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

Prepared by:

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

JUNE 2021

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Table of Contents

APPENDICES

FIGURES

TABLES

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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

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

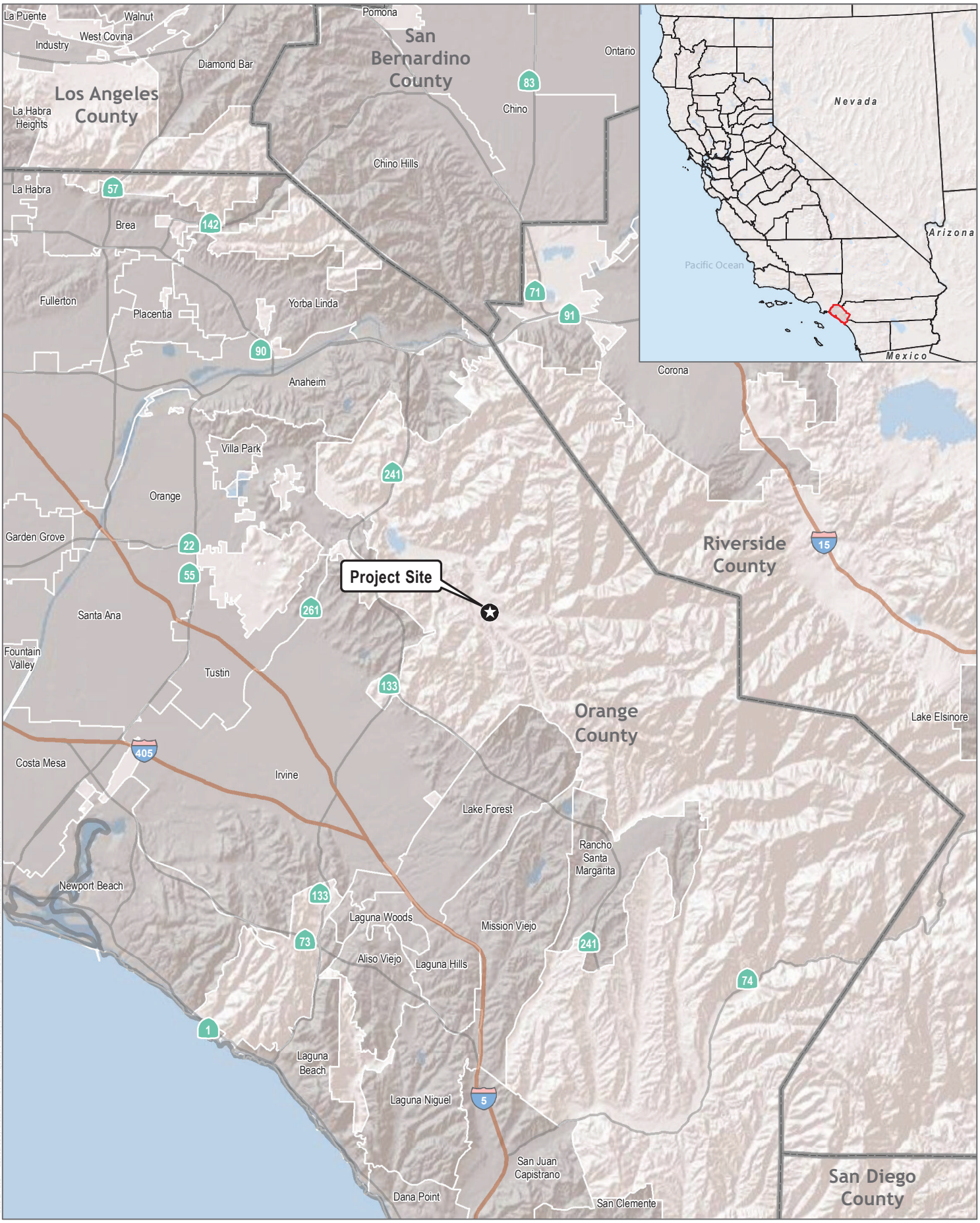
Reservoir

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 2014

DUDEK

0 2 4 Miles

FIGURE 1

Project Location

Fleming Zone 8 Reservoir and Pump Station Improvements Project

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SOURCE: Bing Maps 2021; USGS NHD 2021

DUDEK

0 155 310 Feet

FIGURE 2

Project Aerial

Fleming Zone 8 Reservoir and Pump Station Improvements Project

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Photo A

Photo B

Photo C

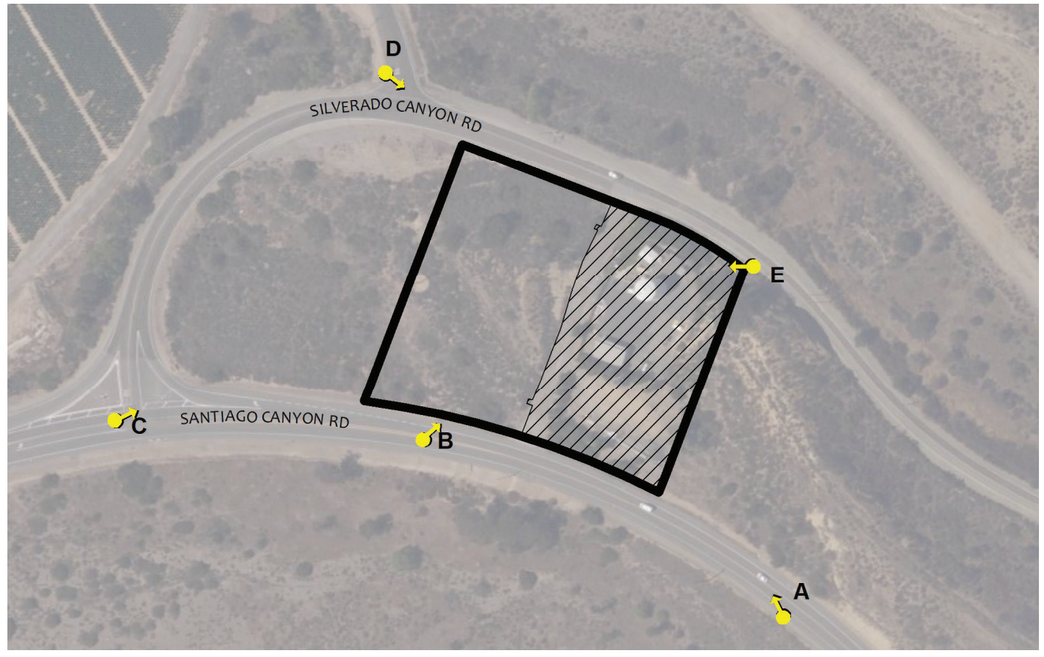

Photo Key Map

SOURCE: Dudek 2021

FIGURE 3A

Existing Conditions

Fleming Zone 8 Reservoir and Pump Station Improvements Project

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Photo D

Photo E

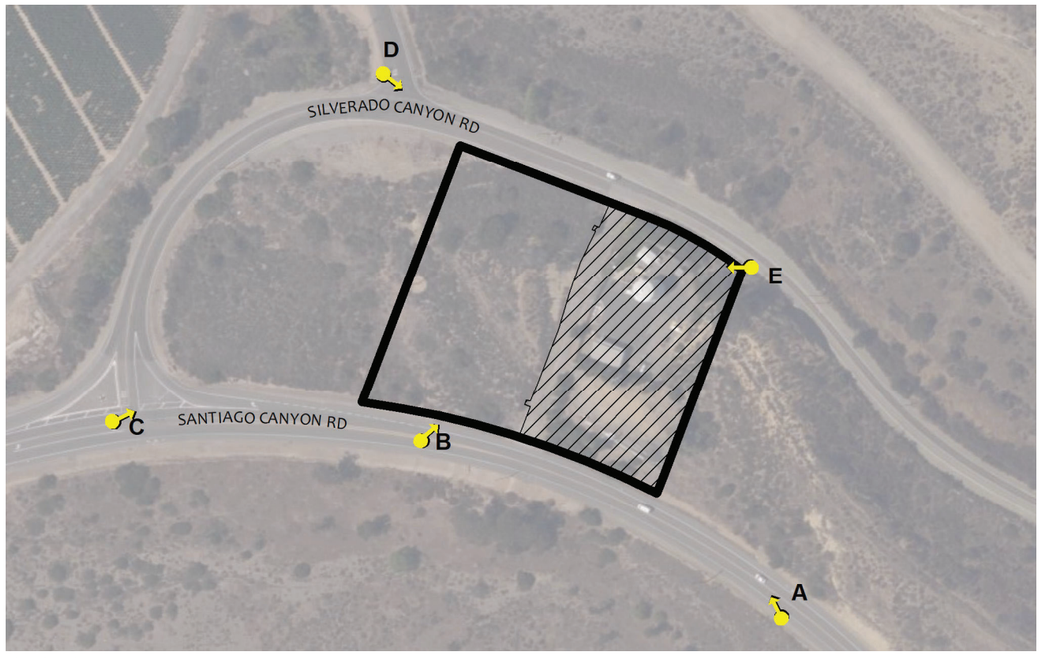

Photo Key Map

SOURCE: Dudek 2021

FIGURE 3B

Existing Conditions

Fleming Zone 8 Reservoir and Pump Station Improvements Project

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

DUDEK

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

DUDEK

0 155 310 Feet

FIGURE 5

Topographic Map

Fleming Zone 8 Reservoir and Pump Station Improvements Project

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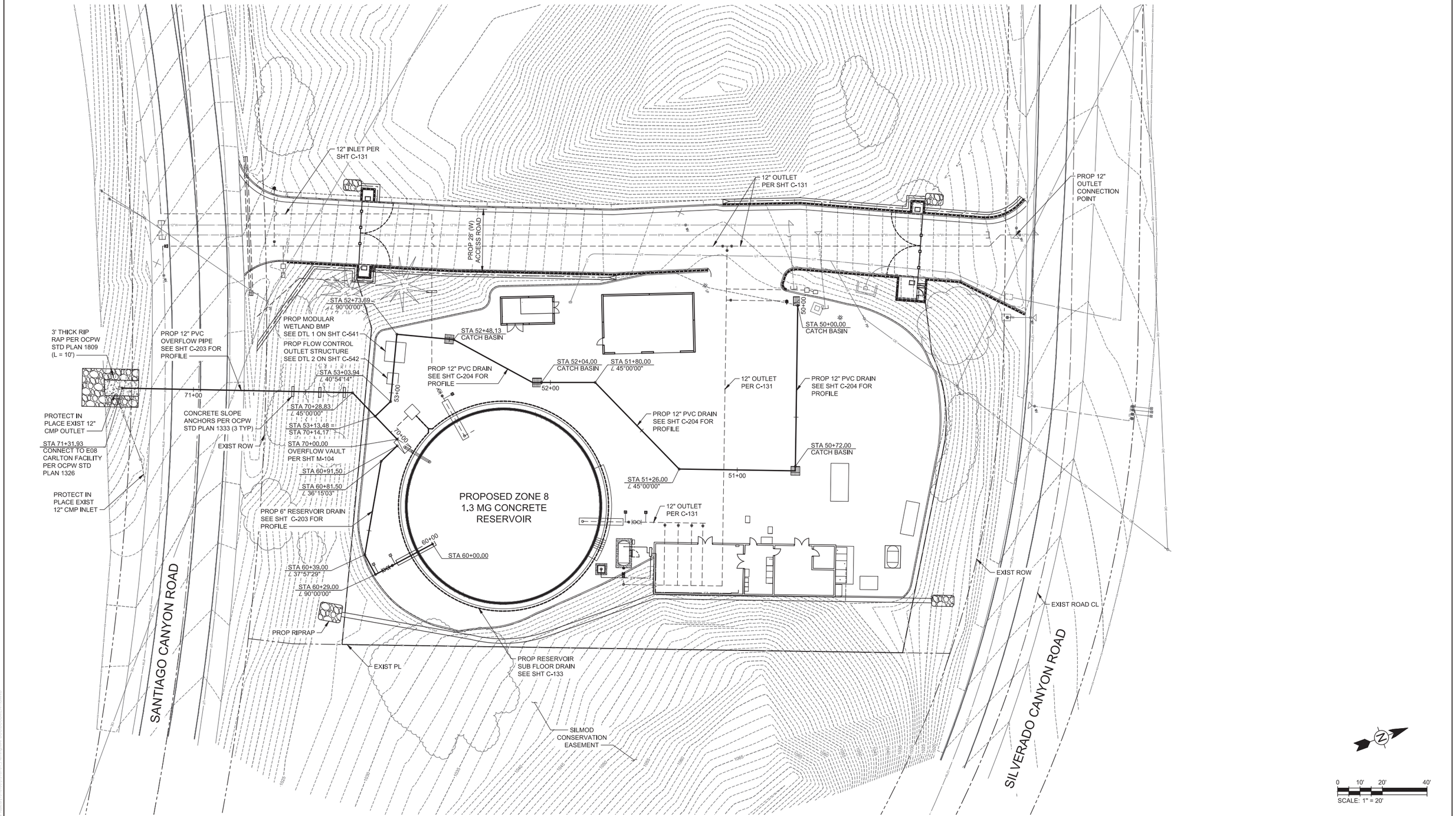

SOURCE: Tetra Tech 2021

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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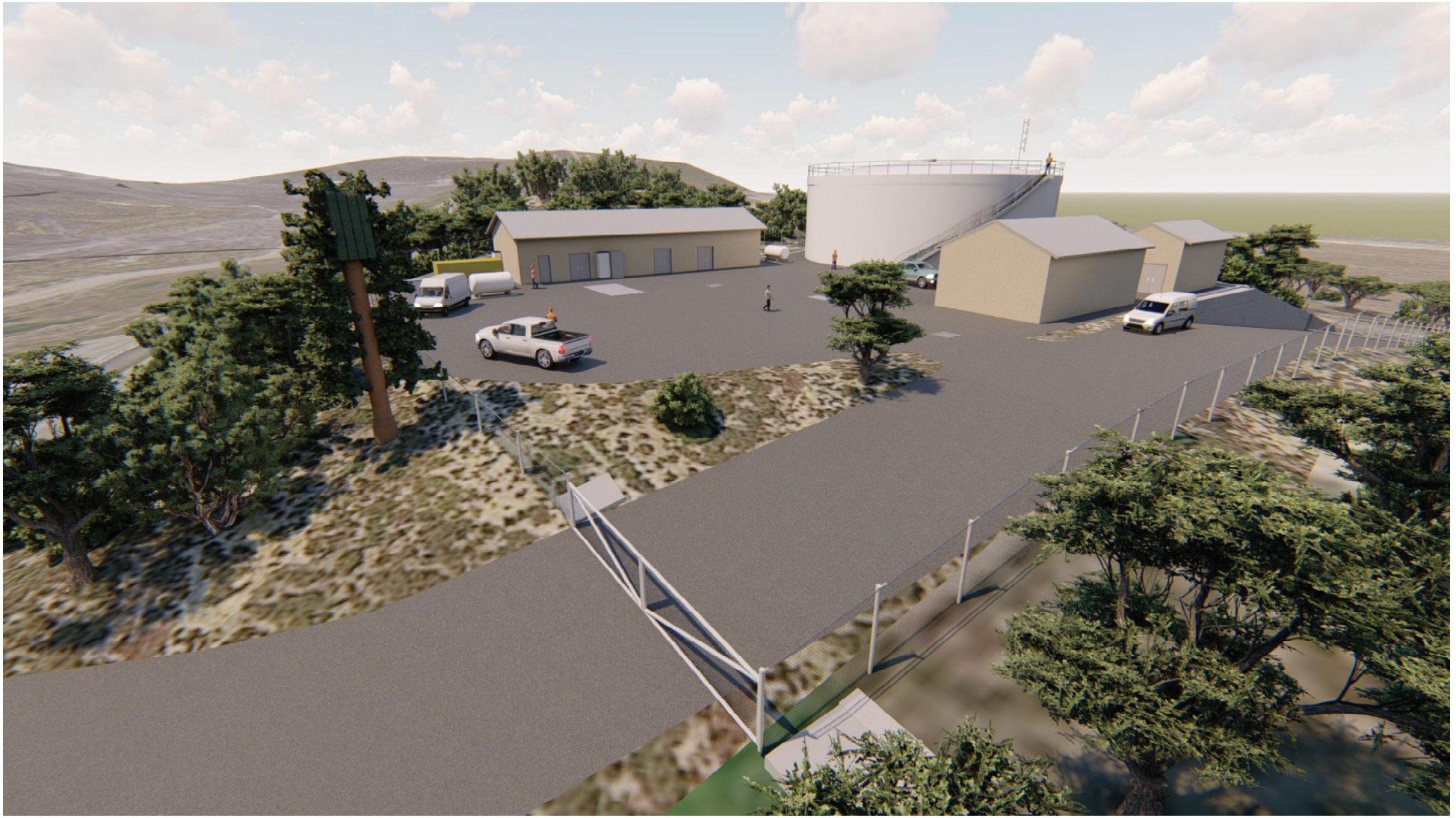

SOURCE: Tetra Tech 2021

FIGURE 7C

Conceptual Rendering: View looking southeast towards project site

Fleming Zone 8 Reservoir and Pump Station Improvements Project

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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.

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 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.

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. 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.

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

Table 11. Construction Vendor Diesel Demand

Phase	Number of Trips	Equipment CO_2 (MT)	kg/CO_2/Gallon	Gallons
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

	CO_2	CH_4	N_2O	CO_2e
Year	*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.

[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
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 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

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

Scoping Plan Measure	Measure Number	Project Potential to Conflict
		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.
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.

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

Scoping Plan Measure	Measure Number	Project Potential to Conflict
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.
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.

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

Scoping Plan Measure	Measure Number	Project Potential to Conflict
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.
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	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

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

Recommend Action Summary	Lead Agencies	Project Potential to Conflict
• Reduce GHG emissions in the electricity sector		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 • 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	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.
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	CNRA and departments	*No conflict.* This action is not within the purview of this project. In addition, the project would

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

Recommend Action Summary	Lead Agencies	Project Potential to Conflict
California's land base as a net carbon sink by 2018	within, CDFA, CalEPA, CARB	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 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?	☐	☐	☐	☒

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

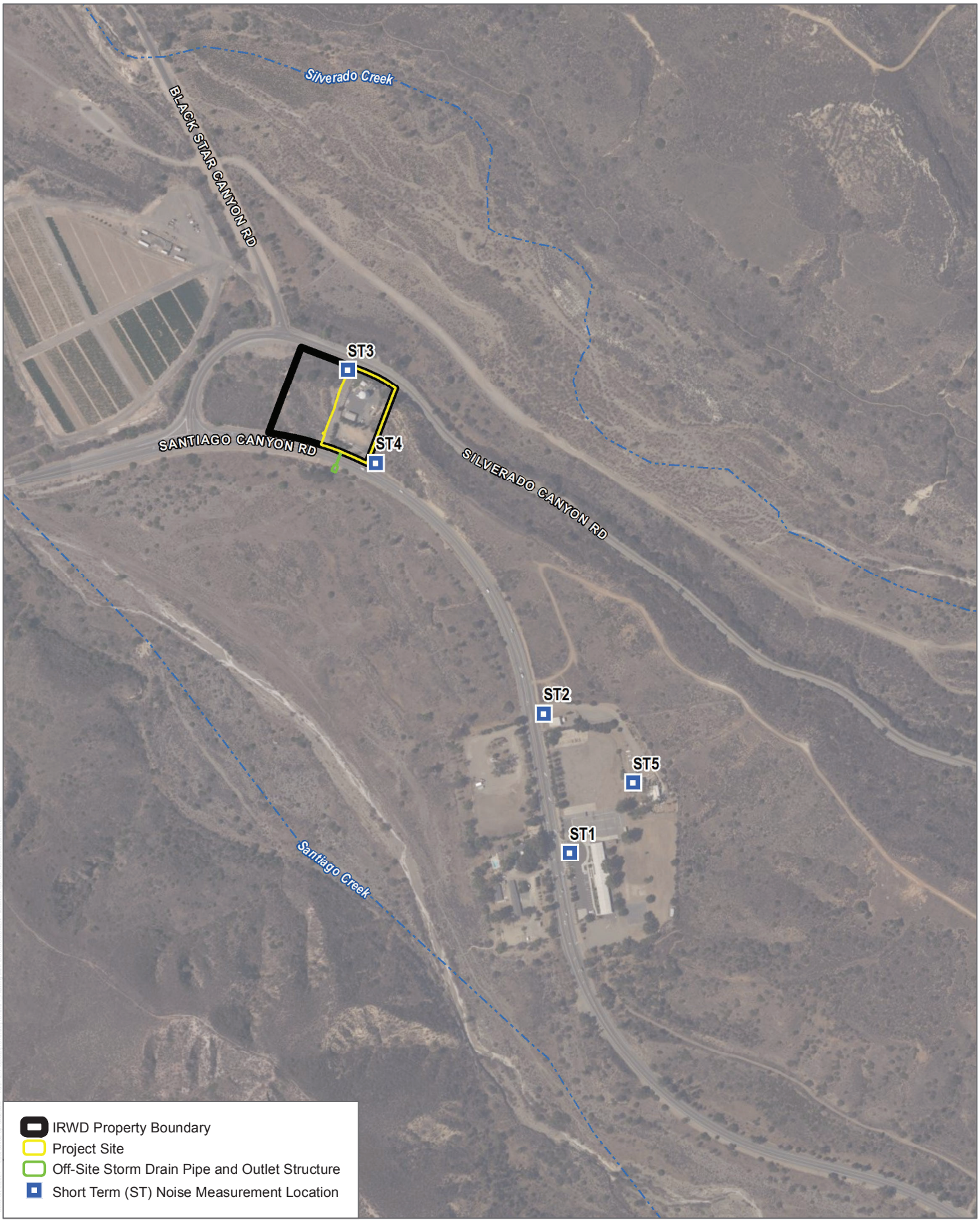
Five short-term noise measurement locations (ST) were conducted in the vicinity of the project site, as shown in Figure 9, Noise Measurement Locations. The measured L_{eq} and maximum noise levels are provided in Table 21. The field noise measurement data sheets are provided in Appendix D. The primary 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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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.

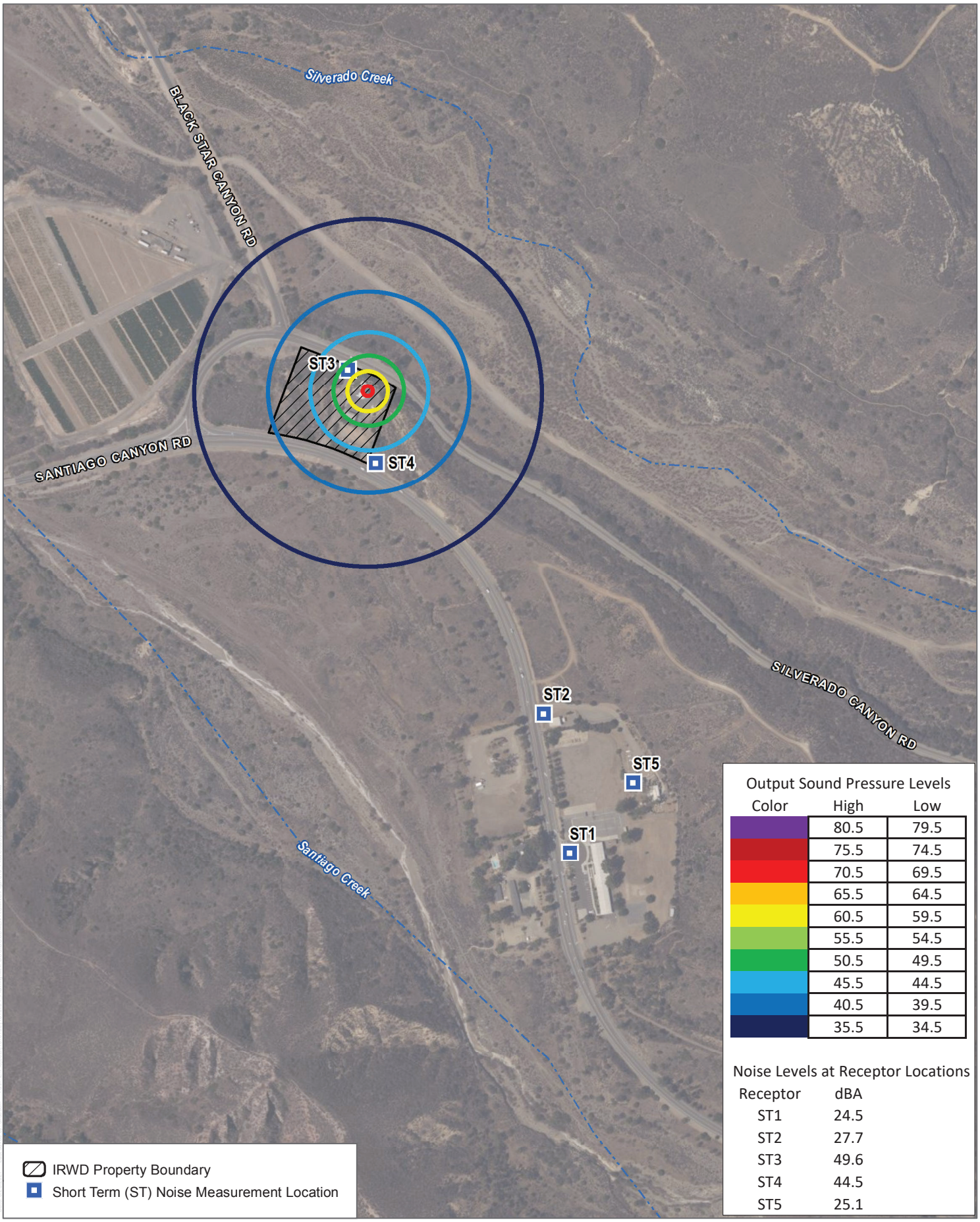
b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

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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0 250 500 Feet

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?	☐	☐	☐	☒
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)?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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

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

Native American Tribal Representatives	Response Received
	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?	☐	☐	☒	☐

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

4.1 References Cited

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4.2 List of Preparers

Irvine Ranch Water District

Fiona Sanchez, Director of Water Resources
Jo Ann Corey, MPA, Environmental Compliance Analyst
Rich Mori, Engineering Manager, Capital Projects
Jacob Moeder, Senior Engineer
Nang Mwe, Engineer
Natalie Palacio, Water Resources Specialist

Dudek

Rachel Struglia, PhD, AICP, Project Manager
Patrick Cruz, Environmental Planner
Hayley Ward, Environmental Analyst
Lillian Renier, Environmental Analyst
Dana Link-Herrera, Environmental Analyst
Adam Poll, Air Quality Specialist
Tommy Molioo, Senior Biologist
Linda Kry, Cultural Resources Specialist
Sarah Corder, Architectural Historian
Kate Kaiser, Architectural Historian
Audrey Herschberger, Hydrogeologist
Michael Williams, PhD, Paleontologist
Sarah Siren, Paleontologist
Mark Storm, Senior Acoustician
Carrie Kubacki, GIS Specialist
Amy Seals, Technical Editor
Chelsea Ringenback, Publications Specialist