Initial Study/Mitigated Negative Declaration

Alameda Reservoir Improvements Project
585 Shoshone Court, Fremont, California

ALAMEDA COUNTY WATER DISTRICT

Lead Agency: Alameda County Water District
Address: 43885 South Grimmer Blvd.
Fremont, CA 94538
Contact: Carlos Sempere

Preparer: Tali Ashurov, Senior Environmental Planner
Firm: WRA, Inc.
Firm Address: 2169-G, Francisco Blvd E, San Rafael, CA 94901

Date: December 2021

43885 South Grimmer Blvd. Fremont, CA 94538 510.668.4499 Phone | 510.651.1760 Fax
www.acwd.org

PROPOSED MITIGATED NEGATIVE DECLARATION

Project Title: Alameda Reservoir Improvements Project

Project Location: Alameda Reservoir is located at 585 Shoshone Court in the City of Fremont, California.

Project Proponent: Alameda County Water District

Project Description: The Alameda County Water District (District) is proposing to replace the roof and roof framing system and seismically upgrade Alameda Reservoir.

Finding: With implementation of mitigation measures, the proposed project will not have a significant effect on the environment.

Reasons Supporting the Finding:

- An Initial Study of Environmental Effects has been prepared that identified no potentially significant impacts following implementation of feasible mitigation measures incorporated into the project.
- The project is consistent with the land use plans, policies, and regulations of the Alameda County Water District and the City of Fremont.
- All work would occur within the Alameda County Water District's property and would not require additional utilities or public services or the expansion of regional facilities.
- The project will not adversely impact fish and wildlife resources or their habitats.
- The project will not result in significant traffic or transportation impacts.

Mitigation Measures Included in the Project: The following mitigation measures are included in the project to avoid potentially significant effects.

A. Air Quality

MM AIR-1.1: During any construction period requiring ground disturbance, the District shall ensure that the project contractor implements measures to control dust and exhaust. Implementation of the measures recommended by Bay Area Air Quality Management District (BAAQMD) and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. In addition to the measures recommended by BAAQMD, the contractor

shall implement the following best management practices that are required by the City of Fremont of all projects:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times daily.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Post a publicly visible sign with the telephone number and person to contact at the District regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

MM AIR-1.2: The project shall use equipment that has low diesel particulate matter (DPM) or zero emissions as follows:

- Mobile diesel-powered off-road equipment larger than 25 horsepower and operating on the site for more than two days shall meet U.S. Environmental Protection Agency (EPA) particulate matter emissions standards for Tier 4 or use engines that include particulate matter emissions control equivalent to California Air Resources Board (CARB) Level 3 verifiable diesel emission control devices (VDECs). Alternatively (or in combination), the use of alternatively fueled or electric equipment (i.e., non-diesel) would be consistent with this requirement.
- Avoid diesel generator use by supplying line power to the construction site and limiting the use of diesel generators to no more than 50 total hours.

B. Biological Resources

MM BIO-1.1: If construction activities are initiated during the nesting season (February 1 – August 31), a nesting bird survey should be conducted by a qualified biologist within 14 days prior to the start of construction within the Study Area and the immediately surrounding area. If active nests are present, exclusion buffers appropriate to the species should be established by the qualified biologist to prevent impacts to nesting birds. Buffers should be maintained until the biologist determines that young have fledged, or the nest becomes inactive.

If construction activities are initiated outside of the nesting season (September 1 – January 31), no pre-construction nesting bird surveys are necessary.

MM BIO-2.1: Prior to the start of work, exclusion fencing should be installed along the southern corner of the project area to prevent California red-legged frog (CRLF) from entering or traversing the site. Fencing location should include the area where no residential development exists along Agua Fria Creek and extend 50 feet to either side. This fencing may be installed along the existing chain link fence and should consist of a material that would not allow CRLF to pass through or become entrapped (i.e., silt fencing). Monofilament fencing should not be used, and fence material should be at least 36 inches in height. Care should be taken that conditions are not created where CRLF may become entrapped in any way within the project area.

Crew members that will work on the project should undergo a Worker Environmental Awareness Program (WEAP) training conducted by a qualified biologist, which will cover basic identification of CRLF and recommended actions should a CRLF be discovered within a work area.

Any materials stockpiled outside of areas protected by exclusion fencings should be covered or stored in a location where they would not provide refugia to any dispersing CRLF.

Within 48-hours prior to start of work, a pre-construction survey should be conducted by a qualified biologist to ensure no CRLF are present within potential work areas or areas where heavy machinery will be operated. This survey would consist of a visual inspection of the work area for individual CRLF. If CRLF are observed during the pre-construction survey, they should be allowed to leave the site of their own volition prior the commencement of project activities. If work stops for a period greater than 48-hours, the survey should be repeated to ensure no CRLF have moved through or occupied the area in the interim period.

C. Cultural Resources

MM CUL-1.1: The following measures shall be implemented during ground-disturbing excavation:

- The District shall include a note on any plans that require ground disturbing excavation that there is a potential for exposing buried cultural resources.

- The District shall retain a professional archaeologist to provide a preconstruction briefing to supervisory personnel of any excavation contractor to alert them to the possibility of exposing buried cultural resources, including significant prehistoric archaeological resources. The briefing shall discuss any cultural resources, including archaeological objects, that could be exposed, the need to stop excavation at the discovery, and the procedures to follow regarding discovery protection and notification of the District and archaeological team.
- In the event that any human remains, or historical, archaeological or paleontological resources are discovered during ground disturbing excavation, the provisions of California Environmental Quality Act (CEQA) Guidelines Sections 15064.5(e) and (f), and of subsection (d)(2)(C) of this section, requiring cessation of work, notification, and immediate evaluation shall be followed.
- If resources are discovered during ground disturbing activities that may be classified as historical, unique archaeological, or tribal cultural resources, ground disturbing activities shall cease immediately, and the District shall be notified. The resources will be evaluated by a qualified archaeologist and, in the District's discretion, a tribal cultural monitor. If the resources are determined to be historical, unique archaeological, or tribal cultural resources, then a plan for avoiding the resources shall be prepared. If avoidance is infeasible, then all significant cultural materials recovered shall be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards. Any plan for avoidance or mitigation shall be subject to the approval of the District.

MM CUL-1.2: An archaeologist shall monitor construction-related ground disturbance within the vicinity of project site features identified as having the potential to include subsurface archaeological, cultural, or tribal cultural resources that could be impacted through ground-disturbing activities related to the construction of the project. Monitoring should continue until the archaeologist determines that there is a low potential for encountering subsurface archaeological, cultural, or tribal cultural resources. An archaeologist that meets the Secretary of the Interior's professional qualifications standards for archaeology shall oversee the monitoring. Any compensation for time and expenses related to this activity shall be borne by the District.

MM CUL-2.1: If any human remains are found during any field investigations, grading, or other construction activities, all provisions of California Health and Safety Code Sections 7054 and 7050.5 and Public Resources Code Sections 5097.9 through 5097.99, as amended per Assembly Bill 2641, shall be followed. In the event of the discovery of human remains during construction, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains, and the District shall immediately notify the Alameda County

Coroner/ Medical Examiner's Office (the Coroner). The Coroner will make a determination as to whether the remains are Native American.

If the remains are believed to be Native American, the Coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC will then designate a Most Likely Descendant (MLD). The MLD will inspect the remains and make a recommendation on the treatment of the remains and associated artifacts. If the District concurs with the recommendation of the MLD, the District will work with the MLD and the Coroner to carry it out.

If one of the following conditions occurs, the Alameda County Water District or their authorized representative shall work with the Coroner to reinter the Native American human remains and associated grave goods with appropriate dignity in a location not subject to further subsurface disturbance:

- The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being notified by the Commission.
- The descendant identified fails to make a recommendation; or
- The District or their authorized representative rejects the recommendation of the descendant, and the mediation by the NAHC fails to provide measures acceptable to the District.

D. Geology and Soils

MM GEO-1.1: In the event that a fossil is discovered during construction of the project, excavations within 50 feet of the find shall be temporarily halted or delayed until the discovery is examined by a qualified paleontologist, in accordance with Society of Vertebrate Paleontology standards. The District shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. If the find is determined to be significant and if avoidance is not feasible, the paleontologist shall design and carry out a data recovery plan consistent with the Society of Vertebrate Paleontology standards. The plan must include preparation, identification, cataloguing, and curation of any salvaged specimens.

E. Hazards and Hazardous Materials

MM HAZ-1.1: The project would be required to implement the following measures to reduce impacts due to the presence of asbestos-containing materials (ACMs) and/or lead-based paint (LBP):

- In conformance with State and local laws, a visual inspection/pre-demolition survey, and possible sampling, shall be conducted prior to the demolition of on-site building(s) to determine the presence of ACMs and/or LBP.
- During demolition activities, all building materials containing LBP shall be removed in accordance with the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) Lead in

Title 8, CCR, Section 1532.1, including employee training, employee air monitoring, and dust control. Any debris or soil containing LBP or coatings shall be disposed of at landfills that meet acceptance criteria for the type of lead being disposed.

- All potentially friable ACMs shall be removed in accordance with National Emission Standards for Air Pollution (NESHAP) guidelines prior to demolition or renovation activities that may disturb ACMs. All demolition activities shall be undertaken in accordance with Cal/OSHA standards contained in Title 8, CCR, Section 1529, to protect workers from asbestos exposure.
- A registered asbestos abatement contractor shall be retained to remove and dispose of ACMs identified in the asbestos survey performed for the site in accordance with the standards stated above.
- Materials containing more than one-percent asbestos are also subject to BAAQMD regulations. Removal of materials containing more than one-percent asbestos shall be completed in accordance with BAAQMD requirements and notifications.
- Based on Cal/OSHA rules and regulations, the following conditions are required to limit impacts from LBP to construction workers.
    - Prior to commencement of demolition activities, a building survey, including sampling and testing, shall be completed to identify and quantify building materials containing LBP.
    - During demolition activities, all building materials containing LBP shall be removed in accordance with Cal/OSHA Lead in Construction Standard, Title 8, CCR, Section 1532.1, including employee training, employee air monitoring and dust control.
    - Any debris or soil containing LBP or lead-based coatings shall be disposed of at landfills that meet acceptance criteria for the type of waste being disposed.

F. Noise

MM NOI-1.1: During construction of the project, the District shall implement the following measures required by the City of Fremont to reduce construction noise:

- Construction equipment shall be well-maintained and used judiciously to be as quiet as practical.
- Construction, excavating, grading, and filling activities (including the loading and unloading of materials, truck movements, and warming of equipment motors) shall be limited as provided in City Code Section 18.160.010.
- All internal combustion engine-driven equipment shall be equipped with mufflers, which are in good condition and appropriate for the equipment.

- The contractor shall utilize “quiet” models of air compressors and other stationary noise sources where technology exists.
- Loading, staging areas, stationary noise generating equipment, etc., shall be located as far as feasible from sensitive receptors.
- The contractor shall comply with Air Resource Board idling prohibitions of unnecessary idling of internal combustion engines.
- Signs shall be posted at the construction site that include permitted construction days and hours (Monday through Friday 8 a.m. to 5 p.m.), a day and evening contact number for the job site, and a contact number for the District in the event of noise complaints. The District shall designate an on-site complaint and enforcement manager to track and respond to noise complaints.
- Temporary noise barriers, such as solid plywood fences, shall be installed around construction sites adjacent to operational business, residences or noise-sensitive land uses, unless an existing wall or other barrier provides equivalent noise attenuation. (City of Fremont Ord. 27-2016 § 37, 12-6-16; Ord. 23-2018 § 41, 10-2-18; Ord. 05-2021 § 52, 4-20-21.)

G. Tribal Cultural Resources

MM TCR-1.1: A tribal cultural representative (or their designee) shall be notified so they may be present during any ground-disturbing activities to monitor sites or objects of significance to Native Americans and to provide construction worker tribal cultural awareness training including applicable regulations and protocols for avoidance, confidentiality, and culturally appropriate treatment.

The tribal cultural representative (or their designee) shall have the ability to request that work be stopped, diverted, or slowed if sites or objects of significance to Native Americans are encountered within the direct impact area and shall be consulted for recommendations regarding the appropriate treatment of such sites or objects.

Initial Study Prepared by: Alameda County Water District

I, Girum Awoke, hereby certify that this Mitigated Negative Declaration was prepared in accordance with the provisions of the California Environmental Quality Act of 1970, as amended, and all applicable State and City Guidelines.

By: _____ Date: 12/17/21

Girum Awoke
Director of Engineering and Technology

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1.0 INTRODUCTION AND PURPOSE

1.1 PURPOSE OF THE INITIAL STUDY

The Alameda County Water District (District), as the Lead Agency, has prepared this Initial Study for the Alameda Reservoir Improvement Project in compliance with the California Environmental Quality Act (CEQA) and the CEQA Guidelines (California Code of Regulations §15000 et. seq.).

The project proposes the Alameda Reservoir Improvement Project which would replace the roof and roof framing system and seismically upgrade Alameda Reservoir. This Initial Study evaluates the environmental impacts that might reasonably be anticipated to result from implementation of the proposed project.

1.2 PUBLIC REVIEW PERIOD

Publication of this Initial Study marks the beginning of a 30-day public review and comment period. During this period, the Initial Study will be available to local, state, and federal agencies and to interested organizations and individuals for review. Written comments concerning the environmental review contained in this Initial Study during the 30-day public review period should be sent to:

Carlos Sempere, Project Manager
Alameda County Water District
43885 South Grimmer Blvd.
Fremont, CA 94538
Carlos.Sempere@acwd.com

1.3 CONSIDERATION OF THE INITIAL STUDY AND PROJECT

Following the conclusion of the public review period, the District will consider the adoption of the Initial Study /Mitigated Negative Declaration (IS/MND) for the project at a regularly scheduled meeting of the District's Board of Directors. The District will consider the IS/MND together with any comments received during the public review process. Upon adoption of the MND, the District may proceed with project approval actions.

1.4 NOTICE OF DETERMINATION

If the project is adopted, the District will file a Notice of Determination (NOD), which will be available for public inspection and posted within 24 hours of receipt at the County Clerk's Office for 30 days. The filing of the NOD starts a 30-day statute of limitations on court challenges to the approval under CEQA (CEQA Guidelines Section 15075(g)).

2.0 PROJECT INFORMATION

2.1 PROJECT TITLE

Alameda Reservoir Improvements Project

2.2 LEAD AGENCY CONTACT

Carlos Sempere
Project Manager
Alameda County Water District
43885 South Grimmer Boulevard
Fremont, CA 94538
Carlos.Sempere@acwd.com

2.3 PROJECT PROPONENT

Alameda County Water District (the District)

2.4 PROJECT LOCATION

The project is located at 585 Shoshone Court in Fremont, California.

2.5 ASSESSOR'S PARCEL NUMBER

Assessor's Parcel Numbers (APNs): 519-1590-92 and 519-1590-93

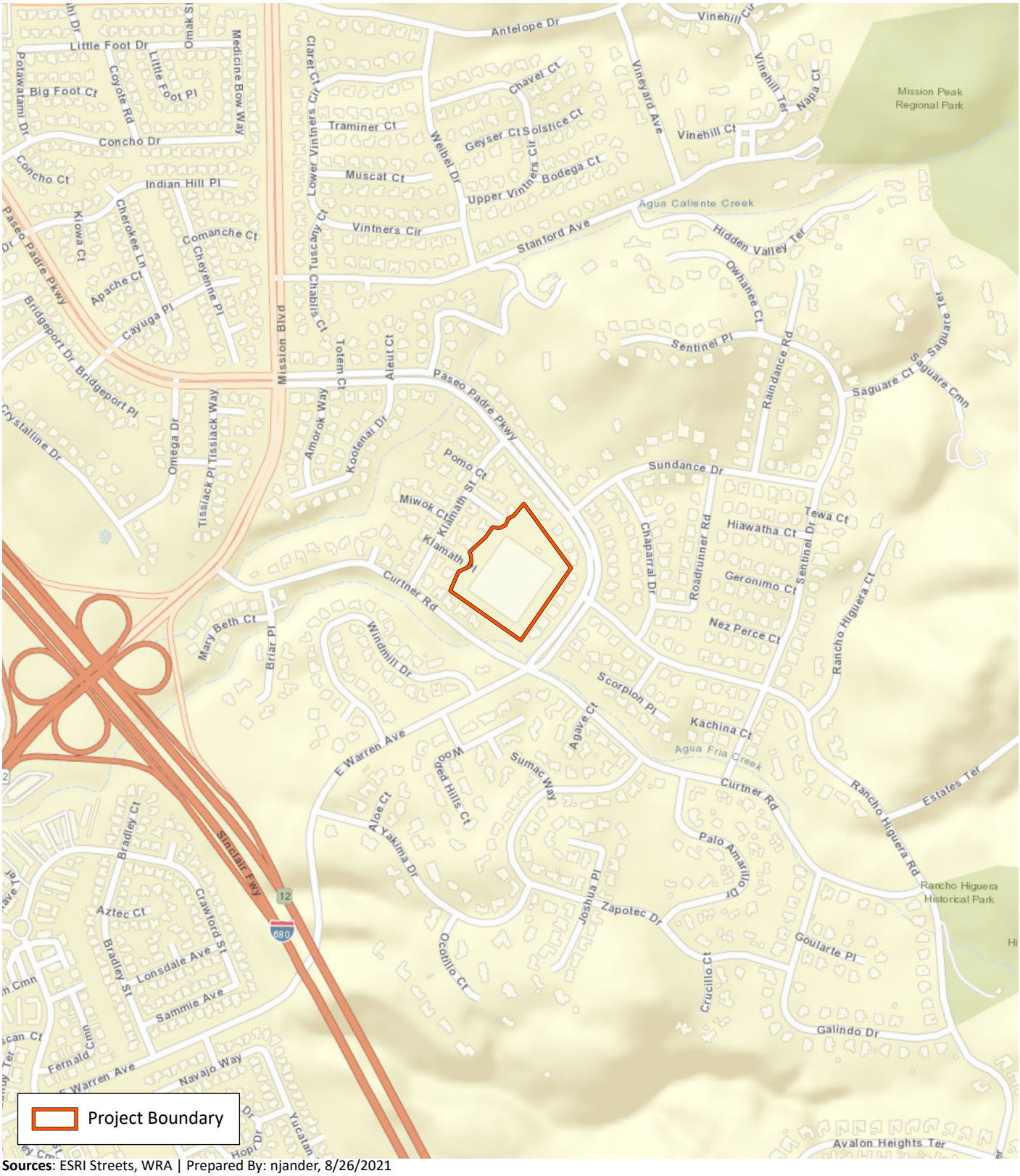
2.6 GENERAL PLAN DESIGNATION AND ZONING DISTRICT

General Plan Designation: *Public Facility (PF)*

Zoning District: *Public Facility (PF)*

2.7 PROJECT-RELATED APPROVALS, AGREEMENTS, AND PERMITS

The District is the Lead Agency under CEQA. This Initial Study (IS) would provide City of Fremont, other public agencies, and the general public with relevant environmental information to use in considering the project. The District anticipates that there will be no discretionary approvals by the City of Fremont. The only permit required for this project is the water system permit amendment from the State Water Resources Control Board Division of Drinking Water (DDW).



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Sources: ESRI Streets, WRA | Prepared By: njander, 8/26/2021

Figure 2. Vicinity Map

0 500 1,000 Feet

N

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Sources: USDA NAIP Imagery 2020, WRA | Prepared By: njander, 8/20/2021

Figure 3. Aerial Map and Surrounding Land Uses

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3.0 PROJECT DESCRIPTION

Project Title

Alameda Reservoir Improvements Project

Lead Agency Name and Address

Alameda County Water District

43885 South Grimmer Boulevard

Fremont, CA 94538

Contact Person and Phone Number

Carlos Sempere, Project Manager, (510) 668-4200

Project Location

585 Shoshone Court, Fremont, CA

3.1 PROJECT BACKGROUND

The Alameda County Water District (District) proposes to carry out the Alameda Reservoir Improvements Project (project). The purpose of this project is to replace the roof and roof framing system and seismically upgrade the reservoir (see Figure 4). Alameda Reservoir is a 16.25-million-gallon potable water reservoir that was built in 1972. The reservoir serves the southern portion of Zone 1, the District's lowest hydraulic zone, and has a roof area of approximately 402 feet by 354 feet, or 3.27 acres in size. It is served by a 30-inch diameter inlet/outlet pipeline and its overflow structure drains to a 15-inch corrugated metal storm drain pipe that surrounds the reservoir.

The reservoir is built within earth levees with perimeter concrete walls, precast concrete columns on spread footings, and a concrete slab-on-grade floor. The reservoir has a maximum water depth of 28.2 feet. The perimeter concrete walls have metal screened openings for ventilation and small access doors on each end. The roof is painted, corrugated, galvanized steel sheeting over timber framing. A roof monitor (elevated roof structure with vents) runs along the ridge of the reservoir from east to west for additional ventilation. The reservoir is surrounded by a paved access road, which is surrounded by landscaping with trees and bushes that serve to screen the reservoir from the surrounding neighborhood.

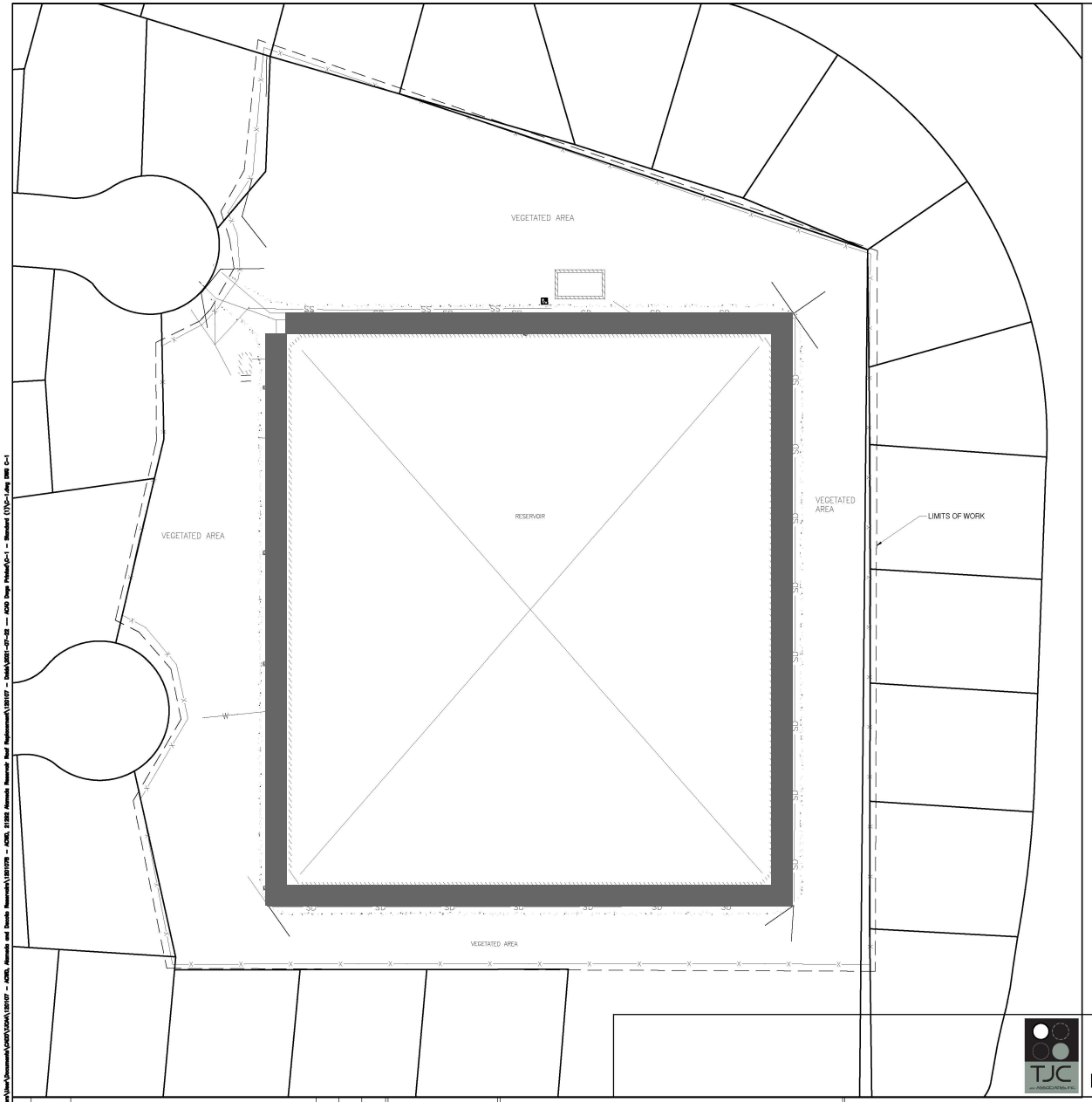
In addition to the seismic upgrade of the reservoir including roof replacement, project work includes the following:

- Replacement of the reservoir's drain valve in the floor of the reservoir and its valve stem extension;
- Installation of a new forced air ventilation system;
- Installation of new interior lighting

The District's construction window for the seismic retrofit and roof replacement is September, 2022 through September, 2023.

As a separate project that was approved and found Categorically Exempt from CEQA in January 2021, the Solar Photovoltaic System Installation Project will install solar panels on the replaced roof structure in 2023. This project was previously approved as part of the Clean Energy Program and is independent of

the Alameda Reservoir retrofit and roof project, and was planned to occur with or without the approval of the retrofit and roof project.



NOTES:

1. UTILITIES SHOWN ARE BASED ON SURFACE EVIDENCE OBSERVED BY SURVEYOR. DISTRICT, ENGINEER, AND SURVEYOR ARE NOT RESPONSIBLE FOR THE COMPLETENESS, LOCATIONS OR SIZES SHOWN. CONTRACTOR SHALL POTHOLE TO IDENTIFY AND CONFIRM LOCATIONS OF UTILITIES.
2. A GEOTECHNICAL INVESTIGATION WAS PERFORMED BY CONERSTONE EARTH GROUP WITH A REPORT DATED 11 JUNE 2021. REPORT IS AVAILABLE FROM OWNER UPON REQUEST.
3. CONTRACTOR SHALL COORDINATE WITH OWNER ON ACCESS TO PARKING AND LAYDOWN AREA.
4. OWNER WILL MAKE AVAILABLE METERED WATER FORM ON SITE FIRE HYDRANTS.
5. CONTRACTOR SHALL INSTALL TEMPORARY FENCING AS NEEDED TO CONTINUOUSLY MAINTAIN SITE SECURITY DURING THE PROJECT. TEMPORARY FENCING SHALL BE 6 FEET HIGH.
6. CONTRACTOR SHALL PROTECT ALL EXISTING FEATURES LOCATED OUTSIDE OF LIMITS OF WORK.

SURVEY NOTES:

1. **BASIS OF COORDINATE SYSTEM: COORDINATES SHOWN HEREON ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM OF 1983 (CCS83), ZONE** III. THE HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83). THE VERTICAL DATUM IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. **PROJECT BENCH MARK:** 15000 SET MAG & SHINER IN ASPHALT, LOCATED APPROXIMATELY 48' SOUTHEAST OF THE MAIN ENTRANCE GATE, 30' SOUTHEAST OF A SEWER CLEAN OUT, AND 11' NORTH OF THE MAIN BUILDING. THE ELEVATION OF THE BENCHMARK IS 212.73 FEET (NAVD88).
3. **SURVEYED BY O'DELL ENGINEERING, INC. DATED JUNE 2021.**

CONTROL POINT	COORDINATE X (FEET)	COORDINATE Y (FEET)
15000	6151266.49	2006862.13
15001	6151033.68	2006524.92
15002	6151327.81	2006323.44
15003	6151560.56	2006655.33

Existing Roadway

N

0 20 40 80
SCALE: 1" = 40'

WARNING
THIS DRAWING REDUCED TO HALF SIZE

15% DESIGN. NOT FOR CONSTRUCTION

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DESIGNED	TFC
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CHECKED	MV
REVIEWED BY OPS	xxx
PROJ. ENGR	xxx
ENGR SUPERVISOR	xxx

ACWD ALAMEDA COUNTY WATER DISTRICT
ALAMEDA COUNTY WATER DISTRICT
43885 SOUTH GRIMMER BOULEVARD
P.O. BOX 5110
FREMONT, CA 94537-5110
(510) 668-4200

ALAMEDA RESERVOIR ROOF REPLACEMENT PROJECT
SITE PLAN

FACILITY ID NO.	PROJECT NO	E NUMBER	FILE: C-1.DWG
R02	SR02.01	–	DATE: JUNE 2021
	JOB NO	DWG NO	SCALE: NOT TO SCALE
	21290	C-1	REV A

SHEET NO C-1

Figure 4. Site Plan

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3.2 GENERAL PLAN DESIGNATION AND ZONING

General Plan Designation – *Public Facility (PF)*

Zoning – *Public Facility (PF)*

3.3 PROJECT DESIGN

3.3.1 Roof System Seismic Retrofit

The District would construct the project with insulated roof panels with a diagonal tie-rod system or structural metal deck diaphragm with connections to new cast-in-place concrete buttresses installed external to the reservoir in the perimeter roadway.

This would involve the removal and replacement in-kind of the existing roof framing members and at least 12 precast concrete columns and replacement of the roof panels. In addition, the project would include the construction of approximately 30 cast-in-place concrete buttresses and cast-in-drilled-holes (CIDH) concrete piers around the outside of the reservoir. There are two styles of buttresses (see Figure 5 and Figure 6) to be constructed: one is 10.5 feet by 6 feet by 2 feet and the other is 8 feet by 12 feet by 2 feet, each with a 24-inch drilled pier below it embedded to approximately 16.5 feet. The buttresses would be constructed within the wall of the reservoir and within a portion of the perimeter road flush with the road surface so that they can be driven over it once complete.

3.3.2 Civil/Site Work

Site civil improvements are generally expected to be minor and would mainly be needed to facilitate the various reservoir improvements. Site civil work is expected include the following elements:

- Clearing and grubbing of the landscaped area – Minor clearing and grubbing would occur to facilitate staging of equipment and materials in non-paved areas. Some trimming of tree branches may also be required, along with potential removal of some small trees that are less than 6 inches at diameter breast height.
- Trenching –No trenching is expected. Existing electrical conduits would be utilized for the new lighting and ventilation equipment.
- Paving – Paving is assumed to only be performed in order to patch where existing pavement is removed for the work described below.
- Valve work – The proposed valve work would consist of replacing the existing 8-inch washdown drain gate valve inside the floor of the reservoir and extending the valve stem for the 30-inch inlet/outlet valve to the roof. No associated piping work would occur.

3.3.3 Concrete Column Repair

Twelve of the 95 precast concrete columns that support the roof were visibly cracked due to corrosion of rebar as a result of chloride absorption. Approximately 12 of the 95 concrete columns would be replaced with new precast concrete columns and others would be repaired. Repair of the damaged precast concrete columns would include application of a surface applied corrosion inhibitor, such as Sika

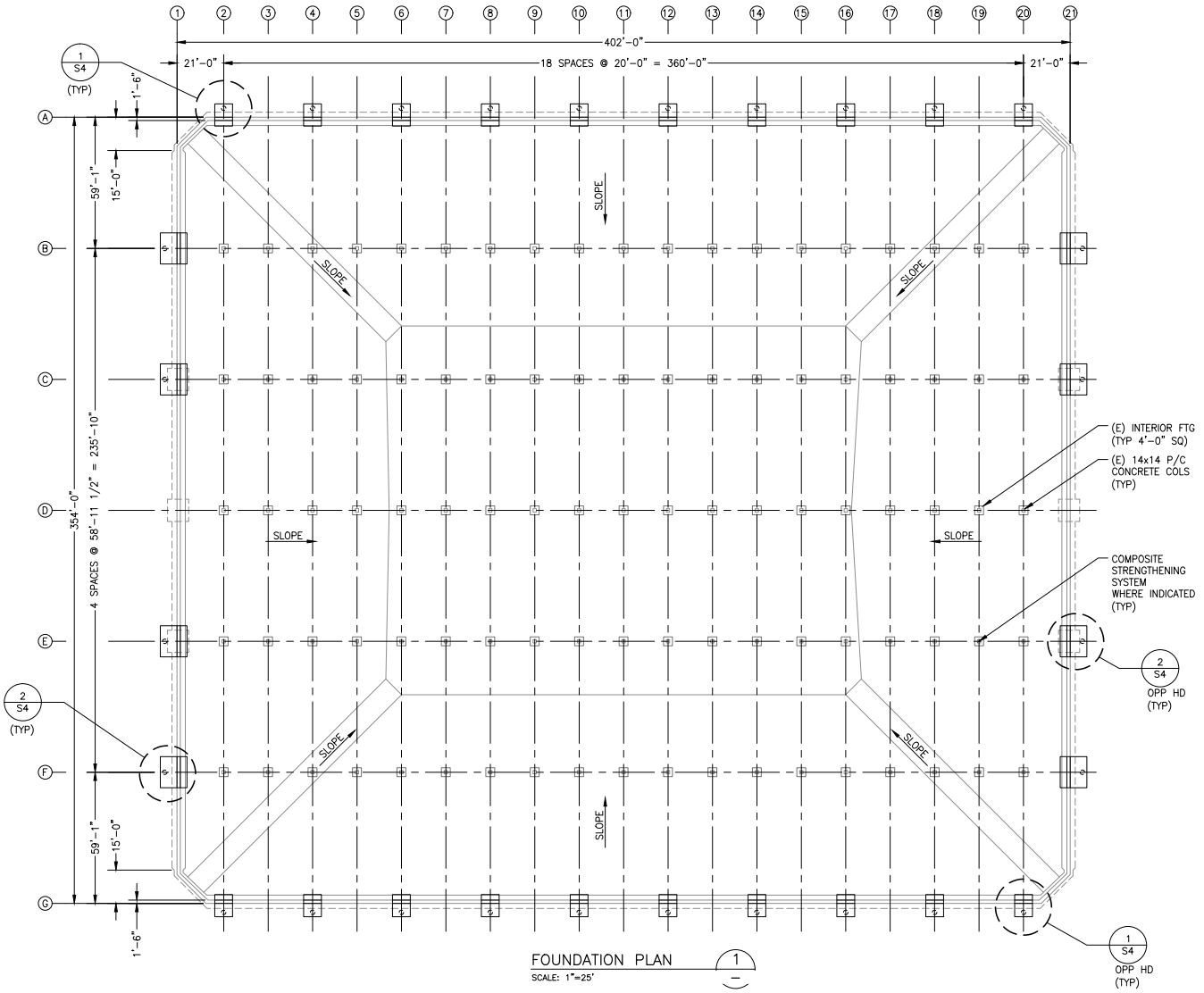
FerroGard® 903 and an external fiber reinforced polymer coating, such as Simpson Strong-Tie composite strengthening system.

3.3.4 Lighting

Lighting would be added to the interior of the reservoir, which would not illuminate the exterior. The selected light fixture would utilize LEDs for energy efficiency and have a brightness totaling 50,000 lumens per fixture. Approximately 26 fixtures would be installed on the interior perimeter walls, in a position that would allow for future maintenance by District staff. The reservoir light fixtures would have individual local switches for manual shutoff.

3.3.5 Ventilation System

The reservoir's existing passive ventilation is through screens in the sides of the reservoir and a central roof monitor. The roof monitor would be removed and not replaced in order to provide continuity for the roof diaphragm, as part of the lateral force resisting system load path associated with the seismic upgrade. A new forced air system would be added to vent out low (non-hazardous) levels of chlorine vapors and moisture build-up within the reservoir. Approximately 12 fans would be mounted within or on the roof of the reservoir and would only run when humidity and/or chlorine levels within the reservoir exceed a pre-determined level or immediately prior to personnel entry into the reservoir, which is approximately 1,460 hours per year. Sensors would determine when to turn the ventilation system on, based on parameters such as inside and outside temperature humidity and chlorine levels. Trenching for new electrical conduits would not occur as there are existing conduit runs that are currently unused and would be re-purposed for the ventilation system.



NOTES:

1. COMPOSITE STRENGTHENING SYSTEM IS A DEFERRED SUBMITTAL ITEM AND IS THE RESPONSIBILITY OF THE CONTRACTOR. COMPOSITE STRENGTHENING SYSTEM HAS NOT BEEN DESIGNED BY THE ENGINEER OF RECORD. REFER TO STRUCTURAL SHEET XXX AND PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. USE OF ALTERNATIVE COMPOSITE STRENGTHENING SYSTEM IS ACCEPTABLE TO THE ENGINEER WITH THE FOLLOWING PROVISIONS:
   a. THE DESIGN OF THE ALTERNATIVE SYSTEM IS THE RESPONSIBILITY OF THE CONTRACTOR.
   b. DESIGN SHALL BE STAMPED AND SIGNED BY A PROFESSIONAL CIVIL OR STRUCTURAL ENGINEER LICENSED IN THE STATE OF CALIFORNIA.
   c. ALTERNATIVE COMPOSITE STRENGTHENING SYSTEM SHALL HAVE A CURRENT ICC-ES EVALUATION REPORT.
   d. USE OF COMPOSITE STRENGTHENING SYSTEMS WITHOUT A VALID ICC-ES ESR IS NOT PERMISSIBLE.

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DRAWN BV
CHECKED –
REVIEWED BY OPS –
PROJ ENGR –
ENGR SUPERVISOR –

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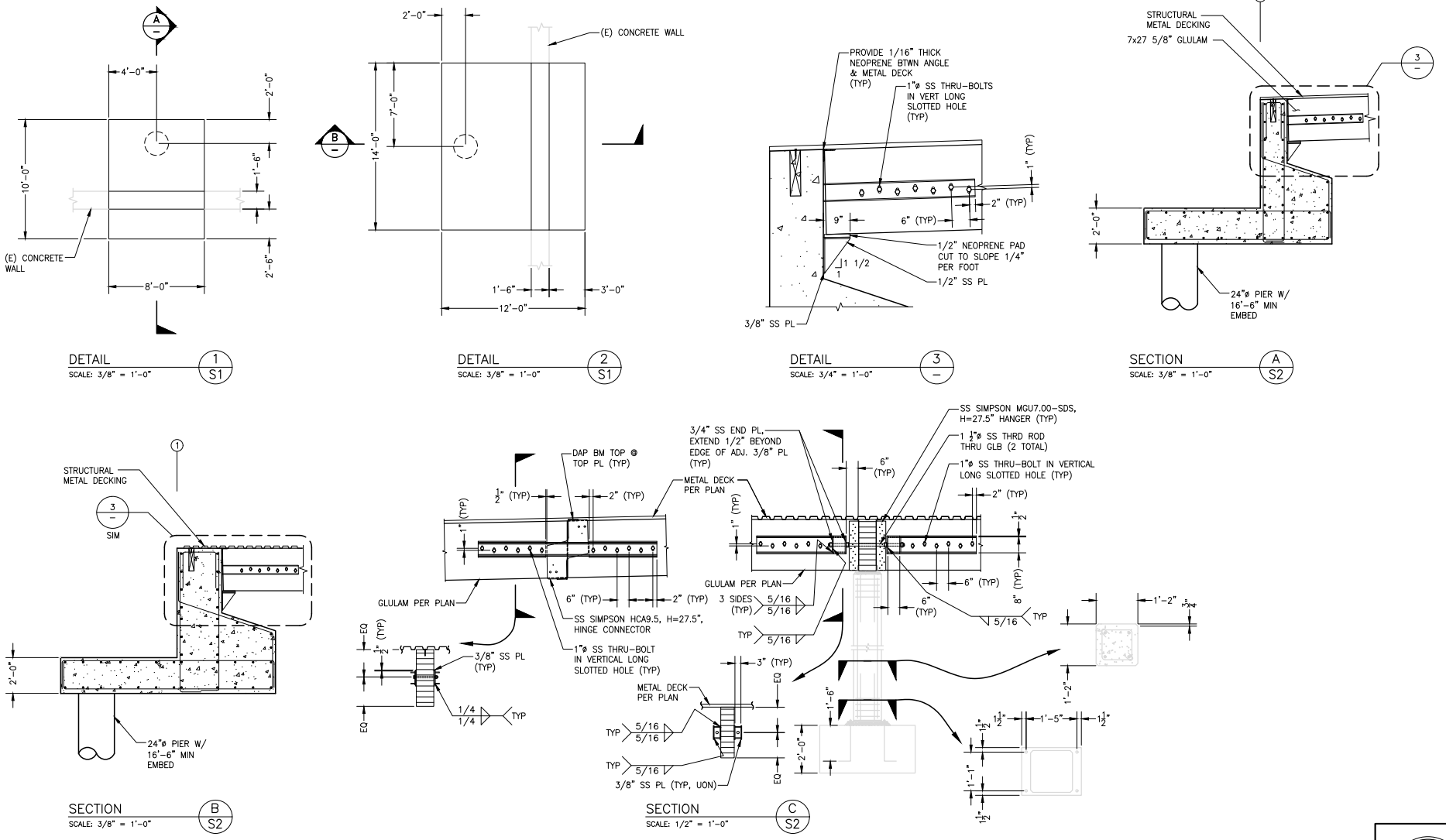
FREMONT, CA 94537-5110
(510) 668-4200

ALAMEDA RESERVOIR ROOF REPLACEMENT PROJECT

RESERVOIR FOUNDATION PLAN

FACILITY ID NO. R02 | PROJECT NO SR02.01 | E NUMBER – | FILE: R01-21D-15-S1.DWG | DATE: OCT 2021 | SCALE: AS SHOWN
JOB NO 21290 | DWG NO R01-21D-15-S1 | REV A | SHEET NO S1

Figure 5 Buttresses Plan View



SECURITY SENSITIVE DISTRICT INFORMATION

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RETURN DOCUMENTS TO ALAMEDA COUNTY WATER DISTRICT

NOT FOR CONSTRUCTION

NO	DATE	REVISION	BY	APP	APP
A	XX/XX/XX	ISSUED FOR BID	XXX	XXX	XXX

DESIGNED	NTP
DRAWN	BV
CHECKED	–
REVIEWED BY OPS	–
PROJ ENGR	–
ENGR SUPERVISOR	–

ALAMEDA COUNTY WATER DISTRICT
43885 SOUTH GRIMMER BOULEVARD
P.O. BOX 5110
FREMONT, CA 94537-5110
(510) 668-4200

ALAMEDA RESERVOIR ROOF REPLACEMENT PROJECT

RESERVOIR SECTIONS

FACILITY ID NO.	PROJECT NO	E NUMBER	FILE: R01-21D-15-S4.DWG
R02	SR02.01	–	DATE: OCT 2021
	JOB NO	DWG NO	SCALE: AS SHOWN
	21290	R01-21D-15-S4	REV A

SHEET NO S4

Figure 6 Buttresses Section View

3.4 PROJECT CONSTRUCTION

3.4.1 Site Preparation, Staging and Material Storage

During construction, the contractor would have access to the site through the main north entrance at the end of Shoshone Court. There are two secondary entrances to the site which are currently blocked by landscaping and would not be used: one at the west side of the site at the end of Klamath Place and the other at the southeast corner of the site at the corner of Curtner Road and Paseo Padre Parkway.

The primary staging area for materials as well as contractor worker vehicle parking would be along the reservoir's perimeter road, allowing for accessibility around the perimeter of the reservoir. The proposed staging areas would be located on the inner 10 feet of the existing roadway, with the outer 10 feet available for general access (see Figure 4).

If additional staging areas are needed, the contractor may use public rights-of-way in accordance with City regulations, or the contractor would make a request to the District to use portions of the unpaved (landscaped) areas surrounding the perimeter road that would remain on existing District property. Equipment would be staged on areas that are not planted with trees or shrubs. Minor clearing and grubbing may be required and any effected areas would be restored to its original state after construction.

3.4.2 Construction Equipment and Schedule

Construction of the proposed project would include 6 phases. The construction phases are summarized in Table 1 and the estimated duration of each phase is provided in Table 2.

Table 1: Construction Phases

Phase	Description of Work Performed During Phase
1. Site Preparation and Mobilization	Establish material staging and storage areas, mobilize heavy equipment, tree protection
2. Demolition of Existing Reservoir Roof and Off-haul Materials	Selective demolition of the roof monitor, concrete column and pavement, roof metal deck, glue laminated girders and purlins
3. Installation of Lateral Force Resisting Systems and Concrete Buttresses	Excavation and installation of poured concrete piers and buttresses. Installation of roof bracing members. Drilling and installation of numerous new concrete drilled piers.
4. Installation of New Roofing Structural Members and New Roof Deck	Installation of new glue laminated girders, roof purlins, and new roof deck.
5. Installation Ventilation and Interior Lighting System	Install new ventilation units and interior lighting fixtures
6. Project closeout	Reservoir Disinfection, Site Restoration and Demobilization

Site Preparation and Mobilization

In this preliminary phase, the contractor would prepare the site for work by setting up exclusion fencing if required, staging areas and bringing heavy construction equipment on-site. The District would draw down the reservoir using system demands and pump any remaining water (following dichlorination) into the sewer system in coordination with the Union Sanitary District, or the storm drain system in coordination with the City of Fremont and/or the Alameda County Flood Control District, temporarily taking it out of service.

Demolition of Existing Reservoir Roof and Off-haul Materials

In this phase, a crane set up along the perimeter driveway would be used for selective demolition of portions of the roof including the roof monitor, the roof corrugated metal deck, glue laminated timber girders and purlins, and concrete columns. The demolition materials would be loaded into approximately 20 dump trucks per day and hauled off-site for disposal or recycling over the 60-day demolition period.

Installation of Lateral Force Resisting Systems and Concrete Buttresses

Following roof demolition, the concrete buttresses and piers would be installed followed by installation of new bracing of the roof members. Concrete buttress construction would include demolition of asphalt and/or concrete, excavation, drilling of the piers, subbase compaction, installation of formwork and rebar, and pouring of ready-mix concrete. Approximately 9,000 cubic yards of cut soil and pavement from

excavation would be exported and 4,000 cubic yards of backfill will be imported to the site. The walls around the buttresses would be patched and strengthened with shear walls. In this phase, the cracked concrete columns would be replaced or repaired with the coating system where required. Replacement of the 8-inch drain valve and 36-inch valve stem will likely occur in this phase as well.

Installation of New Roofing Structural Members and New Roof Deck

In this phase, the new timber and metal roof structural members would be installed followed by the new metal deck and/or insulated roof panels across the top of the entire reservoir.

Installation of Ventilation and Interior Lighting System

The mechanical contractor and electricians would install the ventilation system and interior lighting with associated wiring and electrical conduit in this phase. Electrical wiring would be routed in existing spare conduit buried in the roadway from the existing electrical panel to the reservoir. From there, new electrical conduit would be routed along the existing perimeter walls or over the roof deck to the new light fixtures and fans.

Project Closeout

In this final phase, the reservoir would be filled, disinfected, and placed back into service. The areas used for construction activities surrounding the reservoir would be restored, including replanting areas used for staging equipment, demobilizing construction equipment, and conducting final paving.

Table 2: Preliminary Construction Schedule

Phase	Duration of Phase	Anticipated Start Date	Anticipated End Date
1. Site Preparation and Mobilization	1 week	September-2022	September-2022
2. Demolition of Existing Reservoir Roof and Off-haul Materials	4 weeks	September-2022	September-2022
3. Installation of Lateral Force Resisting Systems and Concrete Buttresses	20 weeks	October-2022	February-2023
4. Installation of New Roofing Structural Members and New Roof Deck	16 weeks	February-2023	June-2023
5. Installation of Ventilation and Interior Lighting System	8 weeks	June-2023	August-2023
6. Project Closeout*	4 weeks	August-2023	September-2023
* To be conservative in the analysis, this schedule assumes that the construction period will go through September 2023, which is several months longer than the currently planned construction schedule.			

Typical construction equipment that is anticipated to be required during construction is listed below in Table 3. Construction hours shall be limited to the hours of 8:00 a.m. to 5:00 p.m. Monday through Friday. Per the City of Fremont Noise Ordinance, construction activities are not allowed within 500 feet of residences on weekends and City-recognized holidays.

Table 3: Construction Equipment and Number of Construction Vehicle Trips

Equipment	**Total Number of Equipment**	**Total Construction Vehicle Trips Per Phase**	**Average Number of Construction Trips Per Day[1]**
Demolition Phase (60 days)			
Boom Truck[2]	1	2	--
Dump Trucks	3	1,200	20
TOTAL:		**1,202**	**20**
Construction Phase (160 days)			
Material Handling Crane	1	2	--
Backhoe	2	2	0
Boom Truck[2]	1	2	--
Vendor Trucks	4	75	>1
Concrete Pump Truck[3]	1	6	1
Concrete Trucks[3]	6	95	16
Contractor/Personal Vehicles	20	3,200	20
TOTAL:		**3,318**	**20 (36 for 3 days)**

[1] Depicts round trips.

[2] One truck would be present during the entire duration of the phase.

[3] Assumes three distinct concrete placements over a 3-day duration.

3.5 OPERATION AND MAINTENANCE ACTIVITIES

Like all water storage facilities, the reservoir would be visited by District staff regularly for inspections and maintenance. The reservoir perimeter may be visually inspected daily by District staff. Samples of the finished water in the reservoir would be taken approximately three to seven times per week. No samples would be collected during project construction since the reservoir would be drained empty. The isolation valve would be exercised on an annual basis as needed. The ventilation equipment will be checked, the filter replaced as needed and mechanical problems repaired.

3.6 REQUIRED PERMITS AND APPROVALS

The following permits would be required for the proposed project:

- Water System Permit Amendment from State Water Resources Control Board, Division of Drinking Water

4.0 ENVIRONMENTAL SETTING, CHECKLIST, AND IMPACT DISCUSSION

4.1 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is potentially significant unless mitigation is incorporated, as indicated by the checklist on the following pages.

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

The discussion for each environmental factor includes the following subsections:

• **Environmental Setting** – This subsection 1) provides a brief overview of relevant plans, policies, and regulations that compose the regulatory framework for the project and 2) describes the existing, physical environmental conditions at the project site and in the surrounding area, as relevant.

• **Impact Discussion** – This subsection 1) includes the recommended checklist questions from Appendix G of the CEQA Guidelines to assess impacts and 2) discusses the project's impact on the environmental subject as related to the checklist questions. For significant impacts, feasible mitigation measures are identified. "Mitigation measures" are measures that will minimize, avoid, or eliminate a significant impact (CEQA Guidelines Section 15370). Each impact is numbered to correspond to the checklist question being answered. For example, Impact BIO-1 answers the first checklist question in the Biological Resources section. Mitigation measures are also numbered to correspond to the impact they address. For example, MM BIO-1.3 refers to the third mitigation measure for the first impact in the Biological Resources section.

4.2 INITIAL STUDY CHECKLIST

The following sections describe the existing environmental conditions in and near the project area and evaluates environmental impacts associated with the proposed Project. The environmental checklist, as recommended in the CEQA Guidelines (Appendix G), was used to identify environmental impacts that could occur if the proposed Project is implemented. The right-hand column in the checklist lists the source(s) for the answer to each question. The cited sources are identified at the end of this section.

Each of the environmental categories was fully evaluated, and one of the following four determinations was made for each checklist question:

- **"No Impact"** means that no impact to the resource would occur as a result of implementing the project.
- **"Less-than-Significant Impact"** means that implementation of the project would not result in a substantial and/or adverse change to the resource, and no mitigation measures are required.
- **"Less-than-Significant Impact with Mitigation Incorporated"** means that the incorporation of one or more mitigation measures is necessary to reduce the impact from potentially significant to less than significant.
- **"Potentially Significant Impact"** means that there is either substantial evidence that a project-related effect may be significant, or due to a lack of existing information, could have the potential to be significant.

4.2.1 Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
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 points). 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?	☐	☐	☐	☒

Regulatory Setting

State

Streets and Highway Code Sections 260 through 263

The California Scenic Highway Program (Streets and Highway Code, Sections 260 through 263) is managed by the California Department of Transportation (Caltrans). The program is intended to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. Interstate 680 (I-680) from Mission Boulevard to the City of Fremont boundary is an officially designated a State Scenic Highway.[1] This segment of I-680 is approximately 0.45-mile southwest of the project site and as such the site is not visible from the scenic highway.

Local

City of Fremont 2030 General Plan

The proposed project would be subject to the aesthetic and design policies of the City Fremont's General Plan, as described in Table 4:

[1] *California Department of Transportation" Scenic Highways." Accessed July 13, 2021. https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways.*

Table 4: City of Fremont 2030 General Plan Policies

Policy	Description
Policy 4-4.6	• Lighting shall be restrained and targeted to its purpose to protect dark skies, reduce glare and glow and promote sustainability. Ensure that the lighting of exterior spaces, including streetlights and building illumination, contributes to the overall quality of public space. Lighting should be used to improve safety and nighttime visibility, as well as to reinforce the character of corridors, centers, and neighborhoods. Variations in lighting should help define street function, highlight important intersections, and define edges and activity centers. • Lighting should utilize technology and design approaches that minimize energy use and associated impacts.
Policy 4-5.1	• Provide visual buffers or screening between adjacent uses which are potentially incompatible, such as industrial and residential uses. Buffers may consist of streets, setbacks, open space, landscaping, building design, reductions in height and bulk, and other site planning methods which minimize the impacts of a particular use on its neighbors. On a smaller scale, activities on individual development sites which could detract from the visual quality or enjoyment of a property—such as mechanical equipment and trash collection areas—should be appropriately screened and buffered.
Policy 4-5.5	• Maintain a network of designated scenic routes through Fremont. The visual features which contribute to scenic designations should be protected through land use, transportation, and capital improvement decisions, as well as landscaping, operations, and maintenance activities along these corridors. • A particular road or corridor may be considered scenic by virtue of its design or amenities, the terrain and natural features it traverses, or the views and visual importance it commands. In Fremont's case, the designation expresses intent to maintain or improve visual quality but does not necessarily limit abutting uses. For example, the designation of an arterial as a locally scenic roadway could affect the City's decision to use landscaping versus sound walls, or could result in a particular gateway being assigned a higher priority for improvement.

Environmental Setting

The project is located on an approximately 3.27-acre site approximately 100 feet south of Shoshone Court in the City of Fremont. The project site, Alameda Reservoir, is surrounded by a paved and gated access road and is landscaped with trees and bushes that serve to screen the reservoir from the surrounding neighborhood. Views of the project site and surrounding land uses are shown in Figure 7, Figure 8, and Figure 9 below.

The surrounding area is entirely residential in use, with several single-family homes visible from the project site. The project area is adjacent to the Agua Fria Creek riparian corridor. Agua Fria Creek is

abundant with Eucalyptus trees and runs along the southwest side of the project area. The surrounding neighborhood land uses are shown in Figure 3.

Paseo Padre Parkway (from State Route 84 to East Warren Avenue) is designated as a scenic corridor in the City of Fremont General Plan. This designation expresses an intent to maintain or improve visual quality, but it does not limit the abutting uses. The project site is located approximately 200 feet north of Paseo Padre Parkway at East Warren Avenue terminus. The project site is generally screened from view by trees and single-family homes from the Paseo Padre Parkway scenic corridor. Mission Boulevard is designated as a scenic roadway in the City's General Plan. The segment of Mission Boulevard (from Union City border to I-880/Warren Avenue Interchange) is also considered a scenic corridor. The project site is located approximately 1,400 feet southeast of Mission Boulevard scenic corridor. Due to the surrounding residential uses, the project site is also screened from public views by trees and single-family homes from the Mission Boulevard scenic corridor.

Discussion of Impacts

a) Have a substantial adverse effect on a scenic vista?

No Impact. There are no scenic vistas within the project site or parcels adjacent to the project site. The project site does not provide visual access to any scenic vista. Although Paseo Padre Parkway and Mission Boulevard are designated scenic corridors, the project site is not visible from either roadway. The crane to be used on-site during construction is estimated to be approximately 200 feet tall, which would be shielded by the large trees on-site. Views of the project site are limited as the site is blocked by landscaping including trees and bushes that serve to screen the reservoir from the surrounding neighborhood and roadways. The views of the on-site facilities from the approach along Curtner Road and Paseo Padre Parkway are partially hidden by vegetation. For these reasons, the proposed project would not block any scenic vistas from area residences. No impacts would occur.

b) *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*

No Impact. The location of the proposed project site is not within or visible from a designated state scenic highway. The purpose of the project is to replace the roof and roof framing system and seismically upgrade the reservoir. Upon project completion, the visual appearance of the project area would be similar to existing conditions. For these reasons, the proposed project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. No impacts would occur.

c) *In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?*

No Impact. The project is located in an urbanized area. The purpose of the project is to replace the roof and roof framing system and seismically upgrade the reservoir on-site, and the project would not introduce an aesthetic element that would be inconsistent with the existing visual character in the project area. Upon project completion, the visual appearance of the project area would be similar to existing conditions. No tree removal is anticipated, so there would be no

impacts to any potential landmark trees. The project would not conflict with any applicable zoning and other regulations governing scenic quality. No impacts would occur.

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

No Impact. As proposed, the project would add lighting to the interior of the reservoir, which would not illuminate the exterior. The interior reservoir lighting fixtures would each have a brightness totaling 50,000 lumens for 26 fixtures. Since project lighting would not illuminate the exterior of the reservoir, no new sources of light would be introduced to the project area. Furthermore, the project site is located on a residential street which already features nighttime street lighting. In addition, existing vegetation surrounding the project site would reduce the light impacts from on-site lighting on surrounding residences. In terms of glare, the current roof deck is corrugated steel painted a matte off-white color. Proposed materials to be used for the new roof deck are insulated roof panels or a painted metal deck. The proposed materials would be similar to the existing materials (light color with a matte finish) and would therefore not subject the site to new glare. For these reasons, the proposed project lighting would not adversely affect day or nighttime views in the project area, or create new sources of substantial light or glare, and there would be no impact.

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View of the front gate and Shoshone Court from the south facing northwest.

View of the reservoir from the southeastern corner facing northwest.

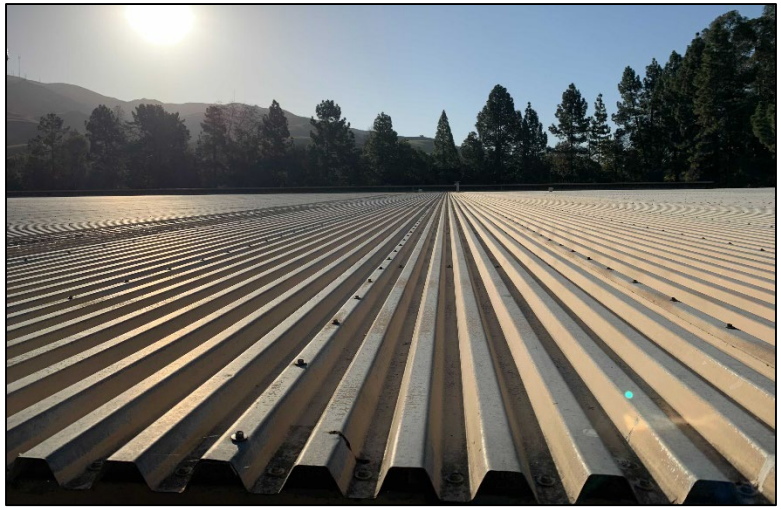
View of the perimeter roadway surrounding the reservoir looking west.

View of the reservoir and staging area facing west.

Figure 7. Views of the Project Site and Surrounding Land Uses (1 of 3)

View of the mature trees and staging area looking southwest.

View of adjacent residences directly to the southwest of the reservoir.



View of the top of the reservoir's roof facing southeast.

View of the interior of the reservoir.

Figure 8. Views of the Project Site and Surrounding Land Uses (2 of 3)

wra ENVIRONMENTAL CONSULTANTS

View of Agua Fria Creek underpass from the south corner.

Overview of the northwest side of the Project Area showing exposed soils.

Figure 9. View of the Project Site and Surrounding Land Uses (3 of 3)

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4.2.2 Agricultural and Forestry Resources

(Farmland Mapping and Monitoring Program Website) In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	***Potentially Significant Impact***	***Less than Significant Impact with Mitigation Incorporated***	***Less than Significant Impact***	***No Impact***
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?	☐	☐	☐	☒

Regulatory Setting

Farmland Mapping and Monitoring Program

The California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) assesses the location, quality, and quantity of agricultural land and conversion of these lands over time. Agricultural land is rated according to soil quality and irrigation status. The best quality land is called Prime Farmland. In CEQA analyses, the FMMP classifications and published county maps are used, in part, to identify whether agricultural resources that could be affected are present on-site or in the project area.[2]

California Land Conservation Act

The California Land Conservation Act (Williamson Act) enables local governments to enter into contracts with private landowners to restrict parcels of land to agricultural or related open space uses. In return, landowners receive lower property tax assessments. In CEQA analyses, identification of properties that are under a Williamson Act contract is used to also identify sites that may contain agricultural resources or are zoned for agricultural uses.[3]

Fire and Resource Assessment Program

The California Department of Forestry and Fire Protection (CAL FIRE) identifies forest land, timberland, and lands zoned for timberland production that can (or do) support forestry resources.[4] Programs such as CAL FIRE's Fire and Resource Assessment Program and are used to identify whether forest land, timberland, or timberland production areas that could be affected are located on or adjacent to a project site.[5]

Environmental Setting

The project site is located in a developed, residential area of in the City of Fremont, and is not used for agricultural or forestry purposes. No land adjacent to the project site is used for or designated as farmland, timberland or forest land. The site is designated as *Urban and Built-Up Land.*[6] Common examples of Urban and Built-Up Land include urban residential, industrial, and commercial uses; golf courses; landfills; airports; sewage treatment; and water control structures. The project site is not subject to a Williamson Act contract.

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[2] *California Department of Conservation. "Farmland Mapping and Monitoring Program." Accessed July 28, 2021. http://www.conservation.ca.gov/dlrp/fmmp/Pages/Index.aspx.*

[3] *California Department of Conservation. "Williamson Act." http://www.conservation.ca.gov/dlrp/lca.*

[4] *Forest Land is land that can support 10 percent native tree cover and allows for management of forest resources (California Public Resources Code Section 12220(g)); Timberland is land not owned by the federal government or designated as experimental forest land that is available for, and capable of, growing trees to produce lumber and other products, including Christmas trees (California Public Resources Code Section 4526); and Timberland Production is land used for growing and harvesting timber and compatible uses (Government Code Section 51104(g)).*

[5] *California Department of Forestry and Fire Protection. "Fire and Resource Assessment Program." Accessed July 28, 2021. http://frap.fire.ca.gov/.*

[6] *Farmland Mapping and Monitoring Program. Alameda County Important Farmland 2018. Available at: https://www.conservation.ca.gov/dlrp/fmmp/Pages/Alameda.aspx Accessed on July 28, 2021.*

Discussion of Impacts

a-e) *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? Conflict with existing zoning for agricultural use, or a Williamson Act contract? 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))? Result in a loss of forest land or conversion of forest land to non-forest use? 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. The project area is designated *Urban and Built-Up Land* on the Alameda County Important Farmland 2018 map.[7] As the project would be constructed within existing right-of-way and utility easements, it would not result in the conversion or loss of prime farmland, unique farmland, or farmland of statewide importance to non-agricultural use.

The project site is not under a Williamson Act contract. Therefore, there would be no conflict with existing zoning for agriculture use or a Williamson Act contract. The project site and surrounding area are located in a developed area and not zoned for forest land or timberland. Therefore, the project would not conflict with existing zoning, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. Neither the project site, nor any of the properties adjacent to the project site or in the vicinity, are used for forest land or timberland. Therefore, the proposed project would not impact forest land or timberland. The project would not result in the conversion of forest or farmlands to other uses. No impacts would occur.

[7] *Farmland Mapping and Monitoring Program. Alameda County Important Farmland 2018. Available at:* https://www.conservation.ca.gov/dlrp/fmmp/Pages/Alameda.aspx *Accessed on July 28, 2021.*

4.2.3 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:	***Potentially Significant Impact***	***Less than Significant Impact with Mitigation Incorporated***	***Less than Significant Impact***	***No Impact***
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 in 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) affecting a substantial number of people?	☐	☐	☒	☐

Regulatory Setting

Federal and State

Clean Air Act

At the federal level, the United States Environmental Protection Agency (EPA) is responsible for overseeing implementation of the Clean Air Act and its subsequent amendments. The federal Clean Air Act requires the EPA to set national ambient air quality standards for the six common criteria pollutants , including particulate matter (PM), ozone (O_3), carbon monoxide (CO), sulfur oxides (SO_X), nitrogen oxides (NO_X), and lead. California Air Resources Board (CARB) is the state agency that regulates mobile sources throughout the state and oversees implementation of the state air quality laws and regulations, including the California Clean Air Act. The EPA and the CARB have adopted ambient air quality standards establishing permissible levels of these pollutants to protect public health and the climate. Violations of ambient air quality standards are based on air pollutant monitoring data and are determined for each air pollutant. Attainment status for a pollutant means that a given air district meets the standard set by the EPA and/or CARB.

Risk Reduction Plan

To address the issue of diesel emissions in the state, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, the plan involves application of emission control strategies to existing diesel vehicles and equipment to reduce diesel particulate matter (DPM) (in additional to other pollutants). Implementation of this plan, in conjunction with stringent federal and

CARB-adopted emission limits for diesel fueled vehicles and equipment (including off-road equipment), will significantly reduce emissions of DPM and NO_X.

Regional

2017 Clean Air Plan

The Bay Area Air Quality Management District (BAAQMD) is the agency primarily responsible for assuring that the federal and state ambient air quality standards are maintained in the San Francisco Bay Area. Regional air quality management districts, such as BAAQMD, must prepare air quality plans specifying how state and federal air quality standards will be met. BAAQMD's most recently adopted plan is the Bay Area 2017 Clean Air Plan (2017 CAP). The 2017 CAP focuses on two related BAAQMD goals: protecting public health and protecting the climate. To protect public health, the 2017 CAP describes how BAAQMD will continue its progress toward attaining state and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities. To protect the climate, the 2017 CAP includes control measures designed to reduce emissions of methane and other super-greenhouse gases (GHGs) that are potent climate pollutants in the near-term, and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.[8]

CEQA Air Quality Guidelines

The BAAQMD CEQA Air Quality Guidelines are intended to serve as a guide for those who prepare or evaluate air quality impact analyses for projects and plans in the San Francisco Bay Area.

Jurisdictions in the San Francisco Bay Area Air Basin utilize the thresholds and methodology for assessing air quality impacts developed in the BAAQMD CEQA Air Quality Guidelines. The guidelines include information on legal requirements, BAAQMD rules, methods of analyzing impacts, and recommended mitigation measures.

Local

City of Fremont Municipal Code

The City of Fremont's Municipal Code provides measures to reduce construction-related fugitive dust and exhaust emissions. The portions of the Municipal Code that are relevant for this project are as follows:

> ***Chapter 18.218.050 Standard Development Requirements***. (a) Air Quality
>
> (1) Construction Related Emissions. The following construction measures, as periodically amended by BAAQMD, are required for all proposed development projects[9] to reduce construction-related fugitive dust and exhaust emissions:

[8] *BAAQMD. Final 2017 Clean Air Plan. April 19, 2017. http://www.baaqmd.gov/plans-and-climate/air-quality- plans/current-plans.*

[9] *"Development projects" under Chapter 180218.050 shall mean the placement or erection of any solid material or structure; discharge or disposal of any dredged material or any gaseous, liquid, solid or thermal waste; grading, removing, dredging, mining or extraction of any soil or materials; change in the density or intensity of use of land including, but not limited to, amendments*

A. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times daily.

B. All haul trucks transporting soil, sand, or other loose material off site shall be covered.

C. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

D. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.

E. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

F. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations (CCR)). Clear signage shall be provided for construction workers at all access points.

G. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

H. A publicly visible sign shall be posted with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

(2) Construction Related Emissions – Supplemental Measures. The following supplemental construction measures, as periodically amended by BAAQMD, are required for all proposed development projects that would exceed the thresholds of significance for construction criteria air pollutant and precursors provided in the most recent BAAQMD CEQA Guidelines:

A. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.

B. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.

C. Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.

to the general plan and zoning ordinance or subdivision pursuant to the State Subdivision Map Act (commencing with Cal. Gov't Code § 66410), and any other division of land, including lot splits, except where the land division is brought about in connection with the purchase of such land by a public agency for public recreational use; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition or alteration of the size of any structure, including any facility of any private, public or municipal utility; and the removal of any major vegetation. As used in the municipal code, "structure" includes, but is not limited to, any building, road, pipe, flume, conduit, siphon, aqueduct, telephone line, and electrical power transmission and distribution line.

D. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.

E. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the total area of surfaces disturbed at any one time.

F. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.

G. Site accesses to a distance of 100 feet from the paved road shall be treated with a six- to 12-inch compacted layer of wood chips, mulch, or gravel.

H. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.

I. Idling time of diesel-powered construction equipment shall be limited to two minutes.

J. The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project-wide fleet-average 20 percent nitrogen oxide (NOx) reduction and 45 percent particulate matter (PM) reduction compared to the most recent Air Resources Board fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.

K. Low volatile organic compound (i.e., reactive organic gas) coatings (i.e., BAAQMD Regulation 8, Rule 3: Architectural Coatings) shall be used.

L. All construction equipment, diesel trucks, and generators shall be equipped with best available control technology for emission reductions of NOx and PM.

M. All contractors shall use equipment that meets the Air Resources Board's most recent certification standard for off-road heavy-duty diesel engines.

Environmental Setting

Criteria Pollutants

Air quality in the San Francisco Bay Area is assessed related to six common air pollutants (referred to as criteria pollutants), including ground-level O_3, NOx, PM, CO, SOx, and lead. Criteria pollutants are regulated because they result in health effects. An overview of the sources of criteria pollutants and their associated health effects are summarized in Table 5. The most regulated criteria pollutants in the Bay Area are discussed further below.

Table 5: Health Effects of Air Pollutants

Pollutants	Sources	Primary Effects
Ozone (O_3)	Atmospheric reaction of organic gases with nitrogen oxides in sunlight	• Aggravation of respiratory and cardiovascular diseases • Irritation of eyes, cardiopulmonary

Pollutants	Sources	Primary Effects
		function impairment
Nitrogen Dioxide (NO_2)	Motor vehicle exhaust, high temperature stationary combustion, atmospheric reactions	• Aggravation of respiratory illness • Reduced visibility
Fine Particulate Matter ($PM_{2.5}$) and Coarse Particulate Matter (PM_{10})	Stationary combustion of solid fuels, construction activities, industrial processes, atmospheric chemical reactions	• Reduced lung function, especially in children • Aggravation of respiratory and cardiorespiratory diseases • Increased cough and chest discomfort • Reduced visibility
Toxic Air Contaminants (TACs)	Cars and trucks, especially diesel-fueled; industrial sources, such as chrome platers; dry cleaners and service stations; building materials and products	• Cancer • Chronic eye, lung, or skin irritation • Neurological and reproductive disorders

High O_3 levels are caused by the cumulative emissions of reactive organic gases (ROG) and NO_x. These precursor pollutants react under certain meteorological conditions to form high O_3 levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce O_3 levels. The highest O_3 levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources.

PM is a problematic air pollutant of the Bay Area. PM is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide emissions and localized emissions.

Toxic Air Contaminants

TACs are a broad class of compounds known to have health effects. They include but are not limited to criteria pollutants. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, diesel fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway).

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs. Diesel exhaust is a complex mixture of gases, vapors, and fine particles. Medium- and heavy-duty diesel trucks represent the bulk of DPM emissions from California highways. The majority of DPM is small enough to be inhaled into the lungs. Most inhaled particles are subsequently exhaled, but some deposit on the lung surface or are deposited in the deepest regions of the lungs (most susceptible to injury).[10] Chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by CARB.

[10] *California Air Resources Board. "Overview: Diesel Exhaust and Health." Accessed August 4, 2021. https://www.arb.ca.gov/research/diesel/diesel-health.htm.*

Sensitive Receptors

Some groups of people are more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools.

The Bay Area is considered a non-attainment area for ground-level O_3 and $PM_{2.5}$ under both the federal Clean Air Act and state Clean Air Act. The area is also considered nonattainment for PM_{10} under the state act, but not the federal act. The area has attained both state and federal ambient air quality standards for CO. As part of an effort to attain and maintain ambient air quality standards for O_3 and PM_{10}, BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for O_3 precursor pollutants (ROG and NO_X), PM_{10}, and $PM_{2.5}$, and apply to both construction period and operational period impacts.

There are no hospitals, daycare facilities, elder care facilities, and elementary schools within a quarter mile of the project area that would be considered sensitive receptors for the project. The closest existing sensitive receptors to the project site are the residences surrounding the Alameda Reservoir facility, whose homes are approximately 50 feet away from the property line. The reservoir comes within 50 feet of the property line along portions of the property. The project would not introduce any new sensitive receptors to the project area.

Discussion of Impacts

Thresholds of Significance

As discussed in CEQA Guidelines Section 15064(b), the determination of whether a project may have a significant effect on the environment calls for judgment on the part of the lead agency and must be based to the extent possible on scientific and factual data. The District has considered the air quality thresholds updated by BAAQMD in May 2017 and regards these thresholds to be based on the best information available for the San Francisco Bay Area Air Basin and conservative in terms of the assessment of health effects associated with TACs and $PM_{2.5}$. The BAAQMD CEQA Air Quality thresholds used in this analysis are identified in Table 6.

Table 6: BAAQMD Air Quality Significance Thresholds

Pollutant	Construction Thresholds	Operation Thresholds	
	Average Daily Emissions (pounds/day)	Average Daily Emissions (pounds/ day)	Annual Average Emissions (tons/year)
Criteria Air Pollutants			
ROG, NO_x	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
CO	Not Applicable	9.0 parts per million (eight-hour) or 20.0 parts per million (one-hour)	
Fugitive Dust	Dust Control Measures/Best Management Practices	Not Applicable	
Health Risks and Hazards for New Sources (within a 1,000-foot Zone of Influence[1])			
Health Hazard	**Single Source**	**Combined Cumulative Sources**	
Excess Cancer Risk	10 per one million	100 per one million	
Hazard Index	1.0	10.0	
Incremental Annual $PM_{2.5}$	0.3 microgram per cubic meter	0.8 microgram per cubic meter (average)	

[1] Zone of Influence refers to the radius around the project boundary used to identify the area potentially impacted by emissions generated at the project site.

a) *Conflict with or obstruct implementation of the applicable air quality plan?*

Less-Than-Significant Impact. Determining consistency with BAAQMD 2017 CAP involves assessing whether a project would alter the population growth and vehicle miles traveled assumptions of the CAP Construction of the project would not be considered growth-inducing as it would not in and of itself increase the region's population or provide expanded infrastructure that would remove an existing constraint on growth in the region. Since the construction of the project would be short-term and temporary and there would be no long-term operational component to the project that would generate air emissions, and it would not generate

substantial new vehicle trips in the Air Basin that would conflict with the 2017 CAP. (See vehicle trip discussion below.) As a result, the project would not conflict with or obstruct implementation of the Plan, and this impact would be less than significant.

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?*

Less-Than-Significant Impact. The Bay Area is a non-attainment area for ground-level ozone and $PM_{2.5}$ under both the Federal Clean Air Act and the California Clean Air Act. The Bay Area is also a non-attainment area for PM_{10} under the California Clean Air Act.

Construction Period Emissions

Construction activity is anticipated to include demolition, excavation and installation of concrete buttresses, installation of lateral force resisting system, installation of new roofing structural members and new roof deck, installation of a ventilation system, and installation of an interior lighting system. Construction activity would occur between 2022 and 2023 with a maximum of 220 working days (approximately one year of construction). Vehicle trips were estimated to be approximately 35 trips per day during the 60-day demolition phase, and 20 trips per day (with the exception of three days which would include a total of 35 daily construction trips due to the concrete truck trips) during the 160-day construction phase. Emissions associated with project construction were estimated using the California Emissions Estimator Model (CalEEMod) version 2020.4.0. Complete CalEEMod results and assumptions can be viewed in Appendix A. Table 7 summarizes the estimated annual and average daily construction emissions. As shown in Table 7, the BAAQMD thresholds would not be exceeded. Therefore, impacts would be less than significant.

Table 7: Unmitigated Construction Period Emissions

Year	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Unmitigated Construction Emissions Per Year (Tons)				
2022	0.04	0.49	0.018	0.016
2023	0.05	0.52	0.023	0.021
Total	0.09	1.01	0.041	0.037
Daily Construction Emissions (Pounds)				
Average (assuming 220 construction days)	0.8	9.2	0.37	0.34

Year	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
BAAQMD Thresholds (pounds per day)	54	54	82	54
Exceed Threshold?	**No**	**No**	**No**	**No**

Operational Period Emissions

The existing Alameda Reservoir has minor equipment that operates on electrical power. The proposed project would result in the continued operation of the Alameda Reservoir with minor increase in electricity demand to operate the new ventilation system and lighting. No operational emissions, with the exception of vehicle trips associated with maintenance and inspection by District staff, would occur. The project would not involve the addition of any other stationary equipment that would result in air pollutant emissions. The project would not increase vehicle traffic to or from the project site compared to the existing condition. For these reasons, project operation would not result in an increase of air pollutant emissions.

c) *Expose sensitive receptors to substantial pollutant concentrations?*

Less-Than-Significant Impact with Mitigation Incorporated.

Toxic Air Contaminants

Construction equipment and heavy-duty truck operation associated with construction activities generate TACs in the form of diesel exhaust and fugitive dust. The nearest sensitive receptors to the project site are the residences surrounding the Alameda Reservoir facility, whose homes are approximately 50 feet away from the property line. The residents are assumed to be present and exposed during all the construction activities, which would last for approximately a year. Due to the proximity of residential sensitive receptors to the project site, the construction activities are considered to result in potentially significant impacts in terms of excess cancer risk to any sensitive receptors present or increased annual $PM_{2.5}$ concentrations caused by construction equipment and traffic exhaust and fugitive dust. Therefore, the project would incorporate measures contained in section 18.218.050 of the City of Fremont's Municipal Code (MM AIR-1.1, shown below) to reduce fugitive dust and exhaust emissions.

Impact AIR-1: The proposed project could result in potentially significant cancer risk impacts to sensitive receptors or increased annual $PM_{2.5}$ concentrations caused by construction equipment and traffic exhaust and fugitive dust.

Mitigation Measures: The following mitigation measures would be implemented during all demolition and construction activities to reduce TAC emission impacts:

MM AIR-1.1: During any construction period requiring ground disturbance, the District shall ensure that the project contractor implements measures to control dust and exhaust. Implementation of the measures recommended by Bay Area Air Quality Management District (BAAQMD) and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. In addition to the measures recommended by BAAQMD, the contractor shall implement the following best management practices that are required by the City of Fremont of all projects:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times daily.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Post a publicly visible sign with the telephone number and person to contact at the District regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

MM AIR-1.2: The project shall use equipment that has low diesel particulate matter (DPM) or zero emissions as follows:

- Mobile diesel-powered off-road equipment larger than 25 horsepower and operating on the site for more than two days shall meet U.S. Environmental Protection Agency (EPA) particulate matter emissions standards for Tier 4 or use engines that include particulate matter emissions control equivalent to California Air Resources Board (CARB) Level 3 verifiable diesel emission control devices (VDECs). Alternatively

(or in combination), the use of alternatively fueled or electric equipment (i.e., non-diesel) would be consistent with this requirement.

- Avoid diesel generator use by supplying line power to the construction site and limiting the use of diesel generators to no more than 50 total hours.

With implementation of the above measures, construction-period emissions would be less than significant.

Criteria Pollutant Emissions

In a 2018 decision (*Sierra Club v. County of Fresno*), the State Supreme Court determined that CEQA requires that when a project's criteria air pollutant emissions would exceed applicable thresholds and contribute a cumulatively considerable contribution to a significant cumulative regional criteria pollutant impact, the potential for the project's emissions to affect human health in the air basin must be disclosed. State and federal ambient air quality standards are health-based standards and exceedances of those standards result in continued unhealthy levels of air pollutants. As stated in the 2017 BAAQMD CEQA Air Quality Guidelines, air pollution by its nature is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. In developing thresholds of significance for airpollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project has a less than significant impact for criteria pollutants, it is assumed to have no adverse health effect.

The project would result in a less than significant project-level and cumulative operational and construction criteria pollutant impact as discussed previously. Therefore, the project would result in a less than significant health impact to sensitive receptors.

d) *Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?*

Less-Than-Significant Impact. The proposed project would result in the continued operation of Alameda Reservoir without any substantial changes in operation. The reservoir operation would not result in emissions such as odors with the potential to adversely affect any number of people. Odors from construction equipment (e.g., diesel exhaust) and materials (e.g., asphalt) may be noticeable in the project vicinity during construction of the proposed project. Project construction would be temporary and, therefore, odors generated during construction activities are not considered significant.

4.2.4 Biological Resources

Would the project:	*Potentially Significant Impact*	*Less than Significant Impact with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
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, or 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

The following section is based in part on a Biological Constraints Assessment prepared for the proposed project. The Biological Constraints Assessment is attached as Appendix B to this Initial Study/Mitigated Negative Declaration.

Regulatory Setting

Sensitive Natural Communities

Sensitive natural communities include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife (CDFW). CDFW ranks sensitive communities as

"threatened" or "very threatened" (CDFW 2021) and keeps records of their occurrences in its California Natural Diversity Database (CNDDB; CDFW 2021). Vegetation alliances are ranked 1 through 5 in the CNDDB based on NatureServe's (2021) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or U.S. Fish and Wildlife Service (USFWS) must be considered and evaluated under CEQA (CCR Title 14, Div. 6, Chap. 3, Appendix G). In addition, this general class includes oak woodlands that are protected by local ordinances under the Oak Woodlands Protection Act.

Waters of the United States, Including Wetlands

The U.S. Army Corps of Engineers (Corps) regulates "Waters of the United States" under Section 404 of the Clean Water Act (CWA). Waters of the United States are defined in the Code of Federal Regulations (CFR) as including the territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, such as tributaries, lakes and ponds, impoundments of waters of the U.S., and wetlands that are hydrologically connected with these navigable features (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Unvegetated waters including lakes, rivers, and streams may also be subject to Section 404 jurisdiction and are characterized by an ordinary high water mark (OHWM) identified based on field indicators such as the lack of vegetation, sorting of sediments, and other indicators of flowing or standing water. The placement of fill material into Waters of the United States generally requires a permit from the Corps under Section 404 of the CWA.

The Corps also regulates construction in navigable waterways of the U.S. through Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 USC 403). Section 10 of the RHA requires Corps approval and a permit for excavation or fill, or alteration or modification of the course, location, condition, or capacity of, any port, roadstead, haven, harbor, canal, lake, harbor or refuge, or enclosure within the limits of any breakwater, or of the channel of any navigable water of the United States. Section 10 requirements apply only to navigable waters themselves, and are not applicable to tributaries, adjacent wetlands, and similar aquatic features not capable of supporting interstate commerce.

Waters of the State, Including Wetlands

The term "Waters of the State" is defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The State Water Resource Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCB) protect waters within this broad regulatory scope through many different regulatory programs. Waters of the State in the context of a CEQA Biological Resources evaluation include wetlands and other surface waters protected by the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (SWRCB 2019). The SWRCB and RWQCB issue permits for the discharge of fill material into surface waters through the State Water Quality Certification Program, which fulfills requirements of Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a Clean Water Act permit are also required to obtain a Water Quality Certification. If a project does not require a federal permit but does involve discharge of dredge or fill material into surface waters of the State, the SWRCB and RWQCB may issue a permit in the form of Waste Discharge Requirements.

Sections 1600-1616 of California Fish and Game Code

Streams and lakes, as habitat for fish and wildlife species, are regulated by CDFW under Sections 1600-1616 of California Fish and Game Code (CFGC). Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term “stream”, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life [including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). The term “stream” can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG 1994). Riparian vegetation has been defined as “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself” (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

Endangered and Threatened Plants, Fish, and Wildlife

Specific species of plants, fish, and wildlife species may be designated as threatened or endangered by the federal Endangered Species Act (ESA), or the California Endangered Species Act (CESA). Specific protections and permitting mechanisms for these species differ under each of these acts, and a species’ designation under one law does not automatically provide protection under the other.

The ESA (16 USC 1531 *et seq*.) is implemented by the USFWS and the National Marine Fisheries Service (NMFS). The USFWS and NMFS maintain lists of endangered and threatened plant and animal species (referred to as "listed species"). "Proposed" or "candidate" species are those that are being considered for listing and are not protected until they are formally listed as threatened or endangered. Under the ESA, authorization must be obtained from the USFWS or NMFS prior to take of any listed species. “Take” under the ESA is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Take under the ESA includes direct injury or mortality to individuals, disruptions in normal behavioral patterns resulting from factors such as noise and visual disturbance and impacts to habitat for listed species. Actions that may result in take of an ESA-listed species may obtain a permit under ESA Section 10, or via the interagency consultation described in ESA Section 7. Federally listed plant species are only protected when take occurs on federal land.

The ESA also provides for designation of critical habitat, which are specific geographic areas containing physical or biological features “essential to the conservation of the species”. Protections afforded to designated critical habitat apply only to actions that are funded, permitted, or carried out by federal agencies. Critical habitat designations do not affect activities by private landowners if there is no other federal agency involvement.

The CESA (CFGC 2050 et seq.) prohibits a take of any plant and animal species that the CFGC determines to be an endangered or threatened species in California. CESA regulations include take protection for threatened and endangered plants on private lands, as well as extending this protection to candidate species which are proposed for listing as threatened or endangered under CESA. The definition of a "take" under CESA ("hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") only applies to direct impact to individuals, and does not extend to habitat impacts or harassment. CDFW may issue an Incidental Take Permit under CESA to authorize take if it is incidental to otherwise lawful activity and if specific criteria are met. Take of these species is also authorized if the geographic area is covered by a Natural Community Conservation Plan (NCCP), as long as the NCCP covers that activity.

Fully Protected Species and Designated Rare Plant Species

This category includes specific plant and wildlife species that are designated in the CFGC as protected even if not listed under CESA or ESA. Fully Protected Species includes specific lists of birds, mammals, reptiles, amphibians, and fish designated in CFGC. Fully protected species may not be taken or possessed at any time. No licenses or permits may be issued for take of fully protected species, except for necessary scientific research and conservation purposes. The definition of "take" is the same under the California Fish and Game Code and the CESA. By law, CDFW may not issue an Incidental Take Permit for Fully Protected Species. Under the California Native Plant Protection Act (NPPA), CDFW has listed 64 "rare" or "endangered" plant species, and prevents "take", with few exceptions, of these species. CDFW may authorize take of species protected by the NPPA through the Incidental Take Permit process, or under a NCCP.

Special Protections for Nesting Birds and Bats

The federal Bald and Golden Eagle Protection Act provides relatively broad protections to both of North America's eagle species (bald eagle [*Haliaeetus leucocephalus*] and golden eagle [*Aquila chrysaetos*)] that in some regards are similar to those provided by the ESA. In addition to regulations for special-status species, most native birds in the United States, including non-status species, have baseline legal protections under the Migratory Bird Treaty Act of 1918 and CFGC, i.e., sections 3503, 3503.5 and 3513. Under these laws/codes, the intentional harm or collection of adult birds as well as the intentional collection or destruction of active nests, eggs, and young is illegal. For bat species, the Western Bat Working Group (WBWG) designates conservation status for species of bats, and those with a high or medium-high priority are typically given special consideration under CEQA.

Species of Special Concern, Movement Corridors, and Other Special-status Species under CEQA

To address additional species protections afforded under CEQA, CDFW has developed a list of special species as "a general term that refers to all of the taxa the CNDDB is interested in tracking, regardless of their legal or protection status." This list includes lists developed by other organizations, including for example, the Audubon Watch List Species, the Bureau of Land Management Sensitive Species, and USFWS Birds of Special Concern. Plant species on the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (Inventory) with California Rare Plant Ranks (Rank) of 1 and 2, as well as some with a Rank of 3, are also considered special-status plant species and must be considered under CEQA. Some Rank 3 species and all Rank 4 species are typically only afforded protection under CEQA when such species are particularly unique to the locale (e.g., range limit, low abundance/low frequency, limited habitat) or are otherwise considered locally rare. Additionally, any species listed as sensitive within local plans, policies and ordinances are likewise considered sensitive. Movement and migratory corridors for native wildlife (including aquatic corridors) as well as wildlife nursery sites are given special consideration under CEQA.

City of Fremont Municipal Code

Tree Ordinance Chapter 18.215, "Tree Preservation" of the City of Fremont Municipal Code provides regulations designed to preserve and protect trees within the City of Fremont. Protected trees subject to permit requirements include:

- A tree having a "diameter-at-breast-height" (DBH) of 6 inches or more, and located on a vacant or undeveloped lot
- A tree having a DBH of 6 inches or more, and located on a developed lot which is the subject of a contemplated or pending application for a development project
- A native tree or tree of exceptional adaptability to the Fremont area having a DBH of 10 inches or more
- A tree having a DBH of 18 inches or more
- A tree that was required by the City to be planted or retained as mitigation for the removal of a tree
- A tree planted or retained as a condition of any City-conferred development project approval
- One of six or more trees of the same species that are located on the same lot that measure at least 6 inches DBH

Anyone who proposes to damage or remove a protected tree is required to acquire a tree removal permit from the City of Fremont. In addition to protected trees, any tree designated as a landmark tree by resolution of the Fremont City Council, as well as any tree that has been designated in the General Plan as a primary historic resource may not be damaged or removed without a permit. Native trees protected in the Tree Ordinance include oak, redwood, buckeye, madrone, sycamore, big-leaf maple, red-bud, and bay. Mitigation in the form of tree replacement is required as a condition of removal authorization in accordance with specifications listed in Chapter 18.215.080 of the City's Tree Ordinance.[11] Private trees exempt from permit requirements include:

- A tree on a developed lot not greater than 10,000 square feet in area and zoned either R-1 or single-family detached planned district, when the tree is behind the forward-most face of the front of the principal building
- A container tree
- A fruit or nut tree of a species grown for commercial food production, except a black walnut or olive tree
- A private tree or a landmark tree removed or damaged under emergency circumstances
- A tree, other than a landmark tree, removed or damaged by a public utility to the extent that such removal or damage is necessary for building or maintaining the public utility's facilities

Private trees exempt from permit requirements do not require authorization through a tree removal permit and do not require mitigation for damage, removal, or relocation. Because the trees on the property could be removed "for building or maintaining the public utility's facilities" during this project, and no trees on the site are landmarks trees, the District is exempt from this ordinance.

[11] *City of Fremont Municipal Code. Chapter 18.215. Tree Preservation. Available at:* https://www.codepublishing.com/CA/Fremont/#!/Fremont18/Fremont18215.html%2318.215 *Accessed on: August 10, 2021.*

Watercourse Protection

Chapter 18.210.120 of the City of Fremont Municipal Code stipulates regulations designed to preserve watercourses within the City of Fremont. Every person owning property through which a watercourse passes is required to keep and maintain that part of the watercourse within the property reasonably free of trash, debris, excessive vegetation, and other obstacles which would pollute, contaminate, or significantly retard the flow of water through the watercourse. All structures within or adjacent to watercourses must be maintained so that the structure will not become a hazard to the use, function, or physical integrity of the watercourse. Healthy bank vegetation cannot not be removed in such a manner that would increase the vulnerability of the watercourse to erosion. No person can commit (or cause to be committed) any of the following acts, unless a written permit has been obtained from the City manager:

- Modify the natural flow of water in a watercourse
- Carry out development within 30 feet of the center line of any creek or 20 feet of the top of bank, whichever is greater
- Deposit in, plant in, or remove any material from a watercourse, including its banks, except as required for necessary maintenance
- Construct, alter, enlarge, connect to, change, or remove and structure in a watercourse
- Place any loose or unconsolidated material along the side or within a watercourse or so close to the side as to cause a diversion of flow, or to cause a probability of such material being carried away by storm waters passing through such watercourse.

Standard Development Requirements

The City of Fremont's Municipal Code provides measures to protect special-status species within the City of Fremont. The portions of the Municipal Code that are relevant for this project are as follows:

> ***Chapter 18.218.050 Standard Development Requirements***. (b) Biology, Special-Status Species
>
> (2) Nesting Birds. New development projects with the potential to impact nesting birds through tree or shrub removal shall implement the following measures prior to removal of any trees/shrubs, grading, or ground disturbing activities:
>
> A. Avoidance. Proposed projects shall avoid construction activities during the bird nesting season (February 1st through August 31st).
>
> B. Preconstruction Surveys. If construction activities are scheduled during the nesting season, a qualified biologist shall conduct a preconstruction survey to identify any potential nesting activity. The biologist shall determine the number and time frame (prior to construction) of surveys to be conducted.
>
> C. Protective Buffer Zone(s). If the survey indicates the presence of nesting birds, protective buffer zones shall be established around the nests. The size of the buffer zone shall be recommended by the biologist in consultation with the CDFW depending on the species of nesting bird and level of potential disturbance.

D. Initiation of Construction Activities. The buffer zones shall remain in place until the young have fledged and are foraging independently. A qualified biologist shall monitor the nests closely until it is determined the nests are no longer active, at which time construction activities may commence within the buffer area.

Environmental Setting

A site visit to the study area, including the project area and an undeveloped land to the south of the project area (see Figure 10), was conducted by WRA biologist and ISA-Certified Arborist, Scott Yarger on August 4, 2021 in order to assess the project area for potential sensitive habitat areas, including wetlands and riparian habitats and to determine the potential effects on sensitive plant and animal species that are included on lists prepared by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and California Native Plant Society (CNPS), as a result the project. A complete list of observed plant and wildlife species is provided in Attachment B of Appendix B. Site photographs are provided in Attachment C of Appendix B.

The approximately 7.71-acre study area is dominated by the developed Alameda Reservoir, surrounded by mature, planted ornamental trees and shrubs enclosed with a chain-link fence around the perimeter. Just outside of the project area, there is a portion of undeveloped land which is bisected by Agua Fria Creek. This creek area is outside of the project boundary and is dominated by non-native blue gum eucalyptus trees situated above the top of bank of the steep creek banks.

The study area is surrounded on all sides by single-family residential development and surface streets, including Curtner Road to the south, Paseo Padre Parkway to the east, and north, and the cul-de-sacs of Shoshone Court, and Klamath Place to the west. In the greater landscape context, the study area occurs within the developed Interstate 880 corridor of southwestern Alameda County, and although undeveloped open space is present to the east of the project area, the project does not provide habitat connections to or from open space in the vicinity.

Sources: USDA NAIP Imagery 2020, WRA | Prepared By: njander, 8/23/2021

Figure 10. Study Area

0 100 200 Feet

N

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Vegetation Communities

The study area is composed of developed/landscaped areas, and blue gum grove, both of which are not considered sensitive vegetation communities. A perennial stream, Agua Fria Creek, crosses the southern portion of the project area, outside of the developed reservoir facility. The perennial stream and associated riparian vegetation constitute a sensitive biological resource. However, those features are outside of the limit of disturbance of the project and impacts to those features will be avoided.

Developed/landscaped areas comprise the majority of the project area including the reservoir, and surrounding asphalt access perimeter road and driveway, and graded, landscaped slopes above the reservoir. The landscaped slopes are dominated by mature ornamental and planted native trees and ornamental shrubs including Canary Island pine (*Pinus canariensis*), Aleppo pine (*Pinus halepensis*), coast live oak (*Quercus agrifolia*), oleander (*Nerium oleander*), pittosporum (*Pittosporum* sp.), and cotoneaster (*Cotoneaster* sp.). Developed/landscaped areas do not constitute a sensitive community, although several trees and shrubs provide potential nesting habitat for common nesting bird species. Mature trees within the project area are exempt from protection per the Fremont Tree Preservation Ordinance (Fremont Municipal Code Chapter 5, "Tree Preservation"). Exemptions provided in Sec. 4-5104(C)(5) include trees "other than a landmark tree[s], removed or damaged by a public utility to the extent that such removal or damage is necessary for building or maintaining the public utility's facilities" (City of Fremont 2021).

Outside of the project boundary within the study area, there is a portion of undeveloped land which is bisected by Agua Fria Creek, a perennial stream. Agua Fria Creek, its bed and banks, and surrounding mature trees, constitute a sensitive biological community, under the jurisdiction of the U.S. Army Corps of Engineers (to the OHWM), Regional Water Quality Control Board (to the top of bank), and CDFW (to the outer edge of mature trees' canopy along the top of bank). Agua Fria Creek enters the study area through an approximately four-foot diameter double concrete culvert and flows off-site through a similar double concrete culvert. The OHWM within the study area is approximately two-four feet wide, with steep banks approximately 25-30 feet wide between tops of bank.

Special-Status Species

Special-Status Plant Species

Based upon a search of the databases listed above, 51 special-status plant species have documented occurrences within the Milpitas USGS quadrangle and eight surrounding quadrangles. Out of the 51 special-status species documented, all are either unlikely or have no potential to occur within the project area for one or more of the following reasons:

- The project area is developed, and has been intensively altered from a natural state thereby eliminating the seedbank or diminishing establishment of the special-status plant(s);
- The project area does not contain hydrologic conditions (e.g., vernal pools, marshes and swamps) necessary to support the special-status plant(s);
- The project area does not contain edaphic (soil) conditions (e.g., alkaline substrates, serpentine substrate) necessary to support the special-status plant(s);
- The project area does not contain vegetation communities (e.g., chaparral, vernal pools) associated with the special-status plant(s);

Based on a lack of suitable habitat and the recent history of soil and vegetation disturbance, none of the 51 special-status plant species have the potential to occur in the project area. No special-status plant species were observed during the site visit.

Special-status Wildlife Species

Of the 37 special-status wildlife species documented in the vicinity of the project area, most are excluded from the project area based on a lack of habitat features. Features not found within the project area that are required to support special-status wildlife species include:

- Vernal pools
- Aquatic habitat (e.g., streams, rivers or ponds)
- Salt marsh
- Old growth redwood or fir forest
- Serpentine soils to support host plants
- Sandy beaches or alkaline flats
- Small mammal burrows
- Caves, mine shafts or abandoned buildings

The absence of such habitat features eliminates components critical to the survival or movement of most special-status species found in the vicinity. Species like California red-legged frog (*Rana draytonii*; CRLF) and California tiger salamander (*Ambystoma californiense*) are known to occur in the open spaces in the vicinity; however, suitable aquatic habitat and movement corridors connecting the project area to outside source populations are absent, precluding California Tiger Salamander in particular from the project area. Other species that are known to occur in the vicinity, like burrowing owl (*Athene cunicularia*), have potential to inhabit open grassland or vacant lots; however, no suitable burrows or burrow surrogates were observed in the project area and surrounding 300 feet, and the project area itself is mostly hardscaped.

It should be noted that a single occurrence of CRLF was documented in nearby Agua Caliente Creek in 1996.[12] Although this creek is presumably connected to Agua Fria Creek via a nearby culvert, CRLF are unlikely to disperse through the culvert during most portions of the year. Additionally, CRLF are unlikely to traverse the project area during upland movements in the rainy season because the fully developed and hardscaped project area provides no habitat value for this species. Source populations in the immediate vicinity are presumably scarce under current conditions based on the lack of other documented occurrences in the area. Thus, although CRLF may have a limited potential to traverse the project area during upland movements in the rainy season, it would not utilize the project area for any portion of its life history and nearby potentially suitable aquatic habitats would not be affected by proposed activities.

One special-status bird, the CDFW fully protected white-tailed kite (*Elanus leucurus*), has potential to nest in the trees surrounding the perimeter of the project area and has been observed roosting within the project area in the past (Alameda County Water District, *pers. comm.*). In addition, non-special-status

[12] *WRA, Inc. Biological Constraints Assessment. August 11, 2021*

native birds and raptors may nest on the ground, in trees, and in vegetation within the project area, or within the vegetation that surrounds the project area.

Wildlife Corridors

Wildlife movement between suitable habitat areas can occur via open space areas lacking substantial barriers. The terms "landscape linkage" and "wildlife corridor" are often used when referring to these areas. The key to a functioning corridor or linkage is that it connects two larger habitat blocks, also referred to as core habitat areas.[13] The term "wildlife corridor" is useful in the context of smaller, local area planning, where wildlife movement may be facilitated by specific local biological habitats or passages and/or may be restricted by barriers to movement. Above all, wildlife corridors must link two areas of core habitat and should not direct wildlife to developed areas or areas that are otherwise void of core habitat.[14]

Discussion of Impacts

a) *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS)?*

Less-Than-Significant with Mitigation Incorporated. Based on the highly disturbed nature of the site, and lack of associated natural vegetation communities, the project area does not provide suitable habitat for special-status plant species. Therefore, no impacts to special-status plant species are anticipated as a result of the proposed project.

One special-status wildlife species has the potential to nest within the project area, white-tailed kite, a CDFW fully protected species. Non-special-status native birds (e.g., passerines, raptors) may also nest on the ground, in trees, and in vegetation within and immediately surrounding the project area. The active nests of such birds are protected under the federal Migratory Bird Treaty Act (MBTA) as well as by California Fish and Game Codes (CFGC). If construction begins during the avian nesting season, generally February 1 to August 31, nesting birds may be impacted through the removal of nest structures or through localized disturbance sufficient to cause nest abandonment. Therefore, the project would implement the following measures contained in section 18.218.050 of the City of Fremont's Municipal Code to mitigate project impacts on nesting birds.

Implementation of Mitigation Measure BIO-1.1 would help avoid and mitigate these potential impacts and maintain compliance with the MBTA and CFGC.

Impact BIO-1: If construction of the proposed project begins during the avian nesting season, generally February 1 to August 31, nesting birds may be impacted through the removal of nest structures or through localized disturbance sufficient to cause nest abandonment.

[13] *WRA, Inc. Biological Constraints Assessment. August 11, 2021*

[14] *Ibid.*

The following mitigation measures would ensure impacts would be reduced to a less-than-significant level.

Mitigation Measure: The following mitigation measure, which is consistent with the nesting bird measures contained in section 18.218.050 of the City of Fremont's Municipal Code, shall be implemented to reduce any potential impacts to common and special-status nesting birds resulting from construction within the project area.

MM BIO-1.1: If construction activities are initiated during the nesting season (February 1 – August 31), a nesting bird survey should be conducted by a qualified biologist within 14 days prior to the start of construction within the Study Area and the immediately surrounding area. If active nests are present, exclusion buffers appropriate to the species should be established by the qualified biologist to prevent impacts to nesting birds. Buffers should be maintained until the biologist determines that young have fledged, or the nest becomes inactive.

If construction activities are initiated outside of the nesting season (September 1 – January 31), no pre-construction nesting bird surveys are necessary.

With the implementation of surveys and exclusion buffers, any potential impacts to common and special-status nesting birds resulting from construction within the project area would be reduced to a less-than-significant level.

CRLF has been documented within 1,000 feet of the project area during past survey efforts.[15] Although the most recent documentation of CRLF at this location is from 1996, it is possible that CRLF may still utilize portions of Agua Fria and Agua Caliente Creeks during aquatic portions of their life history. Although the project area provides no habitat value for CRLF, in the unlikely event that a CRLF utilizes the project area during a short distance movement in the rainy season, construction activities could result in the mortality of individual CRLF. Implementation of Mitigation Measure BIO-2.1 would help avoid and mitigate these potential impacts.

Impact BIO-2: Although the project area provides no habitat value for CRLF, in the unlikely event that a CRLF utilizes the project area during a short distance movement in the rainy season, construction activities could result in the mortality of individual CRLF.

The following mitigation measures would ensure impacts would be reduced to a less-than-significant level.

Mitigation Measure: The following mitigation measure shall be implemented to reduce any potential impacts to CRLF resulting from construction within the project area.

MM BIO-2.1: Prior to the start of work, exclusion fencing should be installed along the southern corner of the project area to prevent California red-legged frog (CRLF) from entering or traversing the site. Installation of this fencing should take place after the pre-construction survey has occurred (see below). Fencing location should include the

[15] *WRA, Inc. Biological Constraints Assessment. August 11, 2021*

area where no residential development exists along Agua Fria Creek and extend 50 feet to either side. This fencing may be installed along the existing chain link fence and should consist of a material that would not allow CRLF to pass through or become entrapped (i.e., silt fencing). Monofilament fencing should not be used, and fence material should be at least 36 inches in height. Care should be taken that conditions are not created where CRLF may become entrapped in any way within the project area. This fencing, once installed, should be maintained by work crews such that it remains functional for its intended purpose.

Within 48-hours prior to start of the installation of exclusion fencing, a pre-construction survey should be conducted by a qualified biologist to ensure no CRLF are present within potential work areas or areas where heavy machinery will be operated. This survey would consist of a visual inspection of the work area for individual CRLF. If CRLF are observed during the pre-construction survey, they should be allowed to leave the site on their own volition prior the commencement of project activities.

Crew members that will work on the project should undergo a Worker Environmental Awareness Program (WEAP) training conducted by a qualified biologist, which will cover basic identification of CRLF and recommended actions should a CRLF be discovered within a work area.

Any materials stockpiled outside of areas protected by exclusion fencings should be covered or stored in a location where they would not provide refugia to any dispersing CRLF.

With the implementation of surveys and exclusion fencing, any potential impacts to CRLF resulting from construction within the project area would be reduced to a less-than-significant level.

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 CDFW or USFWS?*

Less-Than-Significant Impact. The project area is adjacent to Agua Fria Creek, a sensitive biological resource, and surrounding mature trees along the top of bank could be considered riparian habitat which would constitute a sensitive vegetation community. However, Agua Fria Creek and its surrounding mature trees are over 50 to 75 feet away from the limit of disturbance of the project, and are separated by an elevated berm with landscaped vegetation, such that no impacts to the creek or its potentially riparian vegetation will occur as a result of the project. All project activities will occur in the developed and landscaped portion of the project area. Therefore, impacts to riparian habitat would be less than significant.

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?*

No Impact. The project will not result in the direct removal, filling, or hydrological interruption of wetlands, drainages, or other state or federally protected wetlands. The project site does not contain any jurisdictional waters or wetlands. As stated above, the project area is adjacent to

Agua Fria Creek, a sensitive biological resource, and surrounding mature trees along the top of bank could be considered riparian habitat which would constitute a sensitive vegetation community. However, Agua Fria Creek and its surrounding mature trees are over 50 to 75 feet away from the limit of disturbance of the project and are separated by an elevated berm with landscaped vegetation, such that no impacts to the creek or its potentially riparian vegetation will occur as a result of the project. All project activities will occur in the developed and landscaped portion of the project area. As a result, Agua Fria Creek, the perennial stream near the project site, would not be affected by the project.

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?*

No Impact. The project site is located in a densely developed, residential area of the City of Fremont. The project area does not function as a wildlife movement corridor. The extent and density of existing residential development surrounding the project area suggests that the site does not function as a habitat corridor for the movement of terrestrial wildlife. The small size of the project area in the context of the surrounding landscape also substantially reduces the value of the project area as a "steppingstone" corridor for avian, bat, or terrestrial species the movement of which could originate from nearby open space areas. In general, there is very little that distinguishes the project area from surrounding developed and landscaped areas in terms of providing a corridor linkage between more natural habitats. Although common urban-adapted species may utilize the project area in a similar manner to how they would utilize the surrounding residential areas, the proposed project would not change the current characteristics of the project area with regard to short distance movements. Considering these factors, no true habitat corridors exist within the project area. Therefore, no impacts would occur since the project area does not function as a wildlife corridor and no effects to wildlife corridors will result from the proposed project.

e) *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

No Impact. The City of Fremont has a tree protection ordinance, but the project is exempt from it. Therefore, implementation of the proposed project would not conflict with any local biological protection policies or ordinances, including tree ordinances and there would be no impact.

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?*

No Impact. The project area is not within the area of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. As a result, the project would not conflict with the provisions of an adopted HCP, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. Therefore, no impacts would occur.

4.2.5 Cultural Resources

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

This section is based in part on a Phase I Archaeological Cultural Resources Investigation prepared by Pacific Legacy, Inc. (Pacific Legacy). The technical memorandum contains sensitive cultural and tribal cultural resources information and is available for review upon request to qualified individuals only.

Regulatory Setting

National Historic Preservation Act

Federal protection is legislated by the National Historic Preservation Act of 1966 (NHPA) and the Archaeological Resource Protection Act of 1979. These laws maintain processes for the determination of the effects on historical properties eligible for listing in the National Register of Historic Places (NRHP). Section 106 of the NHPA and related regulations (36 Code of Federal Regulations [CFR] Part 800) constitute the primary federal regulatory framework guiding cultural resources investigations and require consideration of effects on properties that are listed or eligible for listing in the NRHP. Impacts to properties listed in the NRHP must be evaluated under CEQA (14 California Code of Regulations § 15064.5).

California Register of Historical Resources

The California Register of Historical Resources (CRHR) is administered by the State Office of Historic Preservation and encourages protection of resources of architectural, historical, archeological, and cultural significance. The CRHR identifies historic resources for state and local planning purposes and affords protections under CEQA. Under Public Resources Code Section 5024.1(c), a resource may be eligible for listing in the CRHR if it meets any of the NRHP criteria.[16]

Historical resources eligible for listing in the CRHR must meet the significance criteria described previously and retain enough of their historic character or appearance to be recognizable as historical resources and

[16] *California Office of Historic Preservation. "CEQA Guidelines Section 15064.5(a)(3) and California Office of Historic Preservation Technical Assistance Series #1." Accessed August 18, 2021. https://ohp.parks.ca.gov/pages/1054/files/ts01ca.pdf*

to convey the reasons for their significance. A resource that has lost its historic character or appearance may still have sufficient integrity for the CRHR if it maintains the potential to yield significant scientific or historical information or specific data.

The concept of integrity is essential to identifying the important physical characteristics of historical resources and, therefore, in evaluating adverse changes to them. Integrity is defined as "the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance." The processes of determining integrity are similar for both the CRHR and NRHP and use the same seven variables or aspects to define integrity that are used to evaluate a resource's eligibility for listing. These seven characteristics include 1) location, 2) design, 3) setting, 4) materials, 5) workmanship, 6) feeling, and 7) association.

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act applies to both state and private lands. The act requires that upon discovery of human remains, construction or excavation activity must cease, and the county coroner be notified.

Public Resources Code Sections 5097 and 5097.98

Section 15064.5 of the CEQA Guidelines specifies procedures to be used in the event of an unexpected discovery of Native American human remains on non-federal land. These procedures are outlined in Public Resources Code Sections 5097 and 5097.98. These codes protect such remains from disturbance, vandalism, and inadvertent destruction, establish procedures to be implemented if Native American skeletal remains are discovered during construction of a project, and establish the Native American Heritage Commission (NAHC) as the authority to resolve disputes regarding disposition of such remains.

Pursuant to Public Resources Code Section 5097.98, in the event of human remains discovery, no further disturbance is allowed until the county coroner has made the necessary findings regarding the origin and disposition of the remains. If the remains are of a Native American, the county coroner must notify the NAHC. The NAHC then notifies those persons most likely to be related to the Native American remains. The code section also stipulates the procedures that the descendants may follow for treating or disposing of the remains and associated grave goods.

City of Fremont Municipal Code

The City of Fremont's Municipal Code provides measures to protect cultural and tribal cultural resources prior to and during project construction. The portions of the Municipal Code that are relevant for this project are as follows:

> ***Chapter 18.218.050 Standard Development Requirements***. (d) Cultural and Tribal Cultural Resources:
>
> (1) Notification, Affiliated California Native American Tribes. Within 14 days of determining that an application for a project is complete or a decision by the City is made to undertake a project, the City shall provide formal notification to the designated contact or a tribal representative of traditionally and culturally affiliated California Native American tribes that have requested to receive such notice from the City. The written notification shall include a

brief description of the proposed project and its location, project contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to Cal. Pub. Res. Code § 64352.4.

(2) Accidental Discovery of Cultural Resources. The following requirements shall be met to address the potential for accidental discovery of cultural resources during ground disturbing excavation:

A. The project proponent shall include a note on any plans that require ground disturbing excavation that there is a potential for exposing buried cultural resources.

B. The project proponent shall retain a professional archaeologist to provide a preconstruction briefing to supervisory personnel of any excavation contractor to alert them to the possibility of exposing buried cultural resources, including significant prehistoric archaeological resources. The briefing shall discuss any cultural resources, including archaeological objects, that could be exposed, the need to stop excavation at the discovery, and the procedures to follow regarding discovery protection and notification of the project proponent and archaeological team.

C. In the event that any human remains, or historical, archaeological or paleontological resources are discovered during ground disturbing excavation, the provisions of CEQA Guidelines Sections 15064.5(e) and (f), and of subsection (d)(2)(C) of this section, requiring cessation of work, notification, and immediate evaluation shall be followed.

D. If resources are discovered during ground disturbing activities that may be classified as historical, unique archaeological, or tribal cultural resources, ground disturbing activities shall cease immediately, and the planning manager shall be notified. The resources will be evaluated by a qualified archaeologist and, in the planning manager's discretion, a tribal cultural monitor. If the resources are determined to be historical, unique archaeological, or tribal cultural resources, then a plan for avoiding the resources shall be prepared. If avoidance is infeasible, then all significant cultural materials recovered shall be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards. Any plan for avoidance or mitigation shall be subject to the approval of the planning manager.

E. As used herein, "historical resource" means a historical resource as defined by CEQA Guidelines Section 15064.5(a); "unique archaeological resource" means unique archaeological resource as defined by Cal. Pub. Res. Code § 21083.2(g); and "tribal cultural resource" means tribal cultural resource as defined by Cal. Pub. Res. Code § 21074. Collectively, these terms describe "significant cultural materials."

(3) Archaeological Monitoring. New development projects with the potential to impact subsurface archaeological or cultural resources through grading, demolition, and/or new construction, if so determined by a site-specific study prepared by an archaeologist that meets the Secretary of the Interior's professional qualifications standards for archaeology, shall implement the following measures prior to any grubbing, grading, or ground disturbing activities:

A. An archaeologist shall monitor construction-related ground disturbance within the vicinity of project site features identified as having the potential to include subsurface archaeological, cultural, or tribal cultural resources that could be impacted through

ground-disturbing activities related to the construction of the project. Monitoring should continue until the archaeologist determines that there is a low potential for encountering subsurface archaeological, cultural, or tribal cultural resources. An archaeologist that meets the Secretary of the Interior's professional qualifications standards for archaeology shall oversee the monitoring. Any compensation for time and expenses related to this activity shall be borne by the project proponent.

(4) Tribal Cultural Monitoring and Training. Should the city receive a formal written request by the designated contact or a tribal representative of a traditionally and culturally affiliated California Native American tribe pursuant to Cal. Pub. Res. Code § 64352.4 to have a tribal cultural representative present at the project site before or during construction activities to identify or monitor sites or objects of significance to Native Americans or to provide construction worker tribal cultural resources awareness training including applicable regulations and protocols for avoidance, confidentiality, and culturally appropriate treatment, the project proponent shall honor that request and include tribal cultural monitoring or training as a component of their project. The tribal cultural representative shall have the ability to request that work be stopped, diverted, or slowed if sites or objects of significance to Native Americans are encountered within the direct impact area and shall be consulted for recommendations regarding the appropriate treatment of such sites or objects. Any compensation for time and expenses related to this activity shall be borne by the project proponent.

Environmental Setting

A Technical Memorandum was prepared for the proposed project which presents the results of Phase I Archaeological Cultural Resources Investigation by Pacific Legacy.

The investigation revealed that there were not previously identified archaeological or built environment resources within the project area. Pacific Legacy performed an on-site pedestrian survey and did not observe intact prehistoric or historic period features, deposits, or artifacts. The NAHC Sacred Lands File search did identify one cultural resource within 0.25-mile of the project. The site vicinity is noted as being archaeologically sensitive due to the proximity to Agua Fria Creek.

Bay Area creeks flood periodically covering their vicinity with flood sediments and, as a result, may cover any nearby archaeological deposits. Over time, these sites can become deeply buried. Although the identified cultural resource is not located on-site, there could be other unidentified, deeply buried site deposits in the project vicinity where ancient creek channels, that have shifted over time, once flowed.

Native American communities historically used lands adjacent to creeks and rivers to live, camp, source and process food and other resources. The project site is located within the Agua Fria Creek area. However, subsurface soils on-site have been previously disturbed for the construction of the existing Alameda Reservoir structure. Therefore, archaeological sensitivity on-site is considered low.

Discussion of Impacts

a) Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?

Less-Than-Significant Impact. The reservoir was constructed in 1972 and is 49 years old. This project will replace the roof and modify the exterior of the reservoir to add buttresses for

structural stability. These changes would not modify the main reservoir structure and would not substantially change the look of the reservoir, which would also be shielded from public views by trees. This reservoir design is very common and most water agencies in the Bay Area have the same style of reservoir. The District has a second nearly identical reservoir called Decoto Reservoir. The reservoir was not formally assessed for historical significance; however, the proposed project is not expected to significantly change the character or construction of the reservoir.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?

Less-Than-Significant with Mitigation Incorporated. The Alameda Reservoir was built in 1972 before construction projects consistently received archaeological review, and much of the project area is paved or covered by the reservoir. As described above in the Environmental Setting, the project site is located within 0.25-mile of a nearby prehistoric resource and is adjacent to Agua Fria Creek. Although unlikely, there is potential for the discovery of buried site deposits near creek confluences. The project may potentially impact undiscovered archaeological resources during ground-disturbing activities. Therefore, the project would implement the following measures contained in section 18.218.050 of the City of Fremont's Municipal Code to mitigate potential impacts to undiscovered archaeological resources.

Impact CUL-1: Construction of the proposed project would involve some ground-disturbing activities such as pier drilling and grading and surface excavation, which have the potential to unearth or adversely impact previously unidentified historical and/or archeological resources.

The following mitigation measures would ensure impacts would be reduced to a less-than-significant level.

Mitigation Measures: The following mitigation measures shall be implemented to reduce impacts to archaeological resources that may be present on the site.

MM CUL-1.1: The following measures shall be implemented during ground-disturbing excavation:

- The District shall include a note on any plans that require ground disturbing excavation that there is a potential for exposing buried cultural resources.
- The District shall retain a professional archaeologist to provide a preconstruction briefing to supervisory personnel of any excavation contractor to alert them to the possibility of exposing buried cultural resources, including significant prehistoric archaeological resources. The briefing shall discuss any cultural resources, including archaeological objects, that could be exposed, the need to stop excavation at the discovery, and the procedures to follow regarding discovery protection and notification of the District and archaeological team.

- In the event that any human remains, or historical, archaeological or paleontological resources are discovered during ground disturbing excavation, the provisions of California Environmental Quality Act (CEQA) Guidelines Sections 15064.5(e) and (f), and of subsection (d)(2)(C) of this section, requiring cessation of work, notification, and immediate evaluation shall be followed.
- If resources are discovered during ground disturbing activities that may be classified as historical, unique archaeological, or tribal cultural resources, ground disturbing activities shall cease immediately, and the District shall be notified. The resources will be evaluated by a qualified archaeologist and, in the District's discretion, a tribal cultural monitor. If the resources are determined to be historical, unique archaeological, or tribal cultural resources, then a plan for avoiding the resources shall be prepared. If avoidance is infeasible, then all significant cultural materials recovered shall be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards. Any plan for avoidance or mitigation shall be subject to the approval of the District.

MM CUL-1.2: An archaeologist shall monitor construction-related ground disturbance within the vicinity of project site features identified as having the potential to include subsurface archaeological, cultural, or tribal cultural resources that could be impacted through ground-disturbing activities related to the construction of the project. Monitoring should continue until the archaeologist determines that there is a low potential for encountering subsurface archaeological, cultural, or tribal cultural resources. An archaeologist that meets the Secretary of the Interior's professional qualifications standards for archaeology shall oversee the monitoring. Any compensation for time and expenses related to this activity shall be borne by the District.

With the implementation of the MM CUL-1.1 and MM CUL-1.2, the proposed project would have a less than significant impact on subsurface cultural resources.

c) *Disturb any human remains, including those interred outside of dedicated cemeteries?*

Less-Than-Significant Impact with Mitigation Incorporated. As a result of the original construction activities for Alameda Reservoir in 1972, subsurface soils on-site have been previously disturbed. However, it is possible that unknown and unrecorded human remains could be discovered during ground disturbing construction activities.

Impact CUL-2: Construction of the proposed project would involve some ground-disturbing activities such as drilling and excavation, which have the potential to unearth or adversely impact previously identified historical and/or archeological resources.

Mitigation Measure: The following mitigation measure shall be implemented to reduce impacts to undiscovered human remains that may be present on the site.

MM CUL-2.1: If any human remains are found during any field investigations, grading, or other construction activities, all provisions of California Health and Safety Code Sections 7054 and 7050.5 and Public Resources Code Sections 5097.9 through 5097.99, as amended per Assembly Bill 2641, shall be followed. In the event of the discovery of human remains during construction, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains, and the District shall immediately notify the Alameda County Coroner/ Medical Examiner's Office (the Coroner). The Coroner will make a determination as to whether the remains are Native American.

If the remains are believed to be Native American, the Coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC will then designate a Most Likely Descendant (MLD). The MLD will inspect the remains and make a recommendation on the treatment of the remains and associated artifacts. If the District concurs with the recommendation of the MLD, the District will work with the MLD and the Coroner to carry it out.

If one of the following conditions occurs, the Alameda County Water District or their authorized representative shall work with the Coroner to reinter the Native American human remains and associated grave goods with appropriate dignity in a location not subject to further subsurface disturbance:

- The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being notified by the Commission.
- The descendant identified fails to make a recommendation; or
- The District or his/her authorized representative rejects the recommendation of the descendant, and the mediation by the NAHC fails to provide measures acceptable to the landowner.

With the implementation of Mitigation Measure CUL-2.1, the proposed project would result in less than significant impacts to unknown human remains.

4.2.6 Energy

Would the project:	*Potentially Significant Impact*	*Less than Significant Impact with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
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?	☐	☐	☒	☐

Regulatory Setting

Federal and State

Renewables Portfolio Standard Program

In 2002, California established its Renewables Portfolio Standard Program, with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent of retail sales by 2010. In 2008, Executive Order S-14-08 was signed into law, requiring retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. In October 2015, Governor Brown signed SB 350 to codify California's climate and clean energy goals. A key provision of SB 350 requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from renewable sources by 2030. SB 100, passed in 2018, requires 100 percent of electricity in California to be provided by 100 percent renewable and carbon-free sources by 2045.

Environmental Setting

Total energy usage in California was approximately 7,875 trillion British thermal units (Btu) in the year 2018, the most recent year for which this data was available.[17] Out of the 50 states, California is ranked second in total energy consumption and 46th in energy consumption per capita. The breakdown by sector was approximately 18 percent (1,440 trillion Btu) for residential uses, 19 percent (1,510 trillion Btu) for commercial uses, 23 percent (1,847 trillion Btu) for industrial uses, and 39 percent (3,078 trillion Btu) for transportation.[18] This energy is primarily supplied in the form of natural gas, petroleum, nuclear electric power, and hydroelectric power.

[17] *United States Energy Information Administration. "State Profile and Energy Estimates, 2018." Accessed August 4,*

[18] *Ibid.*

Electricity

Electricity in Alameda County in 2019 was consumed primarily by the commercial sector (72 percent), followed by the residential sector consuming 28 percent. In 2019, a total of approximately 10,684 gigawatt hours (GWh) of electricity was consumed in Alameda County.[19]

East Bay Community Energy (EBCE) and/or PG&E is the electricity provider for Alameda County. EBCE and/or PG&E sources the electricity and PG&E delivers it to customers over their existing utility lines. EBCE customers are automatically enrolled in Brilliant 100, which provides electricity from 100 percent carbon-free sources (hydropower).[20] Customers also have the option to enroll in Renewable 100, which sources energy from 100 percent renewable sources (small hydroelectric, solar, and wind), and Bright Choice, which is at least 38 percent renewable and an additional 47 percent carbon-free.

Fuel and Motor Vehicles

In 2019, 15.4 billion gallons of gasoline were sold in California.[21] The average fuel economy for light-duty vehicles (autos, pickups, vans, and sport utility vehicles) in the United States has steadily increased from about 13.1 miles per gallon (mpg) in the mid-1970s to 24.9 mpg in 2019.[22] Federal fuel economy standards have changed substantially since the Energy Independence and Security Act was passed in 2007. That standard, which originally mandated a national fuel economy standard of 35 miles per gallon by the year 2020, was updated in March 2020 to require all cars and light duty trucks achieve an overall industry average fuel economy of 40.4 mpg by model year 2026. [23][24]

Discussion of Impacts

a) Result in a 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 involve the removal and replacement of the roof and roof framing system, and seismic upgrades to the Alameda Reservoir. . Energy requirements throughout the construction phase include energy for the manufacturing and transportation of building materials, preparation of the site, and use of construction equipment and vehicles.

The operation of the project would have new electricity demands for lighting and operating the internal ventilation system. The project would not increase the capacity nor change the

[19] *California Energy Commission. Energy Consumption Data Management System. "Electricity Consumption by County." Accessed August 4, 2021. http://ecdms.energy.ca.gov/elecbycounty.aspx.*

[20] *East Bay Community Energy. "Power Mix". https://ebce.org/our-power-mix/index.html/ Accessed August 4, 2021.*

[21] *California Department of Tax and Fee Administration. "Net Taxable Gasoline Gallons." Accessed August 4, 2021. https://www.cdtfa.ca.gov/dataportal/dataset.htm?url=VehicleTaxableFuelDist.*

[22] *United States Environmental Protection Agency. "The 2020 EPA Automotive Trends Report: Greenhouse Gas Emissions, Fuel Economy, and Technology since 1975." January 2021.*

[23] *United States Department of Energy. Energy Independence & Security Act of 2007. Accessed August 4, 2021. http://www.afdc.energy.gov/laws/eisa.*

[24] *Public Law 110–140—December 19, 2007. Energy Independence & Security Act of 2007. Accessed August 4, 2021. http://www.gpo.gov/fdsys/pkg/PLAW-110publ140/pdf/PLAW-110publ140.pdf.*

operations of the Alameda Reservoir. For these reasons, the rehabilitated reservoir will not result in wasteful, inefficient, or unnecessary consumption of energy.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less-Than-Significant Impact. As described above, the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy during any project phase. The project would allow the continued operation of critical water supply infrastructure by the District. After construction, the project would generally be similar to existing conditions except for operation of the new ventilation system. Electricity demands on-site would be slightly increased due to operation of new ventilation system, but will be adequately served by the current provider (EBCE and/or PG&E), who is required to meet state and local plans for meeting renewable energy goals. Therefore, the project would not conflict with state or local plan for renewable energy or energy efficiency. The impact would be less than significant.

4.2.7 Geology and Soils

Would the project:	*Potentially Significant Impact*	*Less than Significant Impact with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
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?	☐	☐	☒	☐
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, creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

The following section is based in part on a Geotechnical Report which was prepared for the proposed project by Cornerstone Earth Group. The Geotechnical Report is attached as Appendix C to this Initial Study/Mitigated Negative Declaration.

Regulatory Setting

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed following the 1971 San Fernando earthquake. The act regulates development in California near known active faults due to hazards associated with surface fault ruptures. Alquist-Priolo maps are distributed to affected cities, counties, and state agencies for their use in planning and controlling new construction. Areas within an Alquist-Priolo Earthquake Fault Zone require special studies to evaluate the potential for surface rupture to ensure that no structures intended for human occupancy are constructed across an active fault.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (SHMA) was passed in 1990 following the 1989 Loma Prieta earthquake. The SHMA directs the California Geological Survey (CGS) to identify and map areas prone to liquefaction, earthquake-induced landslides, and amplified ground shaking. CGS has completed seismic hazard mapping for the portions of California most susceptible to liquefaction, landslides, and ground shaking, including the central San Francisco Bay Area. The SHMA requires that agencies only approve projects in seismic hazard zones following site-specific geotechnical investigations to determine if the seismic hazard is present and identify measures to reduce earthquake-related hazards.

California Building Standards Code

The California Building Code (CBC) prescribes standards for constructing safe buildings. The CBC contains provisions for earthquake safety based on factors including occupancy type, soil and rock profile, ground strength, and distance to seismic sources. The CBC requires that a site-specific geotechnical investigation report be prepared for most development projects to evaluate seismic and geologic conditions such as surface fault ruptures, ground shaking, liquefaction, differential settlement, lateral spreading, expansive soils, and slope stability. The CBC is updated every three years.

California Division of Occupational Safety and Health Regulations

Excavation, shoring, and trenching activities during construction are subject to occupational safety standards for stabilization by the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) under Title 8 of the California Code of Regulations and Excavation Rules. These regulations minimize the potential for instability and collapse that could injure construction workers on the site.

Public Resources Code Section 5097.5

Paleontological resources are the fossilized remains of organisms from prehistoric environments found in geologic strata. They range from mammoth and dinosaur bones to impressions of ancient animals and plants, trace remains, and microfossils. These materials are valued for the information they yield about the history of the earth and its past ecological settings. California Public Resources Code Section 5097.5 specifies that unauthorized removal of a paleontological resource is a misdemeanor. Under the CEQA

Guidelines, a project would have a significant impact on paleontological resources if it would disturb or destroy a unique paleontological resource or site or unique geologic feature.

Local

City of Fremont Municipal Code

The City of Fremont's Municipal Code provides measures to address seismic-related impacts on people or structures resulting from new development projects.[25] The portions of the Municipal Code that are relevant for this project are as follows:

> ***Chapter 18.218.050 Standard Development Requirements***. (e) Geology and Soils
>
> (1) New development projects with the potential to expose people or structures to substantial adverse effects, including the risk of loss, injury, or death due to seismic activity and potential seismic-related ground shaking including liquefaction, if so determined by a site-specific geotechnical study prepared to the satisfaction of the city engineer or his/her designee, shall implement the following measures prior to or during project construction, as applicable.
>
> A. The project geotechnical consultant shall review all geotechnical aspects of the project building and grading plans (i.e., site preparation and grading, site drainage improvements, and design parameters for foundations, and retaining walls). The consultant shall verify that their recommendations, including those regarding the need for further evaluation for potential liquefaction and the presence and lateral extent of any undocumented fill as well as laboratory testing for corrosive soil, have been properly conducted and any necessary design measures are incorporated into the construction plans. The results of the plan review shall be summarized by the geotechnical consultant in a letter and submitted to the city engineer prior to issuance of building permits for the project.
>
> B. The project geotechnical consultant shall inspect, test (as needed), and approve all geotechnical aspects of project construction. The inspections shall include, but not necessarily be limited to: site preparation and grading, site surface and subsurface drainage improvements, and excavations for foundations and retaining walls prior to the placement of steel and concrete. The results of these inspections and the as-built conditions of the project shall be summarized by the project geotechnical consultant in a letter and submitted to the city building official/city engineer for review prior to final (as-built) project approval.

[25] *"Development project" shall mean the placement or erection of any solid material or structure; discharge or disposal of any dredged material or any gaseous, liquid, solid or thermal waste; grading, removing, dredging, mining or extraction of any soil or materials; change in the density or intensity of use of land including, but not limited to, amendments to the general plan and zoning ordinance or subdivision pursuant to the State Subdivision Map Act (commencing with Cal. Gov't Code § 66410), and any other division of land, including lot splits, except where the land division is brought about in connection with the purchase of such land by a public agency for public recreational use; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition or alteration of the size of any structure, including any facility of any private, public or municipal utility; and the removal of any major vegetation. As used in the municipal code, "structure" includes, but is not limited to, any building, road, pipe, flume, conduit, siphon, aqueduct, telephone line, and electrical power transmission and distribution line. A project, as defined in Cal. Gov't Code § 65931, is included within this definition.*

To further address and reduce impacts related to potential seismic activity and liquefaction, all grading, foundations, and structures for the proposed project would be required to be engineered and designed in conformance with applicable geotechnical and soil stability standards as required by the California Building Code (CBC), as adopted by the City.

City of Fremont 2030 General Plan

The proposed project would be subject to the land use policies of the City of Fremont's General Plan, as shown in Table 8 below:

Table 8: City of Fremont 2030 General Plan Policies

Policy	Description
Policy 10-1.2	• Require proposed development in areas of potential land instability to evaluate and sufficiently mitigate such hazards through site planning, appropriate construction techniques, building design and engineering
Policy 10.1-3	• Prohibit excessive and unnecessary grading activity, especially in areas of potential landslide risk as identified on State and local geologic hazard area maps or as identified during site reconnaissance.
Policy 10-2.1	• Regulate new development and redevelopment in a manner to minimize potential damage and hazards related to expected seismic activity.
Policy 10.2-4	• Locate critical facilities and systems vital to public health and safety (e.g., water, power and waste disposal systems, police and fire stations, hospitals, bridges and communication facilities) away from the areas of greatest seismic hazards and land instability and require that such facilities are designed to mitigate any hazards associated with their sites.

Environmental Setting

The project area is located within the Coast Ranges geomorphic province. This province consists of northwest trending mountain ranges and valleys that extend from southern California to Oregon. The bedrock within the Coast Ranges consists of a belt of sedimentary, volcanic and metamorphic rocks that have been deformed by stresses concentrated along the San Andreas fault zone. Valleys within the Coast Ranges are filled with Holocene age alluvium and older sedimentary deposits. According to the California Geological Survey, the Alameda Reservoir is located within the Milpitas 7.5-minute topographic quadrangle.

The reservoir is surrounded by an access road that is paved with asphalt. Surface pavements generally consist of two to four inches of asphalt concrete over five to eight inches of aggregate base. The ground surface slopes approximately five to 15 feet at an inclination of 2:1 (horizontal: vertical) on the north, south, and east sides of the reservoir. The perimeter access road has an elevation of approximately 210 feet. Agua Fria Creek flows just south of the site in a natural channel and is incised approximately 10 to 12 feet deep in the project vicinity.

Soils

Moderately expansive surficial soils generally blanket the project site. Expansive soils can undergo significant volume change with changes in moisture content. They shrink and harden when dried and

expand and soften when wetted. The soils encountered above groundwater at the site were predominantly stiff to very stiff clays.

Groundwater

According to the Geotechnical Report (Appendix C), groundwater was encountered at a depth of approximately 7.5 feet below current grades. Based on historic high groundwater maps, groundwater is mapped at greater than 40 feet deep. This mapping indicates that local groundwater is likely perched within shallow sand and gravel layers and is likely influenced by seasonal water levels in Agua Fria Creek. Fluctuations in subsurface water levels can occur due to variations in rainfall, temperature, underground drainage patterns, and other factors.

Seismicity

The San Francisco Bay Area is one of the most seismically active regions of the United States. An earthquake of moderate to high magnitude generated within the San Francisco Bay region could cause considerable ground shaking at the project site. The degree of shaking is dependent on the magnitude of the event, the distance to its zone of rupture and local geologic conditions.

The faults considered capable of generating significant earthquakes are generally associated with the well-defined areas of crustal movement, which trend northwesterly. Table 9 below presents the state-considered active faults within 16 miles of the site.

Table 9: Approximate Fault Distances

Fault Name	Distance (Miles)
Hayward (total length)	1.6
Hayward (southeast extension)	2.4
Calaveras	4.6
Monte Vista-Shannon	15.1

The fault zones closest to the project site are the Hayward Fault and the Calaveras Fault. The Hayward Fault runs north-south through the City of Fremont, bisecting the City generally along the I-680 corridor.[26] The project site is located approximately 1.6 miles away from the Hayward fault and 0.3-mile east of the Hayward fault zone. The project site is not located within the mapped Alquist-Priolo Earthquake Fault Zone of the Hayward fault.[27]

Liquefaction

Soil liquefaction is a condition where saturated granular soils near the ground surface undergo a substantial loss of strength during a seismic event. Loose, water-saturated soils are transformed from a

[26] *City of Fremont. General Plan 2030 Safety Element. December 2011.*

[27] *California Geologic Survey, 2003, State of California Seismic Hazard Zones, Milpitas 7.5-Minute Quadrangle, California: Seismic Hazard Zone Report 051.*

solid to a liquid state during ground shaking. Soils most susceptible to liquefaction are loose, uniformly saturated, fine-grained sands that lie close to the ground surface. The project site is not located within a state-designated Liquefaction Hazard Zone.[28]

Lateral Spreading

Lateral spreading is a type of ground failure related to liquefaction. It consists of the lateral movement of saturated soil deposits towards an open face. The open bank of Agua Fria Creek, one such area located to the south of the project site, is not within project boundaries. The site is not considered to be a landslide hazard zone.[29]

Discussion of Impacts

a-i) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: 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?

Less-Than-Signficant Impact. The proposed project would seismically strengthen the existing Alameda Reservoir, a facility with no people at it except during brief daily checks and mainenance activities. As discussed above, the project is not located within an Alquist-Priolo earthquake fault hazard zone. However, the project area is located in a seismically-active region and in proximity to the Hayward fault. As a result, the project could experience very strong ground shaking during the lifetime of the proposed project. However, according to the Geotechnical Report prepared for the project, no known surface expression of fault traces cross the project site. Therfore, fault rupture hazard is not a geologic hazard at the site. Moreover, the reservoir's structural modifications would be designed in accordance with applicable seismic provisions of the CBC. As such, impacts would be less than signficant.

a-ii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Strong seismic ground shaking?

Less-Than-Signficant Impact. The project area is located in a seismically-active region and is approximately 0.3-mile east of the Hayward fault zone. As a result, the project could experience very strong ground shaking during the lifetime of the proposed project. The purpose of the project is to seismically retrofit Alameda Reservoir in order to improve the structural performance of the reservoir and meet the current 2019 CBC standards.

Therefore, the project would improve the seismic safety and performance of the reservoir and impacts would be less than significant.

a-iii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Seismic-related ground failure, including liquefaction?

[28] *Ibid.*

[29] *Ibid.*

Less-Than-Significant Impact. As discussed above, the project site is not located within a state-designated Liquefaction Hazard Zone[30]. Furthermore, according to the Geotechnical Report, the primary soils encountered during the geotechnical investigation were stiff cohesive and medium-dense to dense granular soils. The screening of the site for liquefaction indicates a low potential for liquefaction hazards. Therefore, the impact of seismic-related ground failure, including liquefaction, is less than significant.

a-iv) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Landslides?

Less-Than-Significant Impact. The project site is located within a developed urban area and is not located within an earthquake-induced or rainfall-induced landslide zone, according to the Association of Bay Area Governments (ABAG).[31] Therefore, the proposed project is not likely to adversely impact persons or structures due to landslides. Impacts would be less than significant.

b) Result in substantial soil erosion or the loss of topsoil?

Less-Than-Significant Impact. The potential for soil erosion exists during the period of earthwork activities and between the time when earthwork is completed and new vegetation is established or hardscape is installed. As previously described, the project site is located on relatively level terrain and is currently developed with the existing Alameda Reservoir facility. The project's improvements to Alameda Reservoir would not exacerbate substantial soil erosion or the loss of topsoil. Project construction activities, however, would expose soil to the erosive forces of wind and water. As discussed in Hydrology and Water Quality, the project would employ BMPs during construction to reduce erosion and associated impacts to water quality to a less than significant level.

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?

Less-Than-Significant Impact. The project site is not within a mapped seismic landslide hazard zone[32]. No open face waterbodies are located on the property. The project's reservoir improvements would not exacerbate on- or off-site landslide, lateral spreading, subsidence, or liquefaction. Consistent with the requirements of the City of Fremont and existing regulations, the project would conform to the standard engineering and building practices and techniques specified in the CBC. The proposed structure would be designed and constructed in accordance with the recommendations of a design-level Geotechnical Report prepared for the site (refer to Appendix C), which identifies the specific design features related to geologic and seismic conditions.

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[30] *Ibid.*

[31] *Association of Bay Area Governments (ABAG). Interactive Landslide Hazards Map. Available online at: mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8 Accessed on August 3, 2021.*

[32] *United States Geological Survey. US. Land Slide Inventory Maps. Available at:* https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=ae120962f459434b8c904b456c82669d *Accessed on: August 10, 2021.*

Groundwater at the project site has been encountered from 7.5 feet below current grades. The below grade structure would require soil excavation to approximately two feet bgs. The Geotechnical Report notes that historic groundwater is mapped at greater than 40 feet deep, which indicates that local groundwater is likely perched within shallow sand and gravel layers and is likely influenced by seasonal water levels in Agua Fria Creek. As noted in the Geotechnical Report, groundwater levels on the site may exist at shallower depths than noted in borings on the site with seasonal fluctuations. If groundwater is encountered during construction, dewatering and special soil preparation may be necessary to allow construction in a dry condition and on a stable subgrade. Dewatering activities that lower groundwater level could increase the effective stress on underlying sediments, potentially resulting in ground settlements and damage to structures, roadways, and/or utilities.

A permanent subdrainage system was installed when the reservoir was originally constructed in the 1970's to mitigate potential impacts due to shallow groundwater. The system was installed to help stabilize the reservoir when emptied during maintenance. As such, the Geotechnical Report requires that applicable dewatering protocols, including installation of a subsurface drainage system, shall be implemented during foundation retrofit to reduce potential impacts to the reservoir liner and to reduce impacts during any required foundation construction or excavations.

Furthermore, according to the Geotechnical Report, the soils encountered above groundwater at the project site were predominantly stiff to very stiff clays, and the potential for significant differential seismic settlement affecting the proposed improvements was deemed low. Therefore, impacts from dewatering during construction would be less than significant.

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

Less-Than-Significant Impact. The project site contains soils with moderate plasticity and expansive potential to wetting and drying cycles. Since moderately expanisve surfical soils blanket the site, to reduce the potential for damage to the planned reservoir improvements, footings shall extend below the zone of seasonal moisture fluctuation. In addition, it is important to limit moisture changes in the surficial soils by using positive drainage away from structures as well as limiting landscaping watering. The proposed project would be designed and constructed using standard construction methods and would be in compliance with the CBC. Adherence to the CBC requirements would ensure that geotechnical design of the proposed project would reduce potential impacts related to expansive soils to a less-than-significant level. Therefore, expansive soils, would not pose a risk to life or property, and this impact would be less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. The proposed project would seismically retrofit and upgrade the Alameda Reservoir. Septic tanks or alternative wastewater disposal systems are not proposed by the project. Therefore, there would be no impact to soils and wastewater disposal.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less-Than-Significant Impact with Mitigation Incorporated. Paleontological resources are typically associated with bedrock formations which are not close to the surface of the project

area. In addition, subsurface soils on-site have been previously disturbed during construction of the existing facilities. For these reasons, the likelihood of encountering unknown paleontological resources or geological features on-site is low. However, construction activities may result in accidental destruction or disturbance of unknown paleontological resources or geologic features. The following measures shall be incorporated to address potential impacts to paleontological resources:

Impact GEO-1: The proposed project may result in significant impacts to paleontological resources.

Mitigation Measure: The proposed project would implement the following mitigation measures to reduce impacts to paleontological resources during project construction activities to a less than significant level.

MM GEO-1.1: In the event that a fossil is discovered during construction of the project, excavations within 50 feet of the find shall be temporarily halted or delayed until the discovery is examined by a qualified paleontologist, in accordance with Society of Vertebrate Paleontology standards. The District shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. If the find is determined to be significant and if avoidance is not feasible, the paleontologist shall design and carry out a data recovery plan consistent with the Society of Vertebrate Paleontology standards. The plan must include preparation, identification, cataloguing, and curation of any salvaged specimens.

With implementation of MM GEO-1, potential impacts to unique paleontological resources would be reduced to a less than significant level.

4.2.8 Greenhouse Gas Emissions

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

Regulatory Setting

State

In 2005, Governor Schwarzenegger issued Executive Order S-3-05, which states that California is vulnerable to the effects of climate change, including reduced snowpack in the Sierra Nevada Mountains, exacerbation of California's existing air quality problems, and sea level rise. To address these concerns, the executive order established the following statewide GHG emissions reduction targets:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

In 2006, Governor Schwarzenegger signed Assembly Bill (AB) 32, the California Global Warming Solutions Act, which requires California to reduce statewide GHG emissions to 1990 levels by 2020. In December 2008, the CARB adopted the Scoping Plan, which outlines a statewide strategy to achieve AB 32 goals.

In 2015, Governor Brown issued Executive Order B-30-15, which set a statewide GHG emissions reduction target of 40 percent below 1990 levels by 2030. This target is in addition to the previous GHG emissions reduction targets established in Executive Order S-3-05 for 2010, 2020, and 2050. In September 2016, Governor Brown signed Senate Bill (SB) 32, which codifies the GHG emissions reduction target in Executive Order B-30-15.

As required by Executive Order B-30-15 and SB 32, CARB updated the Scoping Plan to identify measures to meet the 2030 target. The revised scoping plan was adopted on December 14, 2017 and builds upon the initial scoping plan initiatives used for achieving 2020 targets, such as implementation of sustainable communities strategies, low-carbon fuel standards, and the renewable portfolio standard. The Plan also supports policies that promote building efficiency; renewable power investment; clean and renewable fuels; vehicle emissions; walkable/bikeable communities with transit; cleaner freight and goods movement; reducing pollutants from dairies, landfills, and refrigerants; and capping emission from transportation, industry, natural gas, and electricity sources.

The State regulates energy consumption under Title 24 Building Standards Code, Part 6 of the California Code of Regulations (also known as the California Energy Code). The Title 24 Building Energy Efficiency Standards were developed by the California Energy Commission and apply to energy consumed for heating, cooling, ventilation, water heating, and lighting in new residential and nonresidential buildings.

The California Energy Code is updated every three years, with the most recent iteration (2019) is effective as of January 1, 2020.

Title 24 Building Standards Code, Part 11 of the California Code of Regulations is referred to as the California Green Building Standards Code (CALGreen Code). The purpose of the CALGreen Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) planning and design; (2) energy efficiency; (3) water efficiency and conservation; (4) material conservation and resource efficiency; and (5) environmental air quality.

Local and Regional

2017 Clean Air Plan

To protect the climate, the 2017 CAP (prepared by BAAQMD) includes control measures designed to reduce emissions of methane and other super-GHGs that are potent climate pollutants in the near-term, and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

CEQA Air Quality Guidelines

The BAAQMD CEQA Air Quality Guidelines are intended to serve as a guide for those who prepare or evaluate air quality impact analyses for projects and plans in the San Francisco Bay Area. The jurisdictions in the San Francisco Bay Area Air Basin utilize the thresholds and methodology for assessing GHG impacts developed by BAAQMD within the CEQA Air Quality Guidelines. The guidelines include information on legal requirements, BAAQMD rules, methods of analyzing impacts, and recommended mitigation measures.

City of Fremont Climate Action Plan

The City of Fremont passed its first Climate Action Plan (CAP) in 2012 with the goal of reducing municipal and community-wide greenhouse gas emissions 25 percent by 2020 from a 2005 baseline level. Some implementation successes include improving bike and pedestrian infrastructure, upgrading City streetlights with high-efficiency LEDs, requiring all businesses to recycle, and establishing mandatory solar requirements for new residential construction.

The City of Fremont is currently updating its Climate Action Plan for this decade of climate action. The City of Fremont's new carbon neutrality goal forms the basis of the CAP update, or "CAP 2.0," setting Fremont on the pathway to a sustainable, vibrant, and healthy community that supports the environment.

GHG emissions worldwide contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change. No single land use project could generate sufficient GHG emissions on its own to noticeably change the global average temperature. The combination of GHG emissions from past, present, and future projects in Fremont, the entire state of California, and across the nation and around the world, contribute cumulatively to the phenomenon of global climate change and its associated environmental impacts.

Post 2020-Impact Thresholds

As described previously, BAAQMD adopted GHG emissions thresholds of significance to assist in the review of projects under CEQA. These thresholds were designed to establish the level at which BAAQMD has determined that GHG emissions would cause significant environmental impacts. The GHG emissions thresholds identified by BAAQMD are 1,100 metric tons (MT) of CO_2e per year or 4.6 MT CO_2e per service population per year. A project that is in compliance with the City of Fremont's Climate Action Plan (a qualified GHG Reduction Strategy) is considered to have a less than significant GHG impact regardless of its emissions.

The numeric thresholds set by BAAQMD and included within the City of Fremont's CAP were calculated to achieve the state's 2020 target for GHG emissions levels (and not the SB 32 specified target of 40 percent below the 1990 GHG emissions level). The project would be constructed in six phases over a period of one year. Because the project would be completed in the post-2020 timeframe, the project would not be covered under the City of Fremont's Climate Action Plan.

CARB has completed a Scoping Plan, which will be utilized by BAAQMD to establish the 2030 GHG efficiency threshold. BAAQMD has yet to publish a quantified GHG efficiency threshold for 2030.

Environmental Setting

Gases that trap heat in the atmosphere, GHGs, regulate the earth's temperature. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. In GHG emission inventories, the weight of each gas is multiplied by its global warming potential (GWP) and is measured in units of CO_2 equivalents (CO_2e). The most common GHGs are carbon dioxide (CO_2) and water vapor but there are also several others, most importantly methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO_2 and N_2O are byproducts of fossil fuel combustion.
- N_2O is associated with agricultural operations such as fertilization of crops.
- CH_4 is commonly created by off-gassing from agricultural practices (e.g., keeping livestock) and landfill operations.
- Chlorofluorocarbons (CFCs) were widely used as refrigerants, propellants, and cleaning solvents, but their production has been stopped by international treaty.
- HFCs are now used as a substitute for CFCs in refrigeration and cooling.
- PFCs and SF_6 emissions are commonly created by industries such as aluminum production and semiconductor manufacturing.

An expanding body of scientific research supports the theory that global climate change is currently causing changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California are adversely affected by the global warming trend. Increased precipitation and sea level rise will increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and

heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

Unlike emissions of criteria and toxic air pollutants, which have regional and local impacts, emissions of GHGs have a broader, global impact. Global warming is a process whereby GHGs accumulating in the upper atmosphere contribute to an increase in the temperature of the earth and changes in weather patterns.

The main source of GHG emissions associated with the existing uses on-site is the electricity used for interior reservoir lighting and the ventilation system. Additional emissions also result from vehicle trips associated with maintenance and operation of the Alameda Reservoir.

Discussion of Impacts

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

Less-Than-Significant Impact. The proposed project would rehabilitate the existing Alameda Reservoir by replacing the roof and roof framing system and seismically upgrading the reservoir. Project improvements would eliminate operational and maintenance issues with the reservoir while simultaneously providing the performance and reliability needed to meet the needs of a designated critical facility. GHG emissions would be generated during construction activities on the site, including demolition, hauling, excavation, concrete pouring and minor paving. Excavation would occur in the paved perimeter roadway surrounding the reservoir during the installation of the concrete buttresses to support the reservoir roof structure walls and electrical infrastructure. Trenching for new electrical conduits would not occur as there are existing conduit runs that are currently unused and would be re-purposed for the ventilation system. The mechanical contractor and electricians would install the filtered ventilation system and interior lighting with associated wiring and buried electrical conduit. Electrical conduit would be routed and buried from the existing electrical panel to the reservoir roofing system. From there, electrical conduit would be routed along the existing perimeter walls or over the roof deck.

The BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions. Construction equipment and trucks using diesel and other fuels would be the primary source of GHG emissions. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change. According to the results of the CalEEMod analysis (see Appendix A), the project would generate up to 182.4 metric tons of CO_2e emissions during construction in 2022 and 2023. These emissions would be temporary and would not represent an on-going source of GHG emissions in the area. Implementation of MM AIR-3 would further reduce GHG emissions from construction activities, although the impact is not significant.

The existing Alameda Reservoir operates on electrical power. The proposed project would result in the continued operation of the reservoir, with minor increase in electricity usage for the new ventilation system. The project would not involve the addition of any stationary equipment that would result in GHG emissions. The project would not increase vehicle traffic to or from the project site in comparison to the existing trips that are already occurring for maintenance of the reservoir. For these reasons, the proposed project would result in a less than significant impact

due to generation of GHG emissions.

b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

Less-Than-Significant Impact. The City of Fremont Climate Action Plan, adopted in 2012, identifies specific and achievable actions for reducing GHG emissions in Fremont. The actions are organized within a three-tier implementation time frame: short term; medium term; and long term, consistent with the goals and policies outlined in the City's General Plan. The CAP goals and actions relate to land use and mobility, energy, solid waste, water, and municipal services and operations. As described above, the proposed project would not result in substantial GHG emissions during the construction or operation phase. The proposed project would allow the continued operation of the existing Alameda Reservoir without increase in capacity. The proposed project would, therefore, not conflict with any existing GHG laws, plans, policies, or regulations adopted by the California legislature, the CARB, BAAQMD, or the City of Fremont. Impacts would be less than significant.

4.2.9 Hazards and Hazardous Materials

Would the project:	*Potentially Significant Impact*	*Less than Significant Impact with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
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 which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard 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?	☐	☐	☐	☒

Regulatory Setting

The storage, use, generation, transport, and disposal of hazardous materials and waste are highly regulated under federal and state laws. In California, the EPA has granted most enforcement authority over federal hazardous materials regulations to the California Environmental Protection Agency (CalEPA). In turn, local agencies have been granted responsibility for implementation and enforcement of many hazardous materials regulations under the Certified Unified Program Agency (CUPA) program.

Worker health and safety and public safety are key issues when dealing with hazardous materials. Proper handling and disposal of hazardous material is vital if it is disturbed during project construction. Cal/OSHA

enforces state worker health and safety regulations related to construction activities. Regulations include exposure limits, requirements for protective clothing, and training requirements to prevent exposure to hazardous materials. Cal/OSHA also enforces occupational health and safety regulations specific to lead and asbestos investigations and abatement.

Federal and State

Federal Aviation Regulations Part 77

Federal Aviation Regulations, Part 77 Objects Affecting Navigable Airspace (FAR Part 77) sets forth standards and review requirements for protecting the airspace for safe aircraft operation, particularly by restricting the height of potential structures and minimizing other potential hazards (such as reflective surfaces, flashing lights, and electronic interference) to aircraft in flight. These regulations require that the Federal Aviation Administration (FAA) be notified of certain proposed construction projects located within an extended zone defined by an imaginary slope radiating outward for several miles from an airport's runways, or which would otherwise stand at least 200 feet in height above the ground.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Over five years, $1.6 billion was collected and the tax went to a trust fund for cleaning up abandoned or uncontrolled hazardous waste sites. CERCLA accomplished the following objectives:

- Established prohibitions and requirements concerning closed and abandoned hazardous waste sites;
- Provided for liability of persons responsible for releases of hazardous waste at these sites; and
- Established a trust fund to provide for cleanup when no responsible party could be identified.

The law authorizes two kinds of response actions:

- Short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response; and
- Long-term remedial response actions that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life-threatening. These actions can be completed only at sites listed on the EPA's National Priorities List.

CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the National Priorities List. CERCLA was amended by the Superfund Amendments and Reauthorization Act on October 17, 1986.[33]

[33] *United States Environmental Protection Agency. "Superfund: CERCLA Overview." Accessed August 3, 2021. https://www.epa.gov/superfund/superfund-cercla-overview.*

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA), enacted in 1976, is the principal federal law in the United States governing the disposal of solid waste and hazardous waste. RCRA gives the EPA the authority to control hazardous waste from the "cradle to the grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also sets forth a framework for the management of non-hazardous solid wastes.

The Federal Hazardous and Solid Waste Amendments (HSWA) are the 1984 amendments to RCRA that focused on waste minimization, phasing out land disposal of hazardous waste, and corrective action for releases. Some of the other mandates of this law include increased enforcement authority for the EPA, more stringent hazardous waste management standards, and a comprehensive underground storage tank program.[34]

Government Code Section 65962.5

Section 65962.5 of the Government Code requires CalEPA to develop and update a list of hazardous waste and substances sites, known as the Cortese List. The Cortese List is used by state and local agencies and developers to comply with CEQA requirements. The Cortese List includes hazardous substance release sites identified by the Department of Toxic Substances Control (DTSC) and State Water Resources Control Board (SWRCB).[35]

Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) of 1976 provides the EPA with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. Certain substances are generally excluded from TSCA, including, among others, food, drugs, cosmetics, and pesticides. The TSCA addresses the production, importation, use, and disposal of specific chemicals including polychlorinated biphenyls (PCBs), asbestos, radon, and lead-based paint.

California Accidental Release Prevention Program

The California Accidental Release Prevention (CalARP) Program aims to prevent accidental releases of regulated hazardous materials that represent a potential hazard beyond the boundaries of a property. Facilities that are required to participate in the CalARP Program use or store specified quantities of toxic and flammable substances (hazardous materials) that can have off-site consequences if accidentally released. The Alameda County Department of Environmental Health reviews CalARP risk management plans as the CUPA.

Asbestos-Containing Materials

Friable asbestos is any asbestos-containing material (ACM) that, when dry, can easily be crumbled or pulverized to a powder by hand, allowing the asbestos particles to become airborne. Common examples

[34] *United States Environmental Protection Agency. "Summary of the Resource Conservation and Recovery Act." Accessed August 3, 2021. https://www.epa.gov/laws-regulations/summary-resource-conservation-and- recovery-act.*

[35] *California Environmental Protection Agency. "Cortese List Data Resources." Accessed August 3, 2021. https://calepa.ca.gov/sitecleanup/corteselist/.*

of products that have been found to contain friable asbestos include acoustical ceilings, plaster, wallboard, and thermal insulation for water heaters and pipes. Common examples of non-friable ACMs are asphalt roofing shingles, vinyl floor tiles, and transited siding made with cement. The EPA phased out use of friable asbestos products between 1973 and 1978. National Emission Standards for Hazardous Air Pollutants (NESHAP) guidelines require that potentially friable ACMs be removed prior to building demolition or remodeling that may disturb the ACMs.

CCR Title 8, Section 1532.1

The United States Consumer Product Safety Commission banned the use of lead-based paint in 1978. Removal of older structures with lead-based paint is subject to requirements outlined by the Cal/OSHA Lead in Construction Standard, CCR Title 8, Section 1532.1 during demolition activities. Requirements include employee training, employee air monitoring, and dust control. If lead-based paint is peeling, flaking, or blistered, it is required to be removed prior to demolition.

Regional and Local

Municipal Regional Permit Provision C.12.f

Polychlorinated biphenyls (PCBs) were produced in the United States between 1955 and 1978 and used in hundreds of industrial and commercial applications, including building and structure materials such as plasticizers, paints, sealants, caulk, and wood floor finishes. In 1979, the EPA banned the production and use of PCBs due to their potential harmful health effects and persistence in the environment. PCBs can still be released to the environment today during demolition of buildings that contain legacy caulks, sealants, or other PCB-containing materials.

With the adoption of the San Francisco Bay Region Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (MRP) by the San Francisco Bay Regional Water Quality Control Board on November 19, 2015, Provision C.12.f requires that permittees develop an assessment methodology for applicable structures planned for demolition to ensure PCBs do not enter municipal storm drain systems. Municipalities throughout the Bay Area are currently modifying demolition permit processes and implementing PCB screening protocols to comply with Provision C.12.f. Buildings constructed between 1950 and 1980 that are proposed for demolition must be screened for the presence of PCBs prior to the issuance of a demolition permit. Single family homes and wood-frame structures are exempt from these requirements.

City of Fremont Municipal Code

The City of Fremont's Municipal Code provides measures to address new development project's potential to create a significant hazard to the public or the environment. The portions of the Municipal Code that are relevant for this project are as follows:

> ***Chapter 18.218.050 Standard Development Requirements***. (f) Hazardous Materials
>
> (1) New development projects with the potential to 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, if so determined by a site-specific environmental site assessment prepared to the satisfaction of the fire marshal or planning

manager, shall implement the following measures prior to or during project construction, as applicable:

A. A soil management plan (SMP) shall be developed to provide guidelines for the appropriate handling and management of soil with known contaminants or recognized environmental condition (REC) concentrations above the applicable screening levels recommended in the California Department of Toxic Substances Control (DTSC) Office of Human and Ecological Risk (HERO) guidance document Human Health Risk Assessment or similar document provided by DTSC.

Prior to issuance of building and/or grading permits for site development, remediation work to remove known contaminants or RECs at the subject property shall be implemented to the satisfaction of the District, City of Fremont fire department, DTSC, or other appropriate agency having jurisdiction, depending on the location (e.g., depth) and the type of REC found and the jurisdictional purview of the agencies. Completion of the remediation work and procurement of an appropriate closure document or written statement that the remediation work has been satisfactorily completed and without further conditions or obligations shall be submitted to the satisfaction of the City of Fremont community development department. Compliance with this mitigation may require the District or their agent to complete a preliminary endangerment report, voluntary cleanup agreement or other documentation as determined by the appropriate agency and receive concurrence that the site's RECs have been resolved.

City of Fremont 2030 General Plan

The proposed project would be subject to the land use policies of the City of Fremont's General Plan, as shown in Table 10.

Table 10: City of Fremont 2030 General Plan Policies

Policy	Description
Policy 10-6.1	• Maintain sufficient regulation of land use and construction to minimize potential health and safety risks associated with future, current or past use of hazardous materials in Fremont.
Policy 10-6.5	• Maintain sufficient oversight regarding the storage, transport and handling of hazardous materials within the City.

Environmental Setting

The project would seismically retrofit the existing Alameda Reservoir and replace its roof. Alameda Reservoir was constructed in 1972. Because of the age of the structure, there is the potential that it contains ACMs or LBP.

The project area consists mainly of residential development and Agua Fria Creek, which flows just south of the project site. There are no recorded hazardous material spill incidents in the site vicinity that would be likely to significantly impact soil, soil vapor, or groundwater beneath the site.[36]

[36] *California Environmental Protection Agency. "Cortese List Data Resources." Accessed July 13, 2021. https://calepa.ca.gov/sitecleanup/corteselist/.*

The project site is not located within a Fire Hazard Zone of local or state responsibility as mapped by CAL FIRE.[37]

Discussion of Impacts

a) 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 proposed project would involve the use of potentially hazardous materials, including vehicle fuels, oils, and fluids. All hazardous materials would be transported, contained, stored, used, and disposed of in accordance with manufacturers' instructions and would be handled in compliance with all applicable standards and regulations. Construction-related hazardous materials use would be temporary, and does not constitute routine transport, use, or disposal.

Operation of the improved Alameda Reservoir would not involve the routine transport, use, or disposal of hazardous materials. Compliance with applicable federal, state, and local laws and regulations pertaining to the handling, storage, and disposal of hazardous materials would ensure that no significant hazards to the public or the environment result from the project's minimal use of hazardous materials. Therefore, the proposed project would have a less than significant impact related to 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?

Less-Than-Significant Impact with Mitigation Incorporated. As described above, operation of the proposed project would not require routine use of hazardous materials. Therefore, no hazards or hazardous materials impacts related to long term operation of the project are anticipated. However, due to the age of the existing structures on-site, building materials may contain ACMs and/or LBP. If the existing structures are demolished, asbestos particles could be released and expose construction workers and nearby residential occupants to harmful levels of asbestos. If LBP is still bonded to the building materials, its removal is not required prior to demolition. If the LBP is flaking, peeling, or blistering, it shall be removed prior to demolition. It would be necessary to follow applicable California Occupational Safety and Health Administration (OSHA) regulations and any debris containing lead must be disposed appropriately. Demolition of the existing structures on-site could expose construction workers or occupants of adjacent residences to harmful levels of ACMs or lead.

Impact HAZ-1: Due to its age, Alameda Reservoir may contain ACMs and/or LBP materials.

Mitigation Measure: The proposed project would implement the following mitigation measures to reduce hazards from harmful levels of ACMs or lead to a less-than-significant level.

MM HAZ-1.1: In conformance with State and local laws, a visual inspection/pre-demolition survey, and possible sampling, shall be conducted prior to the demolition of on-site building(s) to determine the presence of ACMs and/or LBP.

[37] *CAL FIRE. Fire Hazard Severity Zone Viewer. Available at:* http://egis.fire.ca.gov/FHSZ/*. Accessed on: July 28, 2021.*

- During demolition activities, all building materials containing LBP shall be removed in accordance with the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) Lead in Title 8, CCR, Section 1532.1, including employee training, employee air monitoring, and dust control. Any debris or soil containing LBP or coatings shall be disposed of at landfills that meet acceptance criteria for the type of lead being disposed.
- All potentially friable ACMs shall be removed in accordance with National Emission Standards for Air Pollution (NESHAP) guidelines prior to demolition or renovation activities that may disturb ACMs. All demolition activities shall be undertaken in accordance with Cal/OSHA standards contained in Title 8, CCR, Section 1529, to protect workers from asbestos exposure.
- A registered asbestos abatement contractor shall be retained to remove and dispose of ACMs identified in the asbestos survey performed for the site in accordance with the standards stated above.
- Materials containing more than one-percent asbestos are also subject to BAAQMD regulations. Removal of materials containing more than one-percent asbestos shall be completed in accordance with BAAQMD requirements and notifications.
- Based on Cal/OSHA rules and regulations, the following conditions are required to limit impacts from LBP to construction workers.
    - Prior to commencement of demolition activities, a building survey, including sampling and testing, shall be completed to identify and quantify building materials containing LBP.
    - During demolition activities, all building materials containing BP shall be removed in accordance with Cal/OSHA Lead in Construction Standard, Title 8, CCR, Section 1532.1, including employee training, employee air monitoring and dust control.
    - Any debris or soil containing LBP or lead-based coatings shall be disposed of at landfills that meet acceptance criteria for the type of waste being disposed.

Implementation of MM HAZ-1.1 would result in a less than significant impact from ACMs and LBPduring the construction phase. Therefore, the project would not 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?

No Impact. The nearest school to the project site is Fred E. Weibel Elementary School, located approximately 0.8-mile northwest of the project site. In addition, as described above, the project would not involve routine transport, use, and/or disposal of hazardous materials during

construction of the improved reservoir. However, compliance with applicable federal, state, and local laws and regulations pertaining to the hazardous materials would ensure that the project would not result significant impacts within one-quarter mile of a school.

d) Be located on a site which 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 included on any list of hazardous material sites.[38] No hazardous material spill incidents have been reported in the site vicinity that would be likely to significantly impact soil or ground water quality at the site. Impacts would be less than significant.

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 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 two miles of a public airport or public use airport. The project site is located approximately ten miles from the nearest public airport, Norman Y. Mineta San José International Airport. The project site is not within any airport land use plan area. Therefore, the proposed project would not result in a safety hazard for workers in the project area.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less-Than-Significant Impact. The City of Fremont's Disaster Management Operations Plan was developed in compliance with State requirements. Fremont's Disaster Management Operations Plan provides policies and procedures for the evacuation, dispersal, or relocation of people from hazardous areas during natural disasters to less threatened areas. The plan also describes the organization and responsibilities for conducting movement operations. Evacuation routes suited for different types of potential disasters are shown in the City's Disaster Management Operations Plan.[39] Because the proposed project would not alter or block adjacent roadways, implementation of the proposed project would not be expected to impair the function of nearby emergency evacuation routes. Therefore, the proposed project would have a less-than-significant impact on implementation of 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?

No Impact. As stated above, the project site is located in an urban, developed area of the City of Fremont, and is not located within a Fire Hazard Zone of local or state responsibility as mapped

[38] *California Environmental Protection Agency. "Cortese List Data Resources." Available at:* https://calepa.ca.gov/sitecleanup/corteselist/ *Accessed on: July 29, 2021.*

[39] *City of Fremont General Plan. 2011. Chapter 10 – Safety.*

by CAL FIRE. [40] The project would, therefore, not expose people or structures towildland fire risks. No impact would occur.

[40] *CAL FIRE. Fire Hazard Severity Zone Viewer. Available at:* http://egis.fire.ca.gov/FHSZ/*. Accessed on: July 28, 2021.*

4.2.10 Hydrology and Water Quality

Would the project:	*Potentially Significant Impact*	*Less than Significant Impact with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
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 that would exceed the capacity of existing or planned storm water 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?	☐	☐	☒	☐

Regulatory Setting

Federal and State

The federal Clean Water Act and California's Porter-Cologne Water Quality Control Act are the primary laws related to water quality in California. Regulations set forth by the EPA and the SWRCB have been developed to fulfill the requirements of this legislation. EPA regulations include the National Pollutant Discharge Elimination System (NPDES) permit program, which controls sources that discharge pollutants into the waters of the United States (e.g., streams, lakes, bays, etc.). These regulations are implemented

at the regional level by the Regional Water Quality Control Boards (RWQCBs). The project site is within the jurisdiction of the San Francisco Bay RWQCB.

National Flood Insurance Program

The Federal Emergency Management Agency (FEMA) established the National Flood Insurance Program (NFIP) to reduce impacts of flooding on private and public properties. The program provides subsidized flood insurance to communities that comply with FEMA regulations protecting development in floodplains. As part of the program, FEMA publishes Flood Insurance Rate Maps (FIRMs) that identify Special Flood Hazard Areas (SFHAs). An SFHA is an area that would be inundated by the one-percent annual chance flood, which is also referred to as the base flood or 100-year flood.

Statewide Construction General Permit

The State Water Resources Control Board (SWRCB) has implemented an NPDES General Construction Permit for the State of California (Construction General Permit). For projects disturbing one acre or more of soil, a Notice of Intent (NOI) must be filed with the RWQCB by the project sponsor, and a Storm Water Pollution Prevention Plan (SWPPP) must be prepared by a qualified professional prior to commencement of construction and filed with the RWQCB by the project sponsor. The Construction General Permit includes requirements for training, inspections, record keeping, and, for projects of certain risk levels, monitoring. The general purpose of the requirements is to minimize the discharge of pollutants and to protect beneficial uses and receiving waters from the adverse effects of construction-related storm water discharges.

Regional and Local

San Francisco Bay Basin Plan

The San Francisco Bay RWQCB regulates water quality in accordance with the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan). The Basin Plan lists the beneficial uses that the San Francisco Bay RWQCB has identified for local aquifers, streams, marshes, rivers, and the San Francisco Bay, as well as the water quality objectives and criteria that must be met to protect these uses. The San Francisco Bay RWQCB implements the Basin Plan by issuing and enforcing waste discharge requirements, including permits for nonpoint sources such as the urban runoff discharged by a City's stormwater drainage system. The Basin Plan also describes watershed management programs and water quality attainment strategies.

Municipal Regional Permit Provision C.3

The San Francisco Bay RWQCB re-issued the Municipal Regional Stormwater NPDES Permit (MRP) in 2015 to regulate stormwater discharges from municipalities and local agencies (co-permittees) in Alameda, Contra Costa, San Mateo, and Santa Clara Counties, and the cities of Fairfield, Suisun City, and Vallejo.[41] Under Provision C.3 of the MRP, new and redevelopment projects that create or replace 10,000 square feet or more of impervious surface area are required to implement site design, source control, and Low Impact Development (LID)-based stormwater treatment controls to treat post-construction stormwater runoff. LID-based treatment controls are intended to maintain or restore the site's natural hydrologic

[41] *MRP Number CAS612008*

functions, maximizing opportunities for infiltration and evapotranspiration, and using stormwater as a resource (e.g., rainwater harvesting for non-potable uses). The MRP also requires that stormwater treatment measures are properly installed, operated, and maintained.

In addition to water quality controls, the MRP requires new development and redevelopment projects that create or replace one acre or more of impervious surface to manage development-related increases in peak runoff flow, volume, and duration, where such hydromodification is likely to cause increased erosion, silt pollutant generation, or other impacts to local rivers, streams, and creeks.

Projects may be deemed exempt from these requirements if they do not meet the minimized size threshold, drain into tidally influenced areas or directly into the Bay, or drain into hardened channels, or if they are infill projects in subwatersheds or catchment areas that are greater than or equal to 65 percent impervious. This project is deemed exempt as it is a roof replacement project.[42]

Municipal Regional Permit Provision C.12.f

Provision C.12.f of the MRP requires co-permittee agencies to implement a control program for PCBs that reduces PCB loads by a specified amount during the term of the permit, thereby making substantial progress toward achieving the urban runoff PCBs waste load allocation in the Basin Plan by March 2030.[43] Programs must include focused implementation of PCB control measures, such as source control, treatment control, and pollution prevention strategies. Municipalities throughout the Bay Area are updating their demolition permit processes to incorporate the management of PCBs in demolition building materials to ensure PCBs are not discharged to storm drains during demolition. Buildings constructed between 1955 and 1978 that are proposed for demolition must be screened for the presence of PCBs prior to the issuance of a demolition permit.

Alameda County Flood Control and Water Conservation District

The Alameda County Flood Control and Water Conservation District (ACFCWCD) operates as the flood control agency for Alameda County. The ACFCWCD plans, designs, constructs, and maintains flood control projects such as natural creeks, channels, levees, pump stations, dams, and reservoirs.

Sustainable Groundwater Management

The District is the Groundwater Sustainability Agency (GSA) for the Niles Cone Subbasin 2-09.01 which underlies the project site. The District, as the GSA, has an adopted Alternative to a Groundwater Sustainability Plan for the basin which was approved in 2019 by the Department of Water Resources.

[42] *Alameda Countywide Clean Water Program. "C.3 Technical Guidance Manual, Chapter 2 Background/Regulatory Requirements." Accessed November 4, 2021. https://www.cleanwaterprogram.org/c3-guidance-table.html.*

[43] *San Francisco Bay Regional Water Quality Control Board. Municipal Regional Stormwater Permit, Provision C.12. November 19, 2015.*

Environmental Setting

Surface Water Quality

The water quality of streams, creeks, ponds, and other surface water bodies can be greatly affected by pollution carried in contaminated surface runoff. Pollutants from unidentified sources, known as non-point source pollutants, are washed from streets, construction sites, parking lots, and other exposed surfaces into storm drains. Urban stormwater runoff often contains contaminants such as oil and grease, plant and animal debris, pesticides, litter, and heavy metals. In sufficient concentrations, these pollutants have been found to adversely affect the aquatic habitats to which they drain.

There are numerous watersheds within the City, which function as drainage basins of the west slope of the Diablo Range and the low lying, bay adjacent areas of the City.

Groundwater and Groundwater Management

The Niles Cone Groundwater Basin comprises the sub-basin of the Santa Clara Groundwater basin underlying much of the southeast bay area, including the City of Fremont. The project site is located in an area of the Niles Cone Basin identified by the District as the Above Hayward Fault (AHF) sub-basin, due to its location east, and at a higher elevation than, the coastal plain portion of the basin, west of the Hayward Fault. The AHF sub-basin aquifer is a single layer from ground surface to bedrock, bounded on all sides with low permeability sediment and other low- or no-flow boundaries, including the Hayward Fault to the west.[44] The District sustainably manages groundwater in the sub-basin by performing groundwater recharge and implementing a groundwater monitoring program.

Groundwater levels may fluctuate due to variations in rainfall, underground drainage patters, and other factors. According to the California Geological Survey (CGS), historical groundwater near the Alameda Reservoir is greater than 40 feet below ground surface (bgs). The project site is not located in a natural or groundwater recharge area and is approximately 10 miles from the District's water wells in the AHF sub-basin. The natural channel of Agua Fria Creek may interface with the aquifer, draining or recharging groundwater, depending on local conditions. However, the creek does not intersect the project site.

Storm Drainage System

The project site drains to Agua Fria Creek, which flows through about 3,000 feet of natural channels followed by about 2 miles of AFCWCD engineered channels into Coyote Creek. Coyote Creek drains into the south end of San Francisco Bay.

Flooding Hazards

The project site is located within Flood Zone X, which means it is outside a FEMA 100-year flood hazard area, according to the Flood Insurance Rate Map (FIRM) Panel No. 06001C0606G.[45] Due to the elevation of the site, and distance from confined bodies of water, it is not subject to sea level rise or seiche hazards. The project site is not located in an area that would be impacted by dam failure.

[44] *ACWD. "2020 Groundwater Monitoring Report." February 5, 2021.*

[45] *Federal Emergency Management Agency. Flood Insurance Rate Map. Community Panel No. 06001C0606G.*

Seiches, Tsunamis, and Mudflows

A seiche is an oscillation of the surface of a lake or landlocked sea varying in period from a few minutes to several hours. There are no landlocked bodies of water near the project site that will affect the site in the event of a seiche.

A tsunami or tidal wave is a series of water waves caused by displacement of a large volume of a body of water, such as an ocean or a large lake. Due to the immense volumes of water and energy involved, tsunamis can devastate coastal regions. There are no large bodies of water near the project site. The site does not lie within a tsunami inundation hazard area.[46]

A mudflow is the rapid movement of a large mass of mud formed from loose soil and water. The project site and surrounding area are relatively flat. The project site is not susceptible to mudflows.

Discussion of Impacts

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

Less-Than-Significant Impact. The purpose of the proposed project is to replace the roof and roof framing system and seismically upgrade Alameda Reservoir. Construction would include ground disturbing activities, including grading, which has the potential to increase sediment runoff from the site. In addition, demolition and construction could result in the release of materials including paints, vehicle and equipment fuel, and other contaminants to the environment.

Construction of the proposed project would disturb less than one acre. For this reason, the project would not require the preparation of a SWPPP under the statewide Construction General Permit. Implementation of construction Best Management Practices (BMPs) during construction activities would be required. Construction BMPs would include, but not be limited to, Erosion and Sediment Control BMPs which are designed to minimize erosion and retain sediment on site, and Good Housekeeping BMPs which would prevent spills, leaks, and discharge of construction debris and waste into receiving waters. Compliance with State and local regulations regarding stormwater during construction would ensure that the proposed project would result in less-than-significant impacts to water quality during construction.

The proposed project is a roof replacement project. All roof replacement projects are excluded from Provision C.3.[47] Therefore, the proposed project would not be required to comply with the LID requirements of Provision C.3 of the Municipal Regional Permit. The improved reservoir would operate similarly to the existing facility, and no new potentially significant water quality impacts are expected to result from the operation of the proposed project. Due to the overall size of the proposed project (approximately three acres), and the similar nature of the operation of the improved reservoir to that of the existing structure, project operation would not violate any water

[46] *California Department of Conservation. "Alameda County Tsunami Inundation Quads". Accessed August 3, 2021. https://www.conservation.ca.gov/cgs/tsunami/maps/alameda.*

[47] *Alameda Countywide Clean Water Program. "C.3 Technical Guidance Manual, Chapter 2 Background/Regulatory Requirements." Accessed November 4, 2021. https://www.cleanwaterprogram.org/c3-guidance-table.html.*

quality standards, waste discharge requirements, and would not otherwise substantially degrade surface or groundwater quality.

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

Less-Than-Significant Impact. As noted in the Geotechnical Report (refer to Appendix C), groundwater levels on the site may exist at shallower depths than noted in borings on the site with seasonal fluctuations. If groundwater is encountered during construction, dewatering and special soil preparation may be necessary to allow construction in a dry condition and on a stable subgrade. Dewatering activities that lower groundwater levels could increase the effective stress on underlying sediments, potentially resulting in ground settlements and damage to structures, roadways, and/or utilities. The Geotechnical Report requires that applicable dewatering protocols be implemented during foundation retrofit to reduce the potential impacts to reservoir liner and to reduce impacts during any required foundation construction or excavations.

Furthermore, the project is not located in a designated groundwater recharge area. In addition, the project would rehabilitate a critical piece of the District's infrastructure, allowing for continued operation of water supply and management activities in the District's service area. For these reasons, the proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project would impede sustainable groundwater management of the Niles Cone Basin. Potential impacts of depleting groundwater supplies or reducing groundwater recharge, therefore, would be less than significant.

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 that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or (iv) impede or redirect flood flows?

Less-Than-Significant Impact. The site is relatively flat and would require some disturbance and grading during project construction. No streams or rivers would be affected by project construction. Agua Fria Creek flows just south of the project site in a natural channel that is incised approximately 10- to 12-feet deep in the project vicinity; however, no construction or development is proposed near the creek. The project does not propose to alter the existing drainage pattern of the site or alter the course of a stream or river. Stormwater runoff from the project site would continue to drain to the Agua Fria Creek channel. Grading primarily in the paved driveway would occur during the installation of the new reservoir roof structure walls. The project would not alter the existing drainage pattern of the project site during construction activities in a manner that would result in substantial erosion or siltation on- or off-site, increase surface runoff, result in flooding or impede or redirect flood flows.

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

No Impact. As discussed above in the Environmental Setting, the project site is not within a hazard zone for flood, tsunami, or seiche. In addition, the project site would not be subject to inundation

in the event of a dam failure. Therefore, the proposed project would not risk pollutant discharge due to site inundation. No impacts would occur.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less-Than-Significant Impact. The project would comply with all applicable local and state stormwater discharge requirements during construction and operation. The project proposes the rehabilitation of structures and equipment associated with the District's Alameda Reservoir. The proposed project would allow the continued operation of critical water supply infrastructure by the District, and is, as a result, consistent with the groundwater management activities of the District. For these reasons, the proposed project would not conflict with or obstruct implementation of water quality control plan or the District's Alternative to a Groundwater Sustainability Plan. Impacts would be less than significant.

4.2.11 Land Use and Planning

Would the project:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
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?	☐	☐	☐	☒

Regulatory Setting

City of Fremont 2030 General Plan

The proposed project would be subject to the land use policies of the City of Fremont's General Plan, as shown in Table 11 below.

Table 11: City of Fremont 2030 General Plan Policies

Policy	Description
Policy 9-1-2	• Ensure public safety facilities are added or expanded as necessary to keep pace with population growth and meet operational needs. Take into account the availability of both capital and operating funds when determining the timing of new and expanded facilities.
Policy 9-3.1	• Work with the Alameda County Water District, Union Sanitary District, and Alameda County Flood Control District to encourage their long-range plans are consistent with the Fremont General Plan.

City of Fremont Zoning Ordinance

The project site falls within a Public Facility (PF) zoning district. The PF designation generally applies to non-open space parcels owned by public agencies or utilities. The designation includes City facilities, public schools, water and sanitary district facilities, transit agency facilities, utilities, and other federal, state, county, and local government facilities. Not all public facilities appear under this designation—for map legibility purposes, facilities less than one acre in size that are similar in character to adjacent uses may be shown with the adjacent use designation. For example, individual fire stations and branch libraries may not appear on the map. Conversely, sites designated as Public Facility are not precluded from future private use through joint public-private development, provided such development is consistent with the policies of the General Plan. Allowable development intensity on Public Facility properties is determined on a case-by-case basis and a 45-foot height limit generally applies. Public Facility also applies to unmapped portions related to freeway and railroad right-of-way.

Environmental Setting

The project site consists of the existing Alameda Reservoir which is operated by the District. The site is designated *Public Facility* in the City's General Plan. This designation applies to City facilities, public schools, water and sanitary district facilities, transit agency facilities utilities and other federal, state, county, and local government facilities. The surrounding houses are designated as *Residential – Hillside* in the City's General Plan.

Discussion of Impacts

a) Physically divide an established community?

No Impact. Examples of projects that have the potential to physically divide established communities include new freeways and highways, major arterial streets, and railroad lines. The project site is located within a quasi-public area of the City of Fremont, adjacent to existing residential development. The purpose of the project is to replace the roof and roof framing system and seismically upgrade the reservoir. Upon completion, the project would occupy the same area as the current reservoir and would not result in the construction of dividing infrastructure within the surrounding residential neighborhood. For these reasons, the project would not 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?

No Impact. The proposed seismic retrofit and roof replacement would be consistent with the Public Facility designation of the project site under the City of Fremont's General Plan. The project would not conflict with the Public Facility zoning district. The project would not result in a change to the existing land use or zoning designations for the project site. Therefore, the project would not conflict with applicable land use plans in the project area.

4.2.12 Mineral Resources

(USGS MRDS Map) Would the project:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
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?	☐	☐	☐	☒

Regulatory Setting

State

The Surface Mining Control and Reclamation Act

The Surface Mining and Reclamation Act (SMARA) was enacted by the California legislature in 1975 to address the need for a continuing supply of mineral resources, and to prevent or minimize the negative impacts of surface mining to public health, property, and the environment. As mandated under SMARA, the State Geologist has designated mineral land classifications in order to help identify and protect mineral resources in areas within the state subject to urban expansion or other irreversible land uses which would preclude mineral extraction. SMARA also allowed the State Mining and Geology Board (SMGB), after receiving classification information from the State Geologist, to designate lands containing mineral deposits of regional or statewide significance.

Local

City of Fremont 2030 General Plan

The proposed project would be subject to the conservation policies of the City of Fremont's General Plan, as shown in Table 12 below:

Table 12: City of Fremont 2030 General Plan Policies

Policy	Description
Policy 7-5.1	• Protect identified state designated mineral resources from incompatible development whenever feasible consistent with the City's long-range development plans.
Policy 7-5.2	• Ensure mineral resource extraction activities do not create a significant impact to the character and long-term health of the City
Policy 7-5.3	• Enforce requirements for reclamation of mineral resource extraction areas, including salt ponds and quarries.
Policy 7-5.4	• Encourage preservation of former extraction areas (mineral and clay quarries and salt ponds) for open space, wildlife and recreation purposes when appropriate.

Environmental Setting

The project area is situated in eastern Fremont just north of Agua Fria Creek at the north end of the Santa Clara Valley. The project site is located in a developed area in the City of Fremont. The site contains Alameda Reservoir and is surrounded by single-family residential uses. There are no known mineral resources on-site, and the site is not a designated mineral resource recovery area of any kind.

Discussion of Impacts

a, b) 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?

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. The project site does not contain any known mineral resources. For this reason, the proposed project would not result in the loss of availability of any known mineral resource. The project site is not part of a locally important mineral resource recovery site designated by the City of Fremont's General Plan or any other policy.[48] Furthermore, the development of the proposed project would not preclude future excavation of oil or minerals should such extraction become viable. Therefore, no impacts would occur.

[48] *City of Fremont General Plan. 2011. Chapter 7 – Conservation.*

4.2.13 Noise

Would the project result in:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
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?	☐	☐	☐	☒

Regulatory Setting

City of Fremont Municipal Code

The City of Fremont's Municipal Code provides limitations on construction hours. The portions of the Municipal Code that are relevant for this project are as follows:

> ***Chapter 18.160.010 Construction hours – Limitations.*** The City Municipal code stipulates that construction activities within 500 feet of residences, lodging facilities, nursing homes or inpatient hospitals shall be limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, and 9:00 a.m. to 6:00 p.m. on Saturday. Construction activities are not allowed within 500 feet of residences on Sundays and City-recognized holidays.
>
> ***Chapter 18.218.050 Standard Development Requirements***. (g) Noise. (1) Construction Noise. To reduce the potential for noise impacts during construction, the following requirements shall be implemented:
>
> A. Construction equipment shall be well-maintained and used judiciously to be as quiet as practical.
>
> B. Construction, excavating, grading, and filling activities (including the loading and unloading of materials, truck movements, and warming of equipment motors) shall be limited as provided in Section 18.160.010.
>
> C. All internal combustion engine-driven equipment shall be equipped with mufflers, which are in good condition and appropriate for the equipment.
>
> D. The contractor shall utilize "quiet" models of air compressors and other stationary noise sources where technology exists.

E. Loading, staging areas, stationary noise generating equipment, etc., shall be located as far as feasible from sensitive receptors.

F. The contractor shall comply with Air Resource Board idling prohibitions of unnecessary idling of internal combustion engines.

G. Signs shall be posted at the construction site that include permitted construction days and hours, a day and evening contact number for the job site, and a contact number for the project sponsor in the event of noise complaints. The District shall designate an on-site complaint and enforcement manager to track and respond to noise complaints.

H. Temporary noise barriers, such as solid plywood fences shall be installed around construction sites adjacent to operational businesses, residences or noise-sensitive land uses, unless an existing wall or other barrier provides equivalent noise attenuation. (Ord. 27-2016 § 37, 12-6-16; Ord. 23-2018 § 41, 10-2-18; Ord. 05-2021 § 52, 4-20-21.)

City of Fremont 2030 General Plan

The proposed project would be subject to the noise and vibration policies of the City of Fremont's General Plan, as shown in Table 13 below:

Table 13: City of Fremont 2030 General Plan Policies

Policy	Description
Policy 10-8.3	• Protect existing residential neighborhoods from noise. In general, the City will require evaluation of mitigation measures for projects under the following circumstances: ○ The project would cause the L_{dn} to increase by 5 dB(A) or more but would remain below 60 dB(A), or; ○ The project would cause the L_{dn} to increase by 3 dB(A) or more and exceed 60 dB(A), or; ○ The project has the potential to generate significant adverse community response due to the unusual character of the noise.
Policy 10-8.5	• Control construction noise at its source to maintain existing noise levels, and in no case to exceed the acceptable noise levels. ○ **10-8.5. B: Construction Noise Mitigation** ▪ Continue to apply the construction hours ordinance to new development to limit noise exposure created by construction activity. Apply best practices to further limit noise in sensitive areas and long-term projects, such as maintaining construction equipment in good condition and use of mufflers on internal combustion engines, installation of temporary noise barriers, prohibiting extended idling time of internal combustion engines, locating staging areas away from sensitive receptors and other feasible best management practices.

Environmental Setting

Noise

Factors that influence sound as it is perceived by the human ear, include the actual level of sound, period of exposure, frequencies involved, and fluctuation in the noise level during exposure. Noise is measured on a decibel scale, which serves as an index of loudness. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness. Because the human ear cannot hear all pitches or frequencies, sound levels are frequently adjusted or weighted to correspond to human hearing. This adjusted unit is known as the A-weighted decibel, or dBA.

Since excessive noise levels can adversely affect human activities and human health, federal, state, and local governmental agencies have set forth criteria or planning goals to minimize or avoid these effects. Noise guidelines are generally expressed using one of several noise averaging methods, including L_{eq}, DNL, or CNEL.[49] These descriptors are used to measure a location's overall noise exposure, given that there are times when noise levels are higher (e.g., when a jet is taking off from an airport or when a leaf blower is operating) and times when noise levels are lower (e.g., during lulls in traffic flows on freeways or in the middle of the night). L_{max} is the maximum A-weighted noise level during a measurement period.

Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Vibration amplitude can be quantified using Peak Particle Velocity (PPV), which is defined as the maximum instantaneous positive or negative peak of the vibration wave. PPV has been routinely used to measure and assess ground-borne construction vibration. Studies have shown that the threshold of perception for average persons is in the range of 0.008 to 0.012 inches/second (in/sec) PPV.

The project area is located on Shoshone Court, between Curtner Road and Paseo Padre Parkway. The project site is located approximately 290 feet north of the intersection of Curtner Road and East Warren Avenue in the City of Fremont. The project area consists of residential land uses and open space associated with the Agua Fria Creek riparian corridor. Existing noise levels in the environment result primarily from vehicular traffic on surrounding roadways. The nearest sensitive receptors to the site are the single-family residences surrounding the perimeter of the project site, approximately 50 feet from the project site. The project would not introduce any new sensitive receptors to the project area.

Discussion of Impacts

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?

Less-Than-Significant with Mitigation Incorporated.

[49] *L_{eq} is a measurement of average energy level intensity of noise over a given period of time. Day-Night Level (DNL) is a 24-hour average of noise levels, with a 10 dB penalty applied to noise occurring between 10:00 PM and 7:00 AM. Community Noise Equivalent Level (CNEL) includes an additional five dB applied to noise occurring between 7:00 PM and 10:00 PM. Where traffic noise predominates, the CNEL and DNL are typically within two dBA of the peak-hour L_{eq}.*

Construction Noise

The construction of the project could temporarily generate substantial noise and vibrations in the project area. Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance between construction noise sources and noise sensitive receptors.

Construction noise impacts primarily would occur when construction activities coincide with noise-sensitive times of the day (early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise sensitive land uses, or when construction durations last over extended periods of time. A significant temporary noise impact would result if project construction or demolition activities increase noise levels at sensitive receptors to levels exceeding 60 dBA L_{eq} at residential uses, or 5 dBA for ambient levels, for a period greater than one year.

Construction noise would primarily result from the operation of heavy construction equipment and arrival and departure of heavy-duty trucks. The highest maximum noise levels generated by project construction would typically range from about 80 to 90 dBA L_{max} at a distance of 50 feet from the noise source. As shown in Table 14, typical hourly average construction-generated noise levels for public works projects are about 75 to 84 dBA L_{eq} measured at a distance of 50 feet from the center of the site during busy construction periods (e.g., earth moving equipment, impact tools, etc.). This project would involve a roof replacement and a roof system seismic upgrade. The project's construction would require fewer individual pieces of construction equipment operating simultaneously as compared to typical public works roads and highways, sewers, and trenches projects; therefore, the lower range of noise levels for public works projects from Table 14 assuming minimum equipment present at the site, will be used for this analysis. Construction-generated noise levels drop off at a rate of about six (6) dBA per doubling of the distance between the source and receptor. Shielding by buildings or terrain can provide an additional five (5) to 10 dBA noise reduction at distant receptors.

Table 14: Typical Ranges of Construction Noise Levels at 50 Feet, L_{eq} (dBA)

	Domestic Housing		**Office Building, Hotel, Hospital, *School*, Public Works**		**Industrial Parking, Garage, Religious Amusement & Recreations, Store, Service Station**		**Public Works Roads & Highways, Sewers,and Trenches**	
	I	**II**	**I**	**II**	**I**	**II**	**I**	**II**
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78

Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84
I - All pertinent equipment present at site. **II** - Minimum required equipment present at site.								

Construction will occur in six phases spanning a total of approximately one year. Site preparation would take place during the first phase. The contractor would prepare the site for work by setting up staging areas and exclusion fencing and bringing heavy construction equipment on-site. The District would draw down the reservoir and temporarily take it out of service. Demolition and grading work would take place during the second phase. The third phase would include installation of lateral bracing and concrete buttresses, and replacement of drain valve and value stem. Installation of new timber and metal roof structural members, and new roof metal deck would occur during the fourth phase. The fifth phase of construction would include installation of the new ventilation units and interior lighting fixtures would be installed. During the final phase, the reservoir would be filled, disinfected, and placed back into service. The areas used for construction activities surrounding the reservoir would be restored, including replanting areas used for staging equipment, demobilizing construction equipment, and conducting final paving. While construction is anticipated to occur over a period of approximately one year, there will be substantial periods of inactivity where no construction is taking place and therefore the construction duration for the purpose of this analysis will not exceed one year.

Noise-sensitive receptors near the site include single-family residences, with property lines located as close as about 50 feet from the reservoir. At this distance, noise levels could reach 75 to 84 dBA L_{eq} during periods of heavy construction activity. Without considering shielding provided by surrounding structures and terrain, construction-generated noise would have the potential to temporarily exceed 60 dBA L_{eq} at residences located approximately 50 feet of the reservoir's property line.

Reasonable regulation of the hours of construction, as well as regulation of the arrival and operation of heavy equipment and the delivery of construction material, are necessary to protect the health and safety of persons, promote the general welfare of the community, and maintain the quality of life.

Construction activities associated with the proposed project will be conducted in accordance with the provisions of the City of Fremont's General Plan and the Municipal Code, which limits temporary construction work within 500 feet of residential land uses to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and between the hours of 9:00 a.m. to 6:00 p.m. on Saturdays and holidays. The City does not allow construction activities on Sundays for sites located within 500 feet of one or more residences. While project construction would not occur over a period of greater than one year, the project would result in noise levels that could exceed

City standards for noise at the nearest property line. Therefore, the project would implement the following measures contained in section 18.218.050 of the City of Fremont's Municipal Code to reduce annoyance and disruption at the nearest residences.

Impact NOI-1: Project construction could result in noise levels exceeding City of Fremont standards at the nearest residential property line.

Mitigation Measure: The following mitigation measure shall be implemented to reduce noise levels during project construction at nearby residential uses.

MM NOI-1.1: During construction of the project, the District shall implement the following measures required by the City of Fremont to reduce construction noise:

- Construction equipment shall be well-maintained and used judiciously to be as quiet as practical.
- Construction, excavating, grading, and filling activities (including the loading and unloading of materials, truck movements, and warming of equipment motors) shall be limited as provided in City Code Section 18.160.010.
- All internal combustion engine-driven equipment shall be equipped with mufflers, which are in good condition and appropriate for the equipment.
- The contractor shall utilize "quiet" models of air compressors and other stationary noise sources where technology exists.
- Loading, staging areas, stationary noise generating equipment, etc., shall be located as far as feasible from sensitive receptors.
- The contractor shall comply with Air Resource Board idling prohibitions of unnecessary idling of internal combustion engines.
- Signs shall be posted at the construction site that include permitted construction days and hours (Monday through Friday 8 a.m. to 5 p.m.), a day and evening contact number for the job site, and a contact number for the District in the event of noise complaints. The District shall designate an on-site complaint and enforcement manager to track and respond to noise complaints.
- Temporary noise barriers, such as solid plywood fences, shall be installed around construction sites adjacent to operational business, residences or noise-sensitive land uses, unless an existing wall or other barrier provides equivalent noise attenuation. (City of Fremont Ord. 27-2016 § 37, 12-6-16; Ord. 23-2018 § 41, 10-2-18; Ord. 05-2021 § 52, 4-20-21.)

Implementation of MM NOI-1.1 would reduce construction noise levels emanating from the site, limit construction hours, and minimize disruption and annoyance. With the implementation of these measures and recognizing that noise generated by construction activities would occur over a temporary period, the temporary increase in ambient noise levels would be less-than-significant.

Operational Noise

The proposed project would result in the improvement of the existing Alameda Reservoir. The purpose of this project is to replace the roof and roof framing system and seismically upgrade the reservoir. Project improvements would not change the capacity nor the operations of the Alameda Reservoir. A new active ventilation system will be installed at the reservoir to keep air flow moving and reduce the potential for condensation. The fans would add sound similar to a commercial air conditioning unit and would not generate audible noise at any nearby sensitive receptors.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Less-Than-Significant Impact. The construction of the project may generate perceptible vibration when heavy equipment or impact tools (e.g., jackhammers, hoe rams) are used. Construction activities would include demolition, excavation, installation of equipment, drilling, soil compaction, and installation of the new reservoir roof structure. See Table 3 in the Project Description for a full list of construction equipment and number of construction vehicle trips for the proposed project. Pile driving equipment, which can cause excessive vibration, is not expected to be required for the proposed project.

The nearest structures to the site are the single-family residences surrounding the perimeter of the reservoir, with property lines approximately 50 feet from the reservoir. There may be times when construction work may generate perceptible vibration levels at the nearest residential building. Other existing structures are located further away and would experience lower vibration levels. While vibration levels may be perceptible, this would not be considered significant, given the intermittent and short duration of the phases that have the highest potential of producing vibration (use of jackhammers and other high-power tools). Construction-generated vibration would not have the potential to result in damage to existing structures in the vicinity and impacts would be less than significant.

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 the vicinity of any airport land use plan and is not located within two miles of any public or public use airport. Unlike a residential project, the proposed Alameda Reservoir Improvement project would not introduce sensitive receptors to the project area. Furthermore, the project area is located outside the 65 dBA CNEL noise contour line for aircraft activities at Norman Y. Mineta San José International Airport which is located approximately 10 miles away. For these reasons, the proposed project would not expose people to excessive noise levels from airport operations.

4.2.14 Population and Housing

Would the project:	*Potentially Significant Impact*	*Less than Significant Impact with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
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?	☐	☐	☐	☒

Regulatory Setting

State

Housing-Element Law

State requirements mandating that housing be included as an element of each jurisdiction's general plan is known as housing-element law. The Regional Housing Need Allocation (RHNA) is the state-mandated process to identify the total number of housing units (by affordability level) that each jurisdiction must accommodate in its housing element. California housing-element law requires cities to: 1) zone adequate lands to accommodate its RHNA; 2) produce an inventory of sites that can accommodate its share of the RHNA; 3) identify governmental and non-governmental constraints to residential development; 4) develop strategies and a work plan to mitigate or eliminate those constraints; and 5) adopt a housing element and update it on a regular basis.[50] The City of Fremont Housing Element and related land use policies were last updated in 2015.

Regional and Local

Plan Bay Area 2040

Plan Bay Area 2040 is a long-range transportation, land-use, and housing plan intended support a growing economy, provide more housing and transportation choices, and reduce transportation-related pollution and GHG emissions in the Bay Area. Plan Bay Area 2040 promotes compact, mixed-use residential and commercial neighborhoods near transit, particularly within identified Priority Development Areas (PDAs).[51]

[50] *California Department of Housing and Community Development. "Regional Housing Needs Allocation and Housing Elements". Available at: https://www.hcd.ca.gov/community-development/housing-element/index.shtml. Accessed on: August 6, 2021.*

[51] *Association of Bay Area Governments and Metropolitan Transportation Commission. "Project Mapper." http://projectmapper.planbayarea.org/. Accessed on: August 6, 2021.*

ABAG allocates regional housing needs to each city and county within the nine-county San Francisco Bay Area, based on statewide goals. ABAG also develops forecasts for population, households, and economic activity in the Bay Area. ABAG, MTC, and local jurisdiction planning staff created the Regional Forecast of Jobs, Population, and Housing, which is an integrated land use and transportation plan through the year 2040 (upon which Plan Bay Area 2040 is based).

Environmental Setting

The population of Fremont was estimated to be approximately 234,239 in January 2021 with an average of approximately three persons per household.[52] [53] The County of Alameda's population was estimated to be 1,656,591 as of January 1, 2021.[54] Single-family residences surround the project site on Shoshone Court and Curtner Road. The project site is currently developed with Alameda Reservoir and there are no residents on-site.

Discussion of Impacts

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)?

No Impact. The purpose of the proposed project is to replace the roof and roof framing system and seismically upgrade the reservoir. The project would not add new homes, businesses, or roads or other infrastructure that would induce substantial population growth in an area either directly or indirectly. The proposed seismic retrofit and roof replacement project would serve existing and planned development within the urban envelope of Fremont. No impacts would occur.

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

No Impact. The project site does not contain any residential units, nor would the proposed project result in the displacement of any existing people. Therefore, the project would not necessitate the construction of replacement housing. No impacts would occur.

[52] *State of California – Department of Finance. E-1 "Population Estimates for Cities, Counties, and the State. January 1, 2020 and 2021". Available at:* http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-1/ *Accessed on: July 27, 2021.*

[53] *United States Census Bureau. Quick Facts. Fremont City. Available at:* https://www.fire.ca.gov/ *Accessed on: August 6, 2021.*

[54] *State of California – Department of Finance. E-1 "Population Estimates for Cities, Counties, and the State. January 1, 2020 and 2021". Available at:* http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-1/ *Accessed on: July 27, 2021.*

4.2.15 Public Services

Would the project:	*Potentially Significant Impact*	*Less than Significant Impact with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
a) 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?	☐	☐	☒	☐

Environmental Setting

Fire Protection

Fire protection to the project site is provided by the City of Fremont Fire Department (FFD), which serves a population of over 230,000. The FFD provides fire suppression and rescue response, hazard prevention and education, and disaster preparedness. In 2019, FFD responded to 495 fire incidents, 10,543 medical emergencies and 249 incidents involving hazardous materials.[55] The nearest fire station to the project site is Fire Station 5, located approximately 0.9 miles southeast of the project site at 55 Hackamore Lane.

Police Protection

Police protection services are provided to the project site by the Fremont Police Department (FPD). The FPD consists of 320 full time employees, including 199 sworn employees.[56] FPD divides the City of Fremont into three zones for patrol services. The project site is located in Zone 3. Officers patrolling the area are dispatched from police headquarters, located at 2000 Stevenson Boulevard, approximately 4.8 miles northwest of the project site.

Schools

The nearest school to the project site is Fred E. Weibel Elementary School, located approximately 0.8-mile northwest of the project site.

[55] *Fremont Fire Department. "FY 2020-2025 Fremont Fire Department Strategic Plan". Accessed on August 6, 2021. http://fremontcityca.iqm2.com/Citizens/FileOpen.aspx?Type=1&ID=1552&Inline=True.*

[56] *Fremont Police Department. Fremont Police Department Table of Organization FY 2020-21. Accessed July 28, 2021. Available at: https://www.fremontpolice.gov/Home/ShowDocument?id=2*

Parks and Open Space

The nearest parks to the project site are Mission Peak Regional Preserve, located approximately 0.6-mile northeast of the project site, Rancho Higuera Historical Park, located approximately 0.7-mile southeast of the project site, and Warm Springs Community Park, located approximately 0.9-mile southwest of the project site.

Discussion of Impacts

a) *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?

Less-Than-Significant Impact. The purpose of this project is to replace the roof and roof framing system and seismically upgrade the reservoir. The proposed project would not cause an increase in public service needs. The proposed project would not require any road closures as the reservoir's perimeter road is both wide and long enough to accommodate any construction vehicle traffic. Incidents requiring law enforcement, fire protection, or emergency medical services could occur during construction. However, construction of the Alameda Reservoir improvement project is not expected to generate a substantial increase in demand for these services. The construction would not require construction of new or physically altered facilities to maintain service. For these reasons, the proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities in the areas of fire protection, police protection, or other public facilities and impacts would be less than significant.

No Impact. The project would not increase the number of residents or employees using recreational facilities or schools in the City of Fremont or Alameda County. For this reason, the project would have no impact on the use of existing neighborhood or regional parks, recreational facilities, or schools, such that deterioration of any facility would occur or accelerate. There would be no impacts to schools or park facilities.

4.2.16 Recreation

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

Environmental Setting

The City of Fremont maintains approximately 1,148 acres of parkland, spread over 53 parks, which provides recreational facilities to the community. In addition, residents and community members also have access to parks and trail systems maintained by other agencies, including: The East Bay Regional Parks, the Don Edwards San Francisco Bay National Wildlife Refuge, the San Francisco Bay Trail, and other recreational trails. The City also operates other recreational facilities including five community centers, various sport facilities, a water park, and an art gallery.[57]

The nearest parks to the project site are Mission Peak Regional Preserve, located approximately 0.6-mile northeast of the project site, Rancho Higuera Historical Park, located approximately 0.7-mile southeast of the project site, and Warm Springs Community Park, located approximately 0.9-mile southwest of the project site.

Discussion of Impacts

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

No Impact. The project would not result in increased demands on any public services provided within the City. The reservoir is not located within the boundary of an identified recreation facility or area and therefore the temporary influx of construction workers and equipment would not increase park usage and would not result in the physical deterioration of park facilities. Therefore, no impacts would occur. Once the seismic retrofit and roof replacement are complete, the reservoir would be located within the footprint of the existing reservoir and would not conflict with use of any recreational facility. The project would not increase the number of residents or employees using recreational facilities in the City of Fremont or Alameda County. For this reason,

[57] *City of Fremont General Plan. December 2011. Chapter 8 – Parks & Recreation.*

the project would have no impact on the use of existing neighborhood or regional parks, or any other recreational facilities, such that deterioration of any facility would occur or accelerate.

b) 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 does not include recreational facilities and would not require the construction or expansion of recreational facilities. The purpose of the proposed project is to replace the roof and roof framing system and seismically upgrade the reservoir. Maintenance of proposed project components would be addressed by existing maintenance personnel and therefore the proposed project would not induce population growth and no additional recreation facilities would be required. Therefore, no impact would occur.

4.2.17 Transportation

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

Regulatory Setting

Regional Transportation Planning

The Metropolitan Transportation Commission (MTC) is the transportation planning, coordinating, and financing agency for the nine-county San Francisco Bay Area, including Alameda County. MTC is charged with regularly updating the Regional Transportation Plan, a comprehensive blueprint for the development of mass transit, highway, airport, seaport, railroad, bicycle, and pedestrian facilities in the region. MTC and ABAG adopted Plan Bay Area 2040 in July 2017, which includes the region's Sustainable Communities Strategy (integrating transportation, land use, and housing to meet GHG reduction targets set by CARB) and Regional Transportation Plan (including a regional transportation investment strategy for revenues from federal, state, regional and local sources over the next 24 years).

Senate Bill 743

Senate Bill 743 (SB 743) was signed in 2013 and requires that vehicle miles traveled (VMT) per capita, employee, or net VMT be used to analyze transportation impacts of land use projects under CEQA instead of reduction in levels of service. In 2018, the CEQA Guidelines were updated to include Section 15064.3, which implements SB 743 and requires lead agencies to select a VMT methodology, choose significance thresholds, and determine feasible mitigation measures. Section 15064.3 became effective statewide in July 2020. VMT should be reduced to minimize the transportation impact a development has on a community. The goal of SB 743 is to encourage development that reduces VMT.

Environmental Setting

Roadway Network

Regional access to the project site is provided via I-680. Direct access to the site is provided via Shoshone Court, which can be accessed by Klamath Street, Curtner Road, and Paseo Padre Parkway.

- Shoshone Court is a paved local street with one traffic lane in each eastbound and westbound direction that ends in a cul-de-sac. Shoshone Court can be accessed from Klamath Street.

- Klamath Street is a local street with one traffic lane in each direction. This street runs from Curtner Road and Paseo Padre Parkway.

- Curtner Road is a paved local street with one traffic lane in each eastbound and westbound direction between Mission Boulevard and E. Warren Avenue.

- E Warren Avenue, which becomes Paseo Padre Parkway at its intersection with Curtner Road to the east of the project site, provides connectivity to regional roadways including I-680, I-880, Mission Boulevard, and Warm Springs Boulevard. In the City of Fremont General Plan, E Warren Avenue is classified as a Parkway to the east of its intersection with Navajo Road, and as an Arterial to the west of the intersection.

Pedestrian Facilities

E Warren Ave has sidewalks on both sides in addition to highly visible pedestrian crosswalks. Klamath Street and Shoshone Court have paved sidewalks on both sides of the road.

Bicycle Facilities

Class II (signed and striped) bicycle lanes are provided on E Warren Avenue, which connect to other nearby Class II facilities on Warm Springs Boulevard and Paseo Padre Parkway. The City of Fremont's Bicycle and Pedestrian Master Plan proposes several bikeway improvements in the vicinity of the project site, including providing a separated bikeway along E Warren Avenue and creating a Class I bicycle path that connects nearby parks including Warm Springs Community Park, Booster Park, Lone Tree Creek Park, and Plomosa Park. These projects are not designated as Priority Projects under the Bicycle Master Plan, and a timeframe for their completion is not known at this time.

Discussion of Impacts

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

Less-Than-Significant Impact. The proposed project would not require any lane closures during construction of the proposed project. The perimeter road around the reservoir is wide and long enough to accommodate all construction traffic, including back-up concrete trucks. No construction vehicle traffic would spill into adjacent streets. Construction vehicles traveling to and from the project area may cause a slight increase in traffic volumes during the overall construction period. Trucks would travel via Paseo Padre Parkway during construction to access the site, since

no left-turn is available from Curtner Road onto Mission Boulevard. Traffic impacts during construction would be less than significant.

Once constructed, the improved reservoir roof and support system would be located within the existing footprint of the existing reservoir and would not impede or obstruct traffic on any surrounding roadways including Curtner Road or Shoshone Court. As under current operating conditions, the reservoir would require routine maintenance and repair in emergency situations. Maintenance and repair would generally be similar to existing conditions except for operation of the new ventilation system. However, the maintenance of the ventilation system would occur during the reservoir's routine maintenance schedule and would not require additional workers or traffic trips as compared to the existing conditions. For these reasons, the project would not result in a substantial decrease in the effectiveness of the circulation system, and would not conflict with any plan, policy, or ordinance addressing the circulation system.

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

No Impact. The project proposes to improve Alameda Reservoir with a replaced roof and roof framing system, and to seismically upgrade the existing reservoir. Implementation of the project would not increase the capacity nor change the operations of the reservoir. Thus, there would be no change in vehicle miles traveled with implementation of the proposed project and the project would not conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).

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

No Impact. The proposed project does not involve any design features or incompatible uses that would increase hazards within the project area. All construction within existing roadways would be temporary and the roadways would be restored to their existing condition after construction is complete. The project would not increase the capacity nor change the operations of the existing reservoir. Therefore, the proposed project would not 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?

Less-Than-Significant Impact. Construction-related truck traffic has the potential to occur during weekday peak hours, and therefore it could temporarily impede traffic flow, including for emergency service providers. However, the project would not result in inadequate emergency access because emergency vehicles would maintain ingress and egress access around the work area through construction. No road closures would occur during the construction phase. Therefore, the impact on emergency access would be less than significant.

4.2.18 Tribal Cultural Resources

Would the project?	*Potentially Significant Impact*	*Less than Significant Impact with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
a) 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 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)?	☐	☒	☐	☐
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 Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Regulatory Setting

Assembly Bill 52

AB 52, effective July 2015, established a new category of resources for consideration by public agencies called Tribal Cultural Resources (TCRs). AB 52 requires lead agencies to provide notice of projects to tribes that are traditionally and culturally affiliated with the geographic area if they have requested to be notified. Where a project may have a significant impact on a tribal cultural resource, consultation is required until the parties agree to measures to mitigate or avoid a significant effect on a tribal cultural resource or until it is concluded that mutual agreement cannot be reached.

Under AB 52, TCRs are defined as follows:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are also either:
    - Included or determined to be eligible for inclusion in the California Register of Historic Resources, or
    - Included in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).
- A resource determined by the lead agency to be a TCR.

City of Fremont Municipal Code

As discussed in the Section 4.3.5 Cultural Resources above, the City of Fremont's Municipal Code Chapter 18.218.050 Standard Development Requirements Section (d) specifies measures to protect cultural and tribal cultural resources prior to and during project construction.

Environmental Setting

The project site contains the existing Alameda Reservoir. Pacific Legacy, the archaeologists for the project, submitted a request to the Native American Heritage Commission (NAHC) for a search of the Sacred Lands File for potential tribals sensitivity within the project area on July 7, 2021. Ms. Sarah Fonseca, Cultural Resources Analyst with the NAHC, responded in a letter dated July 27, 2021, to report that the search results were positive for Native American cultural resources within the vicinity of the project area. She suggested contact with The Ohlone Indian Tribe and the North Valley Yokuts Tribe for more information. In addition to these two groups, she also provided contact information for twelve additional Native American tribal representatives with potential knowledge of or interest in the project vicinity. On July 28, 2021, Pacific Legacy sent certified contact letters to the following individuals on that list:

- Mr. Andrew Galvan of The Ohlone Indian Tribe;
- Ms. Katherine Perez, Chairperson, and Mr. Timothy Perez of the North Valley Yokuts Tribe;
- Ms. Irene Zwierlein, Chairperson, of the Amah Mutsun Tribal Band of Mission San Juan Bautista;
- Mr. Tony Cerda, Chairperson, of the Costanoan Rumsen Carmel Tribe;
- Ms. Ann Marie Sayers, Chairperson, and Ms. Kanyon Sayers-Roods, Most Likely Descendent of the Indian Canyon Mutsun Band of Costanoan;
- Ms. Monica Arellano, Vice Chairwoman, of the Muwekma Ohlone Indian Tribe of the San Francisco Bay Area;
- Mr. Jesus Tarango, Chairperson, Steven Hutchason, THPO, and Mr. Dahlton Brown, Director of Administration, of the Wilton Rancheria;
- Mr. Kenneth Woodrow, Chairperson, of the Wuksache Indian Tribe/Eshom Valley Band;
- Ms. Corrina Gould, Chairperson, of The Confederated Villages of Lisjan; and
- Ms. Quirina Luna Geary, Chairperson, and Mr. Jonathan Wasaka Costillas, THPO. of the Tamien Nation.

The letters briefly described the proposed project and requested any available information that those potential stakeholders might have regarding Native American cultural resources within or near the Project area. Two responses to these requests for contact have been received to date. Mr. Andres Galvan of the Ohlone Indian Tribe and Ms. Ann Marie Sayers of the Indian Canyon Mutsun Band of Costanoan recommended Native American monitors to be present during soil disturbing activities due to the sensitive nature of the project vicinity. No additional tribes have contacted the District requesting notification of projects under AB 52.

Discussion of Impacts

a) *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 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)?

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 Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less-Than-Significant Impact with Mitigation Incorporated. The archival and record search prepared by Pacific Legacy revealed that no cultural resources have been previously recorded in the project area, and one cultural resource has been reported within a surrounding 0.25-mile radius. Approximately 9,000 cubic yards of cut soil and pavement would be exported and 4,000 cubic yards of backfill will be imported to the site. Concrete buttresses would be installed approximately two feet below ground surface. Therefore, though unlikely, there is the possibility that tribal cultural resources could be uncovered during project construction. In response to the archival records search letters (described above), the Ohlone Indian Tribe and Indian Canyon Mutsu Band of Costanoan have recommended Native American Monitor to be present during any soil disturbing activities due to the sensitive nature of the project vicinity. The City of Fremont Municipal Codes Chapter 18.218.050 subsection (d) (4) requires project proponents to honor requests that made by the designated contract of a California Native American tribe and specifies measures to conduct tribal cultural monitoring and training. Therefore, the project would implement the following measures contained in section 18.218.050 of the City of Fremont's Municipal Code to reduce or avoid project impacts on tribal cultural resources. In addition, as described in Section 4.3.5 Cultural Resources, the project would implement MM CUL-1.1, MM CUL-1.2, and MM CUL-2.1 to reduce potential impacts to unknown subsurface cultural resources. These measures would be applicable to tribal cultural resources and would function to avoid impacts to such resources if they are discovered on-site.

Impact TCR-1: Project construction could result in potentially significant impacts to tribal cultural resources, if any are encountered during construction.

Mitigation Measure: The following mitigation measure shall be implemented to reduce or avoid impacts on tribal cultural resources.

MM TCR-1.1: A tribal cultural representative (or their designee) shall be notified so they may present during any ground-disturbing activities to monitor sites or objects of significance to Native Americans and to provide construction worker tribal cultural resources awareness training including applicable regulations and protocols for avoidance, confidentiality, and culturally appropriate treatment.

The tribal cultural representative (or their designee) shall have the ability to request that work be stopped, diverted, or slowed if sites or objects of significance to Native Americans are encountered within the direct impact area and shall be consulted for recommendations regarding the appropriate treatment of such sites or objects.

With implementation of MM TRC-1.1, MM CUL-1.1, MM CUL-1.2, and MM CUL-2.1 the proposed project would have a less-than-significant impact on tribal cultural resources.

4.2.19 Utilities and Service Systems

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

Regulatory Setting

State

State Water Code

Pursuant to the State Water Code, water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet (approximately 980 million gallons) of water must prepare and adopt an urban water management plan (UWMP) and update it every five years. As part of a UWMP, water agencies are required to evaluate and describe their water resource supplies and projected needs over a 20-year planning horizon, water conservation, water service reliability, water recycling,

opportunities for water transfers, and contingency plans for drought events. The most recent UWMP was adopted by the District on May 13, 2021.[58]

Assembly Bill 939

The California Integrated Waste Management Act of 1989, or AB 939, established the Integrated Waste Management Board, required the implementation of integrated waste management plans, and mandated that local jurisdictions divert at least 50 percent of solid waste generated (from 1990 levels), beginning January 1, 2000, and divert at least 75 percent by 2010. Projects that would have an adverse effect on waste diversion goals are required to include waste diversion mitigation measures.

Assembly Bill 341

AB 341 sets forth the requirements of the statewide mandatory commercial recycling program. Businesses that generate four or more cubic yards of garbage per week and multi-family dwellings with five or more units in California are required to recycle. AB 341 sets a statewide goal for 75 percent disposal reduction by the year 2020.

Senate Bill 1383

SB 1383 establishes targets to achieve a 50 percent reduction in the level of the statewide disposal of organic waste from the 2014 level by 2020 and a 75 percent reduction by 2025. The bill grants CalRecycle the regulatory authority required to achieve the organic waste disposal reduction targets and establishes an additional target that at least 20 percent of currently disposed edible food is recovered for human consumption by 2025.

California Green Building Standards Code

The 2019 California Green Building Standards Code (CCR Title 24, Part 11) establishes mandatory green building standards for all buildings in California[59]. The code covers five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resources efficiency, and indoor environmental quality. These standards include the following mandatory set of measures for new construction projects to achieve specific green building performance levels:

- Reducing indoor water use by 20 percent;
- Reducing wastewater by 20 percent;
- Recycling and/or salvaging 65 percent of nonhazardous construction and demolition debris; and
- Providing readily accessible areas for recycling by occupants.

[58] *Alameda County Water District. Urban Water Management Plan 2020-2025. Available at:* https://www.acwd.org/365/Urban-Water-Management-Plan *Accessed on: August 9, 2021.*

[59] *California Building Standards Commission. 2019 California Green Building Standards Code. Available at https://www.hcd.ca.gov/building-standards/calgreen/index.shtml. Accessed on: September 1, 2021.*

Local

City of Fremont 2030 General Plan

The proposed project would be subject to the utilities and service system policies of the City of Fremont's General Plan, as shown in Table 15 below:

Table 15: City of Fremont 2030 General Plan Policies

Policy	Description
Policy 9-3.1	• Work with the Alameda County Water District, Union Sanitary District, and Alameda County Flood Control District to encourage their long-range plans are consistent with the Fremont General Plan.

City of Fremont Solid Waste Diversion Goal

The City Council adopted a diversion goal of 75 percent of solid waste from the landfill in 1999, in excess of the statewide required 50 percent. In 2009, the City diverted 71 percent of the community's solid waste from the landfill.

Environmental Setting

Water Services

Potable water is provided to the cities of Fremont, Newark, and Union City by Alameda County Water District. The District obtains its water from both the Niles Cone Groundwater Basin and the Del Valle Reservoir. The District supplies primarily urban costumers, with approximately 70 percent of use for residential customers, and the remaining 30 percent utilized by commercial, industrial, and institutional customers. System sources include the Bay-Delta via the State Water Project, the San Francisco Regional Water System, and local groundwater supplies. Total system distribution was approximately 38,500 acre-feet in fiscal year 2019-2020.[60]

Wastewater

The Union Sanitary District (USD) is responsible for collection and treatment of wastewater for a 60 square mile area including Union City, Fremont and Newark. The Alvarado Wastewater Treatment Plant (Alvarado WWTP) is located in Union City, just west of Union City Boulevard. Wastewater generated within the USD service area is collected and conveyed by gravity sewers to three major pump stations. The Irvington Pump Station serves the southern portion of the service area, the Newark Pump Station serves the central portion and the Alvarado Pump Station serves the northern portion. Wastewater collected in the southern and central areas is transported to the Alvarado WWTP in Union City via dual 33-inch and 39-inch force mains prior to outfall in the San Francisco Bay after treatment. The northern area wastewater is pumped directly to the WWTP from the Alvarado Pump Station.

[60] *Alameda County Water District. Urban Water Management Plan 2020-2025. Available at: https://www.acwd.org/365/Urban-Water-Management-Plan Accessed on: August 9, 2021.*

Stormwater

The ACFCWCD oversees stormwater controls in the project area, including creeks, channels, levees, pump stations, dams, and reservoirs. The City of Fremont manages the municipal stormwater system.

Gas, Electricity, and Telecommunications Services

PG&E provides natural gas and electricity in the City. Traditional telephone service is provided by AT&T and its various precursor companies. Comcast operates the fiber-optic cable communications network. Alameda Reservoir is served by an existing PG&E transformer. There is no gas service.

Discussion of Impacts

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?*

Less-Than-Significant Impact. The project would seismically upgrade the existing reservoir to enhance its safety and expand its lifespan. The project would not increase the capacity of the reservoir, nor would it change site operations. The project would not construct any new residential or commercial structures that would require water, wastewater, or other utilities. As a result, the project would have less-than-significant impacts due to construction of new or expanded utility or service system facilities.

b) *Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*

No Impact. The project would replace the roof and roof framing system and seismically upgrade the reservoir and would not create new residential, commercial, industrial, or agricultural uses that would affect available water supplies or require new or expanded water supply resources or entitlements. No significant quantity of water would be required during project construction, other than for routine dust suppression. The temporary increment of potable water demand by the construction workers would not be significant to require new or expanded water supply resources or entitlements.

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?*

Less-Than-Significant Impact. Implementation of the project would not require or result in the relocation or construction of new or expanded wastewater treatment facilities. The project would not result in the construction of new water treatment facilities or expansion of such facilities. During site preparation, the District would draw down the reservoir ban and pump it into the sewage system in coordination with the Union Sanitary District. Wastewater would be generated during construction from worker sanitary facilities and from process-related use (such as dust suppression, in which case the water percolates into the ground after use, requiring no wastewater treatment). The minimal amount of wastewater generated by workers and process-related wastewater generated during construction and draining of the reservoir would not exceed

the treatment capacity of the City's wastewater facilities at the Alvarado WWTP. Therefore, this impact would be less than significant.

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?

Less-Than-Significant Impact. The proposed project would not generate any solid waste during operation. Solid waste resulting from construction and demolition activities will be hauled off-site and would comply with all applicable standards, including the CBC, for solid waste management or impair the attainment of solid waste reduction goals. The demolition materials would be loaded into approximately 20 dump trucks per day and hauled off-site for disposal over the 60-day demolition period. Approximately 9,000 cubic yards of cut soil and pavement from grading would be exported off-site.

The nearest landfill to the project site is the Newby Island Landfill, which is located approximately 3 miles southwest. As of October 2014, the Newby Island Landfill had remaining capacity of 21.2 million cubic yards, with a total capacity of 57.5 million cubic yards.[61] The quantity of solid waste materials associated with construction would be limited to the construction period, and would not pose a significant impact upon existing landfills. No additional solid waste would be generated by long-term operations of the proposed project. Impacts related to solid waste disposal are considered less than significant.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less-Than-Significant Impact. As described above, implementation of the project would generate solid waste associated with construction activities. The demolition materials would be loaded into 20 dump trucks per day and hauled off-site for disposal over the 60-day demolition period. Approximately 9,000 cubic yards of cut soil and pavement would be exported off-site. A minimum of 65 percent nonhazardous construction and demolition debris would be recycled or salvaged for rescue as required by the 2019 California Green Building Standards Code (CCR Title 24, Part 11)[62]. To the extent possible, construction and demolition debris would be recycled either on-site or transported to a local disposal center for recycling. Solid waste generation would be limited to the construction period; no solid waste would be generated from long-term operation of the proposed project. The proposed project would comply with federal, State (including the CBC), and local statutes and regulations related to solid waste. Therefore, impacts would be less than significant.

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[61] *Cal Recycle, 2019. Facility/Site Summary Details: Newby Island Sanitary Landfill (43-AN-0003). Available at:* https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1362?siteID=3388 *Accessed on: August 9, 2021.*

[62] *California Building Standards Commission. 2019 California Green Building Standards Code. Available at https://www.hcd.ca.gov/building-standards/calgreen/index.shtml. Accessed on: September 1, 2021.*

4.2.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	*Potentially Significant Impact*	*Less than Significant Impact with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
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?	☐	☐	☐	☒

Environmental Setting

The California Department of Forestry and Fire Hazard Protection (CAL FIRE) is responsible for the identification of very high fire hazard severity zones and transmission of these maps to local government agencies. Based on the Fire Hazard Severity Zone (FHSZ) Map Viewer, the project site is not located within a FHSZ area.[63]

Discussion of Impacts

a-d) Substantially impair an adopted emergency response plan or emergency evacuation plan? 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? 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? 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?

[63] *CAL FIRE. Fire Hazard Severity Zone Viewer. Available at:* http://egis.fire.ca.gov/FHSZ/*. Accessed on: July 28, 2021.*

No Impact. The project site is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones; therefore, the project would not result in wildfire impacts.

4.2.21 Mandatory Findings of Significance

Does the project:	*Potentially Significant Impact*	*Less than Significant Impact with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
a) 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) 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) Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion of Impacts

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

Less-than-Significant Impact with Mitigation Incorporated. Implementation of the mitigation measures required in this Initial Study would ensure that the construction and operation of the project would not substantially degrade the quality of the environment, substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, 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.

As described in the Section 4.3.4 Biological Resources of this Initial Study, the project would not result in significant impacts to biological resources, with the exception of potential significant impacts to nesting birds and special-status wildlife. Section 4.3.4 includes mitigation measures to minimize impacts to nesting birds and special-status wildlife to a less-than-significant level. Mitigation measures are provided in Section 4.3.5 Cultural Resources, in the event that

unanticipated historical or archeological resources and human remains are identified in the project area during construction. With implementation of mitigation measures the project would not substantially degrade the quality of the environment.

b) *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. Under Section 15065(a)(3) of the CEQA Guidelines, a lead agency shall find that a project may have a significant effect on the environment where there is substantial evidence that the project has potential environmental effects "that are individually limited, but cumulatively considerable." As defined in Section 15065(a)(3) of the CEQA Guidelines, 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."

There are two cumulative projects within the project vicinity: Curtner Road Booster Station Upgrade Project and the Clean Energy Project Phase 2. The Curtner Road Booster Station Upgrade Project is located approximately 240 feet northwest of the project site. This project would involve various improvements at the existing Curtner Road Booster Station, including civil engineering site improvements, mechanical equipment improvements, and electrical improvements.[64] The construction schedule for the Curtner Road Booster Station Project is anticipated to begin in mid-2022 and end in mid-2023. The Clean Energy Project Phase 2 involves the installation of solar arrays on the roof of Alameda Reservoir and would occur in late 2023. The Solar Photovoltaic System Installation Project has been analyzed and deemed categorically exempt from CEQA as part of the Clean Energy Program and would occur with or without the seismic retrofit project and result in less than significant cumulative impacts.

The project would have no impact or less than significant impacts to aesthetics, agricultural and forestry resources, energy, greenhouse gas emissions, hydrology and water quality, land use and planning, mineral resources, population and housing, public services, recreation, transportation, utilities and service systems, and wildfire. Therefore, the project would not contribute to cumulatively considerable impacts to these resources.

The project would involve replacement of the roof and roof framing system and seismically upgrade the Alameda Reservoir. After project completion, existing conditions in the project area would remain unchanged. The potential environmental impacts from the project are primarily limited to the construction period. As discussed throughout this Initial Study, operation of the project would be similar to the existing conditions and would not result in significant impacts to the environment. Construction of the project could result in temporary significant impacts to air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality noise, and tribal cultural resources. Impacts to these resources would be less than significant with implementation of mitigation measures identified

[64] *Alameda County Water District, "Curtner Road Booster Station Upgrade Project Initial Study/Mitigated Negative Declaration". May 2021.*

in this Initial Study. Therefore, the project would not contribute to cumulative impacts upon these resources.

By their very nature, air pollution, greenhouse gas emissions, and energy, are largely cumulative resources. The project-level thresholds identified by BAAQMD (which the project's impacts were compared to in Section 4.3.3 Air Quality) are the basis for determining whether a project's individual impact is cumulatively considerable. As discussed in this Initial Study, the project would have a less-than-significant impact on greenhouse gas emissions and energy and would have less-than-significant impacts on air quality with implementation of MM AIR-1.1 and MM AIR-1.2. Therefore, the project would not have a cumulatively considerable contribution to air quality emissions, greenhouse gas emissions, or energy impacts with implementation of mitigation measures.

Construction of the project would result in temporary noise impacts during construction. However, the project would implement mitigation measures and comply with the adopted City of Fremont's Construction Noise policies to reduce the project's temporary construction noise impacts to a less-than-significant level. Cumulative projects, including the Curtner Road Booster Station Upgrade Project and the Clean Energy Project Phase 2, would also be subject to the City of Fremont Construction Noise policies which would reduce potential for cumulative noise impacts. For these reasons, the project would not contribute to a significant cumulative construction noise impacts with implementation of mitigation measures.

c) *Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?*

Less-Than-Significant Impact with Mitigation Incorporated. Consistent with Section 15065(a)(4) of the CEQA Guidelines, a lead agency shall find that a project may have a significant effect on the environment where there is substantial evidence that the project has the potential to cause substantial adverse effects on human beings, either directly or indirectly. Pursuant to this standard, a change to the physical environment that might otherwise be minor must be treated as significant if people would be significantly affected. This factor relates to adverse changes to the environment of human beings generally, and not to effects on particular individuals. While changes to the environment that could indirectly affect human beings would be represented by all of the designated CEQA issue areas, those that could directly affect human beings include air quality and noise. Implementation of mitigation measures, and adherence to General Plan, City Code, and State and federal regulations described in Section 4.3.3 Air Quality and Section 4.3.13 Noise of this Initial Study, would avoid significant impacts. No other direct or indirect adverse effects on human beings have been identified. The impacts on human beings would be less than significant with implementation of mitigation measures.

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6.0 LEAD AGENCY AND CONSULTANTS

6.1 LEAD AGENCY

Alameda County Water District

Carlos Sempere, SE

6.2 CONSULTANTS

WRA, Inc. – CEQA Consultant

Jenn Hyman, PE, Principal

Tali Ashurov, Senior Environmental Planner

Yingying Cai, Environmental Planner

Reida Khan, Assistant Environmental Planner II

Jason Yakich, Senior Biologist

Scott Yarger, Associate Plant Biologist

Brian Kearns, Wildlife Biologist

Neal Jander, GIS Analyst

Baseline Environmental Consulting (Air Quality, Greenhouse Gas Emissions, Noise)

Bruce Abelli-Amen, Principal/Technical Director

Ivy Tao, Environmental Engineer

Pacific Legacy (Archaeology)

Samantha Schell, Principal

APPENDICES

Appendix A – Air Quality and Greenhouse Gas Emissions Data
Appendix B – Biological Constraints Assessment
Appendix C – Geotechnical Report

Appendix A – Air Quality and Greenhouse Gas Emissions Data

Alameda Reservoir Improvements Project

CalEEMod Results for Estimating Construction Emissions of Criteria Air Pollutants

CalEEMod Results

CONSTRUCTION - Total Emissions

Emissions Scenario			Exhaust			Fugitive Dust	
	ROG	NO_x	PM_{10}	$PM_{2.5}$		PM_{10}	$PM_{2.5}$
Units	Tons	Tons	Tons	Tons		Tons	Tons
Emissions Without Tier 4 Engine Requirements	0.092	1.012	0.040	0.037		Best Management Practice	
Emissions With Tier 4 Engine Requirements	0.026	0.191	0.003	0.003			

Total Construction Days =	220

CONSTRUCTION - Average Daily Emissions

Emissions Scenario			Exhaust			Fugitive Dust	
	ROG	NO_x	PM_{10}	$PM_{2.5}$		PM_{10}	$PM_{2.5}$
Units	lb/day	lb/day	lb/day	lb/day		lb/day	lb/day
Emissions Without Tier 4 Engine Requirements	0.8	9.2	0.37	0.34		Best Management Practice	
Emissions With Tier 4 Engine Requirements	0.2	1.7	0.03	0.03			
BAAQMD's Thresholds	54	54	82	54		---	---
Exceed Thresholds?	No						

CalEEMod Assumptions

1. Construction input for CalEEMod was based on Table 3. Construction Equipment and Number of Vehicle Trips.
2. Dump truck, concrete pump truck, concrete truck trips were grouped together for haul trips and assumed to use heavy-heavy duty trucks.
3. It was conservatively assumed that the construction phase would have one vendor truck trip per day on average.
4. 20 worker vehicles would access the site daily throughout project construction.
5. In CalEEMod, boom truck and material handling crane were both input as "cranes".
6. Two construction scenarios were modeled, one with CalEEMod default off-road equipment tiers, and the other with all Tier 4 Final off-road equipment.
7. All other model parameters, such as trip length and work hours per day, are CalEEMod defaults.

Alameda Reservoir Improvements Construction Emissions.v1 - Alameda County, Annual

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

Alameda Reservoir Improvements Construction Emissions.v1

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	3.27	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2023
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land use selection is arbitrary and does not affect model output.

Construction Phase - Construction phases and duration updated according to Table 3.

Off-road Equipment - Off-road equipment during demolition consists of one boom truck (crane as CalEEMod equipment)

Off-road Equipment - Off-road equipment during construction phase includes crane, boom truck (input as crane), and 2 backhoes.

Demolition - demolition size is left blank to allow manual input of truck trips in 'Trips and VMT'.

Trips and VMT - 20 worker vehicles throughout construction. Dump Truck during demolition is 1,200 total (haul). Concrete pump truck and concrete truck trip are 3+95=98 haul trips. Vendor truck trips total 75 trips over 160 days.

Construction Off-road Equipment Mitigation - Assume all off-road equipment are Tier 4.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

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

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	230.00	160.00
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	PhaseEndDate	7/14/2023	6/2/2023
tblConstructionPhase	PhaseEndDate	8/26/2022	10/21/2022
tblConstructionPhase	PhaseStartDate	8/27/2022	10/24/2022
tblLandUse	LotAcreage	0.00	3.27
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,200.00
tblTripsAndVMT	HaulingTripNumber	0.00	98.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	3.00	20.00
tblTripsAndVMT	WorkerTripNumber	0.00	20.00

2.0 Emissions Summary

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

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0406	0.4876	0.2851	1.0300e-003	0.0193	0.0177	0.0370	5.2300e-003	0.0164	0.0216	0.0000	94.4117	94.4117	0.0170	6.2300e-003	96.6927
2023	0.0514	0.5239	0.4175	9.6000e-004	9.6300e-003	0.0227	0.0324	2.5800e-003	0.0209	0.0235	0.0000	84.9258	84.9258	0.0246	6.6000e-004	85.7363
Maximum	**0.0514**	**0.5239**	**0.4175**	**1.0300e-003**	**0.0193**	**0.0227**	**0.0370**	**5.2300e-003**	**0.0209**	**0.0235**	**0.0000**	**94.4117**	**94.4117**	**0.0246**	**6.2300e-003**	**96.6927**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0129	0.1363	0.3416	1.0300e-003	0.0193	1.9300e-003	0.0212	5.2300e-003	1.8800e-003	7.1100e-003	0.0000	94.4116	94.4116	0.0170	6.2300e-003	96.6926
2023	0.0135	0.0542	0.5018	9.6000e-004	9.6300e-003	1.4900e-003	0.0111	2.5800e-003	1.4900e-003	4.0600e-003	0.0000	84.9257	84.9257	0.0246	6.6000e-004	85.7362
Maximum	**0.0135**	**0.1363**	**0.5018**	**1.0300e-003**	**0.0193**	**1.9300e-003**	**0.0212**	**5.2300e-003**	**1.8800e-003**	**7.1100e-003**	**0.0000**	**94.4116**	**94.4116**	**0.0246**	**6.2300e-003**	**96.6926**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**71.38**	**81.17**	**-20.04**	**0.00**	**0.00**	**91.55**	**53.39**	**0.00**	**90.96**	**75.22**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**8-1-2022**	**10-31-2022**	0.2667	0.1160
2	**11-1-2022**	**1-31-2023**	0.3657	0.0418
3	**2-1-2023**	**4-30-2023**	0.3326	0.0393
4	**5-1-2023**	**7-31-2023**	0.1232	0.0144
		Highest	0.3657	0.1160

2.2 Overall Operational

Unmitigated Operational

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

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

2.2 Overall Operational

Mitigated Operational

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2022	10/21/2022	5	60	
2	Building Construction	Building Construction	10/24/2022	6/2/2023	5	160	

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

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Excavators	0	8.00	158	0.38
Demolition	Cranes	1	8.00	231	0.29
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Building Construction	Cranes	2	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	1	20.00	0.00	1,200.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	20.00	1.00	98.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

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

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0111	0.1247	0.0564	1.7000e-004		5.1800e-003	5.1800e-003		4.7600e-003	4.7600e-003	0.0000	15.1092	15.1092	4.8900e-003	0.0000	15.2314
Total	**0.0111**	**0.1247**	**0.0564**	**1.7000e-004**		**5.1800e-003**	**5.1800e-003**		**4.7600e-003**	**4.7600e-003**	**0.0000**	**15.1092**	**15.1092**	**4.8900e-003**	**0.0000**	**15.2314**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.7600e-003	0.1003	0.0206	3.8000e-004	0.0102	9.3000e-004	0.0111	2.8000e-003	8.9000e-004	3.6800e-003	0.0000	36.7340	36.7340	8.0000e-004	5.8000e-003	38.4828
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6900e-003	1.2100e-003	0.0144	4.0000e-005	4.7400e-003	3.0000e-005	4.7700e-003	1.2600e-003	2.0000e-005	1.2900e-003	0.0000	3.8131	3.8131	1.2000e-004	1.1000e-004	3.8495
Total	**4.4500e-003**	**0.1016**	**0.0350**	**4.2000e-004**	**0.0149**	**9.6000e-004**	**0.0159**	**4.0600e-003**	**9.1000e-004**	**4.9700e-003**	**0.0000**	**40.5471**	**40.5471**	**9.2000e-004**	**5.9100e-003**	**42.3322**

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

3.2 Demolition - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.1100e-003	9.1600e-003	0.0775	1.7000e-004		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	15.1092	15.1092	4.8900e-003	0.0000	15.2314
Total	**2.1100e-003**	**9.1600e-003**	**0.0775**	**1.7000e-004**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**15.1092**	**15.1092**	**4.8900e-003**	**0.0000**	**15.2314**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.7600e-003	0.1003	0.0206	3.8000e-004	0.0102	9.3000e-004	0.0111	2.8000e-003	8.9000e-004	3.6800e-003	0.0000	36.7340	36.7340	8.0000e-004	5.8000e-003	38.4828
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6900e-003	1.2100e-003	0.0144	4.0000e-005	4.7400e-003	3.0000e-005	4.7700e-003	1.2600e-003	2.0000e-005	1.2900e-003	0.0000	3.8131	3.8131	1.2000e-004	1.1000e-004	3.8495
Total	**4.4500e-003**	**0.1016**	**0.0350**	**4.2000e-004**	**0.0149**	**9.6000e-004**	**0.0159**	**4.0600e-003**	**9.1000e-004**	**4.9700e-003**	**0.0000**	**40.5471**	**40.5471**	**9.2000e-004**	**5.9100e-003**	**42.3322**

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

3.3 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0235	0.2564	0.1807	3.9000e-004		0.0115	0.0115		0.0106	0.0106	0.0000	34.1356	34.1356	0.0110	0.0000	34.4116
Total	**0.0235**	**0.2564**	**0.1807**	**3.9000e-004**		**0.0115**	**0.0115**		**0.0106**	**0.0106**	**0.0000**	**34.1356**	**34.1356**	**0.0110**	**0.0000**	**34.4116**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	2.5600e-003	5.3000e-004	1.0000e-005	2.6000e-004	2.0000e-005	2.8000e-004	7.0000e-005	2.0000e-005	9.0000e-005	0.0000	0.9375	0.9375	2.0000e-005	1.5000e-004	0.9821
Vendor	5.0000e-005	1.3700e-003	3.8000e-004	1.0000e-005	1.6000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.5048	0.5048	1.0000e-005	8.0000e-005	0.5275
Worker	1.4100e-003	1.0100e-003	0.0120	3.0000e-005	3.9500e-003	2.0000e-005	3.9800e-003	1.0500e-003	2.0000e-005	1.0700e-003	0.0000	3.1776	3.1776	1.0000e-004	9.0000e-005	3.2079
Total	**1.5300e-003**	**4.9400e-003**	**0.0129**	**5.0000e-005**	**4.3700e-003**	**5.0000e-005**	**4.4400e-003**	**1.1700e-003**	**5.0000e-005**	**1.2200e-003**	**0.0000**	**4.6198**	**4.6198**	**1.3000e-004**	**3.2000e-004**	**4.7175**

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

3.3 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.7600e-003	0.0206	0.2162	3.9000e-004		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	34.1355	34.1355	0.0110	0.0000	34.4115
Total	**4.7600e-003**	**0.0206**	**0.2162**	**3.9000e-004**		**6.4000e-004**	**6.4000e-004**		**6.4000e-004**	**6.4000e-004**	**0.0000**	**34.1355**	**34.1355**	**0.0110**	**0.0000**	**34.4115**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	2.5600e-003	5.3000e-004	1.0000e-005	2.6000e-004	2.0000e-005	2.8000e-004	7.0000e-005	2.0000e-005	9.0000e-005	0.0000	0.9375	0.9375	2.0000e-005	1.5000e-004	0.9821
Vendor	5.0000e-005	1.3700e-003	3.8000e-004	1.0000e-005	1.6000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.5048	0.5048	1.0000e-005	8.0000e-005	0.5275
Worker	1.4100e-003	1.0100e-003	0.0120	3.0000e-005	3.9500e-003	2.0000e-005	3.9800e-003	1.0500e-003	2.0000e-005	1.0700e-003	0.0000	3.1776	3.1776	1.0000e-004	9.0000e-005	3.2079
Total	**1.5300e-003**	**4.9400e-003**	**0.0129**	**5.0000e-005**	**4.3700e-003**	**5.0000e-005**	**4.4400e-003**	**1.1700e-003**	**5.0000e-005**	**1.2200e-003**	**0.0000**	**4.6198**	**4.6198**	**1.3000e-004**	**3.2000e-004**	**4.7175**

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

3.3 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0484	0.5151	0.3913	8.6000e-004		0.0226	0.0226		0.0208	0.0208	0.0000	75.1268	75.1268	0.0243	0.0000	75.7342
Total	**0.0484**	**0.5151**	**0.3913**	**8.6000e-004**		**0.0226**	**0.0226**		**0.0208**	**0.0208**	**0.0000**	**75.1268**	**75.1268**	**0.0243**	**0.0000**	**75.7342**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	4.4300e-003	1.0000e-003	2.0000e-005	5.7000e-004	4.0000e-005	6.1000e-004	1.6000e-004	4.0000e-005	1.9000e-004	0.0000	1.9630	1.9630	4.0000e-005	3.1000e-004	2.0564
Vendor	6.0000e-005	2.4000e-003	7.3000e-004	1.0000e-005	3.6000e-004	1.0000e-005	3.8000e-004	1.0000e-004	1.0000e-005	1.2000e-004	0.0000	1.0639	1.0639	1.0000e-005	1.6000e-004	1.1118
Worker	2.8800e-003	1.9700e-003	0.0245	7.0000e-005	8.7000e-003	5.0000e-005	8.7400e-003	2.3100e-003	4.0000e-005	2.3600e-003	0.0000	6.7721	6.7721	2.0000e-004	1.9000e-004	6.8339
Total	**3.0100e-003**	**8.8000e-003**	**0.0262**	**1.0000e-004**	**9.6300e-003**	**1.0000e-004**	**9.7300e-003**	**2.5700e-003**	**9.0000e-005**	**2.6700e-003**	**0.0000**	**9.7990**	**9.7990**	**2.5000e-004**	**6.6000e-004**	**10.0021**

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

3.3 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0105	0.0454	0.4756	8.6000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	75.1267	75.1267	0.0243	0.0000	75.7341
Total	**0.0105**	**0.0454**	**0.4756**	**8.6000e-004**		**1.4000e-003**	**1.4000e-003**		**1.4000e-003**	**1.4000e-003**	**0.0000**	**75.1267**	**75.1267**	**0.0243**	**0.0000**	**75.7341**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	4.4300e-003	1.0000e-003	2.0000e-005	5.7000e-004	4.0000e-005	6.1000e-004	1.6000e-004	4.0000e-005	1.9000e-004	0.0000	1.9630	1.9630	4.0000e-005	3.1000e-004	2.0564
Vendor	6.0000e-005	2.4000e-003	7.3000e-004	1.0000e-005	3.6000e-004	1.0000e-005	3.8000e-004	1.0000e-004	1.0000e-005	1.2000e-004	0.0000	1.0639	1.0639	1.0000e-005	1.6000e-004	1.1118
Worker	2.8800e-003	1.9700e-003	0.0245	7.0000e-005	8.7000e-003	5.0000e-005	8.7400e-003	2.3100e-003	4.0000e-005	2.3600e-003	0.0000	6.7721	6.7721	2.0000e-004	1.9000e-004	6.8339
Total	**3.0100e-003**	**8.8000e-003**	**0.0262**	**1.0000e-004**	**9.6300e-003**	**1.0000e-004**	**9.7300e-003**	**2.5700e-003**	**9.0000e-005**	**2.6700e-003**	**0.0000**	**9.7990**	**9.7990**	**2.5000e-004**	**6.6000e-004**	**10.0021**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

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

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.569121	0.056513	0.180870	0.112593	0.021111	0.005121	0.013190	0.012692	0.000800	0.000580	0.024593	0.000331	0.002484

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

Mitigated

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

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

5.3 Energy by Land Use - Electricity

Unmitigated

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

Mitigated

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

6.0 Area Detail

6.1 Mitigation Measures Area

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

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

6.2 Area by SubCategory

Unmitigated

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

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

6.2 Area by SubCategory

Mitigated

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

7.0 Water Detail

7.1 Mitigation Measures Water

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

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

7.2 Water by Land Use

Unmitigated

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

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

7.2 Water by Land Use

Mitigated

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

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

8.2 Waste by Land Use

Unmitigated

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

Mitigated

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

9.0 Operational Offroad

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

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B – Biological Constraints Assessment

August 11, 2021

Carlos Sempere,
Project Manager
Alameda County Water District
43885 South Grimmer Boulevard
Fremont, CA 94538

Dear Mr. Sempere,

The purpose of this letter is to inform you of the results of the biological constraints assessment performed on August 4, 2021 at the site of the Alameda Reservoir located at 585 Shoshone Court, in Fremont, Alameda County, California (Study Area). The approximately 7.71 acre Study Area is shown in Attachment A. The Study Area is bordered on all sides by single-family residential homes and surface streets. Agua Fria Creek, a perennial USGS blue-line stream crosses the southern tip of the Study Area near the corner of Paseo Padre Parkway and Curtner Road. The Alameda County Water District (District) proposes to carry out the Alameda Reservoir Improvements Project (project). The purpose of this project is to replace the roof and roof framing system and seismically upgrade the reservoir.

The site visit was conducted in order to assess the Study Area for potential sensitive habitat areas, including wetlands and riparian habitats and to determine the potential effects on sensitive plant and animal species that are included on lists prepared by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and California Native Plant Society (CNPS), as a result the project. A complete list of observed plant and wildlife species is provided in Attachment B. Site photographs are provided in Attachment C.

Survey Methods

A site visit to the Study Area was conducted by WRA biologist and ISA-Certified Arborist, Scott Yarger on August 4, 2021. Prior to the site visit, a review of the following literature and database searches was conducted to determine the potential for sensitive biological communities (e.g., wetlands) and special-status species:

- Milpitas 7.5-minute quadrangle (United States Geological Survey [USGS] 1980);
- California Natural Diversity Database (CNDDB; CDFW 2021);
- California Native Plant Society Electronic Inventory (CNPS 2021);
- USFWS National Wetlands Inventory Database (USFWS 2021a)
- USFWS Information for Conservation and Planning (IPaC) search (USFWS 2021b);
- Aerial photographs (Google Earth 2021)

During each site visit, the Study Area was examined for: (a) potentially sensitive habitat areas and (b) the presence and potential to support special-status plant and wildlife species, and (c) indicators of wetlands, waters, and areas containing an ordinary high water mark (OHWM).

Results

The approximately 7.71-acre Study Area is dominated by the developed reservoir, surrounded by mature, planted ornamental trees and shrubs enclosed with a chain-link fence around the perimeter. Outside of the developed portion of the Study Area, there is a portion of undeveloped land which is bisected by Agua Fria Creek. The undeveloped portion of the Study Area is dominated by non-native blue gum eucalyptus trees situated above the top of bank of the steep creek banks. The Study Area is surrounded on all sides by single-family residential development and surface streets, including Curtner Road to the south, Paseo Padre Parkway to the east, and north, and the cul-de-sacs of Shoshone Court, and Klamath Place to the west. In the greater landscape context, the Study Area occurs within the developed Interstate 880 corridor of southwestern Alameda County, and although undeveloped open space is present to the east of the Study Area, the Study Area does not provide habitat connections to or from open space in the vicinity.

Vegetation Communities

The Study Area is composed of developed/landscaped areas, and blue gum grove, both of which are not considered sensitive vegetation communities. A perennial stream, Agua Fria Creek, crosses the southern portion of the Study Area, outside of the developed reservoir facility. The perennial stream and associated riparian vegetation constitute a sensitive biological resource. However, those features are outside of the limit of disturbance of the project and impacts to those features will be avoided.

Developed/landscaped areas comprise the majority of the Study Area including the reservoir, and surrounding asphalt access perimeter road and driveway, and graded, landscaped slopes above the reservoir. The landscaped slopes are dominated by mature ornamental and planted native trees and ornamental shrubs including Canary Island pine (*Pinus canariensis*), Aleppo pine (*Pinus halepensis*), coast live oak (*Quercus agrifolia*), oleander (*Nerium oleander*), pittosporum (*Pittosporum* sp.), and cotoneaster (*Cotoneaster* sp.). Developed/landscaped areas do not constitute a sensitive community, although several trees and shrubs provide potential nesting habitat for common nesting bird species. Mature trees within the Study Area are potentially exempt from protection per the Fremont Tree Preservation Ordinance (Fremont Municipal Code Chapter 5, “Tree Preservation”). Exemptions provided in Sec. 4-5104(C)(5) include trees “other than a landmark tree[s], removed or damaged by a public utility to the extent that such removal or damage is necessary for building or maintaining the public utility’s facilities” (City of Fremont 2021).

Outside of the developed portion of the Study Area, there is a portion of undeveloped land which is bisected by Agua Fria Creek, a perennial stream. Agua Fria Creek, its bed and banks, and surrounding mature trees, constitute a sensitive biological community, under the jurisdiction of the U.S. Army Corps of Engineers (to the OHWM), Regional Water Quality Control Board (to the top of bank), and CDFW (to the outer edge of mature trees’ canopy along the top of bank). Agua Fria Creek, enters the Study Area through an approximately 4 foot diameter double concrete culvert, and flows off-site through a similar double concrete culvert. The OHWM within the Study Area is approximately 2-4 feet wide, with steep banks approximately 25-30 feet wide between tops of bank.

Special-Status Species

Special-Status Plant Species

Based upon a search of the databases listed above, 51 special-status plant species have documented occurrences within the Milpitas USGS quadrangle eight surrounding quadrangles . Of the 51 special-status species documented, all are either unlikely or have no potential to occur within the Study Area for one or more of the following reasons:

- The Study Area is developed, and has been intensively altered from a natural state thereby eliminating the seedbank or diminishing establishment of the special-status plant(s);
- The Study Area does not contain hydrologic conditions (e.g., vernal pools, marshes and swamps) necessary to support the special-status plant(s);
- The Study Area does not contain edaphic (soil) conditions (e.g., alkaline substrates, serpentine substrate) necessary to support the special-status plant(s);
- The Study Area does not contain vegetation communities (e.g., chaparral, vernal pools) associated with the special-status plant(s);

Based on a lack of suitable habitat and the recent history of soil and vegetation disturbance, none of the 51 special-status plant species have the potential to occur in the Study Area. No special-status plant species were observed during the site visit.

Special-status Wildlife Species

Of the 37 special-status wildlife species documented in the vicinity of the Study Area, most are excluded from the Study Area based on a lack of habitat features. Features not found within the Study Area that are required to support special-status wildlife species include:

- Vernal pools
- Aquatic habitat (e.g. streams, rivers or ponds)
- Salt marsh
- Old growth redwood or fir forest
- Serpentine soils to support host plants
- Sandy beaches or alkaline flats
- Small mammal burrows
- Caves, mine shafts or abandoned buildings

The absence of such habitat features eliminates components critical to the survival or movement of most special-status species found in the vicinity. Species like California red-legged frog (*Rana draytonii*; CRLF) and California tiger salamander (*Ambystoma californiense*) are known to occur in the open spaces in the vicinity; however, suitable aquatic habitat and movement corridors connecting the Study Area to outside source populations are absent, precluding California Tiger Salamander in particular from the Study Area. Other species that are known to occur in the vicinity, like burrowing owl (*Athene cunicularia*), have potential to inhabit open grassland or vacant lots; however, no suitable burrows or burrow surrogates were observed in the Study Area and surrounding 300 feet, and the Study Area itself is essentially entirely hardscaped.

It should be noted that a single occurrence of CRLF was documented in nearby Agua Caliente Creek in 1996 (CDFW 2021). Although this creek is presumably connected to Agua Fria Creek

via a nearby culvert, CRLF are unlikely to disperse through the culvert during most portions of the year. Additionally, CRLF are unlikely to traverse the Study Area during upland movements in the rainy season because the fully developed and hardscaped Study Area provides no habitat value for this species. Source populations in the immediate vicinity are presumably scarce under current conditions based on the lack of other documented occurrences in the area. Thus, although CRLF may have a limited potential to traverse the Study Area during upland movements in the rainy season, it would not utilize the Study Area for any portion of its life history and nearby potentially suitable aquatic habitats would not be affected by proposed activities.

One special-status bird, the CDFW fully protected white-tailed kite (*Elanus leucurus*), has potential to nest in the trees surrounding the perimeter of the Study Area and has been observed roosting within the Study Area in the past (Alameda County Water District, *pers. comm.*). In addition, non-special-status native birds and raptors may nest on the ground, in trees, and in vegetation within the Study Area, or within the vegetation that surrounds the Study Area.

Wildlife Corridors

Wildlife movement between suitable habitat areas can occur via open space areas lacking substantial barriers. The terms “landscape linkage” and “wildlife corridor” are often used when referring to these areas. The key to a functioning corridor or linkage is that it connects two larger habitat blocks, also referred to as core habitat areas (Beier 1992, Soule and Terborgh 1999). The term “wildlife corridor” is useful in the context of smaller, local area planning, where wildlife movement may be facilitated by specific local biological habitats or passages and/or may be restricted by barriers to movement. Above all, wildlife corridors must link two areas of core habitat and should not direct wildlife to developed areas or areas that are otherwise void of core habitat (Hilty et al. 2006).

The Study Area does not function as a wildlife movement corridor. The extent and density of existing residential development surrounding the Study Area suggests that the site does not function as a habitat corridor for the movement of terrestrial wildlife. The small size of the Study Area in the context of the surrounding landscape also substantially reduces the value of the Study Area as a “stepping stone” corridor for avian, bat, or terrestrial species the movement of which could originate from nearby open space areas. In general, there is very little that distinguishes the Study Area from surrounding developed and landscaped areas in terms of providing a corridor linkage between more natural habitats. Although common urban-adapted species may utilize the Study Area in a similar manner to how they would utilize the surrounding residential areas, the proposed project would not change the current characteristics of the Study Area with regard to short distance movements. Considering these factors, no true habitat corridors can be said to exist within the Study Area.

Recommendations

Analysis of Potential Effects to Sensitive Vegetation Communities

The Study Area contains Agua Fria Creek, a sensitive biological resource, and surrounding mature trees along the top of bank could be considered riparian habitat which would constitute a sensitive vegetation community. However, Agua Fria Creek and its surrounding mature trees are over 50-75 feet away from the limit of disturbance of the Project, and separated by an elevated berm with landscaped vegetation, such that no impacts to the creek or its potentially riparian vegetation will occur as a result of the Project. All Project activities will occur in the

developed/landscaped portion of the Study Area. No impacts to sensitive vegetation communities are anticipated as a result of the Project.

Analysis of Potential Effects to Special-Status Species

Special-Status Plant Species

Based on the highly disturbed nature of the site, and lack of associated natural vegetation communities, the Study Area does not provide suitable habitat for special-status plant species. No impacts to special-status plant species are anticipated as a result of the proposed Project, and no further actions are recommended for special-status plant species.

Special-Status and Non-Special-Status Nesting Birds

One special-status wildlife species has the potential to occur within the Study Area, white-tailed kite, a CDFW fully protected species. Non-special-status native birds (e.g., passerines, raptors) may also nest on the ground, in trees, and in vegetation within and immediately surrounding the Study Area. The active nests of such birds are protected under the federal Migratory Bird Treaty Act (MBTA) as well as by California Fish and Game Codes (CFGC). If construction begins during the avian nesting season, generally February 1 to August 31, nesting birds may be impacted through the removal of nest structures or through localized disturbance sufficient to cause nest abandonment. To avoid and minimize these potential impacts and maintain compliance with the MBTA and CFGC, the following is recommended:

- If construction activities are initiated during the nesting season (February 1 – August 31), a nesting bird survey should be conducted by a qualified biologist within 14 days prior to the start of construction within the Study Area and the immediately surrounding area. If active nests are present, exclusion buffers appropriate to the species should be established by the qualified biologist to prevent impacts to nesting birds. Buffers should be maintained until the biologist determines that young have fledged or the nest becomes inactive.
- If construction activities are initiated outside of the nesting season (September 1 – January 31), no pre-construction nesting bird surveys are necessary.

With the implementation of surveys and exclusion buffers, any potential impacts to common and special-status nesting birds resulting from construction within the Study Area would be reduced to a less-than-significant level.

California red-legged frog

CRLF has been documented within 1,000 feet of the Study Area during past survey efforts (CDFW 2021). Although the most recent documentation of CRLF at this location is from 1996, it is possible that CRLF may still utilize portions of Agua Fria and Agua Caliente Creeks during aquatic portions of their life history. Although the Study Area provides no habitat value for CRLF, in the unlikely event that a CRLF utilizes the Study Area during a short distance movement in the rainy season, construction activities could result in the mortality of individual CRLF. To avoid and minimize these potential impacts, the following is recommended:

- Prior to the start of work, exclusion fencing should be installed along the southern corner of the Project Area to prevent CRLF from entering or traversing the site. Fencing location

should include the area where no residential development exists along Agua Fria Creek, and extend 50 feet to either side. This fencing may be installed along the existing chain link fence, and should consist of a material that would not allow CRLF to pass through or become entrapped (i.e., silt fencing). Monofilament fencing should not be used, and fence material should be at least 36 inches in height. Care should be taken that conditions are not created where CRLF may become entrapped in any way within the Project Area.

- Crew members that will work on the project should undergo a Worker Environmental Awareness Program (WEAP) training conducted by a qualified biologist, which will cover basic identification of CRLF and recommended actions should a CRLF be discovered within a work area.
- Any materials stockpiled outside of areas protected by exclusion fencing should be covered or stored in a location where they would not provide refugia to any dispersing CRLF.
- Within 48-hours prior to start of work, a pre-construction survey should be conducted by a qualified biologist to ensure no CRLF are present within potential work areas or areas where heavy machinery will be operated. This survey would consist of a visual inspection of the work area for individual CRLF. If CRLF are observed during the pre-construction survey, they should be allowed to leave the site of their own volition prior the commencement of project activities. If work stops for a period greater than 48-hours, the survey should be repeated to ensure no CRLF have moved through or occupied the area in the interim period.

With the implementation of the above mitigation measures, any potential impacts to CRLF resulting from construction within the Study Area would be reduced to a less-than-significant level.

Analysis of Potential Effects to Wildlife Corridors

The Study Area does not function as a wildlife corridor and no effects to wildlife corridors will result from the proposed Project. No further actions are recommended.

Summary

No impacts to sensitive vegetation communities or special-status plant species are anticipated as a result of the Project. Based on the absence of specific native habitats, lack of specialized habitat features, and previous development in the surrounding areas, the Study Area does not have the potential to support most special-status wildlife species. One special-status wildlife species, white-tailed kite, has potential to nest in trees surrounding the Study Area. Additionally, due to the presence of grasses, trees, and shrubs within and adjacent to the Study Area, non-special-status birds may nest within the Study Area. If construction occurs between February 1 and August 31, a nesting bird survey should be conducted prior to initiation of construction to locate active nests and assure compliance with the MBTA and CFGC. Work outside of this time period would not require a survey as it is not expected that nests would be present. Additionally, CRLF may rarely traverse the Study Area during upland movement that typically occur during or shortly after precipitation events. Work should avoid precipitation events by at least 48-hours, and be preceded by a pre-construction survey to assess the Study Area for the presence of dispersing CRLF.

Please contact me if you have any questions.

Sincerely,

Amy Parravano
Senior Associate Biologist

Enclosures: References Cited
Attachment A – Study Area Location Map
Attachment B – List of Observed Plant and Wildlife Species
Attachment C – Site Photographs

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Attachment A

Study Area Location Map

Sources: USDA NAIP Imagery 2020, WRA | Prepared By: njander, 7/13/2021

Figure 1. Aerial Map and Surrounding Land Uses

Alameda Reservoir Improvement Project
City of Fremont, California

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ENVIRONMENTAL CONSULTANTS

Attachment B

List of Observed Plant and Wildlife Species

Attachment B. Species Observed within the Study Area. Wildlife species were documented over multiple site visits by Alameda County Water District staff.

Wildlife	
Common Name	**Scientific Name**
Birds	
Nuttall's woodpecker	*Picoides nuttallii*
American robin	*Turdus migratorius*
Anna's hummingbird	*Calypte anna*
American crow	*Corvus brachyrhynchos*
song sparrow	*Melospiza melodia*
western scrub-jay	*Aphelocoma californica*
chestnut-backed chickadee	*Poecile rufescens*
ruby-crowned kinglet	*Regulus calendula*
American bushtit	*Psaltriparus minimus*
oak titmouse	*Baeolophus inornatus*
red-breasted nuthatch	*Sitta canadensis*
brown creeper	*Certhia americana*
yellow-rumped warbler	*Setophaga coronata*
Townsend's warbler	*Setophaga townsendi*
Pacific-slope flycatcher	*Empidonax difficilis*
black phoebe	*Sayornis nigricans*
dark-eyed junco	*Junco hyemalis*
lesser goldfinch	*Spinus psaltria*
house finch	*Haemorhous mexicanus*
red-breasted sapsucker	*Sphyrapicus ruber*
hermit thrush	*Catharus guttatus*
California towhee	*Melozone crissalis*
spotted towhee	*Pipilo maculatus*
mourning dove	*Zenaida macroura*
Eurasian collared dove	*Streptopelia decaocto*
Steller's jay	*Cyanocitta stelleri*
white-tailed kite	*Elanus leucurus*
red tailed hawk	*Buteo jamaicensis*
turkey vulture	*Cathartes aura*
Mammals	
fox squirrel	*Sciurus niger*
Reptiles	
western fence lizard	*Sceloporus occidentalis*
Plants	
Buckeye	*Aesculus californica*
Strawberry tree	*Arbutus unedo*
Slim oat	*Avena barbata*
Poison hemlock	*Conium maculatum*
Cotoneaster	*Cotoneaster* sp.
Blue gum	*Eucalyptus globulus*

English ivy	*Hedera helix*
Oleander	*Nerium oleander*
Canary Island pine	*Pinus canariensis*
Aleppo pine	*Pinus halepensis*
Pittosporum	*Pittosporum* sp.
London plane	*Platanus ×hispanica*
California sycamore	*Platanus racemosa*
Coast live oak	*Quercus agrifolia*
Valley oak	*Quercus lobata*
Vinca	*Vinca major*

Attachment C

Site Photographs

Photograph 1. Photograph depicting Agua Fria Creek and associated blue gum (*Eucalyptus globulus*) trees outside of the impact area.

Photograph 2. Photograph depicting Alameda Reservoir, within the developed area of the Study Area.

Appendix C – Geotechnical Report

CORNERSTONE EARTH GROUP

TYPE OF SERVICES	Geotechnical Investigation
PROJECT NAME	ACWD Alameda Reservoir Seismic Upgrade
LOCATION	585 Shoshone Court Fremont, California
CLIENT	TJC and Associates, Inc.
PROJECT NUMBER	1287-1-1
DATE	June 11, 2021

CORNERSTONE EARTH GROUP

Type of Services	**Geotechnical Investigation**
Project Name	**ACWD Alameda Reservoir Seismic Upgrade**
Location	**585 Shoshone Court Fremont, California**
Client	**TJC and Associates, Inc.**
Client Address	**2890 North Main Street, Suite 303 Walnut Creek, CA**
Project Number	**1287-1-1**
Date	**June 11, 2021**

Prepared by

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CORNERSTONE EARTH GROUP

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CORNERSTONE EARTH GROUP

Type of Services	**Geotechnical Investigation**
Project Name	**ACWD Alameda Reservoir Seismic Upgrade**
Location	**585 Shoshone Court Fremont, California**

SECTION 1: INTRODUCTION

This geotechnical report was prepared for the sole use of TJC and Associates, Inc. for the ACWD Alameda Reservoir Seismic Upgrade in Fremont, California. The location of the site is shown on the Vicinity Map, Figure 1. For our use, we were provided with the following documents:

- A set of as-builts titled "Warm Springs Reservoir" prepared by Kennedy Engineers, dated October 29, 1970.
- A supplemental geotechnical report titled "Additional Subsurface Explorations Proposed Warm Springs Reservoir Site 9A, Warm Springs, California for the Alameda County Water District" prepared by Cooper-Clark & Associates, dated June 19, 1970.
- A geotechnical report titled "Geologic and Soil Investigation Proposed Warm Springs Reservoir Site No. 9A, Warm Springs, California for the Alameda County Water District" prepared by Cooper-Clark & Associates, dated March 20, 1970.

1.1 PROJECT DESCRIPTION

Alameda County Water District (ACWD) is preparing to replace the roof (corrugated galvanized steel over timber framing) and seismically upgrade the Alameda Reservoir. The Alameda Reservoir is a 16.25-million-gallon reservoir built in 1972 and located at 585 Shoshone Court in Fremont. The reservoir has an operating range from Elevation 180 feet to 208.2 feet, with an overflow structure at 208.5 feet. It is served by a 30-inch diameter inlet/outlet pipeline and the overflow structure drains to a 15-inch corrugated metal storm drain pipe that surrounds the reservoir.

The reservoir is cut into ground with perimeter concrete walls, precast concrete columns on spread footings, and a concrete slab on grade floor. The perimeter walls support the roof

framing, which consists of glulam beams and purlins. The roof is painted corrugated metal deck. Access to the interior is through a man-door and a sliding door on the east side of the reservoir. The perimeter concrete reportedly exhibits minor cracking. The interior columns reportedly show moderate cracking and spalling, with rebar exposed on several columns.

The existing piping is reportedly in good condition, but modifications may be required while making the above improvements. The district plans to install photovoltaic panels on the Alameda Reservoir roof, following its replacement, in the second half of calendar year 2023.

1.2 SCOPE OF SERVICES

Our scope of services was presented in our proposal dated November 9, 2020 and consisted of field and laboratory programs to evaluate physical and engineering properties of the subsurface soils, engineering analysis to prepare recommendations for site work and grading, seismic upgrades, flatwork, and preparation of this report. Brief descriptions of our exploration and laboratory programs are presented below.

1.3 EXPLORATION PROGRAM

Field exploration consisted of four borings drilled on May 20, 2021, with track-mounted, limited-access, hollow-stem auger drilling equipment. The borings were drilled to depths of approximately 15 feet. The borings were backfilled with cement grout in accordance with local requirements; exploration permits were obtained as required by local jurisdictions. The approximate locations of our exploratory borings are shown on the Site Plan, Figure 2. Details regarding our field program are included in Appendix A.

1.4 PREVIOUS SITE EXPLORATION

As part of our study, we reviewed prior subsurface data performed in 1969 and 1970 by Cooper Clark & Associates for the design of the current reservoir. Eight borings were performed in 1969 and ten (10) borings were performed in 1970. The borings were drilled to depths of approximately 40 to 60 feet.

The approximate locations of the prior explorations are shown on the Site Plan, Figure 2. Copies of the prior exploration logs are also included in Appendix B.

1.5 LABORATORY TESTING PROGRAM

In addition to visual classification of samples, the laboratory program focused on obtaining data for shallow foundation design. Testing included moisture contents, dry densities, grain size analyses, washed sieve analyses, Plasticity Index tests, and triaxial compression tests. Details regarding our laboratory program are included in Appendix B.

1.6 CORROSION EVALUATION

Two samples from our borings from depths from 2 to 6 feet were tested for saturated resistivity, pH, and soluble sulfates and chlorides. JDH Corrosion Consultants prepared a brief corrosion evaluation based on the laboratory data, which is attached to this report in Appendix C.

1.7 ENVIRONMENTAL SERVICES

Environmental services were not requested for this project. If environmental concerns are determined to be present during future evaluations, the project environmental consultant should review our geotechnical recommendations for compatibility with the environmental concerns.

SECTION 2: REGIONAL SETTING

2.1 GEOLOGICAL SETTING

The site is located at the northern end of the Santa Clara Valley, which is a broad alluvial plane between the Santa Cruz Mountains to the southwest and west, and the Diablo Range to the northeast. The San Andreas Fault system, including the Monte Vista-Shannon Fault, exists within the Santa Cruz Mountains and the Hayward and Calaveras Fault systems exist within the Diablo Range. Helley & Graymer (1997) have mapped the site vicinity as being underlain by Pleistocene aged alluvial and fluvial deposits (Qpaf). Dibblee (2005) mapped the site vicinity as being underlain by older alluvium (Qoa). The Mission Hills to the east are generally mapped by Helley & Graymer (1997) as Briones Sandstone (Tbr), Ourson Sandstone (To), unnamed sandstone and claystone (Tcs), and Tice Shale (Tt).

2.2 REGIONAL SEISMICITY

The San Francisco Bay area region is one of the most seismically active areas in the Country. While seismologists cannot predict earthquake events, the U.S. Geological Survey's Working Group on California Earthquake Probabilities 2015 revises earlier estimates from their 2008 (2008, UCERF2) publication. Compared to the previous assessment issued in 2008, the estimated rate of earthquakes around magnitude 6.7 (the size of the destructive 1994 Northridge earthquake) has gone down by about 30 percent. The expected frequency of such events statewide has dropped from an average of one per 4.8 years to about one per 6.3 years. However, in the new study, the estimate for the likelihood that California will experience a magnitude 8 or larger earthquake in the next 30 years has increased from about 4.7 percent for UCERF2 to about 7.0 percent for UCERF3.

UCERF3 estimates that each region of California will experience a magnitude 6.7 or larger earthquake in the next 30 years. Additionally, there is a 63 percent chance of at least one magnitude 6.7 or greater earthquake occurring in the Bay Area region between 2007 and 2036.

The faults considered capable of generating significant earthquakes are generally associated with the well-defined areas of crustal movement, which trend northwesterly. The table below presents the State-considered active faults within 25 kilometers of the site.

Table 1: Approximate Fault Distances

Fault Name	Distance	
	(miles)	(kilometers)
Hayward (Total Length)	1.6	2.6
Hayward (Southeast Extension)	2.4	3.9
Calaveras	4.6	7.4
Monte Vista-Shannon	15.1	24.4

A regional fault map is presented as Figure 3, illustrating the relative distances of the site to significant fault zones.

SECTION 3: SITE CONDITIONS

3.1 SITE BACKGROUND

The Alameda reservoir was built approximately 50 years ago in the 1972 in the Vineyards – Avalon neighborhood in Fremont, California. Prior to the construction of the reservoir, the site appears as vacant land on available aerial photographs. In prior topography maps, the site ranged from Elevation 224 to 216 feet (City of Fremont datum). The construction of the reservoir cut the grade down to Elevation 180 to 211 feet.

We understand the reservoir was constructed with 3:1 (horizontal:vertical) slopes from Elevation 210 feet to Elevation 180 feet. The reservoir has three different footing types supporting the roof structure; the perimeter footing near the top of the reservoir, the mid-level column footings located on the reservoir slope, and the column footings at the bottom of the reservoir located below Elevation 180 feet.

3.2 SURFACE DESCRIPTION

The site is bounded by residential development on all sides. The reservoir is located in the middle of the site and extends approximately 30 feet below the existing site grades. The reservoir is surrounded by an access road that is paved with asphalt. Surface pavements generally consist of 2 to 4 inches of asphalt concrete over 5 to 8 inches of aggregate base. The ground surface slopes up approximately 5 to 15 feet at an inclination of 2:1 (horizontal:vertical) on the north, south and east sides of the reservoir. The perimeter access road was reportedly constructed at approximately Elevation 210 feet.

Agua Fria Creek flows just south of the site in a natural channel that appears to be incised approximately 10 to 12 feet deep in the project vicinity.

3.3 SUBSURFACE CONDITIONS

Below the surface pavements, Boring EB-1 encountered stiff to medium stiff lean clays with interbedded loose sands to a depth of 11 feet. The clays were followed by loose sands ranging from clayey sands to silty sands to the maximum depth explored of 15 feet. Below the surface pavements, Boring EB-2 encountered medium dense clayey sands with gravels to a depth of 3 feet underlain by stiff to very stiff lay with variable amounts of sand to a depth of 12½ feet. The

clays were followed by medium dense poorly graded sands to a depth of 14½ feet underlain by stiff lean clays to the maximum depth explored of 15 feet. Below the surface pavements, Borings EB-3 and EB-4 encountered undocumented fill consisting of stiff to hard lean clays and loose poorly graded sands to depths ranging from 2 to 4 feet. The undocumented fill was underlain by stiff to hard lean clays followed by medium dense sands to the maximum depth explored of 15 and 16½ feet, respectively.

3.3.1 Plasticity/Expansion Potential

We performed two Plasticity Index (PI) tests on representative samples. Test results were used to evaluate expansion potential of surficial soils. The results of the surficial PI tests indicated PIs ranging from 17 to 25, indicating moderate plasticity and expansion potential to wetting and drying cycles.

3.3.2 In-Situ Moisture Contents

Laboratory testing indicated that the in-situ moisture contents in the upper 10 feet range from approximately 3 percent below to 10 percent over the estimated laboratory optimum moisture.

3.4 GROUNDWATER

Groundwater was encountered in Boring EB-1 at a depth of approximately 7½ feet below current grades, corresponding to Elevation 203½ feet (City of Fremont datum). From the Cooper-Clark & Associates report (1970), groundwater was recorded in Borings B-1 and B-4 at approximately Elevation 204 to 208 feet. Based on our review of historic high groundwater maps (CGS, Milpitas 7.5-Minute Quadrangle, 2004), groundwater is mapped at greater than 40 feet deep. This mapping indicates that local groundwater is likely perched within shallow sand and gravel layers and is likely influenced by seasonal water levels in Agua Fria Creek. All measurements were taken at the time of drilling and may not represent the stabilized levels that can be higher than the initial levels encountered.

Fluctuations in groundwater levels occur due to many factors including seasonal fluctuation, underground drainage patterns, regional fluctuations, and other factors.

SECTION 4: GEOLOGIC HAZARDS

4.1 FAULT RUPTURE

As discussed above several significant faults are located within 25 kilometers of the site. The site is not located within a State-designated Alquist Priolo Earthquake Fault Zone. As shown in Figure 3, no known surface expression of fault traces is thought to cross the site; therefore, fault rupture hazard is not a significant geologic hazard at the site.

4.2 ESTIMATED GROUND SHAKING

Moderate to severe (design-level) earthquakes can cause strong ground shaking, which is the case for most sites within the Bay Area. A peak ground acceleration (PGA) was estimated for analysis using a value equal to F_{PGA}*PGA, as allowed in the 2019 edition of the California Building Code. For our analysis we used a PGA of 1.15g.

4.3 LIQUEFACTION POTENTIAL

The site is not located within a State-designated Liquefaction Hazard Zone (CGS, Milpitas Quadrangle, 2001).

During strong seismic shaking, cyclically induced stresses can cause increased pore pressures within the soil matrix that can result in liquefaction triggering, soil softening due to shear stress loss, potentially significant ground deformation due to settlement within sandy liquefiable layers as pore pressures dissipate, and/or flow failures in sloping ground or where open faces are present (lateral spreading) (NCEER 1998). Limited field and laboratory data is available regarding ground deformation due to settlement; however, in clean sand layers settlement on the order of 2 to 3 percent of the liquefied layer thickness can occur. Soils most susceptible to liquefaction are loose, non-cohesive soils that are saturated and are bedded with poor drainage, such as sand and silt layers bedded with a cohesive cap.

As discussed in the “Subsurface” section above, we primarily encountered stiff cohesive and medium dense to dense granular soils. Prior borings drilled by Cooper Clark & Associates encountered stiff clays and interbedded dense sands and gravels to depth of 40 to 60 feet. Based on the above, our screening of the site for liquefaction indicates a low potential for liquefaction and is in general agreement with local mapping for the site by CGS.

4.4 LATERAL SPREADING

Lateral spreading is horizontal/lateral ground movement of relatively flat-lying soil deposits towards a free face such as an excavation, channel, or open body of water; typically lateral spreading is associated with liquefaction of one or more subsurface layers near the bottom of the exposed slope. As failure tends to propagate as block failures, it is difficult to analyze and estimate where the first tension crack will form.

Considering the relatively low liquefaction potential, in our opinion, the potential for lateral spreading to affect the site is considered low.

4.5 SEISMIC SETTLEMENT/UNSATURATED SAND SHAKING

Loose unsaturated sandy soils can settle during strong seismic shaking. As the soils encountered above groundwater at the site were predominantly stiff to very stiff clays, in our opinion, the potential for significant differential seismic settlement affecting the proposed improvements is low.

4.6 FLOODING

Based on our internet search of the Federal Emergency Management Agency (FEMA) flood map public database, the site is located within Zone X, an area described as “Area of minimal flooding hazard”.

SECTION 5: CONCLUSIONS

5.1 SUMMARY

From a geotechnical viewpoint, the proposed seismic upgrades to the existing reservoir roof system are feasible provided the concerns listed below are addressed in the project design. Descriptions of each concern with brief outlines of our recommendations follow the listed concerns.

- Presence of moderately expansive soils
- Shallow groundwater
- Dewatering stability
- Soil corrosion potential

5.1.1 Expansive Soils

Moderately expansive surficial soils generally blanket the site. Expansive soils can undergo significant volume change with changes in moisture content. They shrink and harden when dried and expand and soften when wetted. To reduce the potential for damage to the planned improvements, footings should extend below the zone of seasonal moisture fluctuation. In addition, it is important to limit moisture changes in the surficial soils by using positive drainage away from structures as well as limiting landscaping watering. Detailed grading and foundation recommendations addressing this concern are presented in the following sections.

5.1.2 Shallow Groundwater

From our recent explorations, shallow groundwater was measured at a depth of 7½ feet below the existing ground surface, corresponding to Elevation 203½ feet (City of Fremont datum). From prior explorations, ground water was encountered at Elevation 204 to 208 feet. Our experience with similar sites in the vicinity indicates that shallow groundwater could significantly impact grading and underground construction. These impacts typically consist of potentially wet and unstable pavement subgrade, difficulty achieving compaction, and difficult underground utility installation. Dewatering and shoring of utility trenches may be required in some isolated areas of the site. Detailed recommendations addressing this concern are presented in the "Earthwork" section of this report.

5.1.3 Dewatering Stability

We understand that a permanent subdrainage system was installed when the reservoir was constructed to mitigate potential impacts due to shallow groundwater. We understand the system was installed to help stabilize the reservoir when emptied during maintenance. Recommendations from the prior 1970 Cooper-Clark & Associates report are summarized below for clarity:

> "*As previously discussed, the most critical reservoir conditions would develop while the reservoir is emptied for periodic maintenance purposes. In order to prevent possible heaving of the reservoir lining, we recommend that a subsurface drainage system with pumping facilities be installed so that the groundwater could be lowered to a safe level prior to emptying the reservoir. Such a system would have to be*

completely separate from the drainage system under the reservoir lining, which is intended to monitor reservoir leakage through the impermeable membrane."

We recommend applicable dewatering protocols be implemented during foundation retrofit to reduce the potential impacts to the reservoir liner and to reduce impacts during any required foundation construction or excavations.

5.1.4 Soil Corrosion Potential

A preliminary soil corrosion screening was performed by JDH Corrosion Consultants based on the results of analytical tests on samples of the near-surface soil. In general, the JDH report concludes that the corrosion potential for buried concrete does not warrant the use of sulfate resistant concrete. The corrosion potential for buried metallic structures, such as metal pipes, is considered corrosive. JDH recommends that special requirements for corrosion control be made to protect metal pipes. A more detailed discussion of the site corrosion evaluation is presented in Appendix C.

5.2 PLANS AND SPECIFICATIONS REVIEW

We recommend that we be retained to review the geotechnical aspects of the project structural plans and specifications, allowing sufficient time to provide the design team with any comments prior to issuing the plans for construction.

5.3 CONSTRUCTION OBSERVATION AND TESTING

As site conditions may vary significantly between the small-diameter borings performed during this investigation, we also recommend that a Cornerstone representative be present to provide geotechnical observation and testing during earthwork and foundation construction. This will allow us to form an opinion and prepare a letter at the end of construction regarding contractor compliance with project plans and specifications, and with the recommendations in our report. We will also be allowed to evaluate any conditions differing from those encountered during our investigation and provide supplemental recommendations as necessary. For these reasons, the recommendations in this report are contingent of Cornerstone providing observation and testing during construction. Contractors should provide at least a 48-hour notice when scheduling our field personnel.

SECTION 6: EARTHWORK

6.1 SITE DEMOLITION

Demolition may be concentrated to areas where improvements are required. Recommendations in this section apply to the removal of these improvements, which may be present on the site, prior to the start of the construction of new improvements. Cornerstone should be notified prior to the start of demolition and should be present on at least a part-time basis during all backfill as a result of demolition.

6.2 SITE CLEARING AND PREPARATION

In areas of planned improvements, the area should be stripped of all surface vegetation. Demolition of existing improvements is discussed in the prior paragraphs. Surface vegetation and topsoil should be stripped to a sufficient depth to remove all material greater than 3 percent organic content by weight.

6.3 TEMPORARY CUT AND FILL SLOPES

The contractor is responsible for maintaining all temporary slopes and providing temporary shoring where required. Temporary shoring, bracing, and cuts/fills should be performed in accordance with the strictest government safety standards. On a preliminary basis, the upper 10 feet at the site may be classified as OSHA Site C materials.

Excavations performed during site demolition should be sloped at 2:1 (horizontal:vertical) within the upper 5 feet below building subgrade. Excavations extending more than 5 feet below building subgrade and excavations in pavement and flatwork areas should be slope at a 1:1 inclination unless the OSHA soil classification indicates that slope should not exceed 1.5:1.

6.4 SUBGRADE PREPARATION

After site clearing and demolition is complete, and prior to backfilling any excavations resulting from fill removal or demolition, the excavation subgrade and subgrade within areas to receive additional site fills, slabs-on-grade and/or pavements should be scarified to a depth of 6 inches, moisture conditioned, and compacted in accordance with the “Compaction” section below.

6.5 MATERIAL FOR FILL

6.5.1 Re-Use of On-site Soils

On-site soils with an organic content less than 3 percent by weight may be reused as general fill. General fill should not have lumps, clods or cobble pieces larger than 6 inches in diameter; 85 percent of the fill should be smaller than 2½ inches in diameter. Minor amounts of oversize material (smaller than 12 inches in diameter) may be allowed provided the oversized pieces are not allowed to nest together and the compaction method will allow for loosely placed lifts not exceeding 12 inches.

6.5.2 Potential Import Sources

Import fill material should be inorganic with a Plasticity Index (PI) of 15 or less. To prevent significant caving during trenching or foundation construction, imported material should have sufficient fines. Samples of potential import sources should be delivered to our office at least 10 days prior to the desired import start date. Information regarding the import source should be provided, such as any site geotechnical reports. If the material will be derived from an excavation rather than a stockpile, potholes will likely be required to collect samples from throughout the depth of the planned cut that will be imported. At a minimum, laboratory testing will include PI tests. Material data sheets for select fill materials (Class 2 aggregate base, ¾-inch crushed rock, quarry fines, etc.) listing current laboratory testing data (not older than 6 months from the import date) may be provided for our review without providing a sample. If current data is not available, specification testing will need to be completed prior to approval.

Environmental and soil corrosion characterization should also be considered by the project team prior to acceptance. Suitable environmental laboratory data to the planned import quantity should be provided to the project environmental consultant; additional laboratory testing may be required based on the project environmental consultant's review. The potential import source should also not be more corrosive than the on-site soils, based on pH, saturated resistivity, and soluble sulfate and chloride testing.

6.6 COMPACTION REQUIREMENTS

All fills, and subgrade areas where fill, slabs-on-grade, and pavements are planned, should be placed in loose lifts 8 inches thick or less and compacted in accordance with ASTM D1557 (latest version) requirements, and in accordance with Alameda County Water District specifications. At a minimum, new fills should be compacted to at least 90 percent relative compaction at least 2 percent above the laboratory optimum. In general, clayey soils should be compacted with sheepsfoot equipment and sandy/gravelly soils with vibratory equipment; open-graded materials such as crushed rock should be placed in lifts no thicker than 18 inches consolidated in place with vibratory equipment. Each lift of fill and all subgrade should be firm and unyielding under construction equipment loading in addition to meeting the compaction requirements to be approved. The contractor (with input from a Cornerstone representative) should evaluate the in-situ moisture conditions, as the use of vibratory equipment on soils with high moistures can cause unstable conditions.

6.7 TRENCH BACKFILL

Utility lines should be trenched, bedded and shaded, and backfilled in accordance with Alameda County Water District specifications.

All utility lines should be bedded and shaded to at least 6 inches over the top of the lines with crushed rock (⅜-inch-diameter or greater) or well-graded sand and gravel materials conforming to the pipe manufacturer's requirements. Open-graded shading materials should be consolidated in place with vibratory equipment and well-graded materials should be compacted to at least 90 percent relative compaction with vibratory equipment prior to placing subsequent backfill materials.

General backfill over shading materials may consist of on-site native materials provided they meet the requirements in the "Material for Fill" section, and are moisture conditioned and compacted in accordance with the requirements in the "Compaction" section.

Where utility lines will cross perpendicular to strip footings, the footing should be deepened to encase the utility line, providing sleeves or flexible cushions to protect the pipes from anticipated foundation settlement, or the utility lines should be backfilled to the bottom of footing with sand-cement slurry or lean concrete. Where utility lines will parallel footings and will extend below the "foundation plane of influence," an imaginary 1:1 plane projected down from the bottom edge of the footing, either the footing will need to be deepened so that the pipe is above the foundation plane of influence, or the utility trench will need to be backfilled with sand-cement slurry or lean concrete within the influence zone. Sand-cement slurry used within foundation influence zones should have a minimum compressive strength of 75 psi.

SECTION 7: SEISMIC DESIGN CONSIDERATIONS

7.1 SEISMIC DESIGN CRITERIA

Site-specific seismic design parameters were developed in accordance with Chapter 16, Chapter 18 and Appendix J of the 2019 California Building Code (CBC) and Chapters 11, 12, 20, and 21 and Supplement No. 1 of ASCE 7-16.

7.1.1 Site Location and Provided Data For 2019 CBC Seismic Design

The project is located at latitude 37.497155° and longitude -121.914657°, which is based on Google Earth (WGS84) coordinates at the approximate center of the reservoir located at 585 Shoshone Court in Fremont, California. We have assumed that a Seismic Importance Factor (I_e) of 1.00 has been assigned to the structure in accordance with Table 1.5-2 of ASCE 7-16 for structures classified as Risk Category II.

7.2 2019 CBC SEISMIC DESIGN CRITERIA

As discussed in the "Subsurface" section of our report, the previously performed exploratory borings encountered stiff to hard clay and interbedded medium dense to dense sand and gravel deposits to a depth of 60 feet, the maximum depth previously explored, with typical SPT "N" values between 15 and 50 blows per foot. Shear wave velocity (V_S) estimates were based on Pleistocene-aged alluvial soil mapped by Graymer et al, resulting in an assumed time-averaged shear wave velocity for the top 30 meters (V_{S30}) of 350 meters per second (1148 feet per second), for the upper 100 feet (Wills & Silva, 1998).

7.2.1 2019 CBC Seismic Design

Per section 20.3.2 of ASCE 7-16, we have determined the site as Site Classification D, which is described as a "stiff soil" profile. Because we used site specific data from recent and prior explorations and laboratory testing, the site class should be considered as "determined" for the purposes of estimating the seismic design parameters from the code.

In accordance with Section 11.4.8 of ASCE 7-16, we performed a ground motion hazard analysis following Chapter 21, Section 21.2 of ASCE 7-16. We evaluated both Probabilistic MCE_R Ground Motions in accordance with Method 1 and Deterministic MCE_R Ground Motions

to generate our recommended design response spectrum for the project, see Figure 5. The recommended design spectral accelerations and associated periods are also provided in graphically on Figure 5.

If Exception 2 per Chapter 20 of ASCE 7-16 is considered, the table below lists the various factors used to determine the seismic coefficients and other parameters. This is based on the site coordinates and using site class D from the web-based program ATC Hazards by Locations, located at https://hazards.atcouncil.org/. Additionally, if seismic design parameters are needed based on ASCE 41-17, Site Class D should be used.

Table 2: CBC Site Categorization and Site Coefficients

Classification/Coefficient	Design Value
Site Class	D
Site Latitude	37.497972°
Site Longitude	-121.915127°
0.2-second Period Mapped Spectral Acceleration[1], S_S	2.499g
1-second Period Mapped Spectral Acceleration[1], S_1	0.957g
Short-Period Site Coefficient – Fa	1
Long-Period Site Coefficient – Fv	Null
0.2-second Period, Maximum Considered Earthquake Spectral Response Acceleration Adjusted for Site Effects - S_{MS}	2.499g
1-second Period, Maximum Considered Earthquake Spectral Response Acceleration Adjusted for Site Effects – S_{M1}	Null
0.2-second Period, Design Earthquake Spectral Response Acceleration – S_{DS}	1.666g
1-second Period, Design Earthquake Spectral Response Acceleration – S_{D1}	Null

SECTION 8: FOUNDATIONS

8.1 SUMMARY OF RECOMMENDATIONS

In our opinion, any proposed modifications to the existing roof structure may be supported on shallow foundations provided the recommendations in the “Earthwork” section and the sections below are followed.

8.2 SHALLOW FOUNDATIONS

8.2.1 Conventional Footings

Spread or continuous footings should bear on natural, undisturbed soil or engineered fill, be at least 18 inches wide, and extend at least 24 inches below the lowest adjacent grade. Lowest adjacent grade is defined as the deeper of the following: 1) bottom of the adjacent exterior pavement, or 2) finished reservoir slope or bottom.

Footings constructed to the above dimensions and in accordance with the "Earthwork" recommendations of this report are capable of supporting maximum allowable bearing pressures shown below in Table 3. These pressures are based on factors of safety of 3.0, 2.0, and 1.5 applied to the ultimate bearing pressure for dead, dead plus live, and all loads, respectively. These pressures are net values; the weight of the footing may be neglected for the portion of the footing extending below grade (typically, the full footing depth). Top and bottom mats of reinforcing steel should be included in continuous footings to help span irregularities and differential settlement.

Table 3: Allowable Bearing Pressures

Footing Location	Estimated Soil Type	Allowable Bearing Pressure		
		Dead Load	Dead + Live Load	All Loads
Perimeter Wall	Stiff Clay	2,000	3,000	4,000
Reservoir Slope	Medium Dense Sands/Stiff Clay	1,500	2,250	3,000
Reservoir Bottom	Stiff Clay	3,000	4,500	6,000

8.2.2 Footing Settlement

We estimate that the total static footing settlement for new footings will be less than ½ inch, with approximately ¼ inch or less of post-construction differential settlement between adjacent footings.

8.2.3 Lateral Loading

Lateral loads may be resisted by friction between the bottom of footing and the supporting subgrade, and also by passive pressures generated against footing sidewalls. An ultimate frictional resistance of 0.45 applied to the footing dead load. Ultimate passive pressures based on an equivalent fluid pressure of 350 and 450 pcf for footings on existing reservoir slopes or at the bottom of the reservoir, respectively, may be used in design. The structural engineer should apply an appropriate factor of safety (such as 1.5) to the ultimate values above.

8.2.4 Spread Footing Construction Considerations

Where utility lines will cross perpendicular to strip footings, the footing should be deepened to encase the utility line, providing sleeves or flexible cushions to protect the pipes from anticipated foundation settlement, or the utility lines should be backfilled to the bottom of footing with sand-cement slurry or lean concrete. Where utility lines will parallel footings and will extend below the "foundation plane of influence," an imaginary 1:1 plane projected down from the bottom edge of the footing, either the footing will need to be deepened so that the pipe is above the foundation plane of influence, or the utility trench will need to be backfilled with sand-cement slurry or lean concrete within the influence zone. Sand-cement slurry used within foundation influence zones should have a minimum compressive strength of 75 psi.

Footing excavations should be filled as soon as possible or be kept moist until concrete placement by regular sprinkling to prevent desiccation. A Cornerstone representative should observe all footing excavations prior to placing reinforcing steel and concrete. If there is a significant schedule delay between our initial observation and concrete placement, we may need to re-observe the excavations.

8.3 CAST-IN-DRILLED-HOLE (CIDH) PIERS

The proposed seismic upgrades can also be supported on or resisted by cast-in-drilled-hole (CIDH) piers. We understand that CIDH piers would be constructed near the existing reservoir perimeter. Recommendations are provided in the follow sections.

8.3.1 Vertical Capacity and Settlement

The piers should have a minimum diameter of 18 inches and extend to a depth of at least 10 feet below the bottom of footings or grade beams. Adjacent piers centers should be spaced at least three diameters apart, otherwise, a reduction for group effects may be required. Grade beams should span between piers and/or pier caps in accordance with structural requirements.

As discussed, the soils that were encountered were primarily lean clays with interbedded clayey sands. The vertical capacity of the piers may be designed based on the allowable skin friction values presented below for combined dead plus live loads based on a factor of safety of 2.0; dead loads should not exceed two-thirds of the allowable capacities. The allowable skin friction may be increased by one-third for wind and seismic loads. Frictional resistance to uplift loads may be developed along the pier shafts based on an ultimate frictional resistance of 80 percent of the downward capacities; the structural engineer should apply an appropriate factor of safety (such as 1.5) to the ultimate uplift capacity.

Table 4: Allowable Skin Friction

Depth* (feet)	Allowable Skin Friction (psf)
0 to 10	500
10 to 20	600

*Depth assumed to be below lowest adjacent grade or bottom of grade beam

Total settlement of individual piers should not exceed ¼ to ½ inch to mobilize static capacities and post-construction differential movement between adjacent piers should not exceed ¼ inch due to static and seismic loads.

8.3.2 Lateral Capacity

Lateral loads exerted on pier-supported structures may be resisted by a passive resistance based on an ultimate equivalent fluid pressure of 450 pcf acting against twice the projected area of piers below the grade beam, up to a maximum uniform pressure of 2,500 psf at depth. The structural engineer should apply an appropriate factor of safety, as needed, to the ultimate passive pressure.

8.3.3 Construction Considerations

The excavation of all drilled shafts should be observed by the geotechnical engineer to confirm the soil profile and observe that the piers are constructed in accordance with our recommendations and project requirements. The drilled shafts should be straight, dry, and relatively free of loose material before reinforcing steel is installed and concrete is placed. If perched or shallow ground water is encountered that cannot be removed from the excavations prior to concrete placement, the concrete should be placed using a tremie pipe, keeping the tremie pipe below the surface of the concrete to avoid entrapment of water in the concrete.

Due to the presence of localized interbedded sand layers below a depth of 5 feet, localized sloughing or sidewall caving could occur during pier drilling. Therefore, the use of drilling slurry and/or casing of each drilled shaft may be required. Due to the presence of shallow groundwater and localized sand layers, excavated piers should be backfilled with concrete on the same day of drilling unless casing is used to stabilize the pier.

SECTION 9: RETAINING WALLS

9.1 STATIC LATERAL EARTH PRESSURES

The structural design of any site retaining wall should include resistance to lateral earth pressures that develop from the soil behind the wall, any undrained water pressure, and surcharge loads acting behind the wall. Provided a drainage system is constructed behind the wall to prevent the build-up of hydrostatic pressures as discussed in the section below, we recommend that the walls with level backfill be designed for the following pressures:

Table 5: Recommended Lateral Earth Pressures

Wall Condition	Lateral Earth Pressure*	Additional Surcharge Loads
Unrestrained – Cantilever Wall	45 pcf	⅓ of vertical loads at top of wall
Restrained – Braced Wall	45 pcf + 8H** psf	½ of vertical loads at top of wall

* Lateral earth pressures are based on an equivalent fluid pressure for level backfill conditions
** H is the distance in feet between the bottom of footing and top of retained soil

If adequate drainage cannot be provided behind the wall, an additional equivalent fluid pressure of 40 pcf should be added to the values above for both restrained and unrestrained walls for the portion of the wall that will not have drainage. Damp proofing or waterproofing of the walls may be considered where moisture penetration and/or efflorescence are not desired.

9.2 SEISMIC LATERAL EARTH PRESSURES

The 2019 CBC states that lateral pressures from earthquakes should be considered in the design of retaining walls. At this time, we are not aware of any retaining walls for the project exceeding 6 feet in height. In our opinion, design of these walls for seismic lateral earth pressures in addition to static earth pressures is not warranted.

9.3 WALL DRAINAGE

Adequate drainage should be provided by a subdrain system behind all walls. This system should consist of a 4-inch minimum diameter perforated pipe placed near the base of the wall (perforations placed downward). The pipe should be bedded and backfilled with Class 2 Permeable Material per Caltrans Standard Specifications, latest edition. The permeable backfill should extend at least 12 inches out from the wall and to within 2 feet of outside finished grade. Alternatively, ½-inch to ¾-inch crushed rock may be used in place of the Class 2 Permeable Material provided the crushed rock and pipe are enclosed in filter fabric, such as Mirafi 140N or approved equivalent. The upper 2 feet of wall backfill should consist of compacted on-site soil. The subdrain outlet should be connected to a free-draining outlet or sump.

Miradrain, Geotech Drainage Panels, or equivalent drainage matting can be used for wall drainage as an alternative to the Class 2 Permeable Material or drain rock backfill. Horizontal strip drains connecting to the vertical drainage matting may be used in lieu of the perforated pipe and crushed rock section. The vertical drainage panel should be connected to the perforated pipe or horizontal drainage strip at the base of the wall, or to some other closed or through-wall system such as the TotalDrain system from AmerDrain. Sections of horizontal drainage strips should be connected with either the manufacturer's connector pieces or by pulling back the filter fabric, overlapping the panel dimples, and replacing the filter fabric over the connection. At corners, a corner guard, corner connection insert, or a section of crushed rock covered with filter fabric must be used to maintain the drainage path.

Drainage panels should terminate 18 to 24 inches from final exterior grade. The Miradrain panel filter fabric should be extended over the top of and behind the panel to protect it from intrusion of the adjacent soil.

9.4 BACKFILL

Where surface improvements will be located over the retaining wall backfill, backfill placed behind the walls should be compacted to at least 95 percent relative compaction using light compaction equipment. Where no surface improvements are planned, backfill should be compacted to at least 90 percent.

9.5 FOUNDATIONS

Retaining walls may be supported on a continuous spread footing designed in accordance with the recommendations presented in the "Foundations" section of this report.

SECTION 10: LIMITATIONS

This report, an instrument of professional service, has been prepared for the sole use of TJC and Associates, Inc. specifically to support the design of the ACWD Alameda Reservoir Seismic Upgrade project in Fremont, California. The opinions, conclusions, and recommendations presented in this report have been formulated in accordance with accepted geotechnical engineering practices that exist in Northern California at the time this report was prepared. No warranty, expressed or implied, is made or should be inferred.

Recommendations in this report are based upon the soil and groundwater conditions encountered during our subsurface exploration. If variations or unsuitable conditions are

encountered during construction, Cornerstone must be contacted to provide supplemental recommendations, as needed.

TJC and Associates, Inc. may have provided Cornerstone with plans, reports and other documents prepared by others. TJC and Associates, Inc. understands that Cornerstone reviewed and relied on the information presented in these documents and cannot be responsible for their accuracy.

Cornerstone prepared this report with the understanding that it is the responsibility of the owner or his representatives to see that the recommendations contained in this report are presented to other members of the design team and incorporated into the project plans and specifications, and that appropriate actions are taken to implement the geotechnical recommendations during construction.

Conclusions and recommendations presented in this report are valid as of the present time for the development as currently planned. Changes in the condition of the property or adjacent properties may occur with the passage of time, whether by natural processes or the acts of other persons. In addition, changes in applicable or appropriate standards may occur through legislation or the broadening of knowledge. Therefore, the conclusions and recommendations presented in this report may be invalidated, wholly or in part, by changes beyond Cornerstone's control. This report should be reviewed by Cornerstone after a period of three (3) years has elapsed from the date of this report. In addition, if the current project design is changed, then Cornerstone must review the proposed changes and provide supplemental recommendations, as needed.

An electronic transmission of this report may also have been issued. While Cornerstone has taken precautions to produce a complete and secure electronic transmission, please check the electronic transmission against the hard copy version for conformity.

Recommendations provided in this report are based on the assumption that Cornerstone will be retained to provide observation and testing services during construction to confirm that conditions are similar to that assumed for design, and to form an opinion as to whether the work has been performed in accordance with the project plans and specifications. If we are not retained for these services, Cornerstone cannot assume any responsibility for any potential claims that may arise during or after construction as a result of misuse or misinterpretation of Cornerstone's report by others. Furthermore, Cornerstone will cease to be the Geotechnical-Engineer-of-Record if we are not retained for these services.

SECTION 11: REFERENCES

ATC Hazards by Location, Hazards by Location, 2020, https://hazards.atcouncil.org/

California Building Code, 2019, Structural Engineering Design Provisions, Vol. 2.

California Geological Survey, 2003, State of California Seismic Hazard Zones, Milpitas 7.5-Minute Quadrangle, California: Seismic Hazard Zone Report 051.

Federal Emergency Management Administration (FEMA), 1989, FIRM Alameda County, California, Community Panel #06001C0606G.

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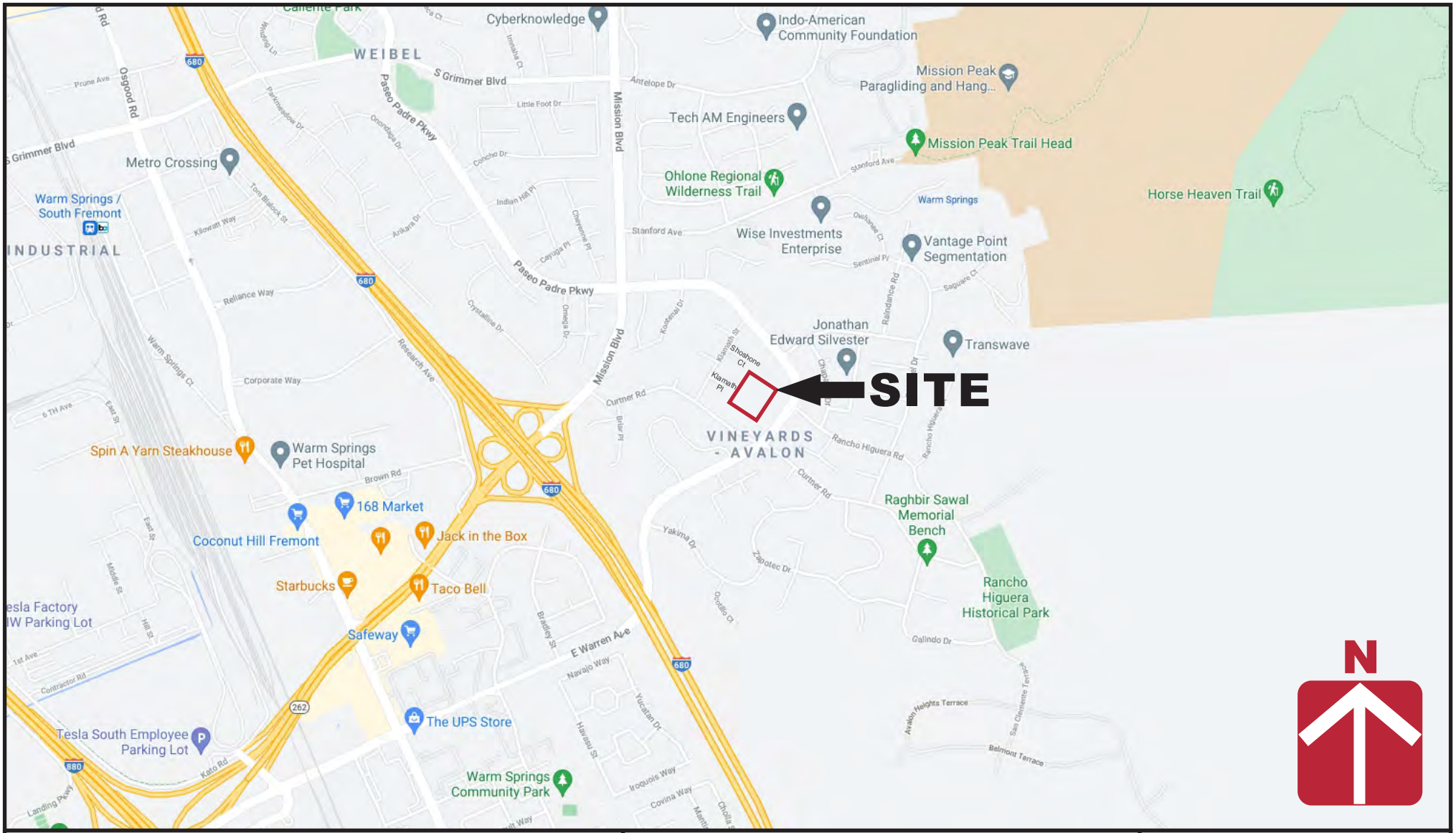
Youd, T.L. and Idriss, I.M., et al, 1997, Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils: National Center for Earthquake Engineering Research, Technical Report NCEER - 97-0022, January 5, 6, 1998.

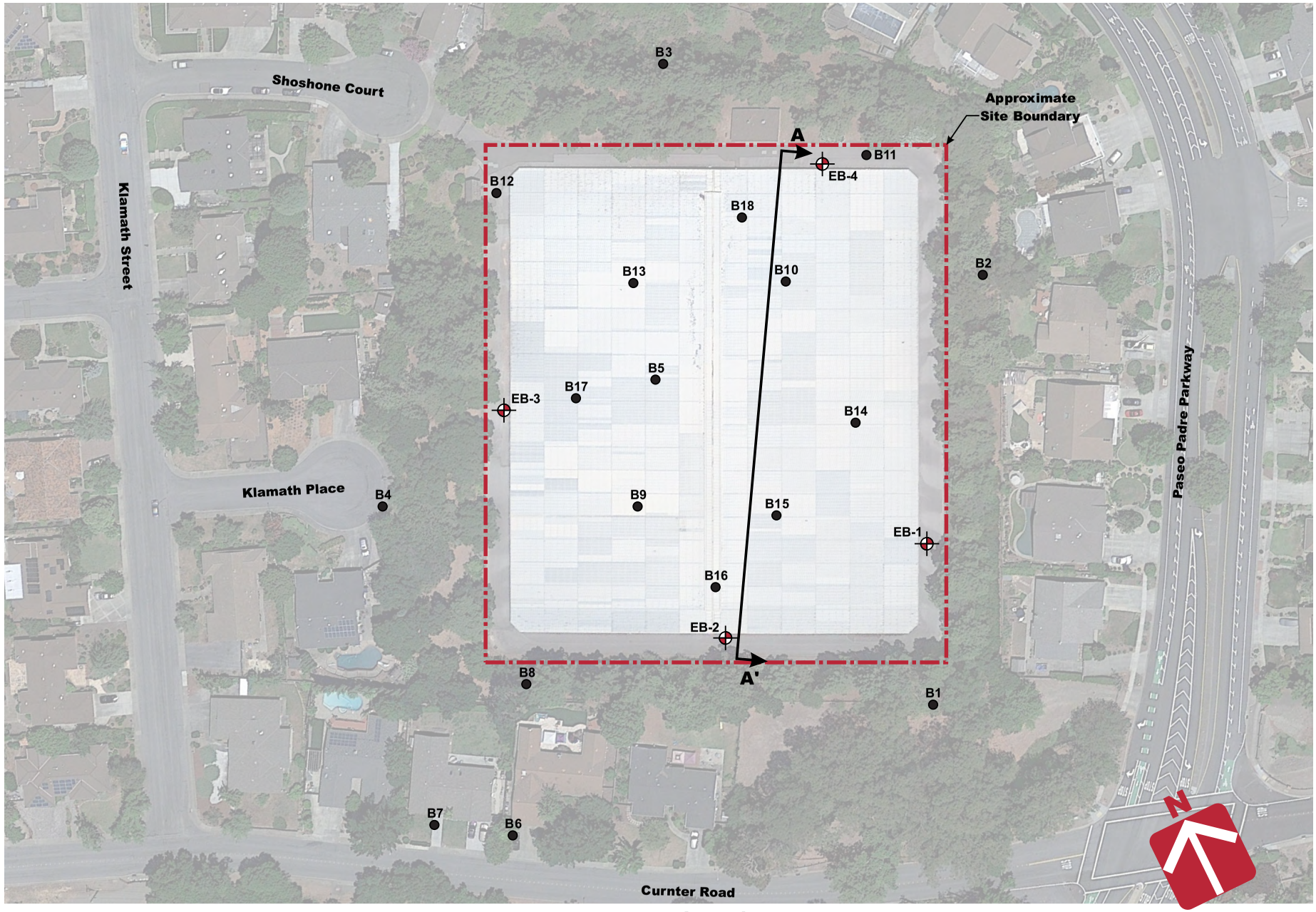


CORNERSTONE EARTH GROUP

Vicinity Map

ACWD Alameda Reservoir
585 Shoshone Court
Fremont, CA

Project Number	1287-1-1
Figure Number	Figure 1
Date	June 2021
Drawn By	RRN



Project Number 1287-1-1

Figure Number Figure 2

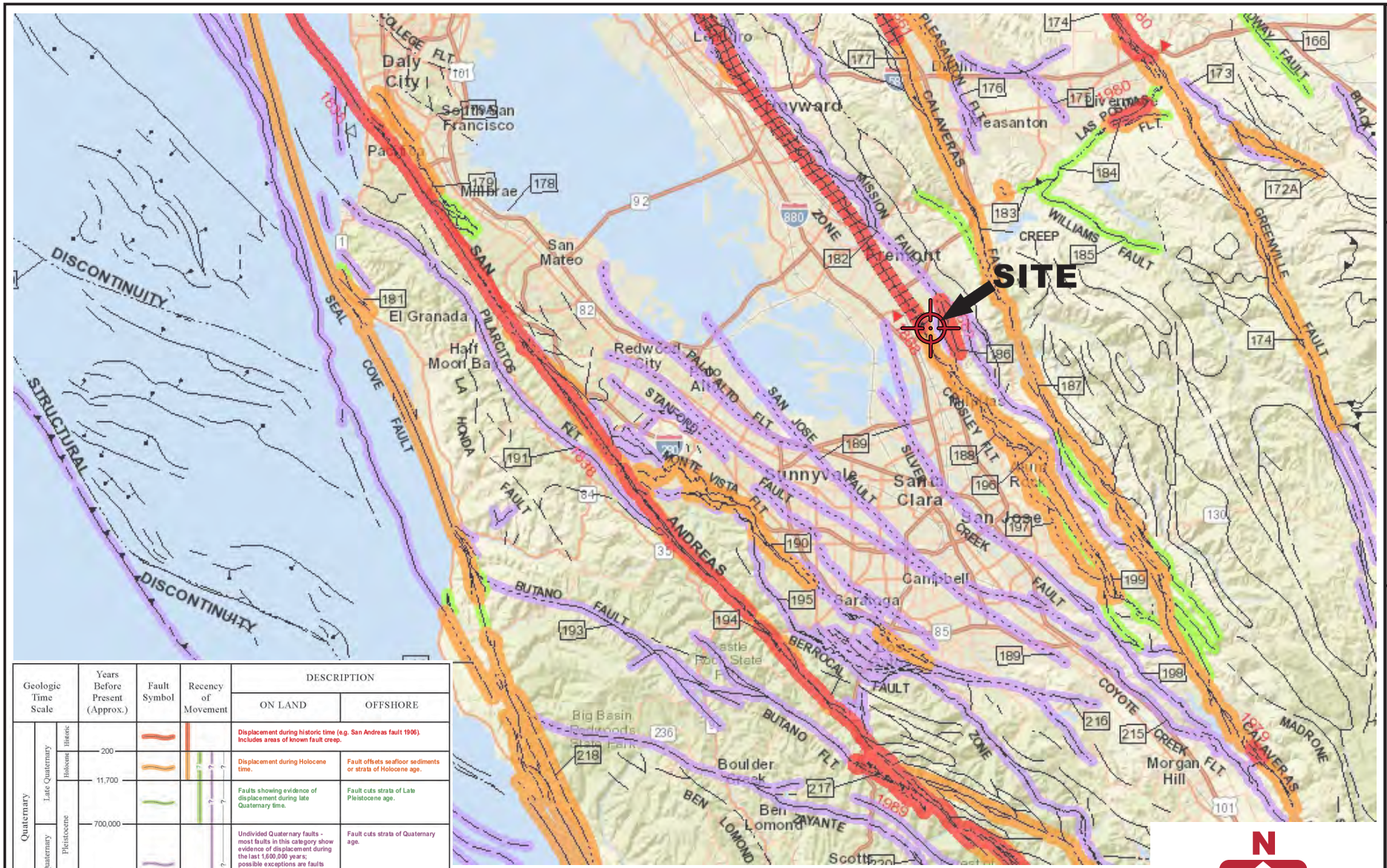
Date June 2021

Drawn By RRN

Site Plan

ACWD Alameda Reservoir
585 Shoshone Court
Fremont, CA

CORNERSTONE EARTH GROUP



Geologic Time Scale	Years Before Present (Approx.)	Fault Symbol	Recency of Movement	DESCRIPTION ON LAND	DESCRIPTION OFFSHORE
Quaternary – Late Quaternary – Historic	200			Displacement during historic time (e.g. San Andreas fault 1906). Includes areas of known fault creep.	
Quaternary – Late Quaternary – Holocene	11,700		? ? ?	Displacement during Holocene time.	Fault offsets seafloor sediments or strata of Holocene age.
Quaternary – Late Quaternary – Pleistocene	700,000		? ? ?	Faults showing evidence of displacement during late Quaternary time.	Fault cuts strata of Late Pleistocene age.
Quaternary – Early Quaternary – Pleistocene	1,600,000		?	Undivided Quaternary faults - most faults in this category show evidence of displacement during the last 1,600,000 years; possible exceptions are faults which displace rocks of undifferentiated Plio-Pleistocene age.	Fault cuts strata of Quaternary age.
Pre-Quaternary	4.5 billion (Age of Earth)			Faults without recognized Quaternary displacement or showing evidence of no displacement during Quaternary time. Not necessarily inactive.	Fault cuts strata of Pliocene or older age.

Base by California Geological Survey - 2010 Fault Activity Map of California (Jennings and Bryant, 2010)

N

0 5 10

APPROXIMATE SCALE (MILES)

Project Number 1287-1-1

Figure Number Figure 3

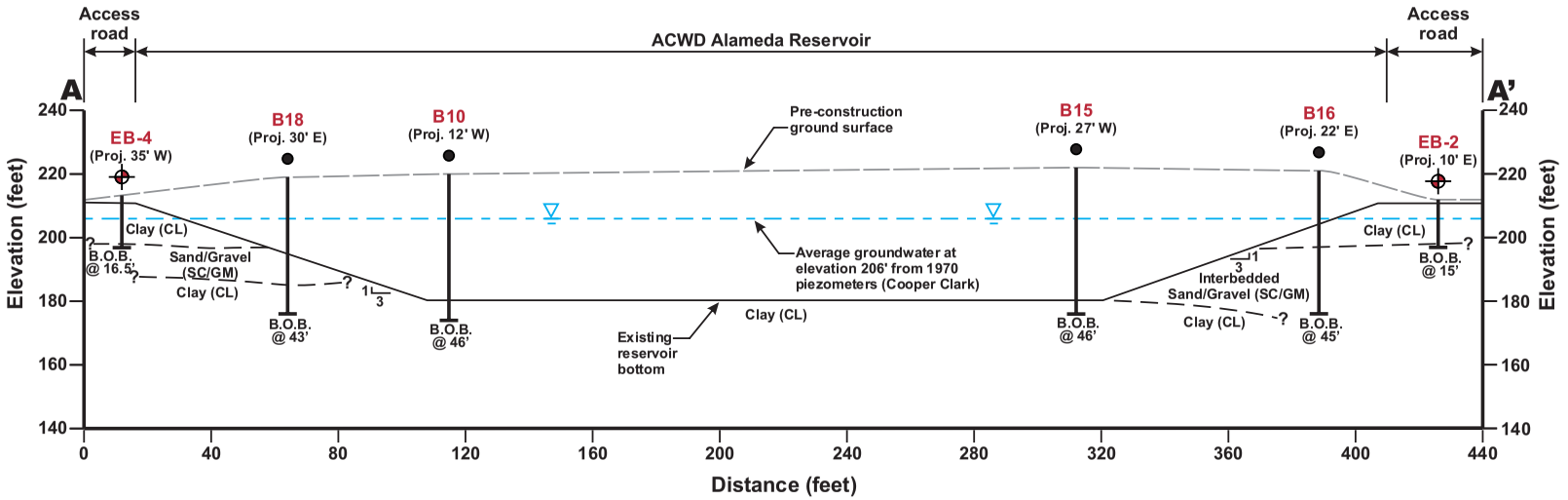
Drawn By RRN

Date June 2021

Regional Fault Map

ACWD Alameda Reservoir
585 Shoshone Court
Fremont, CA

CORNERSTONE EARTH GROUP



Section A-A'

(View Looking Southeast)
1"=40' H:V

Symbols

CL	Clay
SC/GM	Sand/Gravel
⌖	Approximate location of exploratory boring (EB) (Cornerstone, current investigation)
●	Approximate location of previous boring (B) (Cooper Clark & Associates, 1969 and 1970)

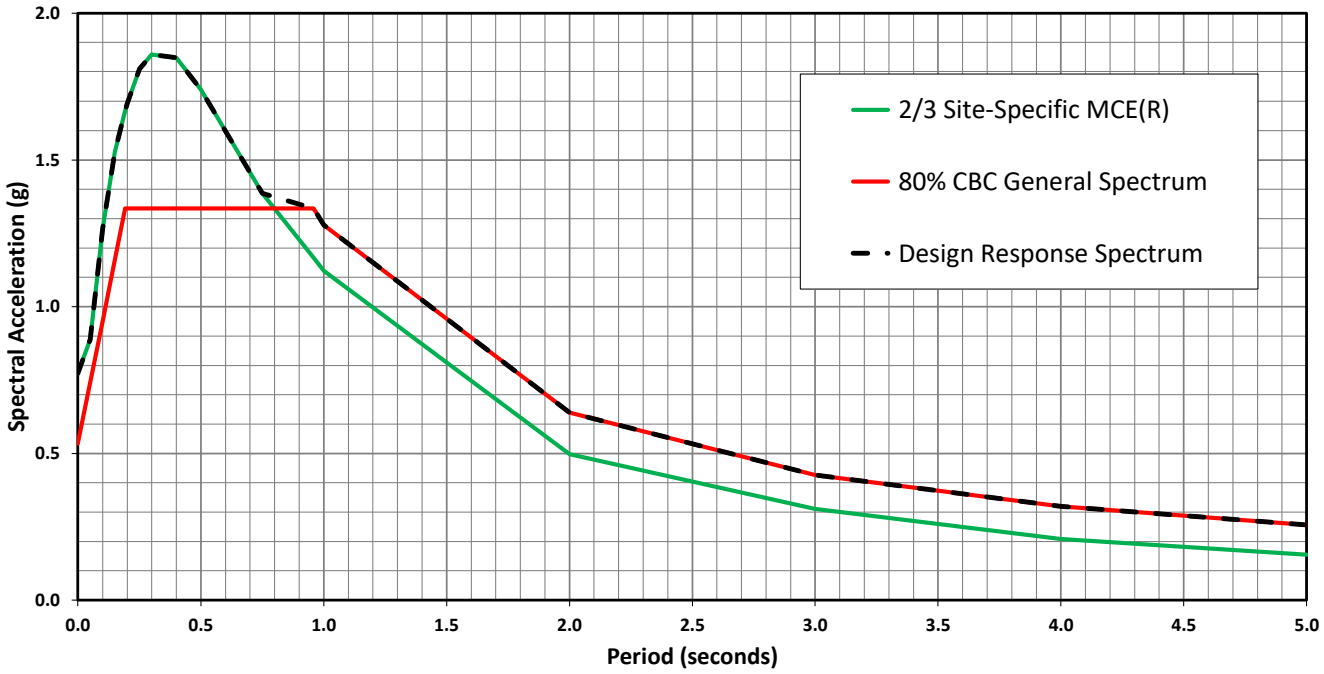
Notes:
1) Surficial fills associated with existing pavements, landscaping or utilities are not shown.
2) The subsurface profile is conceptual and is based on limited subsurface data obtained from widely spaced borings. Actual subsurface conditions may vary significantly between borings.
3) See Figure 2 for location of cross section.

Project Number 1287-1-1
Figure Number Figure 4
Date June 2021
Drawn By RRN

Generalized Cross Section A-A'

ACWD Alameda Reservoir
585 Shoshone Court
Fremont, CA

CORNERSTONE EARTH GROUP



The Site-Specific Design Response Spectrum per Section 21.2, 21.3 and 21.4 of ASCE 7-16 is defined as the greater of the following at all periods:

- 2/3 of the Site-Specific MCE_R, or
- 80% of the CBC General Spectrum.

Design Response Spectra	
Period (Seconds)	Spectral Acceleration (g)
0.00	0.773
0.05	0.889
0.10	1.268
0.15	1.528
0.19	1.667
0.20	1.694
0.25	1.809
0.30	1.858
0.40	1.847
0.50	1.739
0.75	1.386
0.96	1.334
1.00	1.279
2.00	0.639
3.00	0.426
4.00	0.320
5.00	0.256

Site Design	Design Values
Site Class (Per Chapter 20 ASCE 7-16)	D
Shear Wave Velocity, V_{S30} (m/sec)	350
Site Latitude (degrees)	37.497155
Site Longitude (degrees)	-121.914657
Risk Category	II
Building Period (sec)	Unknown
Importance Factor, I_e	1
[1]Site Specific PGA_M (g)	1.05

[1] Lower of Deterministic and Probabilistic, but not less than 80% of mapped value of FM x PGA, determined in accordance with Section 21.5 of ASCE 7-16.

Design Acceleration Parameters[1]	
S_{DS}	1.673
S_{D1}	1.279
S_{MS}	2.509
S_{M1}	1.918

References:

ASCE/SEI 7-16: Minimum Design Loads and Associated Criteria for Buildings and Other Strutures with Supplement No. 1.
2019 California Building Code, Title 24, Part 2, Volume 2

CORNERSTONE EARTH GROUP

DESIGN RESPONSE SPECTRA

ACWD Alameda Reservoir
585 Shoshone Court
Fremont, CA

FIGURE 5

PROJECT NO. 1287-1-1

June 11, 2021 | SJO

APPENDIX A: FIELD INVESTIGATION

The field investigation consisted of a surface reconnaissance and a subsurface exploration program using track-mounted, hollow-stem, limited-access auger drilling equipment. Four 6½ -inch-diameter exploratory borings were drilled on May 20, 2021, to depths of 15 to 16½ feet. The approximate locations of exploratory borings are shown on the Site Plan, Figure 2. The soils encountered were continuously logged in the field by our representative and described in accordance with the Unified Soil Classification System (ASTM D2488). Boring logs, as well as a key to the classification of the soil, are included as part of this appendix.

Boring locations were approximated using existing site boundaries, a hand-held GPS unit, and other site features as references. Boring elevations were based on interpolation of plan contours. The locations and elevations of the borings should be considered accurate only to the degree implied by the method used.

Representative soil samples were obtained from the borings at selected depths. All samples were returned to our laboratory for evaluation and appropriate testing. The standard penetration resistance blow counts were obtained by dropping a 140-pound hammer through a 30-inch free fall. The 2-inch O.D. split-spoon sampler was driven 18 inches and the number of blows was recorded for each 6 inches of penetration (ASTM D1586). 2.5-inch I.D. samples were obtained using a Modified California Sampler driven into the soil with the 140-pound hammer previously described. Unless otherwise indicated, the blows per foot recorded on the boring log represent the accumulated number of blows required to drive the last 12 inches. The various samplers are denoted at the appropriate depth on the boring logs.

Field tests included an evaluation of the unconfined compressive strength of the soil samples using a pocket penetrometer device. The results of these tests are presented on the individual boring logs at the appropriate sample depths.

Attached boring logs and related information depict subsurface conditions at the locations indicated and on the date designated on the logs. Subsurface conditions at other locations may differ from conditions occurring at these boring locations. The passage of time may result in altered subsurface conditions due to environmental changes. In addition, any stratification lines on the logs represent the approximate boundary between soil types and the transition may be gradual.

UNIFIED SOIL CLASSIFICATION (ASTM D-2487-98)

MATERIAL TYPES	CRITERIA FOR ASSIGNING SOIL GROUP NAMES			GROUP SYMBOL	SOIL GROUP NAMES & LEGEND
COARSE-GRAINED SOILS >50% RETAINED ON NO. 200 SIEVE	GRAVELS >50% OF COARSE FRACTION RETAINED ON NO 4. SIEVE	CLEAN GRAVELS <5% FINES	Cu>4 AND 1<Cc<3	GW	WELL-GRADED GRAVEL
			Cu>4 AND 1>Cc>3	GP	POORLY-GRADED GRAVEL
		GRAVELS WITH FINES >12% FINES	FINES CLASSIFY AS ML OR CL	GM	SILTY GRAVEL
			FINES CLASSIFY AS CL OR CH	GC	CLAYEY GRAVEL
	SANDS >50% OF COARSE FRACTION PASSES ON NO 4. SIEVE	CLEAN SANDS <5% FINES	Cu>6 AND 1<Cc<3	SW	WELL-GRADED SAND
			Cu>6 AND 1>Cc>3	SP	POORLY-GRADED SAND
		SANDS AND FINES >12% FINES	FINES CLASSIFY AS ML OR CL	SM	SILTY SAND
			FINES CLASSIFY AS CL OR CH	SC	CLAYEY SAND
FINE-GRAINED SOILS >50% PASSES NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT<50	INORGANIC	PI>7 AND PLOTS>"A" LINE	CL	LEAN CLAY
			PI>4 AND PLOTS<"A" LINE	ML	SILT
		ORGANIC	LL (oven dried)/LL (not dried)<0.75	OL	ORGANIC CLAY OR SILT
	SILTS AND CLAYS LIQUID LIMIT>50	INORGANIC	PI PLOTS >"A" LINE	CH	FAT CLAY
			PI PLOTS <"A" LINE	MH	ELASTIC SILT
		ORGANIC	LL (oven dried)/LL (not dried)<0.75	OH	ORGANIC CLAY OR SILT
HIGHLY ORGANIC SOILS		PRIMARILY ORGANIC MATTER, DARK IN COLOR, AND ORGANIC ODOR		PT	PEAT

OTHER MATERIAL SYMBOLS

- Poorly-Graded Sand with Clay
- Clayey Sand
- Sandy Silt
- Artificial/Undocumented Fill
- Poorly-Graded Gravelly Sand
- Topsoil
- Well-Graded Gravel with Clay
- Well-Graded Gravel with Silt
- Sand
- Silt
- Well Graded Gravelly Sand
- Gravelly Silt
- Asphalt
- Boulders and Cobble

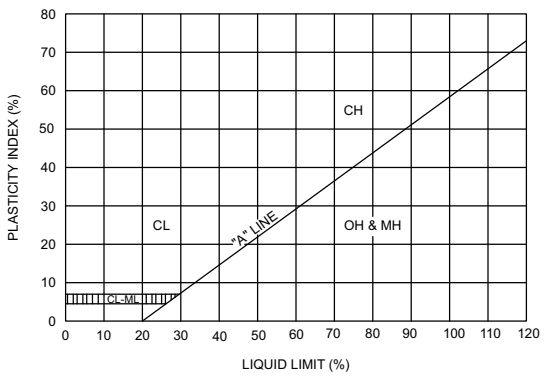
SAMPLER TYPES

- SPT
- Modified California (2.5" I.D.)
- Rock Core
- Shelby Tube
- No Recovery
- Grab Sample

ADDITIONAL TESTS

CA	-	CHEMICAL ANALYSIS (CORROSIVITY)	PI	-	PLASTICITY INDEX
CD	-	CONSOLIDATED DRAINED TRIAXIAL	SW	-	SWELL TEST
CN	-	CONSOLIDATION	TC	-	CYCLIC TRIAXIAL
CU	-	CONSOLIDATED UNDRAINED TRIAXIAL	TV	-	TORVANE SHEAR
DS	-	DIRECT SHEAR	UC	-	UNCONFINED COMPRESSION
PP	-	POCKET PENETROMETER (TSF)	(1.5)	-	(WITH SHEAR STRENGTH IN KSF)
(3.0)	-	(WITH SHEAR STRENGTH IN KSF)			
RV	-	R-VALUE	UU	-	UNCONSOLIDATED UNDRAINED TRIAXIAL
SA	-	SIEVE ANALYSIS: % PASSING #200 SIEVE			
▼	-	WATER LEVEL			

PLASTICITY CHART



PENETRATION RESISTANCE
(RECORDED AS BLOWS / FOOT)

SAND & GRAVEL		SILT & CLAY		
RELATIVE DENSITY	BLOWS/FOOT*	CONSISTENCY	BLOWS/FOOT*	STRENGTH** (KSF)
VERY LOOSE	0 - 4	VERY SOFT	0 - 2	0 - 0.25
LOOSE	4 - 10	SOFT	2 - 4	0.25 - 0.5
MEDIUM DENSE	10 - 30	MEDIUM STIFF	4 - 8	0.5-1.0
DENSE	30 - 50	STIFF	8 - 15	1.0 - 2.0
VERY DENSE	OVER 50	VERY STIFF	15 - 30	2.0 - 4.0
		HARD	OVER 30	OVER 4.0

* NUMBER OF BLOWS OF 140 LB HAMMER FALLING 30 INCHES TO DRIVE A 2 INCH O.D. (1-3/8 INCH I.D.) SPLIT-BARREL SAMPLER THE LAST 12 INCHES OF AN 18-INCH DRIVE (ASTM-1586 STANDARD PENETRATION TEST).

** UNDRAINED SHEAR STRENGTH IN KIPS/SQ. FT. AS DETERMINED BY LABORATORY TESTING OR APPROXIMATED BY THE STANDARD PENETRATION TEST, POCKET PENETROMETER, TORVANE, OR VISUAL OBSERVATION.

CORNERSTONE EARTH GROUP

LEGEND TO SOIL DESCRIPTIONS

Figure Number A-1

BORING NUMBER EB-1

CORNERSTONE EARTH GROUP

PROJECT NAME ACWD Alameda Reservoir
PROJECT NUMBER 1287-1-1
PROJECT LOCATION 585 Shoshone Court, Fremont, CA

DATE STARTED 5/20/21 **DATE COMPLETED** 5/20/21
GROUND ELEVATION 211 FT +/- **BORING DEPTH** 15 ft.
DRILLING CONTRACTOR Cuesta Geoservices
LATITUDE 37.496592° **LONGITUDE** -121.914347°
DRILLING METHOD MPP LAD Track Rig, 6½ inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY BCG
AT TIME OF DRILLING 8.5 ft.
NOTES
AT END OF DRILLING 7.5 ft.

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
211.0	0	2½ inches asphalt concrete over 6 inches aggregate base						
210.7								
210.2		**Sandy Lean Clay (CL)** stiff, moist, brown, fine to coarse sand, some fine to coarse subrounded gravel, low to moderate plasticity		GB-1		17		
				GB				
				GB-3		17		
				GB				
206.0	5	**Clayey Sand with Gravel (SC)** loose, moist, brown, fine to coarse sand, fine to coarse subangular to subrounded gravel	19	MC-5B	121	14		16
204.5		**Lean Clay with Sand (CL)** medium stiff, moist, brown, fine to medium sand, moderate plasticity	11	SPT				
			6	MC-7B	102	24		
	10							
200.0		**Clayey Sand (SC)** loose, moist, brown, fine to medium sand	11	MC-8B	108	20		28
198.0		**Silty Sand (SM)** loose, moist, brown, fine to medium sand						
196.5			16	MC-9B	109	20		
196.0	15	**Clayey Sand (SC)** loose, moist, brown, fine to medium sand, some fine subanglar to subrounded gravel						
		Bottom of Boring at 15.0 feet.						
	20							

UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL
1.0 2.0 3.0 4.0

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 6/10/21 12:43 - P:\DRAFTING\GINT FILES\1287-1-1 ACWD RESERVIOR.GPJ

BORING NUMBER EB-2

CORNERSTONE EARTH GROUP

PROJECT NAME ACWD Alameda Reservoir
PROJECT NUMBER 1287-1-1
PROJECT LOCATION 585 Shoshone Court, Fremont, CA

DATE STARTED 5/20/21 **DATE COMPLETED** 5/20/21
GROUND ELEVATION 211 FT +/- **BORING DEPTH** 15 ft.
DRILLING CONTRACTOR Cuesta Geoservices **LATITUDE** 37.496674° **LONGITUDE** -121.915010°
DRILLING METHOD MPP LAD Track Rig, 6½ inch Hollow-Stem Auger **GROUND WATER LEVELS:**
LOGGED BY BCG **AT TIME OF DRILLING** Not Encountered
NOTES **AT END OF DRILLING** Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
211.0	0	4 inches asphalt concrete over 5 inches aggregate base						
210.7								
210.2		**Clayey Sand with Gravel (SC)** medium dense, moist, dark brown, fine to coarse sand, fine to coarse subangular to subrounded gravel		GB-1		9		40
				GB				
208.0		**Sandy Lean Clay (CL)** stiff, moist, brown, fine to medium sand, moderate plasticity		GB-3				
206.0	5	**Lean Clay with Sand (CL)** very stiff, moist, brown, fine sand, moderate plasticity	28	MC-4B	120	14		
203.0		**Lean Clay (CL)** stiff, moist, brown with gray mottles, some fine sand, moderate plasticity	11	MC-5B	107	21		
	10							
198.5		**Poorly Graded Sand with Clay and Gavel (SP-SC)** medium dense, moist, brown, fine to coarse sand, fine to coarse subangular to subrounded gravel	18	MC-6B	121	12		
196.5								
196.0	15	**Sandy Lean Clay (CL)** stiff, moist, gray and brown, fine to medium sand, moderate plasticity						
		Bottom of Boring at 15.0 feet.						
	20							

UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL
1.0 2.0 3.0 4.0

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 6/10/21 12:43 - P:\DRAFTING\GINT FILES\1287-1-1 ACWD RESERVIOR.GPJ

BORING NUMBER EB-3

CORNERSTONE EARTH GROUP

PROJECT NAME ACWD Alameda Reservoir
PROJECT NUMBER 1287-1-1
PROJECT LOCATION 585 Shoshone Court, Fremont, CA

DATE STARTED 5/20/21 **DATE COMPLETED** 5/20/21
GROUND ELEVATION 211 FT +/- **BORING DEPTH** 15 ft.
DRILLING CONTRACTOR Cuesta Geoservices **LATITUDE** 37.497416° **LONGITUDE** -121.915173°
DRILLING METHOD MPP LAD Track Rig, 6½ inch Hollow-Stem Auger **GROUND WATER LEVELS:**
LOGGED BY BCG **AT TIME OF DRILLING** Not Encountered
NOTES **AT END OF DRILLING** Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf
211.0	0	3 inches asphalt concrete over 8 inches aggregate base							
210.7									
210.1		**Sandy Lean Clay (CL) [Fill]** hard, moist, brown, fine to coarse sand, fine to coarse subangular to subrounded gravel, low plasticity	14	MC-1B	107	10			>4.5
207.5		**Poorly Graded Sand (SP) [Fill]** loose, moist, light brown, fine to medium sand	11	MC-2B		17			>4.5
207.0									
206.0	5	**Lean Clay with Sand (CL)** hard, moist, dark brown, fine to medium sand, moderate plasticity	18	3A MC	112	14			>4.5
		Lean Clay (CL) hard, moist, brown, some fine sand, moderate plasticity Liquid Limit = 40, Plastic Limit = 15		3B	114	13	25		
	10		22	MC-4B	106	19			>4.5
199.0		**Clayey Sand (SC)** medium dense, moist, brown, fine to medium sand, some fine to coarse subangular to subrounded gravel	38	MC-5B	117	7			
196.0	15	Bottom of Boring at 15.0 feet.							
	20								

UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL
1.0 2.0 3.0 4.0

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 6/10/21 12:43 - P:\DRAFTING\GINT FILES\1287-1-1 ACWD RESERVIOR.GPJ

BORING NUMBER EB-4

CORNERSTONE EARTH GROUP

PROJECT NAME ACWD Alameda Reservoir
PROJECT NUMBER 1287-1-1
PROJECT LOCATION 585 Shoshone Court, Fremont, CA

DATE STARTED 5/20/21 **DATE COMPLETED** 5/20/21
GROUND ELEVATION 210.5 FT +/- **BORING DEPTH** 16.5 ft.
DRILLING CONTRACTOR Cuesta Geoservices **LATITUDE** 37.497479° **LONGITUDE** -121.913969°
DRILLING METHOD MPP LAD Track Rig, 6½ inch Hollow-Stem Auger **GROUND WATER LEVELS:**
LOGGED BY BCG ▽ **AT TIME OF DRILLING** Not Encountered
NOTES ▼ **AT END OF DRILLING** Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
210.5	0	2 inches asphalt concrete over 7 inches aggregate base						
210.3								
209.7		**Sandy Lean Clay (CL) [Fill]** stiff, moist, brown, fine to coarse sand, fine to coarse subangular to subrounded gravel, low plasticity		GB-1		16	17	
208.5		Liquid Limit = 31, Plastic Limit = 14		GB				
		Lean Clay with Sand (CL) very stiff, moist, brown, fine sand, moderate plasticity		GB-3		19		
				GB				
205.5	5	**Sandy Lean Clay (CL)** very stiff, moist, reddish brown with gray mottles, fine to medium sand, low plasticity	18	MC-5B	106	19		
203.5		**Lean Clay with Sand (CL)** stiff, moist, reddish brown with gray mottles, fine to medium sand, low to moderate plasticity	15	MC-6C	114	17		
	10							
198.5		**Clayey Sand with Gravel (SC)** medium dense, moist, brown, fine to medium sand, fine to coarse suangular to subrounded gravel	27	MC-7B	123	11		18
	15		23	SPT				
194.0		Bottom of Boring at 16.5 feet.						
	20							

UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL
1.0 2.0 3.0 4.0

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 6/10/21 12:43 - P:\DRAFTING\GINT FILES\1287-1-1 ACWD RESERVIOR.GPJ

APPENDIX B: LABORATORY TEST PROGRAM

The laboratory testing program was performed to evaluate the physical and mechanical properties of the soils retrieved from the site to aid in verifying soil classification.

Moisture Content: The natural water content was determined (ASTM D2216) on 21 samples of the materials recovered from the borings. These water contents are recorded on the boring logs at the appropriate sample depths.

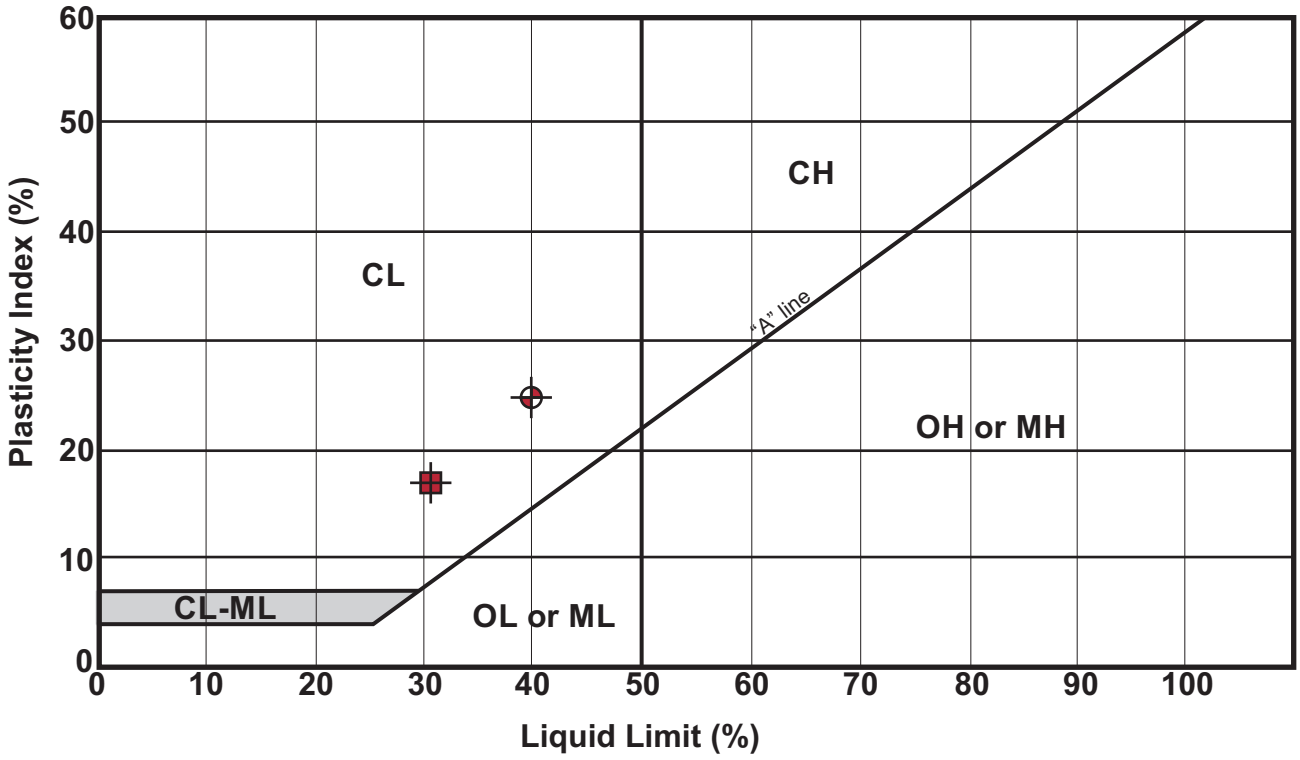
Dry Densities: In place dry density determinations (ASTM D2937) were performed on 15 samples to measure the unit weight of the subsurface soils. Results of these tests are shown on the boring logs at the appropriate sample depths.

Washed Sieve Analyses: The percent soil fraction passing the No. 200 sieve (ASTM D1140) was determined on four samples of the subsurface soils to aid in the classification of these soils. Results of these tests are shown on the boring logs at the appropriate sample depths.

Plasticity Index: Two Plasticity Index determinations (ASTM D4318) were performed on samples of the subsurface soils to measure the range of water contents over which this material exhibits plasticity. The Plasticity Index was used to classify the soil in accordance with the Unified Soil Classification System and to evaluate the soil expansion potential. Results of these tests are shown on the boring logs at the appropriate sample depths.

Undrained-Unconsolidated Triaxial Shear Strength: The undrained shear strength was determined on six relatively undisturbed samples by unconsolidated-undrained triaxial shear strength testing (ASTM D2850). The results of this test are included as part of this appendix.

Plasticity Index (ASTM D4318) Testing Summary



Symbol	Boring No.	Depth (ft)	Natural Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index	Passing No. 200 (%)	Group Name (USCS - ASTM D2487)
⊕	EB-3	5.5	13	40	15	25	—	Lean Clay (CL)
⊞	EB-4	1.0	16	31	14	17	—	Sandy Lean Clay (CL) [Fill]

Samples prepared in accordance with ASTM D421

CORNERSTONE EARTH GROUP

Plasticity Index Testing Summary

ACWD Alameda Reservoir
585 Shoshone Court
Fremont, CA

Project Number: 1287-1-1

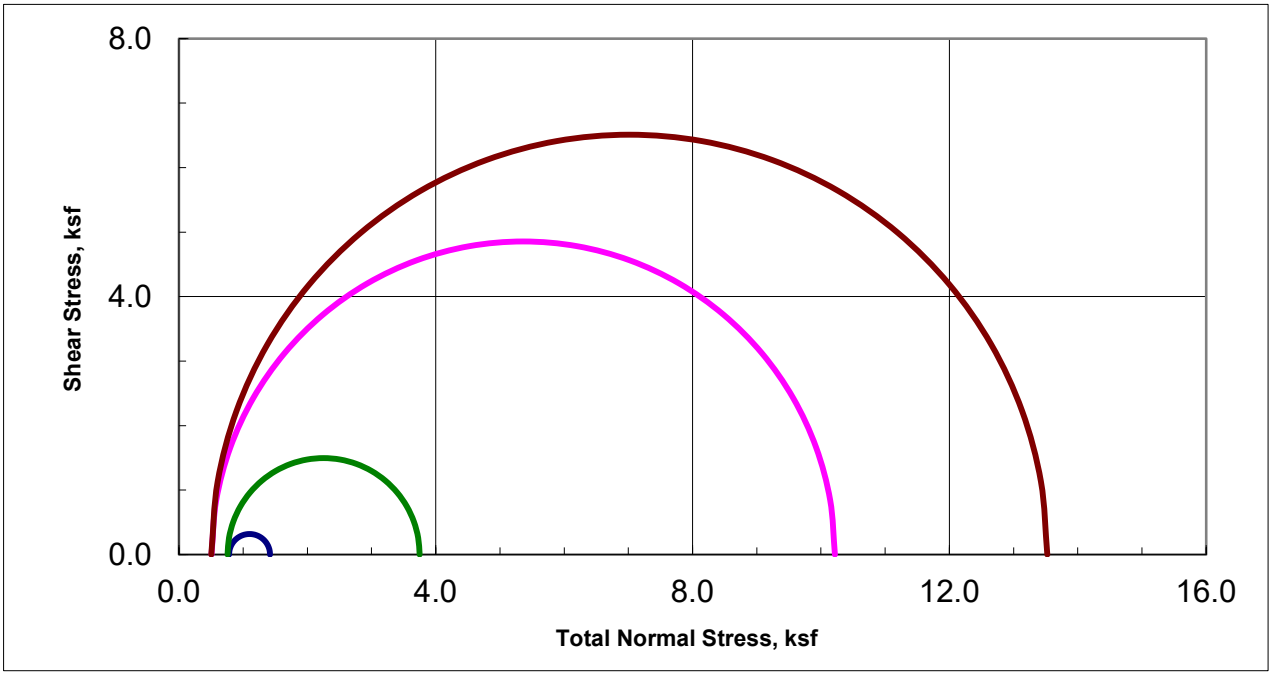
Figure Number: Figure B1

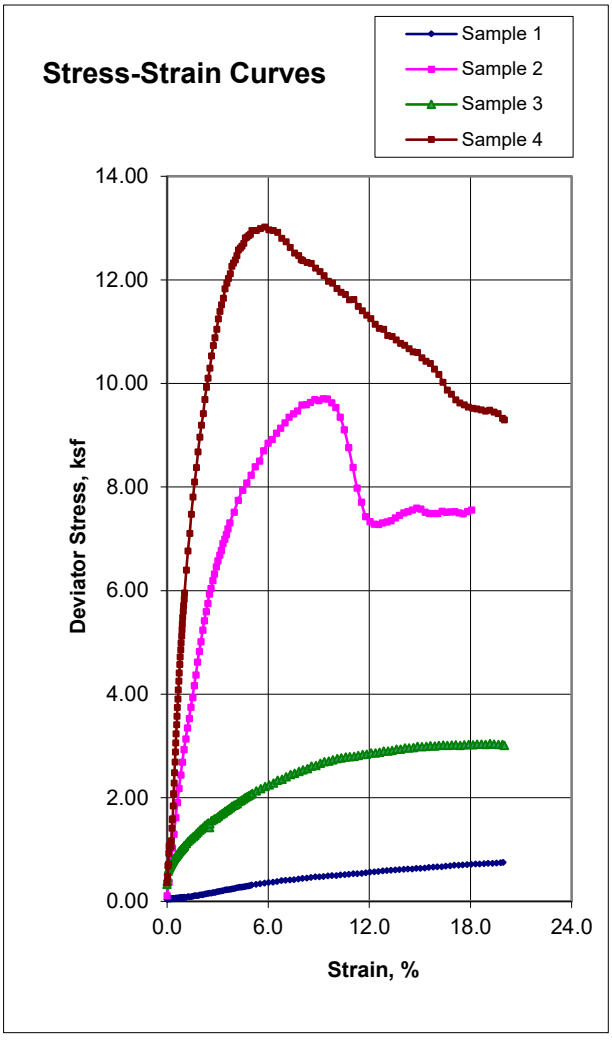
Date: June 2021

Drawn By: FLL

Cooper Testing Labs, Inc.
937 Commercial Street
Palo Alto, CA 94303

Unconsolidated-Undrained Triaxial Test
ASTM D2850





Sample Data				
	1	2	3	4
Moisture %	24.0	14.1	21.4	14.1
Dry Den,pcf	102.0	119.7	106.6	111.8
Void Ratio	0.653	0.409	0.582	0.507
Saturation %	99.0	93.5	99.2	75.0
Height in	4.97	5.03	5.03	5.02
Diameter in	2.42	2.41	2.42	2.39
Cell psi	5.4	3.5	5.3	3.5
Strain %	15.00	9.25	15.00	5.79
Deviator, ksf	0.638	9.710	2.992	13.021
Rate %/min	0.99	1.00	1.00	1.00
in/min	0.049	0.050	0.050	0.050
Job No.:	640-1465a			
Client:	Cornerstone Earth Group			
Project:	1287-1-1			
Boring:	EB-1	EB-2	EB-2	EB-3
Sample:	7B	2B	5B	3A
Depth ft:	9.5	6.0	9.0	5.0

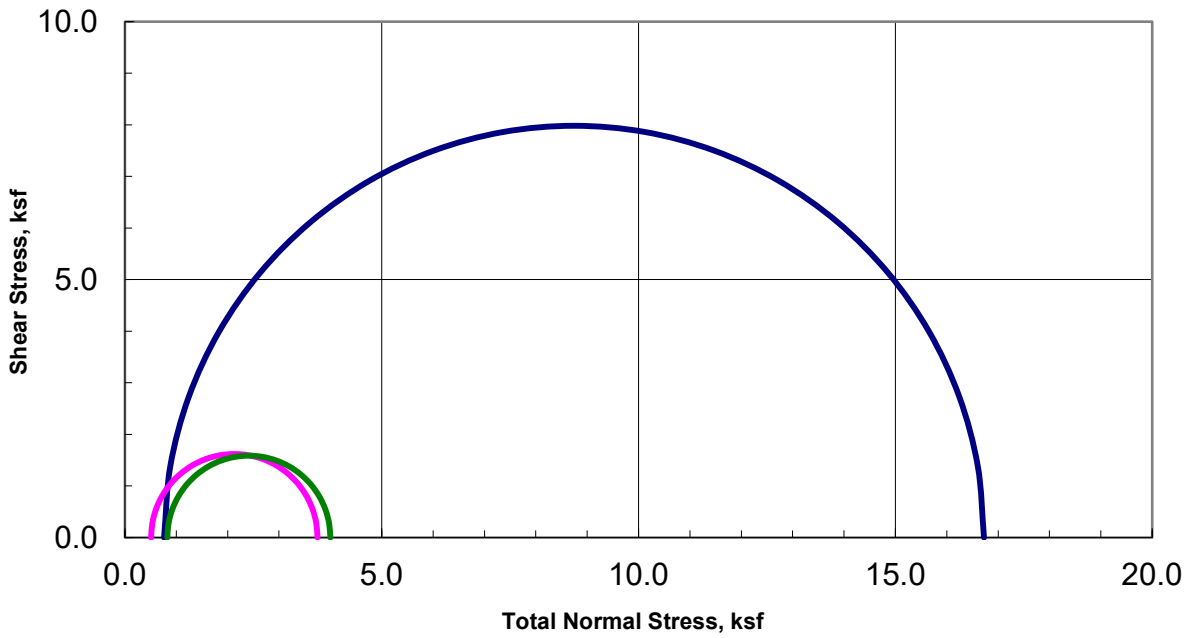
Visual Soil Description	
Sample #	
1	Reddish Brown Sandy CLAY
2	Dark Brown Sandy CLAY/ Clayey SAND
3	Dark Brown CLAY/ CLAY w/ Sand
4	Dark Gray Sandy CLAY w/ pockets Siilty Sand

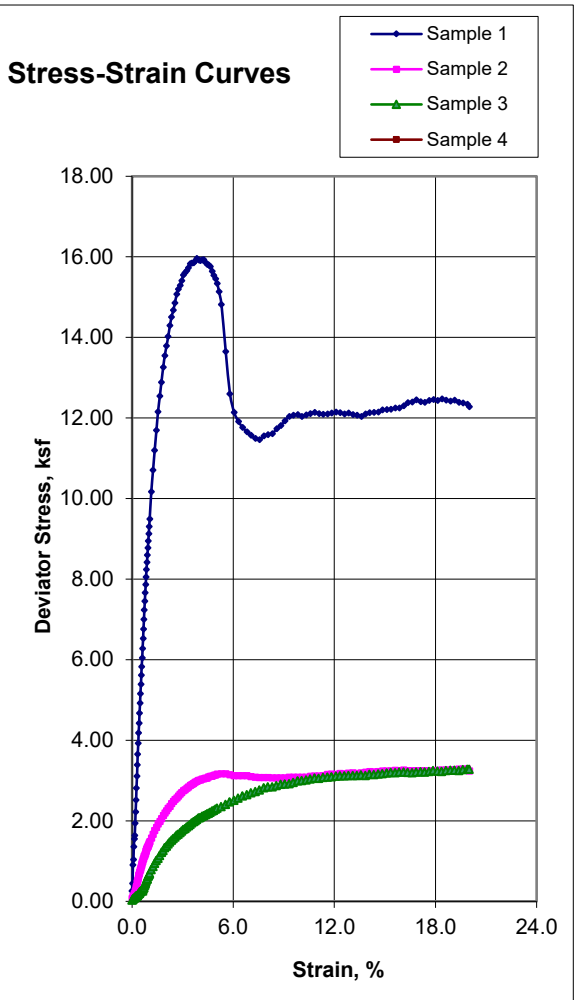
Remarks:

Note: Strengths are picked at the peak deviator stress or 15% strain which ever occurs first per ASTM D2850.

Cooper Testing Labs, Inc.
937 Commercial Street
Palo Alto, CA 94303

Unconsolidated-Undrained Triaxial Test
ASTM D2850





Sample Data	1	2	3	4
Moisture %	13.9	18.9	16.6	
Dry Den,pcf	116.5	106.2	114.0	
Void Ratio	0.446	0.587	0.478	
Saturation %	84.0	86.9	93.7	
Height in	5.04	5.02	5.02	
Diameter in	2.39	2.41	2.41	
Cell psi	5.3	3.5	5.7	
Strain %	3.85	15.00	15.00	
Deviator, ksf	15.963	3.240	3.174	
Rate %/min	1.00	1.00	1.00	
in/min	0.050	0.050	0.050	
Job No.:	640-1465b			
Client:	Cornerstone Earth Group			
Project:	1287-1-1			
Boring:	EB-3	EB-4	EB-4	
Sample:	4B	5B	6C	
Depth ft:	9.0	5.5	9.5	

Visual Soil Description	
Sample #	
1	Dark Brown Sandy CLAY
2	Reddish Brown Sandy CLAY
3	Reddish Brown Clay with Sand
4	

Remarks:

Note: Strengths are picked at the peak deviator stress or 15% strain which ever occurs first per ASTM D2850.

APPENDIX C: SITE CORROSIVITY EVALUATION

JDH CORROSION CONSULTANTS REPORT DATED JUNE 10, 2021

June 10, 2021

Cornerstone Earth Group, Inc.
1220 Oakland Boulevard, Suite 220
Walnut Creek, California 94596

Attention: **John R. Dye, P.E., G.E.**
Principal Engineer

Subject: **Site Corrosivity Evaluation**
ACWD Alameda Reservoir
Fremont, CA
Project: 1287-1-1

Dear John,

In accordance with your request, we have reviewed the laboratory soils data for the above referenced project site. Our evaluation of these results and our corresponding recommendations for corrosion control for the above referenced project foundations and buried site utilities are presented herein for your consideration.

Soil Testing & Analysis

Soil Chemical Analysis

Two (2) soil samples from the project site were chemically analyzed for corrosivity by **Cornerstone Earth Group**. Each sample was analyzed for chloride and sulfate concentration, pH, resistivity at 100% saturation and moisture percentage. The test results are presented in Cornerstone Earth Group Test Summary dated 6/2/2021. The results of the chemical analysis were as follows:

Soil Laboratory Analysis

Chemical Analysis	Range of Results	Corrosion Classification*
Chlorides	12 - 24 mg/kg	Non-corrosive*
Sulfates	72 - 114 mg/kg	Non-corrosive**
pH	6.9 – 7.0	Non-corrosive *
Moisture (%)	16 – 17 %	Not-applicable
Resistivity at 100% Saturation	747 – 1,510 ohm-cm	**Corrosive***

* With respect to bare steel or ductile iron.
** With respect to mortar coated steel

Discussion

Reinforced Concrete Foundations

Due to the low levels of water-soluble sulfates found in these soils, there is no special requirement for sulfate resistant concrete to be used at this site. The type of cement used should be in accordance with California Building Code (CBC) for soils which have less than 0.10 percent by weight of water soluble sulfate (SO_4) in soil and the minimum depth of cover for the reinforcing steel should be as specified in CBC as well.

Underground Metallic Pipelines

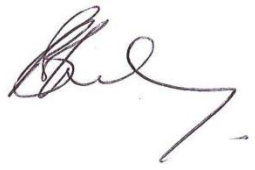
The soils at the project site are generally considered to be "corrosive" to ductile/cast iron, steel and dielectric coated steel based on the saturated resistivity measurements. Therefore, special requirements for corrosion control are required for buried metallic utilities at this site depending upon the critical nature of the piping. Pressure piping systems such as domestic and fire water should be provided with appropriate coating systems and cathodic protection, where warranted. In addition, all underground pipelines should be electrically isolated from above grade structures, reinforced concrete structures and copper lines in order to avoid potential galvanic corrosion problems.

LIMITATIONS

The conclusions and recommendations contained in this report are based on the information and assumptions referenced herein. All services provided herein were performed by persons who are experienced and skilled in providing these types of services and in accordance with the standards of workmanship in this profession. No other warrantees or guarantees, expressed or implied, is provided.

We thank you for the opportunity to be of service to **Cornerstone Earth Group** on this project and trust that you find the enclosed information satisfactory. If you have any questions, or if we can be of any additional assistance, please feel free to contact us at (925) 927-6630.

Respectfully submitted,



Brendon Hurley
JDH CORROSION CONSULTANTS, INC.
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Senior Corrosion Engineer

CC: File 2021183

Corrosivity Tests Summary

CORNERSTONE EARTH GROUP

Job Number	1287-1-1	Date Tested	6/2/2021
Job Name	ACWD Reservior	Tested By	BBA, FL
Location	Fremont, CA		

Sample I.D.			Soil Visual Description	Moisture Content	pH	Temp. at Testing	Resistivity (Ohm-cm) Corrected to 15.5 C°		Chloride Dry Wt.	Sulfate Dry Wt.
Boring	Sample No.	Depth, ft.		%		C°	As Received	Saturated	mg/kg	mg/kg
				ASTM D2216	ASTM G51		G57	ASTM G57	ASTM D4327	ASTM D4327
EB-3	2B	3.5	Dark Brown Lean Clay with Sand (CL)	17	6.9	24.5	-	747	24	114
EB-4	1	1.0	Brown Sandy Lean Clay (CL) [Fill]	16	7.0	24.6	-	1,510	12	72

MITIGATION MONITORING OR REPORTING PROGRAM

Alameda Reservoir Improvements Project

December 2021

PREFACE

Section 21081 of the California Environmental Quality Act (CEQA) requires a Lead Agency to adopt a Mitigation Monitoring or Reporting Program whenever it approves a project for which measures have been required to mitigate or avoid significant effects on the environment. The purpose of the monitoring or reporting program is to ensure compliance with the mitigation measures during projectimplementation.

The Initial Study for the *Alameda Reservoir Improvements Project* concluded that the implementation of the project could result in significant effects on the environment and mitigation measures were incorporated into the proposed project or are required as a condition of project approval. This Mitigation Monitoring or Reporting Program addresses those measures in terms of how and when they will be implemented.

This document does *not* discuss those subjects for which the Initial Study concluded that the impacts from implementation of the project would be less than significant and for which no standard or mitigation measures would be required.

MITIGATION MONITORING OR REPORTING PROGRAM ALAMEDA RESERVOIR IMPROVEMENTS PROJECT				
Impact	**Mitigation**	**Timeframe for Implementation**	**Method for Compliance**	**Oversight of Implementation**
Impact AIR-1: The proposed project could result in potentially significant cancer risk impacts to sensitive receptors or increased annual $PM_{2.5}$ concentrations caused by construction equipment and traffic exhaust and fugitive dust. **(Significant Impact)**	**MM AIR-1.1:** • During any construction period requiring ground disturbance, the District shall ensure that the project contractor implements measures to control dust and exhaust. Implementation of the measures recommended by Bay Area Air Quality Management District (BAAQMD) and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. In addition to the measures recommended by BAAQMD, the contractor shall implement the following best management practices that are required by the City of Fremont of all projects: • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times daily. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered.	The measures shall be implemented by the contractors during all demolition and construction activities.	Incorporation of required measures on all project construction documents, contracts, and plans.	Alameda County Water District (ACWD) is responsible for incorporating this measure into contract specification and for ensuring compliance during construction.

MITIGATION MONITORING OR REPORTING PROGRAM ALAMEDA RESERVOIR IMPROVEMENTS PROJECT				
Impact	**Mitigation**	**Timeframe for Implementation**	**Method for Compliance**	**Oversight of Implementation**
	• All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. • All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph). • All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and			

MITIGATION MONITORING OR REPORTING PROGRAM ALAMEDA RESERVOIR IMPROVEMENTS PROJECT				
Impact	**Mitigation**	**Timeframe for Implementation**	**Method for Compliance**	**Oversight of Implementation**
	determined to be running in proper condition prior to operation. • Post a publicly visible sign with the telephone number and person to contact at the District regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations. **MM AIR-1.2:** The project shall use equipment that has low diesel particulate matter (DPM) or zero emissions as follows: • Mobile diesel-powered off-road equipment larger than 25 horsepower and operating on the site for more than two days shall meet U.S. Environmental Protection Agency (EPA) particulate matter emissions standards for Tier 4 or use engines that include particulate matter emissions control equivalent to California Air Resources Board (CARB) Level 3 verifiable diesel emission control devices (VDECs). Alternatively (or in combination), the			

MITIGATION MONITORING OR REPORTING PROGRAM ALAMEDA RESERVOIR IMPROVEMENTS PROJECT				
Impact	**Mitigation**	**Timeframe for Implementation**	**Method for Compliance**	**Oversight of Implementation**
	use of alternatively fueled or electric equipment (i.e., non-diesel) would be consistent with this requirement. • Avoid diesel generator use by supplying line power to the construction site and limiting the use of diesel generators to no more than 50 total hours			
Impact BIO-1: If construction of the proposed project begins during the avian nesting season, generally February 1 to August 31, nesting birds may be impacted through the removal of nest structures or through localized disturbance sufficient to cause nest abandonment. **(Significant Impact)**	**MM BIO-1.1:** If construction activities are initiated during the nesting season (February 1 – August 31), a nesting bird survey should be conducted by a qualified biologist within 14 days prior to the start of construction within the Study Area and the immediately surrounding area. If active nests are present, exclusion buffers appropriate to the species should be established by the qualified biologist to prevent impacts to nesting birds. Buffers should be maintained until the biologist determines that young have fledged, or the nest becomes inactive. If construction activities are initiated outside of the nesting season (September 1 – January 31), no pre-construction nesting bird surveys are necessary.	Prior to issuance of any grading, demolition, and/or building permit or activities.	A qualified biologist is responsible for conducting a pre-construction survey of the site, determining an appropriate exclusion zone, and monitoring the exclusion fencing during construction.	ACWD is responsible for incorporating measures into contract specifications, and ensuring compliance and work is conducted outside of the nesting bird season, if possible.

MITIGATION MONITORING OR REPORTING PROGRAM ALAMEDA RESERVOIR IMPROVEMENTS PROJECT				
Impact	**Mitigation**	**Timeframe for Implementation**	**Method for Compliance**	**Oversight of Implementation**
	MM BIO-2.1: Prior to the start of work, exclusion fencing should be installed along the southern corner of the project area to prevent California red-legged frog (CRLF) from entering or traversing the site. Fencing location should include the area where no residential development exists along Agua Fria Creek and extend 50 feet to either side. This fencing may be installed along the existing chain link fence and should consist of a material that would not allow CRLF to pass through or become entrapped (i.e., silt fencing). Monofilament fencing should not be used, and fence material should be at least 36 inches in height. Care should be taken that conditions are not created where CRLF may become entrapped in any way within the project area. Crew members that will work on the project should undergo a Worker Environmental Awareness Program (WEAP) training conducted by a qualified biologist, which will cover basic identification of CRLF and recommended actions should a CRLF be discovered within a work area. Any materials stockpiled outside of areas protected by exclusion fencings should be		The construction contractor is responsible for keeping work out of the exclusion zone.	

MITIGATION MONITORING OR REPORTING PROGRAM ALAMEDA RESERVOIR IMPROVEMENTS PROJECT				
Impact	**Mitigation**	**Timeframe for Implementation**	**Method for Compliance**	**Oversight of Implementation**
	covered or stored in a location where they would not provide refugia to any dispersing CRLF. Within 48-hours prior to start of work, a pre-construction survey should be conducted by a qualified biologist to ensure no CRLF are present within potential work areas or areas where heavy machinery will be operated. This survey would consist of a visual inspection of the work area for individual CRLF. If CRLF are observed during the pre-construction survey, they should be allowed to leave the site of their own volition prior the commencement of project activities. If work stops for a period greater than 48-hours, the survey should be repeated to ensure no CRLF have moved through or occupied the area in the interim period			
Impact CUL-1: Construction of the proposed project would involve some ground-disturbing activities such as pier drilling and grading and surface excavation, which have the potential to unearth or adversely impact previously unidentified historical	**MM CUL-1.1:** The following measures shall be implemented during ground-disturbing excavation: • The District shall include a note on any plans that require ground disturbing excavation that there is a potential for exposing buried cultural resources.	Ongoing during project construction.	Stop work and notify a qualified archaeologist.	ACWD is responsible for incorporating measure into contract specifications, and ensuring compliance during construction if archaeological resources are discovered.

MITIGATION MONITORING OR REPORTING PROGRAM ALAMEDA RESERVOIR IMPROVEMENTS PROJECT				
Impact	**Mitigation**	**Timeframe for Implementation**	**Method for Compliance**	**Oversight of Implementation**
and/or archeological resources. **(Significant Impact)**	• The District shall retain a professional archaeologist to provide a preconstruction briefing to supervisory personnel of any excavation contractor to alert them to the possibility of exposing buried cultural resources, including significant prehistoric archaeological resources. The briefing shall discuss any cultural resources, including archaeological objects, that could be exposed, the need to stop excavation at the discovery, and the procedures to follow regarding discovery protection and notification of the District and archaeological team. • In the event that any human remains, or historical, archaeological or paleontological resources are discovered during ground disturbing excavation, the provisions of California Environmental Quality Act (CEQA) Guidelines Sections 15064.5(e) and (f), and of subsection (d)(2)(C) of this section, requiring cessation of work, notification, and immediate evaluation shall be followed.			

MITIGATION MONITORING OR REPORTING PROGRAM ALAMEDA RESERVOIR IMPROVEMENTS PROJECT				
Impact	**Mitigation**	**Timeframe for Implementation**	**Method for Compliance**	**Oversight of Implementation**
	If resources are discovered during ground disturbing activities that may be classified as historical, unique archaeological, or tribal cultural resources, ground disturbing activities shall cease immediately, and the District shall be notified. The resources will be evaluated by a qualified archaeologist and, in the District's discretion, a tribal cultural monitor. If the resources are determined to be historical, unique archaeological, or tribal cultural resources, then a plan for avoiding the resources shall be prepared. If avoidance is infeasible, then all significant cultural materials recovered shall be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards. Any plan for avoidance or mitigation shall be subject to the approval of the District. **MM CUL-1.2:** An archaeologist shall monitor construction-related ground disturbance within the			

MITIGATION MONITORING OR REPORTING PROGRAM ALAMEDA RESERVOIR IMPROVEMENTS PROJECT				
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	vicinity of project site features identified as having the potential to include subsurface archaeological, cultural, or tribal cultural resources that could be impacted through ground-disturbing activities related to the construction of the project. Monitoring should continue until the archaeologist determines that there is a low potential for encountering subsurface archaeological, cultural, or tribal cultural resources. An archaeologist that meets the Secretary of the Interior's professional qualifications standards for archaeology shall oversee the monitoring. Any compensation for time and expenses related to this activity shall be borne by the District.			
Impact CUL-2: Construction of the proposed project would involve some ground-disturbing activities such as drilling and excavation, which have the potential to unearth or adversely impact previously identified historical and/or archeological resources.	**MM CUL-2.1:** If any human remains are found during any field investigations, grading, or other construction activities, all provisions of California Health and Safety Code Sections 7054 and 7050.5 and Public Resources Code Sections 5097.9 through 5097.99, as amended per Assembly Bill 2641, shall be followed. In the event of the discovery of human remains during construction, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains. The	Ongoing during project construction. In the event that human remains are found.	Stop all excavation or disturbance of the site and nearby area, and notify the Alameda County Coroner. Contact the NAHC within 24 hours of	ACWD is responsible for incorporating measure into contract specifications, and ensuring compliance during construction if human remains are discovered.

MITIGATION MONITORING OR REPORTING PROGRAM ALAMEDA RESERVOIR IMPROVEMENTS PROJECT				
Impact	**Mitigation**	**Timeframe for Implementation**	**Method for Compliance**	**Oversight of Implementation**
(Significant Impact)	District shall immediately notify the Alameda County Coroner/ Medical Examiner's Office (the Coroner). The Coroner will make a determination as to whether the remains are Native American. If the remains are believed to be Native American, the Coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC will then designate a Most Likely Descendant (MLD). The MLD will inspect the remains and make a recommendation on the treatment of the remains and associated artifacts. If the District concurs with the recommendation of the MLD, the District will work with the MLD and the Coroner to carry it out. If one of the following conditions occurs, the Alameda County Water District or their authorized representative shall work with the Coroner to reinter the Native American human remains and associated grave goods with appropriate dignity in a location not subject to further subsurface disturbance: • The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours		determining remains are Native American. Inspect the remains and associated artifacts and make recommendation on treatment of artifacts.	

MITIGATION MONITORING OR REPORTING PROGRAM ALAMEDA RESERVOIR IMPROVEMENTS PROJECT				
Impact	**Mitigation**	**Timeframe for Implementation**	**Method for Compliance**	**Oversight of Implementation**
	after being notified by the Commission. • The descendant identified fails to make a recommendation; or • The District or their authorized representative rejects the recommendation of the descendant, and the meditation by the NAHC fails to provide measures acceptable to the District.			
Impact GEO-1: The proposed project may result in significant impacts to paleontological resources. **(Significant Impact)**	**MM GEO-1.1:** In the event that a fossil is discovered during construction of the project, excavations within 50 feet of the find shall be temporarily halted or delayed until the discovery is examined by a qualified paleontologist, in accordance with Society of Vertebrate Paleontology standards. The District shall include a standard inadvertent ,discovery clause in every construction contract to inform contractors of this requirement. If the find is determined to be significant and if avoidance is not feasible, the paleontologist shall design and carry out a data recovery plan consistent with the Society of Vertebrate Paleontology standards. The plan must include preparation, identification,	Ongoing during project construction.	Stop work within 50 feet of the find and notify a qualified paleontologist. The paleontologist shall design and carry out a data recovery plan.	ACWD is responsible for incorporating the standard inadvertent discovery clause in every construction contract and informing contractors of this requirement.

MITIGATION MONITORING OR REPORTING PROGRAM ALAMEDA RESERVOIR IMPROVEMENTS PROJECT				
Impact	**Mitigation**	**Timeframe for Implementation**	**Method for Compliance**	**Oversight of Implementation**
	cataloguing, and curation of any salvaged specimens.			
Impact HAZ-1: Due to its age, Alameda Reservoir may contain ACMs and/or LBP materials. **(Significant Impact)**	**MM HAZ-1.1:** The project would be required to implement the following measures to reduce impacts due to the presence of asbestos-containing materials (ACMs) and/or lead-based paint (LBP): • In conformance with State and local laws, a visual inspection/pre-demolition survey, and possible sampling, shall be conducted prior to the demolition of on-site building(s) to determine the presence of ACMs and/or LBP. • During demolition activities, all building materials containing lead-based paint shall be removed in accordance with the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) Lead in Title 8, CCR, Section 1532.1, including employee training, employee air monitoring, and dust control. Any debris or soil containing lead-based paint or coatings shall be disposed of at landfills that meet acceptance	Prior to demolition of on-site buildings. During demolition activities.	Conduct a visual inspection/pre-demolition survey, and possible sampling of on-site buildings to determine the presence of asbestos-containing materials and or lead based-paint. Remove all building materials containing lead-based paint and all potentially friable ACMs Retain a registered asbestos	ACWD is responsible for retaining a qualified hazardous materials firm to conduct visual inspections/pre-demolition surveys for ACMs and LBP, remove all building materials containing LBP per Cal/OSHA regulations, retain a registered asbestos abatement contractor to remove and dispose of ACMs identified.

MITIGATION MONITORING OR REPORTING PROGRAM ALAMEDA RESERVOIR IMPROVEMENTS PROJECT				
Impact	**Mitigation**	**Timeframe for Implementation**	**Method for Compliance**	**Oversight of Implementation**
	criteria for the type of lead being disposed. • All potentially friable ACMs shall be removed in accordance with National Emission Standards for Air Pollution (NESHAP) guidelines prior to demolition or renovation activities that may disturb ACMs. All demolition activities shall be undertaken in accordance with Cal/OSHAstandards contained in Title 8, CCR, Section 1529, to protect workers from asbestos exposure. • A registered asbestos abatement contractor shall be retained to remove and dispose of ACMs identified in the asbestos survey performed for the site in accordance with the standards stated above. • Materials containing more than one-percent asbestos are also subject to BAAQMD regulations. Removal of materials containing more than one-percent asbestos shall be completed in accordance with BAAQMD requirements and notifications. • Based on Cal/OSHA rules and regulations, the following conditions		abatement contractor to remove and dispose of ACMs identified in the asbestos survey. Any debris or soil containing lead-based paint or coatings shall be disposed of at a landfill that meets acceptance criteria for the waste being disposed.	

MITIGATION MONITORING OR REPORTING PROGRAM ALAMEDA RESERVOIR IMPROVEMENTS PROJECT				
Impact	**Mitigation**	**Timeframe for Implementation**	**Method for Compliance**	**Oversight of Implementation**
	are required to limit impacts to construction workers. ○ Prior to commencement of demolition activities, a building survey,including sampling and testing, shall be completed to identify and quantify building materials containing lead-based paint. ○ During demolition activities, all building materials containing lead-based paint shall be removed in accordance with Cal/OSHA Lead in Construction Standard, Title 8, CCR, Section 1532.1, including employee training, employee air monitoring and dust control. ○ Any debris or soil containing lead-based paint or coatings shall be disposed of at landfills that meet acceptance criteria for the type of waste being disposed.			
Impact NOI-1: Project construction could result in noise levels exceeding City of Fremont standards	**MM NOI-1.1:** During construction of the project, the District shall implement the following	Ongoing during project construction.	Ensure that construction equipment is well maintained, equipped with	ACWD is responsible for incorporating the measure into contract specifications and

MITIGATION MONITORING OR REPORTING PROGRAM ALAMEDA RESERVOIR IMPROVEMENTS PROJECT				
Impact	**Mitigation**	**Timeframe for Implementation**	**Method for Compliance**	**Oversight of Implementation**
at the nearest residential property line. **(Significant Impact)**	measures required by the City of Fremont to reduce construction noise: • Construction equipment shall be well-maintained and used judiciously to be as quiet as practical. • Construction, excavating, grading, and filling activities (including the loading and unloading of materials, truck movements, and warming of equipment motors) shall be limited as provided in City Code Section 18.160.010. • All internal combustion engine-driven equipment shall be equipped withmufflers, which are in good condition and appropriate for the equipment. • The contractor shall utilize "quiet" models of air compressors and other stationary noise sources where technology exists. • Loading, staging areas, stationary noise generating equipment, etc., shall be located as far as feasible from sensitive receptors. • The contractor shall comply with Air Resource Board idling prohibitions of		mufflers, and utilize "quiet mode." Ensure that loading, staging areas, and noise generating equipment are located as far as feasible from sensitive receptors and signs are posted at the construction site identifying the construction days, hours, contact information for noise complaints. Construct a temporary noise barrier which blocks line of sight between the project and nearest	ensuring compliance during construction.

MITIGATION MONITORING OR REPORTING PROGRAM ALAMEDA RESERVOIR IMPROVEMENTS PROJECT				
Impact	**Mitigation**	**Timeframe for Implementation**	**Method for Compliance**	**Oversight of Implementation**
	unnecessary idling of internal combustion engines. • Signs shall be posted at the construction site that include permitted construction days and hours (Monday through Friday 8 a.m. to 5 p.m.), a day and evening contact number for the job site, and a contact number for the District in the event of noise complaints. The District shall designate an on-site complaint and enforcement manager to track and respond to noise complaints. • Temporary noise barriers, such as solid plywood fences, shall be installed around construction sites adjacent to operational business, residences or noise-sensitive land uses, unless an existing wall or other barrier provides equivalent noise attenuation. (City of Fremont Ord. 27- 2016 § 37, 12-6-16; Ord. 23-2018 § 41, 10-2-18; Ord. 05-2021 § 52, 4-20-21.)		residential land uses.	
Impact TCR-1: Project construction could result in potentially significant impacts to tribal cultural	**MM TCR-1.1:** A tribal cultural representative (or their designee) shall be notified so they may be	Ongoing during project construction.	Conduct tribal cultural monitoring; stop,	ACWD is responsible for incorporating the measure into contract specifications and

MITIGATION MONITORING OR REPORTING PROGRAM ALAMEDA RESERVOIR IMPROVEMENTS PROJECT				
Impact	**Mitigation**	**Timeframe for Implementation**	**Method for Compliance**	**Oversight of Implementation**
resources, if any are encountered during construction. **(Significant Impact)**	present during any ground-disturbing activities to monitor sites or objects of significance to Native Americans and to provide construction worker tribal cultural resources awareness training including applicable regulations and protocols for avoidance, confidentiality, and culturally appropriate treatment. The tribal cultural representative (or their designee) shall have the ability to request that work be stopped, diverted, or slowed if sites or objects of significance to Native Americans are encountered within the direct impact area and shall be consulted for recommendations regarding the appropriate treatment of such sites or objects.		divert, or slow work.	ensuring compliance during construction if sites or objects of significance to Native Americans are discovered.