facilities during both planned and unplanned electrical service outages.
- Installation of a 1,000-gallon diesel fuel storage tank and dispensing system.
- Improvements to the existing site electrical service and installation of new controls and telemetry equipment, including installation of an antenna on top of the tank for radio communications and equipment control.

Installation of site improvements including a modified access road, fencing, retaining walls, two motorized swing gates, and landscaping. Installation of new pipelines, located in the access road, which will extend into Santiago Canyon Road and Silverado Canyon Road.

In addition to the Project components discussed above, the Project includes an off-site connection to the Carlton earthen storm drain, located south of Santiago Canyon Road and south of the extant Fleming Reservoir and Pump Station facility, near an existing storm drain outlet owned by the County of Orange Public Works. This work would entail the placement of rip rap and possible small concrete headwall.

The Project, as currently proposed, would be located on the eastern portion of the site to minimize impacts to the undeveloped, vegetated western portion of the site.

Regulatory Context

This section includes a discussion of the applicable state laws, ordinances, regulations, and standards governing cultural resources, which must be adhered to before and during construction of the Project.

Federal

The Project does not have a federal nexus and therefore is not subject to Federal regulations.

State

The California Register of Historical Resources (CRHR)

In California, the term "historical resource" includes, but is not limited to, "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (California Public Resources Code (PRC), Section 5020.1(j)). In 1992, the California legislature established the California Register of Historical Resources (CRHR) "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1(a)). The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the National Register of Historic Places (NRHP), enumerated below. According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

(2) Is associated with the lives of persons important in our past.

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

In order to understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see 14 California Code of Regulations [CCR] 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

Assembly Bill 52

Assembly Bill 52 of 2014 (AB 52) amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3.

Consultation with Native Americans

AB 52 formalizes the consultation process between lead agencies and tribal representatives, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with a project area. This includes tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

Tribal Cultural Resources

Section 4 of AB 52 adds Sections 21074 (a) and (b) to the PRC, addressing tribal cultural resources and cultural landscapes. Section 21074 (a) defines tribal cultural resources as one 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.

Section 1 (a)(9) of AB 52 establishes that "a substantial adverse change to a tribal cultural resource has a significant effect on the environment." Effects on tribal cultural resources should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to tribal cultural resources, the consultation shall include those topics (PRC Section 21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3[a]).

Native American Historic Cultural Sites

The Native American Historic Resources Protection Act (California Public Resources Code Section 5097, et seq.) addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and establishes the NRHC to resolve disputes regarding the disposition of such remains. In addition, the Native American Historic Resource Protection Act makes

it a misdemeanor punishable by up to 1 year in jail to deface or destroy an Indian historic or cultural site that is listed or may be eligible for listing in the CRHR.

California Native American Graves Protection and Repatriation Act

The California Native American Graves Protection and Repatriation Act (California Repatriation Act), enacted in 2001, requires all state agencies and museums that receive state funding and that have possession or control over collections of human remains or cultural items, as defined, to complete an inventory and summary of these remains and items on or before January 1, 2003, with certain exceptions. The California Repatriation Act also provides a process for the identification and repatriation of these items to the appropriate tribes.

California Environmental Quality Act

As described further below, the following CEQA statutes and CEQA Guidelines are relevant to the analysis of archaeological and historic resources:

1. California Public Resources Code Section 21083.2(g): Defines "unique archaeological resource."
2. California Public Resources Code Section 21084.1 and CEQA Guidelines Section 15064.5(a): Defines historical resources. In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource. It also defines the circumstances when a project would materially impair the significance of a historical resource.
3. California Public Resources Code Section 5097.98 and CEQA Guidelines Section 15064.5(e): These statutes set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
4. California Public Resources Code Sections 21083.2(b)-(c) and CEQA Guidelines Section 15126.4: These statutes and regulations provide information regarding the mitigation framework for archaeological and historic resources, including options of preservation-in-place mitigation measures; identifies preservation-in-place as the preferred manner of mitigating impacts to significant archaeological sites.

Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (California Public Resources Code Section 21084.1; CEQA Guidelines Section 15064.5(b)). An "historical resource" is any site listed or eligible for listing in the CRHR. The CRHR listing criteria are intended to examine whether the resource in question: (a) is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; (b) is associated with the lives of persons important in our past; (c) embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or (d) has yielded, or may be likely to yield, information important in pre-history or history.

The term "historical resource" also includes any site described in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of California Public Resources Code Section 5024.1(q)).

CEQA also applies to "unique archaeological resources." California Public Resources Code Section 21083.2(g) defines a "unique archaeological resource" as any archaeological artifact, object, or site about which it can be

clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

5. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
6. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
7. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

In 2014, CEQA was amended to apply to "tribal culture resources" as well, but the amendment did not provide a definition for such resources or identify how they were to be evaluated or mitigated (California Public Resources Code Sections 21084.2 and 21084.3). Instead, California Public Resources Code Section 21083.09 required that the Office of Planning and Research develop and adopt guidelines for analyzing "tribal cultural resources" by July 1, 2016. As of the effective date of this report, however, those guidelines have not been finalized or adopted. Consequently, this report addresses only historic resources and unique archaeological resources.

All historical resources and unique archaeological resources – as defined by statute – are presumed to be historically or culturally significant for purposes of CEQA (California Public Resources Code Section 21084.1; CEQA Guidelines Section 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (California Public Resources Code Section 21084.1; CEQA Guidelines Section 15064.5(a)). A site or resource that does not meet the definition of "historical resource" or "unique archaeological resource" is not considered significant under CEQA and need not be analyzed further (California Public Resources Code Section 21083.2(a); CEQA Guidelines Section 15064.5(c)(4)).

Under CEQA and significant cultural impact results from a "substantial adverse change in the significance of an historical resource [including a unique archaeological resource]" due to the "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines Section 15064.5(b)(1); California Public Resources Code Section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project:

1. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
2. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
3. Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

CEQA Guidelines Section 15064.5(b)(2)

Pursuant to these sections, the CEQA first evaluates evaluating whether a project site contains any "historical resources," then assesses whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

When a project significantly affects a unique archeological resource, CEQA imposes special mitigation requirements. Specifically, "[i]f it can be demonstrated that a project will cause damage to a unique archeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. Examples of that treatment, in no order of preference, may include, but are not limited to, any of the following:"

1. "Planning construction to avoid archeological sites."
2. "Deeding archeological sites into permanent conservation easements."
3. "Capping or covering archeological sites with a layer of soil before building on the sites."
4. "Planning parks, greenspace, or other open space to incorporate archeological sites."

California Public Resources Code Section 21083.2(b)(1)-(4)

If these "preservation in place" options are not feasible, mitigation may be accomplished through data recovery (California Public Resources Code Section 21083.2(d); CEQA Guidelines Section 15126.4(b)(3)(C)). California Public Resources Code Section 21083.2(d) states that "[e]xcavation as mitigation shall be restricted to those parts of the unique archeological resource that would be damaged or destroyed by the project. Excavation as mitigation shall not be required for a unique archeological resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the resource, if this determination is documented in the environmental impact report."

These same requirements are set forth in slightly greater detail in CEQA Guidelines Section 15126.4(b)(3), as follows:

(A) Preservation in place is the preferred manner of mitigating impacts to archeological sites. Preservation in place maintains the relationship between artifacts and the archeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.

(B) Preservation in place may be accomplished by, but is not limited to, the following:

1. Planning construction to avoid archeological sites;
2. Incorporation of sites within parks, greenspace, or other open space;
3. Covering the archeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site [; and]
4. Deeding the site into a permanent conservation easement.

(C) When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken.

Note that, when conducting data recovery, "[i]f an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation." However, "[d]ata recovery shall not be required for an historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archeological or historic resource, provided that determination is documented in the EIR and that the studies are deposited with the California Historical Resources Regional Information Center" (CEQA Guidelines Section 15126.4(b)(3)(D)).

California Health and Safety Code

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in California Public Resources Code Section 5097.98.

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the County coroner has examined the remains (Section 7050.5b). California Public Resources Code Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the Native American Heritage Commission (NAHC) within 24 hours (section 7050.5c). The NAHC will notify the Most Likely Descendant (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the MLD by the NAHC. The MLD may recommend means of treating or disposing of, with appropriate dignity, the human remains, and items associated with Native Americans.

Local

Orange County

Orange County has two sections within its municipal code pertaining to the protection of archaeological and cultural resources. These sections include Section 2-5-27(Ord. No. 99-21, § 2, 8-31-99) and Section 2-5-227 (Ord. No. 99-22, § 1, 8-31-99) the aspects of these sections which relate to archaeological and cultural resources are as follows:

Section 2-5-27 and Section 2-5-227. - Protection of natural, cultural, structural, and archaeological resources.

a) *Artifacts.* No person shall possess, destroy, injure, deface, remove, dig, or disturb from its natural state any fossilized or nonfossilized paleontological specimens, cultural or archaeological resources, or the parts thereof in any park, beach or recreational facility.

Archaeological Background Research

SCCIC Records Search

On February 18, 2021, staff at the SCCIC, located on the campus of California State University, Fullerton, provided the results of a CHRIS records search for the Project site and a 1-mile radius. Due to COVID-19, the SCCIC notified researchers that they are only able to provide data for Orange County that has already been digitized. As such, not all available data known to CHRIS may be provided in the records search. The CHRIS records search results provided by the SCCIC included their digitized collections of mapped prehistoric and historic archaeological resources and historic built-environment resources; Department of Parks and Recreation site records; technical reports; archival resources; and ethnographic references. Dudek reviewed the SCCIC records to determine whether the implementation of the Project would have the potential to impact known cultural resources. The confidential records search results are also provided in Confidential Appendix B.

Previously Conducted Cultural Resource Studies

Results of the cultural resources records search indicated that twenty-three (23) previous cultural resource studies have been conducted within 1-mile of the Project site between 1973 and 2015. Of these, six (6) cultural resource studies overlap the Project site. Table 1, below, summarizes all 23 previous cultural resources studies within a 1-mile of the Project site, followed by a brief summary of each overlapping report.

Table 1. Previously Conducted Cultural Resources Studies within 1-Mile of the Project Site

SCCIC Report Number	Authors	Year	Title	Proximity to Project Site
OR-00228	Cottrell, Marie G.	1978	Report of an Archaeological Resource Survey Conducted for a Proposed Sand and Gravel Operation in Silverado Canyon	Overlaps
OR-00286	Bean, Lowell	1979	Cultural Resources and the High Voltage Transmission Line from San Onofre to Santiago Substation and Black Star Canyon	Outside
OR-00302	Unknown	1978	A Preliminary Archaeological Overview: the Santiago County Water District Sewage Master Plan	Outside
OR-00305	Schroth, Adella	1979	The History of Archaeological Research on Irvine Ranch Property: the Evolution of a Company Tradition	Overlaps
OR-00581	McCoy, Lesley C. and Kirkish, Alex N.	1982	Cultural Resources Data Recovery Program for the 230kv Transmission Line Rights-of-way From San Onofre Nuclear Generating Station to Black Star Canyon and Santiago Substation and to Encina and Mission Valley Substations	Outside

Table 1. Previously Conducted Cultural Resources Studies within 1-Mile of the Project Site

SCCIC Report Number	Authors	Year	Title	Proximity to Project Site
OR-00648	Breece, Bill and Beth Padon	1982	Cultural Resource Survey: Archaeological Resources: Foothill Transportation Corridor, Phase II	Outside
OR-00746	Bissell, Ronald M.	1984	Cultural Resources Assessment Miyasako Property, Irvine Mesa Area, Orange County, California	Outside
OR-00788	Bouscaren, Stephen	1985	An Archaeological Assessment of the Proposed Valley-Serrano 500 Kv Transmission Line Corridor, Orange and Riverside Counties, California	Outside
OR-00852	Drover, Christopher E. and Phillip de Barros	1986	Project Documentation Blue Diamond/Irvine Lake Sand and Gravel Extraction Permit	Outside
OR-01026	Mason, Roger D.	1990	Cultural Resources Survey Report Santiago Canyon Road Alignment Study Orange County, California	Overlaps
OR-01127	Rosenthal, Jane	1991	Past to Present: Cultural and Scientific Resources, an Archival Inventory Irvine Ranch Open Space Reserve Orange County, California	Outside
OR-01188	Mason, Roger D.	1990	Cultural Resources Records Search Santiago Canyon Road Alignment Study Addendum Orange County, California	Outside
OR-01398	Carbone, Larry A.	1994	Cultural Resources Survey for Santiago Canyon Central Pool Water Facilities, Orange County, California	Outside
OR-01431	Cerreto, Richard and Roger D. Mason	1995	Cultural Resources Survey Report for the Blue Diamond Materials Silverado Project Operation Plan, Silverado Canyon, Orange County, California	Outside
OR-01439	McCoy, Lesley C. and Phillips Roxana	1980	National Register Assessment Program of Cultural Resources of the 230 Kv Transmission Line Rights-of-way from San Onofre Nuclear Generating Station to Black Star Canyon and Santiago Substation and to Encina and Mission Valley Substation	Outside
OR-01441	Leonard, Nelson N. III	1976	Archaeological Report on the Silverado-Modjeska Planning Area Orange County California P.o. No. X 49525	Overlaps
OR-01564	Newland, James D.	1995	Historic Resources Survey & Evaluation Report: Administrative Buildings	Outside
OR-01758	Gardner, Michael C.	1973	Report of Preliminary Archaeological Reconnaissance of Vidal-Chemehuevi-rice Htgr Transmission Lines	Outside

Table 1. Previously Conducted Cultural Resources Studies within 1-Mile of the Project Site

SCCIC Report Number	Authors	Year	Title	Proximity to Project Site
OR-02225	Strozier, Hardy	1978	The Irvine Company Planning Process and California Archaeology - A Review and Critique	Overlaps
OR-02534	Unknown	1976	Annual Report to The Irvine Company from Archaeological Research, Inc.	Overlaps
OR-02941	Kyle, Carolyn E.	2004	Cultural Resource Assessment for AT&T Wireless Facility 950-013-520b Located at 7531 Santiago Canyon Road City of Silverado Orange County, California	Outside
OR-02945	Kyle, Carolyn E.	2004	Cultural Resource Assessment for AT&T Wireless Facility 950-013-515d 7431 Santiago Canyon Road City of Silverado Orange County, California	Outside
OR-03283	Fulton, Terri and Deborah McLean	2005	Results of Cultural Resource Monitoring for the East Orange Spadefoot Toad Mitigation Plan	Outside
OR-03600	Garcia, Kyle H. and Marcy Rockman	2007	Results of Archaeological Survey and Monitoring for Southern California Edison's Pole Replacements After Santiago Fire Along Santiago Canyon Road, Modjeska Canyon Road, and Hicks Canyon Road; Orange County, California; Jo:6259-0468	Outside
OR-03989	Deering, Mark and Mason, Roger D.	2011	Cultural Resources Documentation and Monitoring of Southern California Edison Access Roads During Maintenance by the Orange County Fire Authority, 2010 Orange County, California	Outside
OR-04029	Deering, Mark and Roger Mason	2010	Cultural Resources Monitoring of Southern California Edison Access Roads Maintained by Orange County Fire Authority, Orange County, California (JPA E6088-0031; I.O. 305869)	Outside
OR-04140	Fege, Anne S.	1999	Construction of Permanent Apparatus Building at Silverado Ranger Station, Cleveland National Forest, Orange County	Outside
OR-04551	Fulton, Terri and Phil Fulton	2015	Cultural Resources Assessment Lower Silverado Canyon Restoration Project, Orange County, California	Outside
OR-04561	Fulton, Terri and Phil Fulton	2015	Archaeology Sensitivity Assessment, Macpherson Preserve Property, County of Orange, California	Outside

Report No. OR-00228

Report of an Archaeological Resource Survey Conducted for a Proposed Sand and Gravel Operation in Silverado Canyon (Cottrell 1978), documents the results of an archaeological resource survey conducted on behalf of Reynolds and Associates. The area of study overlaps the northern portion of the current Project site. The survey identified a prehistoric rock shelter designated as CA-ORA-724 within the area of study; this does not overlap with the current Project site. No further archeological actions were recommended.

Report No. OR-00305

History of Archaeological Research on Irvine Ranch Property: The Evolution of a Company Tradition (Schroth 1979), documents a comprehensive history of previous archaeological research and investigations. The area of study overlaps the entire current Project site. The report identifies 75 previously identified cultural resources within the study area, none of which overlap the current Project site.

Report No. OR-01026

Cultural Resources Survey Report Santiago Canyon Road Alignment Study Orange County, California (Mason 1990), documents the results of a cultural resources survey conducted on behalf of Culbertson, Adams, and Associates for a proposed road widening project. The area of study overlaps the majority of the current Project site, with the exception of the northeast corner of the Project site. The report identifies 16 previously recorded cultural resource sites within the area of study, three of which overlap the 1-mile buffer of the current Project site (See CA-ORA-724, 831, and 847); however, these resources are not within the current Project site. Various mitigation measures were recommended including resource avoidance, further archaeological and testing.

Report No. OR-01441

Archaeological Report on the Silverado-Modjeska Planning Area Orange County, California P.O. NO. X 49525 (Leonard 1976), documents the results of an archaeological investigation consisting of literature review, pedestrian field survey, and archival records search. The area of study overlaps the entire current Project site. The report identifies four previously recorded cultural resources within the area of study, none of which overlap the current Project site. Leonard notes that the exact location of CA-ORA-79, the Silverado Cave Site, has not been determined and Leonard himself was not able to locate the site over the course of various surveys. Various mitigation measures are recommended including turning highly sensitive archaeological sites into an interpretive center, site capping, and data recovery measures.

Report No. OR-02225

The Irvine Company Planning Process and California Archaeology – A Review and Critique (Strozier 1978), details the response and criticism of Irvine City Planning in relation to cultural resources. The area of study overlaps the entire current Project site. The report does not identify any new cultural resources within the current Project site.

Report No. OR-02534

Annual Report to The Irvine Company from Archaeological Resources Inc. (Unknown 1976), documents the results of archaeological testing conducted on behalf of The Irvine Company from January 1976 to May 1977. The area of

study overlaps the entire current Project site. The report identifies 13 previously recorded cultural resources within the area of study, none of which overlap the current Project site. No further recommendations are included within the 1976 study.

Previously Recorded Cultural Resources

The CHRIS records search indicates that fourteen (14) cultural resources have been previously recorded within 1-mile of the Project site, none of which overlap the Project site. Two previously recorded cultural resources are historic-era archaeological resources, six are prehistoric archaeological resources, and six are historic built environment resources. All 14 previously recorded cultural resources within 1-mile of the Project site are summarized in Table 2.

Table 2. Previously Recorded Cultural Resources Within a 1-Mile Radius of the Project Site

Primary (P-30-)	Trinomial (CA-ORA-)	Resource Age and Type	Resource Description	Recording Events	NRHP Eligibility	Proximity to Project Site
000247	000247	Prehistoric Site	Prehistoric site consisting of mortars, projectile points, and a bone needle with eye.	1968 (Robinson and McKinney)	**	Outside
000724	000724	Prehistoric Site	Prehistoric rock shelter with associated burned rock, debitage, burned faunal bone, marine shell, hammerstone, and charcoal.	1978 (Jacobs and Neitzel)	**	Outside
000831	000831	Prehistoric Site	Prehistoric site consisting of low-density flake scatter.	1979 (Oxendine); 1980 (McCoy, Lesley C.)	**	Outside
000847	000847	Prehistoric Site	Prehistoric site consisting of a lithic scatter including scrapers, cores, flakes, drill, and marine shell fragments.	1979 (Langenwalter)	**	Outside
001226	001226	Prehistoric Site	Prehistoric site consisting of a low-density lithic scatter with hammerstone, mano, scraper, and flakes.	1990 (Knight and Paniagua)	**	Outside
001636	001636	Prehistoric Site	Prehistoric site consisting of low-density chert flake scatter.	2003 (P. Fulton)	**	Outside

Table 2. Previously Recorded Cultural Resources Within a 1-Mile Radius of the Project Site

Primary (P-30-)	Trinomial (CA-ORA-)	Resource Age and Type	Resource Description	Recording Events	NRHP Eligibility	Proximity to Project Site
001752	001752H	Historic Site	Historic site consisting of a wooden structure, late 1920's Ford Mode A rusted car frame, tin cans, metal springs, and glass fragments.	2014 (Sandy Duarte, Logan Freeberg, Aaron McCann)	**	Outside
001753		Historic Structure	Historic site consisting of concrete foundation pad and collapsed wooden frame.	2014 (Sandy Duarte, Logan Freeberg, Aaron McCann)	**	Outside
150001		Built Resource	Silverado Station: 27172 Silverado Canyon Road	1995 (Newland, James D.)	**	Outside
150005		Built Resource	Silverado Ranger Station Office Barracks	1995 (Newland, James D.)	**	Outside
150006		Built Resource	Silverado Ranger Station Garage/Warehouse	1995 (Newland, James D.)	**	Outside
150007		Built Resource	Silverado Ranger Station Gas and Oil House	1995 (Newland, James D.)	**	Outside
162266		Built Resource	Plaque dedicated to Silverado, a mining town established in 1878.	1935 (State Park Commission); 1959 (Leo Crawford); 1980 (J. Arbuckle)	Listed on California Register Historical Landmarks	Outside
162274		Built Resource	Site of 1878 coal discovery	1935 (State Park Commission); 1959 (Jack A. Genter); 1980 (J. Arbuckle)	Listed on California Register Historical Landmarks	Outside

**Note: No record of formal evaluation was provided within related records.

NAHC SLF Coordination

A search of the NAHC SLF was requested on January 13, 2021 and conducted by Cultural Services Analyst Andrew Green on January 28, 2021 to determine the presence of any reported Native American cultural resources within the Project site as listed in the NAHC maintained SLF (see Appendix C). The NAHC SLF records search result was negative. The NAHC identified 11 Native American individuals who would potentially have specific knowledge as to whether or not Native American cultural resources are identified within the Project site that could be at-risk (see Confidential Appendix D). To date, Dudek has not initiated contact with the individuals on the NAHC's contact list, in regard to the Project site. Note: Sacred Land Files maintained by the NAHC represent a curation of "ancient places of special religious or social significance to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California" (nahc.gov 2021) provided by Tribal entities and Native

American representatives. For various reasons, Tribal entities and Native American representatives do no not always report sacred lands or TCRs to the NAHC; as such, the NAHC's SLF is not necessarily a comprehensive list of known TCRs and searches of the SLF must be considered in concert with other research and not used as a sole source of information regarding the presence of TCRs. Additionally, results of the SLF provided relate to the general regional area within and surrounding the Project site and don't necessarily equate to the existence of resources within the specific area occupied by the Project site.

Record of Assembly Bill 52 Consultation

The Project is subject to compliance with AB 52 (PRC 21074), which requires consideration of impacts to TCRs as part of the CEQA process, and that the lead agency notify California Native American Tribal representatives (that have requested notification) who are traditionally or culturally affiliated with the geographic area of the Project. All NAHC-listed California Native American Tribal representatives that have requested project notification pursuant to AB 52 were sent letters by the IRWD on February 25, 2021. The letters contained a project description, outline of AB 52 timing, an invitation to consult, a Project location map, and contact information for the appropriate lead agency representative. Documents related to AB 52 consultation are on file with the IRWD.

Review of Historical Topographic Maps and Aerial Photographs

Dudek consulted historical topographic maps and aerial photographs to understand development of the Project site and surrounding properties. Topographic maps are available for the years 1901, 1950, 1958, 1960, 1963, 1970, 1975, 1978, 1982, 1984, 2000, 2012, 2015, and 2018 (NETR 2021a; USGS NGMDB 2021). Historic aerials are available for the years 1946, 1948, 1952, 1966, 1967, 1980, 1994, 2002, 2003, 2004, 2005, 2009, 2010, 2012, 2014, and 2016 (NETR 2021b).

The Project site first appears on the 1901 USGS topographic map and is located at the junction of Santiago Creek and Silverado Canyon on the Lomas de Santiago Land Grant in Eastern Orange County, California. The Project site is nestled between two unnamed roads that have similar alignments to present-day Silverado Canyon Road and Santiago Canyon Road that bound the Project. A third unnamed road branches northwest from the northern corner of the Project site in a similar alignment to what is present day Black Star Canyon Road.

A clearer picture of the Project site is seen on the 1950 topographic map. Silverado Canyon Road and Santiago Canyon Road are established thoroughfares. Santiago Canyon Road runs through the southwestern portion of the Project site. Adjacent to the Project site to the southeast is a single-track road that originates from Santiago Canyon Road and loops southeast to the Silverado Guard Station approximately 1-mile east. This road follows a similar alignment to present-day Irvine Mesa Road. The guard station and an unnamed structure approximately 0.25-mile southeast are the closest structures in the vicinity of the Project site.

Changes to the Project site are seen on the 1970 through 1982 maps. The 1970 map shows the addition of a water tank to the Project site. Schools and clusters of structures are infiltrating the rural areas to the east of the Project site. The 1979 topographic map depicts a change to the alignment of Santiago Canyon Road. The road no longer runs through the Project site but rather along the southern border. The 1982 map shows substantial changes to the Project site with the addition of the north south trending access road that bisects the site as well as the addition of a second structure adjacent to the water tank. The remainder of the topographic maps from 1984 to 2018 show no significant change to Project Site.

The Project site first appears on the 1946 historic aerial photograph in a largely rural setting with no development aside from a confluence of roads. Santiago Canyon Road bisects the Project site northeast southwest. Also, within the Project site is a single-tract road that loops in and out of the eastern portion of the site. This road is likely part of the initial alignment of Irvine Mesa Road. Silverado Canyon Road runs along the northern border of the Project site. There is some amount of ground disturbance within the Project site along northwest bound Santiago Canyon Road that may be a turnout or extended shoulder. The surrounding area is undeveloped, however, there appears to be erosion control measures in place directly south of the Project site. Land to the northwest of the Project site has been graded and cleared by 1948, though there are no changes to the Project site. Noticeable tire tracks or perhaps the start of an informal road is seen on the 1952 aerial photograph within the southwestern portion of the Project site. Additionally, the initial alignment of the Irvine Mesa Road within the Project site is beginning to fade.

Substantial ground disturbance within the Project site is visible on the 1966 aerial photograph. Santiago Canyon Road has been realigned and is no longer within the Project site; rather, it comprises the southern border of the Project. The original alignment within the Project site has been dismantled but an obvious scar remains. The southeastern half of the Project site has been graded and modified to accommodate the development of the water tank. Additionally, a hill in the middle of the Project site has been cut to make way for the access road. There are no changes to the Project site on the 1967 aerial photograph aside from a noticeable utility line pole adjacent to the northwestern border of the site.

The Fleming Reservoir and Pump Station facility appears fully developed and in its current configuration in the 1980s aerial photograph. The southeastern half of the Project site, which houses the facility, has been graded and leveled to accommodate the on-site structures and infrastructure. The northwestern half of the Project site remains undeveloped. However, a series of dirt roads intersect the southern border, and the remnants of the original alignment of Santiago Canyon Road continue to be utilized as a dirt road shortcut joining Santiago Canyon Road with Silverado Canyon Road and Black Star Canyon Road.

There are little to no changes to the Project site noted in the 1994 through 2016 aerial photographs aside from a steady increase of vegetation within the western half of the site. By 2016, vegetation fully covers the western half of the site and no discernable dirt roads remain.

Geotechnical Report Review

The geotechnical report, *Geotechnical Exploration Report, Irvine Ranch Water District Fleming Tank and Pump Station Improvements, Silverado Canyon Road, Orange County, California* (Leighton Consulting, Inc. 2020), was prepared for Tetra Tech, Inc. in May 2020 to determine the geotechnical conditions for the current Project site. The report details the results of six subsurface exploratory hollow-stem auger borings conducted January 22, 2020. The locations of the subsurface exploratory investigations as described and mapped in the geotechnical report (Leighton Consulting, Inc. 2020, Appendix E: Site Exploration Map) include four within the extant Fleming Reservoir and Pump Station facility (LB-1 through LB-3 and P-1 and P-2) and one within the northeast-southwest oriented access road that bisects the western and eastern portions of the Project site (LB-4). No subsurface exploratory testing was conducted within the western, undeveloped portion of the Project site. These investigations varied in depths between 10 to 25 ½ feet (ft.) below the existing ground surface (bgs). According to the report, artificial fill was encountered at all six testing locations beneath the asphalt concrete approximately 6 inches bgs and encountered up to 2 to 3 ft. bgs and is characterized as grayish brown and reddish brown clayey sand, silty sand and sand with varying amounts of gravel and reported to have been placed during the grading of the existing facility and associated

improvements. The report further notes that deeper fill associated with the development of the facility may be present. Underlying the artificial fill at testing locations LB-3 and P-2, located within the unpaved in the southeastern portion of the site, near the AT&T cellular antenna facility, Quaternary Old Alluvial (Qoa) deposits were encountered approximately 2 to 3 ft. bgs and is characterized as reddish brown, stiff to very stiff sandy clay and medium dense to dense sand. The geologic formation underlying the alluvial soils is sedimentary bedrock of the Santiago Formation (Tsa), which was encountered at five testing locations LB-1, LB-2, LB-4, P-1, and P-2, at depths between 2 to 5 ft. bgs and is characterized as pale gray and pale tan, medium- to coarse-grained conglomeratic sandstone and silty sandstone with minor conglomerate lenses.

Intensive Pedestrian Survey

Methods

Dudek Archaeologist Adriane Gusick, BA, conducted an archaeological pedestrian survey of the Project site on March 17, 2021, using standard archaeological procedures and techniques. The Project site is comprised of the Fleming Reservoir and Pump Station facility and undeveloped open space. Based on these existing Project site conditions, survey techniques were adjusted in accordance with the various levels of development. An opportunistic survey approach was employed within the facility grounds, which involved inspecting areas of exposed ground surface when possible. An intensive-level survey was conducted within the limits of the open space, which entailed walking parallel transects, spaced no more than 10 meters apart (approximately 32 feet).

Throughout the extent of the Project site, the ground surface was inspected for prehistoric artifacts (e.g., flaked stone tools, tool-making debris, groundstone tools, ceramics, fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions, features indicative of structures and/or buildings (e.g., standing exterior walls, post holes, foundations), and historical artifacts (e.g., metal, glass, ceramics, building materials). Ground disturbances such as burrows, cut banks, and drainages were also visually inspected for exposed subsurface materials. Location-specific photographs were taken using an Apple 3rd Generation iPad equipped with 8-megapixel resolution and georeferenced PDF maps of the Project site. All field notes, photographs, and records related to the current study are on file at Dudek's Pasadena, California, office.

Results

The approximately 2.9-acre rectangular Project site is a combination of developed and natural areas situated on the westernmost finger ridge of the Irvine Mesa foothills where Silverado Canyon meets Santiago Creek. The topography is such that the middle of the site is generally on a hilltop and slopes down to the north, west, and south, and increases in elevation to the east. The site is nestled between the junction of Silverado Canyon Road and Santiago Canyon Road and has been subject to substantial earth moving activities in the past. The eastern portion of the site was heavily modified by the development of the Fleming Reservoir and Pump Station facility. A portion of the hilltop was cut and removed to create the facility access road, a pad for the facility, and a second pad for the staging area. Native ground surface visibility was variable throughout the facility area. Asphalt and/or gravel covered approximately 90 percent of the facility grounds. The remaining 10 percent of exposed ground surface was located within the staging area composed of a dirt lot; however, the soil in this area was mixed with various gravel and appeared to be composed of disturbed fill material. A hedge of mature ornamental trees lined the north, west, and south perimeter of the staging area causing further disturbance (Image 1). No archaeological material was identified within the facility grounds.

Continued on the eastern half of the Project site, beyond the facility fence line, is natural open space to the north and east. Native vegetation was considered heavy in this area prompting a meandering-type survey effort. Due to the dense vegetation, ground visibility was poor to moderate in this area with approximately 30 percent visibility (Image 2). The northern portion was comprised of a steep southwestern climbing slope. An active irrigation line ran parallel to the hillside along Silverado Creek Road. Climbing upwards to the south along the eastern border of the Project site reaches the apex of the ridge. This area, although overgrown with native vegetation, was subject to previous grading. Remnants of a dirt road, though faded, still remain. No archaeological material was identified within the natural area of the eastern half of the Project site.

The off-site connection to the Carlton earthen storm drain, located south of Santiago Canyon Road and south of the extant Fleming Reservoir and Pump Station facility, near an existing storm drain was also surveyed. This area includes native vegetation. No archaeological material was identified within area.

The natural area comprising the western half of the Project site was subject to a 2020 wildfire. As such, the area was denude of vegetation which created optimal conditions for an intensive-level pedestrian survey (Image 3). The initial westernmost ascent along Irvine Mesa ridgeline originates within the western portion of the Project site. The area is comprised of a hilltop summit with a steep decreasing slope to the north, west, and south foothills, which in turn gradually slope to the south in the direction of Santiago Creek. To the west is a near vertical man-made cut into the hillside creating an approximately 20-foot deep natural wall to the access road below.

The surrounding foothill areas in the western portion of the site have been subject to major ground disturbances over time. The hill cut and grading from the original alignment of Santiago Creek Road is still present. Additional scarring from multiple informal dirt roads is also evident along the southern border of the Project site. Numerous dirt push piles, gouges from bulldozer excavations, and general scarring from earth moving activities are apparent throughout the foothill areas. A utility line traverses the southern corner of the Project site. An exposed fiber optic telecom cable ground line runs parallel to the overhead utilities. A moderate amount of modern trash is evident throughout the foothill area, the majority of which consists of glass and plastic beverage containers. There is a concentration of numerous trash dumps within the southern area placed on top of the original alignment of Santiago Creek Road (Image 4). The dumps generally consist of discarded household material such as appliances, furniture, clothing items, kitchenware, and glass beverage containers in addition to discarded building material such as roofing tile, concrete, and asphalt. Diagnostic material that could relay datable information, such as maker's marks on glass and ceramics, showed that the dumping episodes occurred from the late 1970s through the 1990s. This material is considered modern and requires no further cultural consideration. No archaeological material was identified within the foothill area of the western portion of the Project site.

Evidence of modern disturbance continued upslope to the summit of the hill within the western portion of the Project site. Modern beverage containers littered the summit. Numerous T-bars were pounded into the ground. Remains of concrete-filled postholes were also evident. An Orange County surveyor marker of unknown age was located at the summit. The copper medallion is set within a concrete cast embedded in native ground. An isolated prehistoric debitage (ISO-01), was also identified at the summit. ISO-01 consists of a primary flake composed of cryptocrystalline silica (Image 5). The surrounding area was carefully inspected for the presence of additional prehistoric cultural material as was native material that eroded and settled at the base of the hill. No additional prehistoric cultural material was identified. The isolate was recorded on a Department of Parks and Recreation (DPR) 523 series resource form (Confidential Appendix F). Isolated artifacts are not eligible for listing on the CRHR or local register and not significant under CEQA. Therefore, no further cultural consideration are required for ISO-01 beyond recordation. No additional prehistoric or historic-age archaeological material was identified within the western portion of the Project site.

Image 1. View of Ground Surface Visibility within Dirt Lot Staging Area, Looking South

Image 2. View of Vegetation Coverage within Natural Area of Western Portion of Project Site, Looking Southwest

Image 3. View of Western Portion of Project Site Showing Excellent Visibility Due to Recent Wildfire, Looking Northwest

Image 4. View of Western Portion of Project Site Showing Modern Trash Dumps on Previous Alignment of Santiago Creek Road, Looking Southeast

Image 5. Showing ISO-01, Primary Flake

Sensitivity Analysis

Archaeological Sensitivity

Although the entirety of the Project site has been subjected to previous investigations, no prehistoric or historic-era archaeological resources were identified within the Project site as a result of background research, CHRIS database or NAHC SLF records search. A review of the 1966 aerial photograph shows that the Project site had been subjected to substantial ground disturbance through the realignment of Santiago Canyon Road, development of the water tank, and cuts in the hill to create an access road. In the 1967 aerial, a utility line pole adjacent to the northwestern portion border of the Project site is present. By the 1980s, the Project site is fully developed into the current Fleming Reservoir and Pump Station facility (constructed between the 1960s and 1970s), which involved grading for the placement of on-site structures. Also depicted are numerous intersecting dirt roads, including portions of the former alignment of the Santiago Canyon Road that intersect the present-day Santiago Canyon Road and Silverado Canyon Road and Black Star Canyon Road. A review of the geotechnical report prepared for the Project site (Leighton Consulting, Inc. 2020) show that fill soils were encountered within the northeast-southwest oriented access road that bisect the Project site and within the eastern portion of the site, where the extant Fleming Reservoir and Pump Station facility is located. According to the geotechnical report, fill soils were encountered approximately 6 inches bgs and up to 2 to 3 ft. bgs and is underlain by alluvial soils and/or sedimentary bedrock. While the pedestrian survey did not identify any cultural material within the developed eastern portion of the Project site, the western undeveloped portion of the site, resulted in the discovery of an isolated prehistoric flaked stone composed of cryptocrystalline silica (ISO-01). While the study area includes both the western undeveloped portion and the eastern portion of the site with the extant Fleming Reservoir and Pump Station facility, the Project, as currently proposed, will not encroach on the western undeveloped portion, which has a moderate to high potential to encounter known resources (ISO-01), and unknown archaeological resources. Therefore, beyond recordation

of the isolated prehistoric flaked stone (ISO-01) on a DPR 523 series resource form (see Confidential Appendix F) no further cultural considerations are required. However, current Project design indicates that the construction work on the eastern portion of the site will involve between 3 to 10 ft. bgs for general ground disturbance, including the construction of the retaining walls; between 6 to 7 ft. bgs for the proposed pipelines; and up to 11 ft. bgs for the construction of the vaults with a maximum depth of 11 to 12 ft. overall. In consideration of all these factors, the potential to encounter unknown intact subsurface archaeological resources beyond the depths of identified fill soils within the eastern portion of the Project site is low. However, there remains the possibility that cultural material could be encountered in native soils during construction-related ground disturbance. Management recommendations to reduce impacts to unanticipated archaeological resources and human remains to less than significant are provided below.

Summary and Management Recommendations

Although the eastern portion of the Project site has been disturbed over time as a result of development, it is possible that unknown intact archaeological resources could be encountered subsurface during ground disturbing activities within native soils. Therefore, in addition to the recommendations provided below, Dudek recommends that an inadvertent discovery clause, written by an archaeologist, be added to all construction plans associated with ground disturbing activities. With the implementation of these measures, the Project will have a less than significant impact on archaeological resources and human remains.

Inadvertent Discovery of Archaeological Resources

All construction personnel and monitors who are not trained archaeologists shall be briefed regarding inadvertent discoveries prior to the start of construction activities. Informational pamphlet and/or a presentation shall be prepared in order to ensure proper identification and treatment of inadvertent discoveries. The purpose of the Workers Environmental Awareness Program (WEAP) training is to provide specific details on the kinds of archaeological materials that may be identified during construction of the Project and explain the importance of and legal basis for the protection of significant archaeological resources. Each worker shall also learn the proper procedures to follow in the event that cultural resources or human remains are uncovered during ground-disturbing activities. These procedures include work curtailment or redirection, and the immediate contact of the site supervisor and archaeological monitor.

A qualified archaeologist shall be retained and on-call to respond and address any inadvertent discoveries identified during initial excavation in native soil. Initial excavation is defined as initial construction-related earth moving of sediments from their place of deposition. All work conducted shall be overseen by an archaeological principal investigator, meeting the Secretary of the Interior's Professional Qualification Standards,

In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed Project, all construction work occurring within 100 feet of the find shall immediately stop and a qualified archaeologist is notified immediately to assess the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the find, the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work such as preparation of an archaeological treatment plan, testing, data recovery, or monitoring may be warranted.

If monitoring is conducted, an archaeological monitoring report shall be prepared within 60 days following completion of ground disturbance and submitted to IRWD for review. This report should document compliance with approved mitigation, document the monitoring efforts, and include an appendix with daily monitoring logs. The final report shall be submitted to the SCCIC.

Inadvertent Discovery of Human Remains

In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County Coroner shall be notified within 24 hours of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined, within two working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the remains are determined to be Native American, the Coroner shall notify the NAHC in Sacramento within 24 hours. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the MLD from the deceased Native American. The MLD shall complete their inspection within 48 hours of being granted access to the site. The MLD would then determine, in consultation with the property owner, the disposition of the human remains.

Please do not hesitate to contact us if you have any questions about this report.

Sincerely,

Linda Kry, BA, RA
Archaeologist
DUDEK
lkry@dudek.com

Adam Giacinto, MA, RPA
Archaeologist
DUDEK
agiacinto@dudek.com

cc: Rachel Struglia, Patrick Cruz, Adriane Gusick, Dudek

Att: Appendix A: Figures
Appendix B: (Confidential) SCCIC Records Search Results
Appendix C: NAHC SLF Search Results
Appendix D: (Confidential) NAHC-Listed SLF Contacts
Appendix E: Geotechnical Site Exploration Map
Appendix F: (Confidential) DPR for ISO-01

References

Leighton Consulting, Inc. 2020. Geotechnical Exploration Report, Irvine Ranch Water District Fleming Tank and Pump Station Improvements, Silverado Canyon Road, Orange County, California. Prepared for Tetra Tech, Inc., Irvine, California.

Nahc.gov. 2021. California Native American Heritage Commission. About the Native American Heritage Commission. State of California Native American Heritage Commission, 2021, http://nahc.ca.gov/about/. Accessed April 22, 2021.

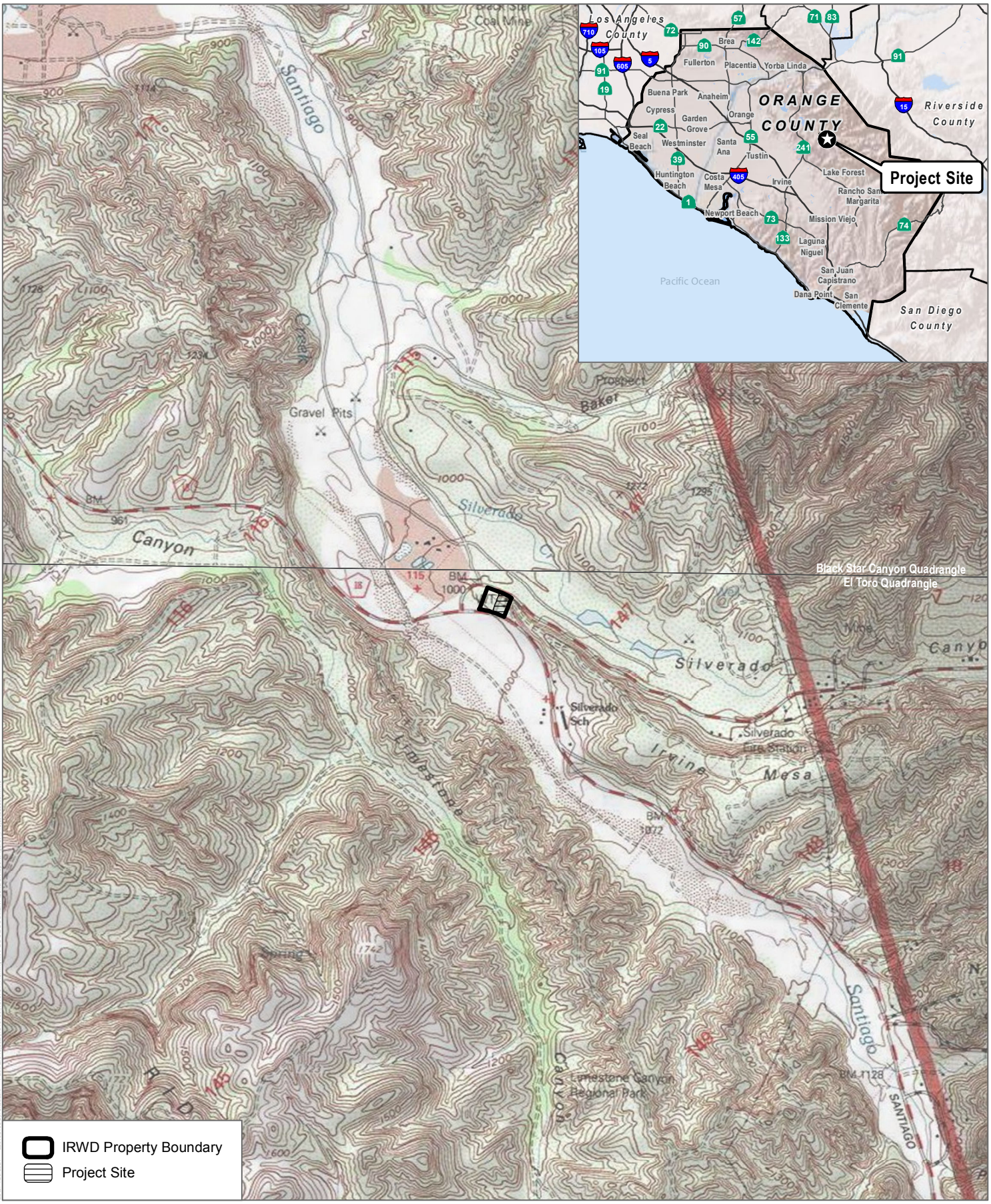
NETR (Nationwide Environmental Title Research LLC). 2021a. Historic Topographical Maps of Orange County dating from 1901, 1950, 1958, 1960, 1963, 1970, 1975, 1978, 1982, 1984, 2000, 2012, 2015, and 2018. Accessed April 2, 2021. https://www.historicaerials.com/viewer.

NETR. 2021b. Historic Aerial Photographs of Orange County dating from 1946, 1948, 1952, 1966, 1967, 1980, 1994, 2002, 2003, 2004, 2005, 2009, 2010, 2012, 2014, and 2016. Accessed April 2, 2021. https://www.historicaerials.com/viewer.

USGS NGMDB (U.S. Geological Survey National Geologic Map Database). 2021. Historic Topographical Maps of Orange County. Accessed April 2, 2021. https://ngmdb.usgs.gov/topoview/

Appendix A

Figures



SOURCE: USGS 7.5-Minute Series El Toro and Black Star Canyon Quadrangles
Township 5S / Range 8W / Section 12

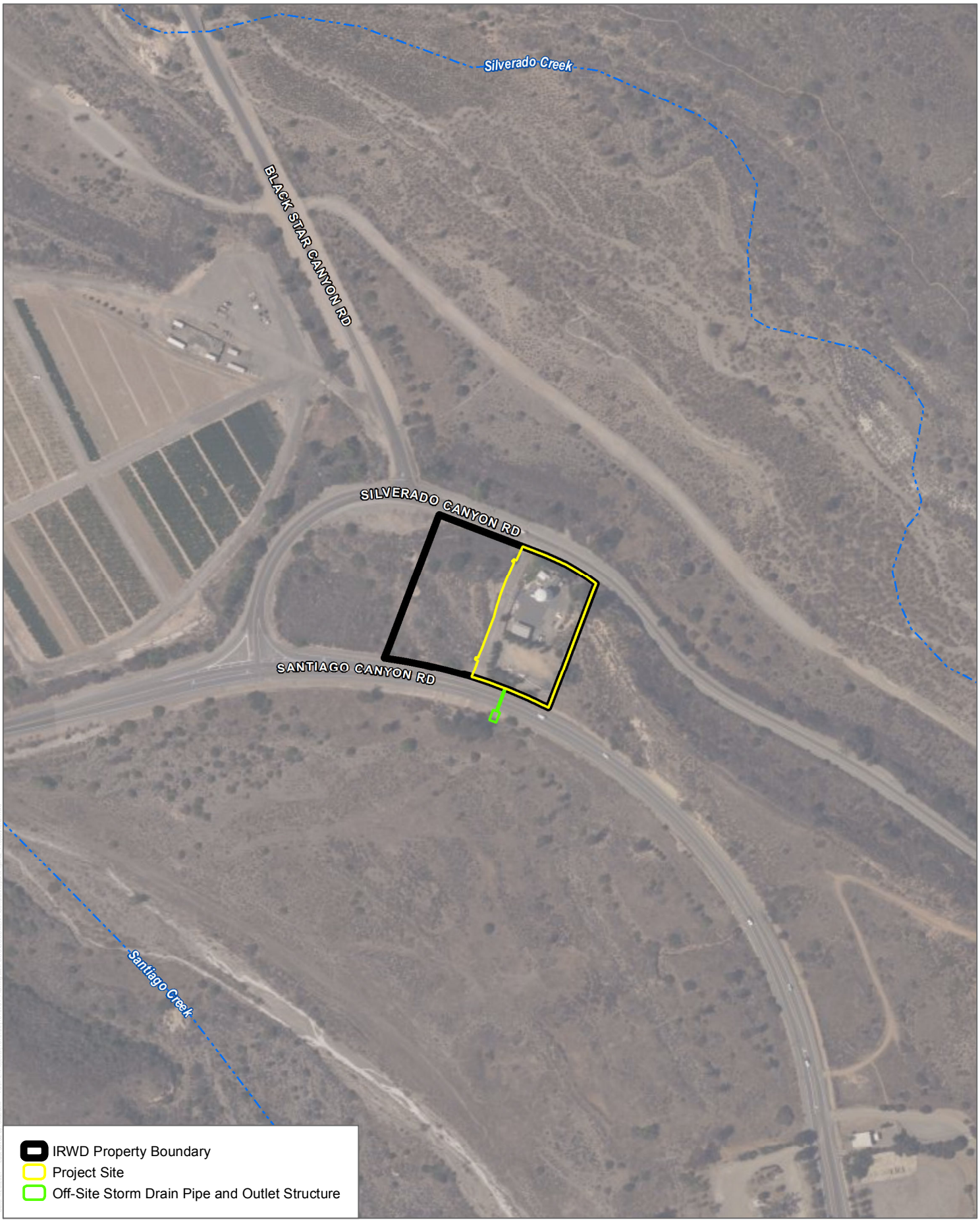
DUDEK

0 1,000 2,000 Feet
0 300 600 Meters
1:24,000

FIGURE 1

Project Location

Fleming Zone 8 Reservoir and Pump Station Improvements Project



SOURCE: Bing Maps 2021; USGS NHD 2021

0 40 80 Meters

0 150 300 Feet

DUDEK

FIGURE 2

Project Aerial

Fleming Zone 8 Reservoir and Pump Station Improvements Project

Appendix B (Confidential)

SCCIC Records Search Results

Appendix C

NAHC SLF Search Results

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

January 28, 2021

Jennifer De Alba
Dudek

Via Email to: jdealba@dudek.com

Re: 13167.01 Fleming Zone 8 Reservoir and Pump Station Improvements Project, Orange County

Dear Ms. De Alba:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded 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. I suggest you contact all of those indicated; if they cannot supply information, they might 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 me. 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

Andrew Green
Cultural Resources Analyst

Attachment

Appendix D (Confidential)

NAHC-Listed SLF Contacts

Appendix E

Geotechnical Site Exploration Map

Project: 12653.001	Eng/Geol: DJC
Scale:1 " = 80 '	Date: February 2020

Base Map: ESRI ArcGIS Online 2020
Thematic Information: Leighton
Author: Leighton Geomatics (btran)

SITE EXPLORATION MAP

IRWD Fleming Tank and Pump Station Improvements
Silverado Canyon Road
Orange County, California

Figure 2

Leighton

Map Saved as V:\Drafting\12653\001\Maps\12653-001_F02_SEM_2020-02-26.mxd on 2/25/2020 12:44:14 PM

Appendix F (Confidential)

DPR for ISO-01

Appendix D

Noise Attachments

Appendix D-1

Field Noise Data

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: IRWD FLEMING RESERVOIR SITE — PROJECT #:
SITE ID:
SITE ADDRESS:
OBSERVER(S): PETE VITAR
START DATE: 2/3/21 — END DATE: 2/3/21
START TIME: — END TIME:

METEOROLOGICAL CONDITIONS

TEMP: 60 F — HUMIDITY: 59 % R.H. — WIND: CALM (LIGHT) MODERATE
WINDSPD: 3 MPH — DIR. N NE S SE S SW W NW — VARIABLE STEADY GUSTY
SKY: (SUNNY) CLEAR — OVRCAST — (PRTLY CLDY) — FOG — RAIN

ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT: PICCOLO SLM-P3 — TYPE 1 2 — SERIAL #: 140317004
CALIBRATOR: BSWA CA 114 — SERIAL #: 490151
CALIBRATION CHECK — PRE-TEST: ____ dBA SPL — POST-TEST: ____ dBA SPL — WINDSCRN: YES

SETTINGS: (A-WTD) (SLOW) FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
ST-1 1-16	9:20	9:35							

COMMENTS: READING TAKEN IN FRONT OF LIBRARY OF THE CANYONS (7531 E. SANTIAGO CANYON RD); PRIMARY NOISE SOURCE IS TRAFFIC ON E. SANTIAGO CANYON RD; SECONDARY IS SOUND OF CHILDREN PLAYING AT PRE-SCHOOL TO THE EAST OF THE METER; SOME AUDIBLE NOISE FROM HVAC UNITS AT SCHOOL

SOURCE INFO AND TRAFFIC COUNTS

PRIMARY NOISE SOURCE: (TRAFFIC) AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: ASPHALT — DIST. TO RDWY C/L OR EOP: APX 45' TO C/L OF E. SANTIAGO CANYON RD

TRAFFIC COUNT DURATION: 15 MIN — SPEED

COUNT 1 (OR RDWY 1) DIRECTION	NB/EB	SB/WB	NB/EB SPEED	SB/WB SPEED
AUTOS	46			
MED TRKS	3			
HVY TRKS	0			
BUSES	0			
MOTRCLS	1			

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ✓

COUNT 2 (OR RDWY 2)	NB/EB	SB/WB	NB/EB SPEED	SB/WB SPEED

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS (BIRDS) DIST. INDUSTRIAL
(DIST. KIDS PLAYING) (DIST. CONVRSTNS / YELLING) DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER: CHILDREN PLAYING / ADULT CONVERSATIONS AT SCHOOL TO THE EAST OF THE METER LOCATION; LIBRARY & PARKING LOT ARE CLOSED MAKE NEARBY

DESCRIPTION / SKETCH

TERRAIN: HARD SOFT (MIXED) FLAT OTHER:
PHOTOS: ST1-1; ST1-2; ST1-3; ST1-4; ST1-5; ST1-6; ST1-7; ST1-8
OTHER COMMENTS / SKETCH

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: IRWD FLEMING RESERVOIR SITE — PROJECT #:
SITE ID:
SITE ADDRESS:
OBSERVER(S): PETE VITAR
START DATE: 2/3/21 — END DATE: 2/3/21
START TIME: — END TIME:

METEOROLOGICAL CONDITIONS
TEMP: 61 F — HUMIDITY: 57 % R.H. — WIND: CALM (LIGHT) MODERATE
WINDSPD: 3 MPH — DIR. N NE E SE S SW W NW — VARIABLE STEADY GUSTY
SKY: (SUNNY) CLEAR — OVRCAST — (PRTLY CLDY) — FOG — RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT: PICCOLO SLM-P3 — TYPE 1 2 — SERIAL #: 14051700
CALIBRATOR: BSWA CA 114 — SERIAL #: 490151
CALIBRATION CHECK — PRE-TEST: ____ dBA SPL — POST-TEST: ____ dBA SPL — WINDSCRN: YES

SETTINGS: (A-WTD) (SLOW) FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
ST-2 17-32	9:49	10:04							

COMMENTS: READING TAKEN NORTH OF UTILITY BUILDING AT 7511 E. SANTIAGO CANYON RD; AT&T BACKUP GENERATOR GENERATOR IS RUN ONCE A MONTH AND DURING OUTAGES; GENERATOR WAS RUNNING AND PRIMARY NOISE SOURCE DURING READING; SECONDARY WAS TRAFFIC ON SANTIAGO CANYON RD;

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE: TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER: AT&T BACK-UP GENERATOR
ROADWAY TYPE: ASPHALT — DIST. TO RDWY (C/L) OR EOP: APX 60' TO C/L ON E. SANTIAGO CANYON RD

TRAFFIC COUNT DURATION: 15 MIN

COUNT 1 (OR RDWY 1) DIRECTION	NB/EB	SB/WB	NB/EB SPEED	SB/WB SPEED
AUTOS	48			
MED TRKS	3			
HVY TRKS	2			
BUSES	0			
MOTRCLS	2			

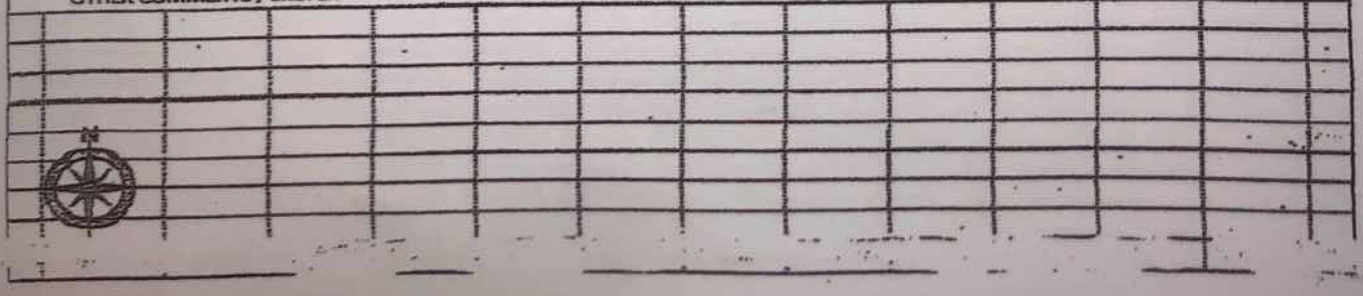
IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ✓

COUNT 2 (OR RDWY 2) ____ MIN	NB/EB	SB/WB	NB/EB SPEED	SB/WB SPEED

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS (BIRDS) DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER:

DESCRIPTION / SKETCH
TERRAIN: HARD SOFT (MIXED) FLAT OTHER:
PHOTOS: ST2-1; ST2-2; ST2-3; ST2-4; ST2-5; ST2-6; ST2-7; ST2-8; ST2-9; ST2-10
OTHER COMMENTS / SKETCH



DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: IRWD FLEMING RESERVOIR SITE PROJECT #:
SITE ID:
SITE ADDRESS: OBSERVER(S): PETE VITAR
START DATE: 2/3/21 END DATE: 2/3/21
START TIME: END TIME:

METEOROLOGICAL CONDITIONS
TEMP: 64 F HUMIDITY: 52 % R.H. WIND: CALM (LIGHT) MODERATE
WINDSPD: 5 MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY
SKY: (SUNNY) CLEAR OVRCAST (PRTLY CLDY) FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT: PICCOLO SLM-P3 TYPE 1 2 SERIAL #: 1403 17004
CALIBRATOR: BSWA CA 114 SERIAL #: 490151
CALIBRATION CHECK PRE-TEST: ____ dBA SPL POST-TEST: ____ dBA SPL WINDSCRN: YES

SETTINGS: (A-WTD) (SLOW) FAST FRONTAL RANDOM ANSI OTHER:

(ST-3) REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
33-48	10:12	10:27							

COMMENTS: READING 3 AT THE NORTH OF PROJECT SITE ALONG SILVERADO CANYON ROAD; PRIMARY NOISE SOURCE IS TRAFFIC ON SILVERADO CANYON RD;

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE: (TRAFFIC) AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: ASPHALT DIST. TO RDWY C/L OR EOP: AT ± 35' TO C/L OF SILVERADO CANYON ROAD

TRAFFIC COUNT DURATION: 15 MIN SPEED ___ MIN

COUNT 1 (OR RDWY 1) DIRECTION	NB/EB	SB/WB	NB/EB SPEED	SB/WB SPEED
AUTOS	26			
MED TRKS	1			
HVY TRKS	1			
BUSES	0			
MOTRCLS	0			

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ✓

COUNT 2 (OR RDWY 2)	NB/EB	SB/WB	NB/EB SPEED	SB/WB SPEED

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS (BIRDS) DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER: HELICOPTER HOVERING TO THE SOUTH OF MEAS AT 10:14-10:17AM AND 10:19-10:24AM;

DESCRIPTION / SKETCH
TERRAIN HARD SOFT (MIXED) FLAT OTHER:
PHOTOS: ST3-1; ST3-2; ST3-3; ST3-4; ST3-5; ST3-6;
OTHER COMMENTS / SKETCH

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: IRWD FLEMING RESERVOIR SITE PROJECT #:
SITE ID:
SITE ADDRESS: OBSERVER(S): PETE VITAR
START DATE: 2/3/21 END DATE: 2/3/21
START TIME: END TIME:

METEOROLOGICAL CONDITIONS

TEMP: 64 F HUMIDITY: 52 % R.H. WIND: CALM (LIGHT) MODERATE
WINDSPD: 5 MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY
SKY: (SUNNY) CLEAR OVRCAST (PRTLY CLDY) FOG RAIN

ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT: PICCOLO SLM-P3 TYPE 1 2 SERIAL #: 14031700
CALIBRATOR: ISWA CA 114 SERIAL #: 490151
CALIBRATION CHECK PRE-TEST: ____ dBA SPL POST-TEST: ____ dBA SPL WINDSCRN: YES

SETTINGS: (A-WTD) (SLOW) FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
ST-4 49-64	10:36	10:51							

COMMENTS: READING TAKEN TO THE SOUTH OF PROJECT SITE, ALONG E. SANTIAGO CANYON ROAD; PRIMARY NOISE SOURCE IS TRAFFIC ON E. SANTIAGO CANYON ROAD.

SOURCE INFO AND TRAFFIC COUNTS

PRIMARY NOISE SOURCE: (TRAFFIC) AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: ASPHALT DIST. TO RDWY C/L OR EOP: APX 40' TO C/L ON E. SANTIAGO CTN RD

TRAFFIC COUNT DURATION: 15 MIN SPEED ___ MIN

COUNT 1 (OR RDWY 1)

DIRECTION	NB/EB	SB/WB	NB/EB SPEED	SB/WB SPEED
AUTOS	50			
MED TRKS	1			
HVY TRKS	2			
BUSES	0			
MOTRCLS	0			

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ✓

COUNT 2 (OR RDWY 2)

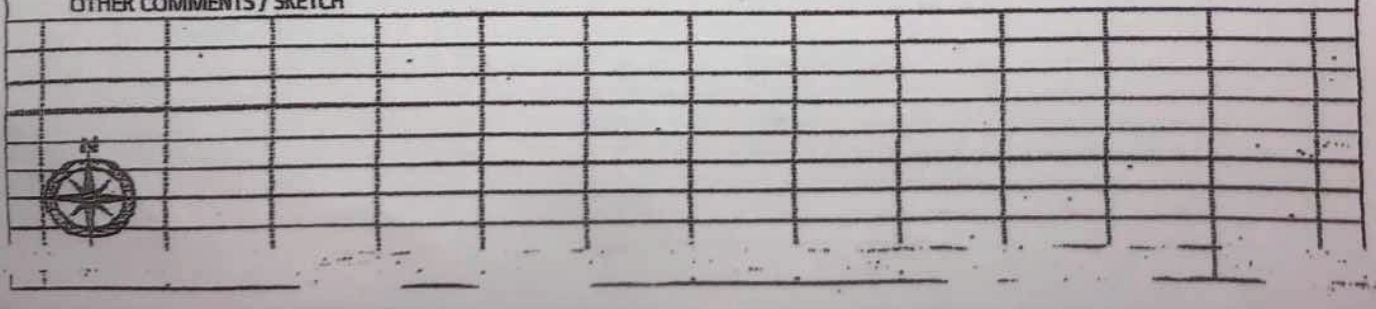
NB/EB	SB/WB	NB/EB SPEED	SB/WB SPEED

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS (BIRDS) DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER:

DESCRIPTION / SKETCH

TERRAIN: HARD SOFT (MIXED) FLAT OTHER:
PHOTOS: ST4-1; ST4-2; ST4-3; ST4-4; ST4-5; ST4-6; ST4-7;
OTHER COMMENTS / SKETCH



DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: IRWD FLEMING RESERVOIR SITE — PROJECT #:
SITE ID:
SITE ADDRESS: — OBSERVER(S): PETE VITAL
START DATE: 2/3/21 — END DATE: 2/3/21
START TIME: — END TIME:

METEOROLOGICAL CONDITIONS

TEMP: 63 F — HUMIDITY: 57 % R.H. — WIND: CALM (LIGHT) MODERATE
WINDSPD: 6 MPH — DIR. N NE E SE S SW W NW — VARIABLE STEADY GUSTY
SKY: (SUNNY) CLEAR — OVRCAST — (PRTLY CLDY) — FOG — RAIN

ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT: PICCOLO SLM - P3 — TYPE 1 2 — SERIAL #: 1403/7004
CALIBRATOR: BSWA CA 114 — SERIAL #: 490151
CALIBRATION CHECK — PRE-TEST: ____ dBA SPL — POST-TEST: ____ dBA SPL — WINDSCRN: YES

SETTINGS: (A-WTD) (SLOW) FAST FRONTAL RANDOM ANSI — OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
(ST-5) 65-80	11:00	11:15							

COMMENTS:
READING TAKEN ON WEST SIDE OF SILVERADO CHILDRENS CENTER/PRE-SCHOOL (7525 E. SANTIAGO CANYON)
PRIMARY NOISE SOURCE IS TRAFFIC FROM E. SANTIAGO CANYON ROAD TO THE WEST;
SECONDARY IS CHILDREN IN SCHOOL BUILDINGS;

SOURCE INFO AND TRAFFIC COUNTS

PRIMARY NOISE SOURCE: (TRAFFIC) AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: ASPHALT — DIST. TO RDWY C/L OR EOP: APX 355' TO C/L ON SANTIAGO CANYON RD

TRAFFIC COUNT DURATION: 15 MIN — SPEED

COUNT 1 (OR RDWY 1)

DIRECTION	NB/EB	SB/WB	NB/EB SPEED	SB/WB SPEED
AUTOS	47			
MED TRKS	2			
HVY TRKS	0			
BUSES	0			
MOTRCLS	1			

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ✓

COUNT 2 (OR RDWY 2) ____ MIN — SPEED

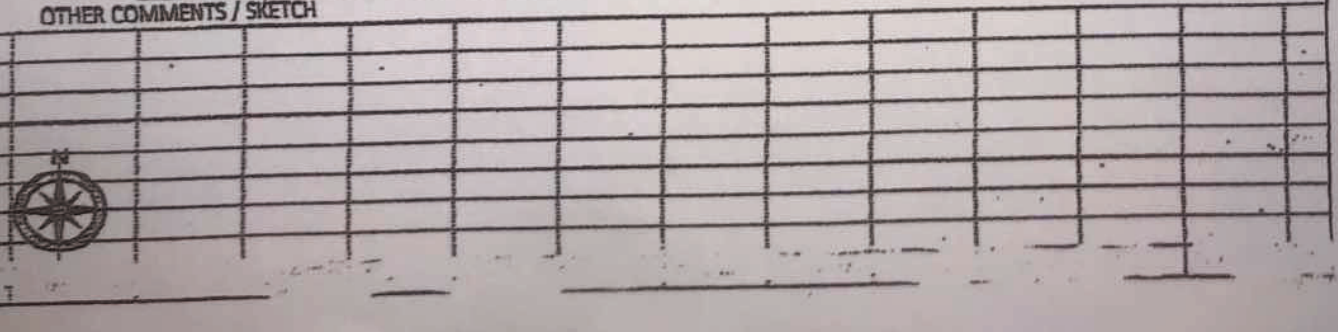
NB/EB	SB/WB	NB/EB SPEED	SB/WB SPEED

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS (BIRDS) DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER:

DESCRIPTION / SKETCH

TERRAIN: HARD SOFT (MIXED) FLAT OTHER:
PHOTOS: ST5-1; ST5-2; ST5-3; ST5-4; ST5-5; ST5-6; ST5-7;
OTHER COMMENTS / SKETCH



Appendix D-2

Construction Noise Modeling Input and Output

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction phase, per FTA guidance = 80
allowable hours over which Leq is to be averaged (example: 8 for FTA guidance) = 8

Construction Phase	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq
Site Demolition	Excavator	1	40	81		1770	50.0	8	480	46
	Backhoe	1	40	78		1770	47.0	8	480	43
	Dump Truck	1	40	76		1770	45.0	8	480	41
							Total for Site Demolition Phase:			**48.6**
Interim Grading and Shoring	Grader	1	40	85		1770	54.0	8	480	50
	Excavator	1	40	81		1770	50.0	8	480	46
	Backhoe	1	40	78		1770	47.0	8	480	43
	Dump Truck	2	40	76		1770	45.0	8	480	44
	Dozer	1	40	82		1770	51.0	8	480	47
							Total for Interim Grading and Shoring Phase:			**53.8**
Tank Construction	Excavator	1	40	81		1770	50.0	8	480	46
	Backhoe	1	40	78		1770	47.0	8	480	43
	Dump Truck	1	40	76		1770	45.0	8	480	41
	Crane	1	16	81		1770	50.0	8	480	42
	All Other Equipment > 5 HP	1	50	85	Tank Wrapping Machine	1770	54.0	8	480	51
	Compressor (air)	1	40	78		1770	47.0	8	480	43
							Total for Tank Construction Phase:			**53.7**
Pump Station, RMS Facility, and Storage Building	Backhoe	1	40	78		1770	47.0	8	480	43
	Dump Truck	1	40	76		1770	45.0	8	480	41
	Compressor (air)	1	40	78		1770	47.0	8	480	43
	Concrete Mixer Truck	1	40	79		1770	48.0	8	480	44
	Crane	1	16	81		1770	50.0	8	480	42
							Total for Pump Station, RMS Facility, and Storage Building Phase:			**49.8**
Vault Construction, Site and Electrical Improvements	Backhoe	1	40	78		1770	47.0	8	480	43
	Dump Truck	1	40	76		1770	45.0	8	480	41
	Compressor (air)	1	40	78		1770	47.0	8	480	43
	Paver	1	50	77	Paving Equipment	1770	46.0	8	480	43
	Concrete Mixer Truck	1	40	79		1770	48.0	8	480	44
							Total for Vault Construction, Site and Electrical Improvements Phase:			**49.9**

Phase 1, Silverado Children's Center Receptor - Closest Distance

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction phase, per FTA guidance = 80

allowable hours over which Leq is to be averaged (example: 8 for FTA guidance) = 8

Construction Phase	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq
Site Demolition	Excavator	1	40	81		1650	50.6	8	480	47
	Backhoe	1	40	78		1650	47.6	8	480	44
	Dump Truck	1	40	76		1650	45.6	8	480	42
							Total for Site Demolition Phase:			**49.2**
Interim Grading and Shoring	Grader	1	40	85		1650	54.6	8	480	51
	Excavator	1	40	81		1650	50.6	8	480	47
	Backhoe	1	40	78		1650	47.6	8	480	44
	Dump Truck	2	40	76		1650	45.6	8	480	45
	Dozer	1	40	82		1650	51.6	8	480	48
							Total for Interim Grading and Shoring Phase:			**54.4**
Tank Construction	Excavator	1	40	81		1650	50.6	8	480	47
	Backhoe	1	40	78		1650	47.6	8	480	44
	Dump Truck	1	40	76		1650	45.6	8	480	42
	Crane	1	16	81		1650	50.6	8	480	43
	All Other Equipment > 5 HP	1	50	85	Tank Wrapping Machine	1650	54.6	8	480	52
	Compressor (air)	1	40	78		1650	47.6	8	480	44
							Total for Tank Construction Phase:			**54.3**
Pump Station, RMS Facility, and Storage Building	Backhoe	1	40	78		1650	47.6	8	480	44
	Dump Truck	1	40	76		1650	45.6	8	480	42
	Compressor (air)	1	40	78		1650	47.6	8	480	44
	Concrete Mixer Truck	1	40	79		1650	48.6	8	480	45
	Crane	1	16	81		1650	50.6	8	480	43
							Total for Pump Station, RMS Facility, and Storage Building Phase:			**50.4**
Vault Construction, Site and Electrical Improvements	Backhoe	1	40	78		1650	47.6	8	480	44
	Dump Truck	1	40	76		1650	45.6	8	480	42
	Compressor (air)	1	40	78		1650	47.6	8	480	44
	Paver	1	50	77	Paving Equipment	1650	46.6	8	480	44
	Concrete Mixer Truck	1	40	79		1650	48.6	8	480	45
							Total for Vault Construction, Site and Electrical Improvements Phase:			**50.5**

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction phase, per FTA guidance = 80
allowable hours over which Leq is to be averaged (example: 8 for FTA guidance) = 8

Construction Phase	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq
Site Demolition	Excavator	1	40	81		1770	50.0	8	480	46
	Backhoe	1	40	78		1770	47.0	8	480	43
	Dump Truck	1	40	76		1770	45.0	8	480	41
							Total for Site Demolition Phase:			**48.6**
Building Construction, Diesel and Sewer Tank Installation	Backhoe	1	40	78		1770	47.0	8	480	43
	Dump Truck	1	40	76		1770	45.0	8	480	41
	Compressor (air)	1	40	78		1770	47.0	8	480	43
	Concrete Mixer Truck	1	40	79		1770	48.0	8	480	44
							Total for Building Construction, Diesel and Sewer Tank Installation Phase:			**48.9**

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction phase, per FTA guidance = 80
allowable hours over which Leq is to be averaged (example: 8 for FTA guidance) = 8

Construction Phase	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq
Site Demolition	Excavator	1	40	81		1650	50.6	8	480	47
	Backhoe	1	40	78		1650	47.6	8	480	44
	Dump Truck	1	40	76		1650	45.6	8	480	42
							Total for Site Demolition Phase:			**49.2**
Building Construction, Diesel and Sewer Tank Installation	Backhoe	1	40	78		1650	47.6	8	480	44
	Dump Truck	1	40	76		1650	45.6	8	480	42
	Compressor (air)	1	40	78		1650	47.6	8	480	44
	Concrete Mixer Truck	1	40	79		1650	48.6	8	480	45
							Total for Building Construction, Diesel and Sewer Tank Installation Phase:			**49.5**

Appendix D-3

Traffic Noise Modeling Input and Output

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Fleming Zone 8 Reservoir and Pump Station Improvements	JN:	13167
ROADWAY:	E. Santiago Canyon Road	DATE:	03-Mar-21
Scenario:	**Existing**	BY:	D. Ortega

ADT	10,000			PK HR VOL	1,000
SPEED	50				
PK HR %	10				
DIST CTL	150				
DIST N/F	76	(M=76,P=52,S=36,C=12)		AUTO SLE DISTANCE	145.2
DIST WALL	0			MED TRUCK SLE DIST	145.1
DIST W/OB	150			HVY TRUCK SLE DIST	145.1
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	45.0				
ROADWAY VIEW:					
LF ANGLE	-90				
RT ANGLE	90				
DF ANGLE	180				

SITE CONDITIONS:		(15=HARD SITE, 10=SOFT SITE)			
AUTOM	15.0				
MED TR	15.0				
HVY TR	15.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.770	0.127	0.096	0.9700
MEDIUM TRUCKS	0.874	0.051	0.075	0.0200
HEAVY TRUCKS	0.891	0.028	0.081	0.0100

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	59.5	57.6	55.8	49.8	59.0
MEDIUM TRUCKS	53.5	52.1	45.7	42.7	52.2
HEAVY TRUCKS	54.8	53.5	44.6	44.4	53.6
VEHICULAR NOISE	61.5	59.8	56.5	51.5	60.8

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Fleming Zone 8 Reservoir and Pump Station Improvements	JN:	13167
ROADWAY:	E. Santiago Canyon Road	DATE:	03-Mar-21
Scenario:	**Existing + Construction Trips**	BY:	D. Ortega

ADT	10,102			PK HR VOL	1,010
SPEED	50				
PK HR %	10				
DIST CTL	150				
DIST N/F	76	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		145.2
DIST WALL	0		MED TRUCK SLE DIST		145.1
DIST W/OB	150		HVY TRUCK SLE DIST		145.1
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	45.0				
ROADWAY VIEW:					
LF ANGLE	-90				
RT ANGLE	90				
DF ANGLE	180				

SITE CONDITIONS:		(15=HARD SITE, 10=SOFT SITE)			
AUTOM	15.0				
MED TR	15.0				
HVY TR	15.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.770	0.127	0.096	0.9614
MEDIUM TRUCKS	0.874	0.051	0.075	0.0198
HEAVY TRUCKS	0.891	0.028	0.081	0.0188

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	59.5	57.6	55.8	49.8	59.0
MEDIUM TRUCKS	53.5	52.1	45.7	42.7	52.2
HEAVY TRUCKS	57.6	56.3	47.4	47.1	56.3
VEHICULAR NOISE	62.3	60.7	56.7	52.2	61.4

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Fleming Zone 8 Reservoir and Pump Station Improvements	JN:	13167
ROADWAY:	E. Santiago Canyon Road	DATE:	03-Mar-21
Scenario:	**Existing**	BY:	D. Ortega

ADT	10,000			PK HR VOL	1,000
SPEED	50				
PK HR %	10				
DIST CTL	345				
DIST N/F	76	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		342.9
DIST WALL	0		MED TRUCK SLE DIST		342.9
DIST W/OB	345		HVY TRUCK SLE DIST		342.9
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	45.0				
ROADWAY VIEW:					
LF ANGLE	-90				
RT ANGLE	90				
DF ANGLE	180				

SITE CONDITIONS:		(15=HARD SITE, 10=SOFT SITE)			
AUTOM	15.0				
MED TR	15.0				
HVY TR	15.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.770	0.127	0.096	0.9700
MEDIUM TRUCKS	0.874	0.051	0.075	0.0200
HEAVY TRUCKS	0.891	0.028	0.081	0.0100

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	53.9	52.0	50.2	44.2	53.4
MEDIUM TRUCKS	47.9	46.5	40.1	37.1	46.6
HEAVY TRUCKS	49.2	47.9	39.0	38.8	48.0
VEHICULAR NOISE	55.9	54.2	50.9	45.9	55.2

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Fleming Zone 8 Reservoir and Pump Station Improvements	JN:	13167
ROADWAY:	E. Santiago Canyon Road	DATE:	03-Mar-21
Scenario:	**Existing + Construction Trips**	BY:	D. Ortega

ADT	10,102			PK HR VOL	1,010
SPEED	50				
PK HR %	10				
DIST CTL	345				
DIST N/F	76	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		342.9
DIST WALL	0		MED TRUCK SLE DIST		342.9
DIST W/OB	345		HVY TRUCK SLE DIST		342.9
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	45.0				
ROADWAY VIEW:					
LF ANGLE	-90				
RT ANGLE	90				
DF ANGLE	180				

SITE CONDITIONS:		(15=HARD SITE, 10=SOFT SITE)			
AUTOM	15.0				
MED TR	15.0				
HVY TR	15.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

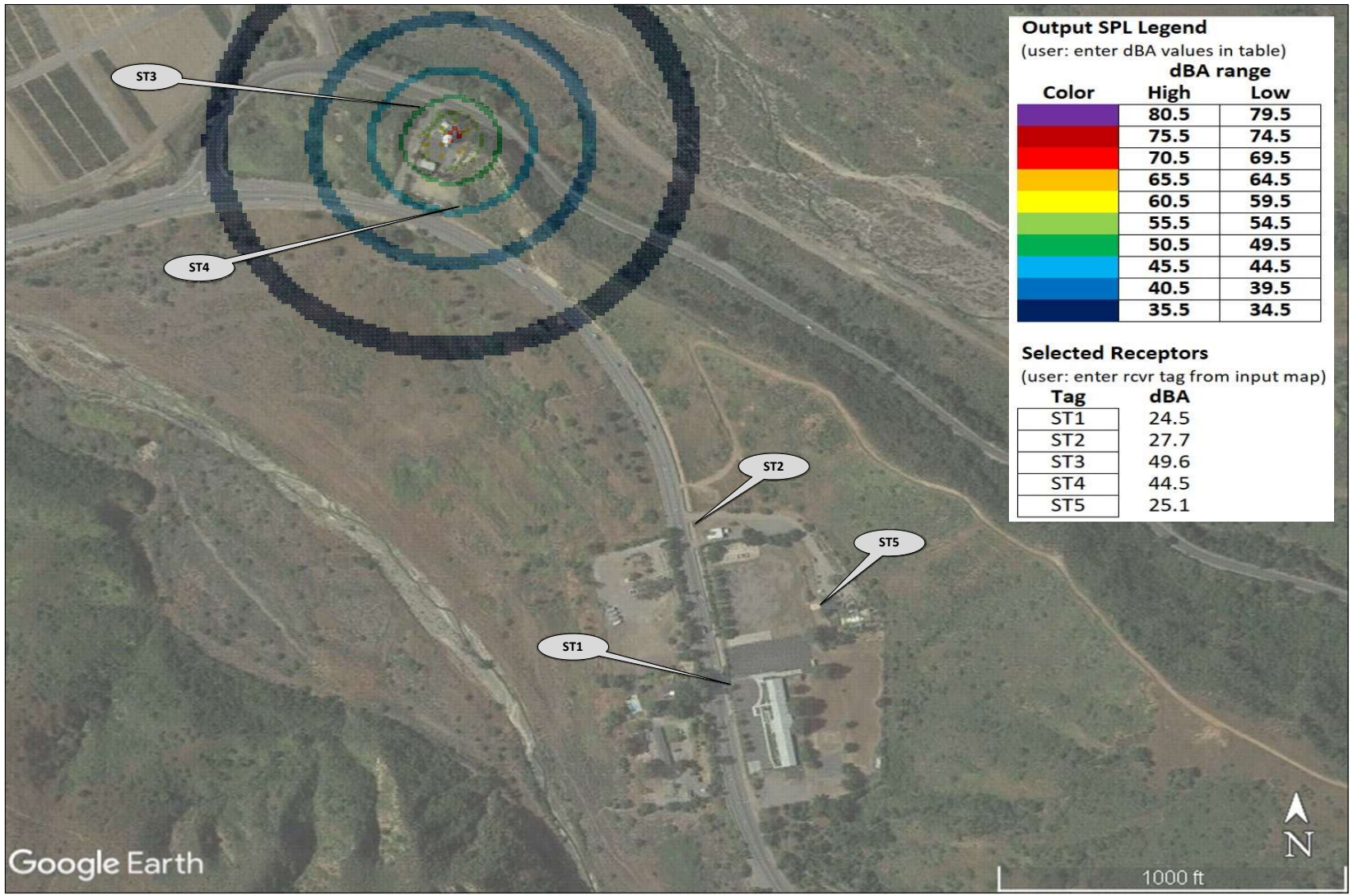
	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.770	0.127	0.096	0.9614
MEDIUM TRUCKS	0.874	0.051	0.075	0.0198
HEAVY TRUCKS	0.891	0.028	0.081	0.0188

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	53.9	52.0	50.2	44.2	53.4
MEDIUM TRUCKS	47.9	46.5	40.1	37.1	46.6
HEAVY TRUCKS	52.0	50.7	41.8	41.5	50.7
VEHICULAR NOISE	56.7	55.1	51.1	46.6	55.8

Appendix D-4

Operational Noise Modeling Output



Output SPL Legend
(user: enter dBA values in table)

Color	dBA range High	Low
	80.5	79.5
	75.5	74.5
	70.5	69.5
	65.5	64.5
	60.5	59.5
	55.5	54.5
	50.5	49.5
	45.5	44.5
	40.5	39.5
	35.5	34.5

Selected Receptors
(user: enter rcvr tag from input map)

Tag	dBA
ST1	24.5
ST2	27.7
ST3	49.6
ST4	44.5
ST5	25.1