



TUOLUMNE UTILITIES DISTRICT
18885 Nugget Blvd., Sonora, CA 95370

ZONE 4 TANK AND PUMP STATION PROJECT

Draft Initial Study and Mitigated Negative Declaration



Prepared By

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Initial Study/Mitigated Negative Declaration **Zone 4 Tank and Pump Station Project**

OCTOBER 2022

Prepared for:

TUOLUMNE UTILITIES DISTRICT

18885 Nugget Boulevard
Sonora, California 95370

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AB	Assembly Bill
BLM	Bureau of Land Management
BMPs	best management practices
BRA	Biological Resources Assessment
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCaIC	Central California Information Center
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFC	California Fire Code
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO ₂ e	carbon dioxide equivalent
dB	decibel
dBA	A-weighted decibel
DOC	California Department of Conservation
DOM	Department Operations Manual
DTSC	Department of Toxic Substance Control
EO	Executive Order
EPA	Environmental Protection Agency
FGC	Fish and Game Code
GHG	greenhouse gas
GWP	global warming potential
IS	Initial Study
lbs/day	pounds per day
L _{dn}	day-night average sound level
L _{eq}	equivalent sound level over a given period
MBTA	Migratory Bird Treaty Act
MCAB	Mountain Counties Air Basin
MJHMP	Multi-Jurisdictional Hazard Mitigation Plan
MLD	most likely descendent
MMRP	mitigation monitoring and reporting program
MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zone
MT	metric tons
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission

NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
OPR	Office of Planning and Research
PAC	Protected Activity Center
PM _{2.5}	particulate matter with an aerodynamic diameter less than or equal to 2.5 microns in size
PM ₁₀	particulate matter with an aerodynamic diameter less than or equal to 10 microns in size
PPV	Peak Particle Velocity
ROG	reactive organic gas
SB	Senate Bill
SO _x	sulfur oxides
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCAPCD	Tuolumne County Air Pollution Control District
TCRs	tribal cultural resources
TUD	Tuolumne Utilities District
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VMT	Vehicle Miles Traveled
VOC	volatile organic compound
VQO	Visual Quality Objective

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1 Introduction

1.1 Project Background and Overview

The Tuolumne Utilities District (TUD, District) provides water and wastewater services to a population of approximately 44,000 residents within northern Tuolumne County (County). TUD owns and operates the White Fir Tank and pump station and the Zone 3 pump station. Combined, the White Fir Tank and Zone 3 Tank provided a total of 335,000 gallons of water storage to the District. The Zone 3 Tank failed in late 2021 and TUD has determined that the White Fir Tank should be removed and replaced due to the tank's poor condition.

TUD is proposing to implement the Zone 4 Tank and Pump Station Project (Project), which would include constructing a new storage tank and pump station on TUD property to provide reliable water storage capacity to District customers. The existing White Fir Tank and pump station would be removed at a later date, following completion of the new tank and pump station. The proposed storage tank and pump station would be located on a 0.5-acre TUD-owned parcel within the overall approximately 1.44-acre Project site; within the Project site, only approximately 0.4 acres would be disturbed by implementation of the Project.

1.2 California Environmental Quality Act Compliance

Approval by TUD to award a construction contract to build the Project constitutes a discretionary action that triggers environmental review requirements pursuant to the California Environmental Quality Act (CEQA), with TUD serving as lead agency under CEQA. TUD has prepared this Initial Study to analyze and consider the environmental impacts of implementing the Project. Based on the conclusions of this Initial Study, TUD has made the determination that no significant impacts would result from the proposed Project following implementation of mitigation measures identified in this Initial Study, and a Mitigated Negative Declaration is the appropriate environmental document for compliance with CEQA (California Public Resources Code, Section 21000 et seq.). As stated in California Public Resources Code, Section 21064, a Mitigated Negative Declaration may be prepared for a project subject to CEQA when an Initial Study has determined that no significant negative effects on the environment would occur from the Project with implementation of mitigation measures identified in the Initial Study. The draft MMRP is attached as Appendix A to this Initial Study and proposed Mitigated Negative Declaration.

This Initial Study has been prepared by TUD as lead agency in conformance with Section 15070(a) of the CEQA Guidelines (14 CCR 15000 et seq.). The purpose of this Initial Study is to disclose to the public and decision-makers any potentially significant impacts associated with the proposed Project, and to identify mitigation measures that will be incorporated into the Project design, as necessary, to reduce or eliminate potentially significant impacts of the Project.

1.3 Public Review Process

The Initial Study and proposed Mitigated Negative Declaration is subject to a 30-day public review period. The public is encouraged to provide written comments during the 30-day review, and/or attend the Board of Directors' hearing at which the Project and the Initial Study and proposed Mitigated Negative Declaration will be considered for approval. In accordance with Section 15074 of the CEQA Guidelines, TUD's Board of Directors must consider

the Initial Study and proposed Mitigated Negative Declaration along with any comments received during the public review process.

Comments on the Initial Study and Mitigated Negative Declaration may be submitted during the public review period from October 6, 2022 to November 5, 2022, to TUD at emerchant-wells@tudwater.com or by U.S. mail at:

ATTN: Elizabeth Merchant-Wells, E.I.T., Assistant Engineer
Tuolumne Utilities District
18885 Nugget Boulevard
Sonora, California 95370

This Initial Study and proposed Mitigated Negative Declaration has been made available for download or viewing on TUD's website (<https://tudwater.com/>), at TUD's main office in Sonora, California, and provided for review to State agencies via the California State Clearinghouse. In accordance with Section 15072 of the CEQA Guidelines, notice of the document's availability and intent to adopt a mitigated negative declaration has been published in the Union Democrat newspaper, posted on the Project site, filed at the Tuolumne County Clerk's office, and provided via direct mailings and emails to stakeholders, local agencies, and other parties that have expressed interest in the Project.

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2 Project Description

2.1 Project Location

The Project site is within the unincorporated community of Sugarpine in Tuolumne County, approximately 11 miles northeast of the City of Sonora (Figure 1, Project Site and Vicinity). The main access to the Project site is via White Fir Drive. Coordinates of the approximate center of the TUD-owned parcel are 38°3'47.71" north latitude, 120°11'39.41" west longitude.

2.2 Environmental Setting

The Project site is approximately 1.44 acres and includes the 0.5-acre TUD-owned parcel (proposed tank and pump station site), roadways in which water main pipes will be placed, and the site of the existing White Fir Tank (Figure 2, Project Study Area; Figure 3, Site Photos). Within the larger Project site, only approximately 0.4 acres would be disturbed by Project implementation. Elevation on the Project site is approximately 4,575 feet above mean sea level. The TUD-owned parcel is generally flat to slightly sloping and is characterized by natural vegetation including conifer forest and associated understory shrubs and herbaceous vegetation. Approximately 15 trees are within the footprint of the proposed tank and infrastructure improvements on the TUD-owned parcel. Roadways within the Project site and the White Fir Tank site are within an existing residential area. The existing White Fir Tank is within a utility easement between residential parcels and has a capacity of 210,000 gallons and is approximately 24 feet tall and 38.5 feet in diameter. The existing White Fir Tank pump station is approximately 48 square feet (6 feet by 8 feet) and approximately 10 feet tall and houses one, 5 horsepower pump. The TUD-owned parcel (proposed new tank and pump station site) has a general plan land use designation and corresponding zoning of Timberland Production District and the existing White Fir Tank and pump station are within zoning and land use identified for residential uses (County of Tuolumne 2022).

Land use designations applied to the area surrounding the Project site include Low Density Residential (LDR), Public (P), and Parks and Recreation (R/P) (Tuolumne County 2022). The Project site is within an area of small to medium lot size residential parcels and the nearest residence to the Project site is approximately 20 feet west of the existing White Fir Tank. The TUD-owned parcel proposed for the new tank is bordered by an undeveloped parcel and SR 108 to the north and west and residential parcels to the east and south; developed residential parcels exist along roadways in which water main pipelines would be installed, including White Fir Drive and Live Oak Street.

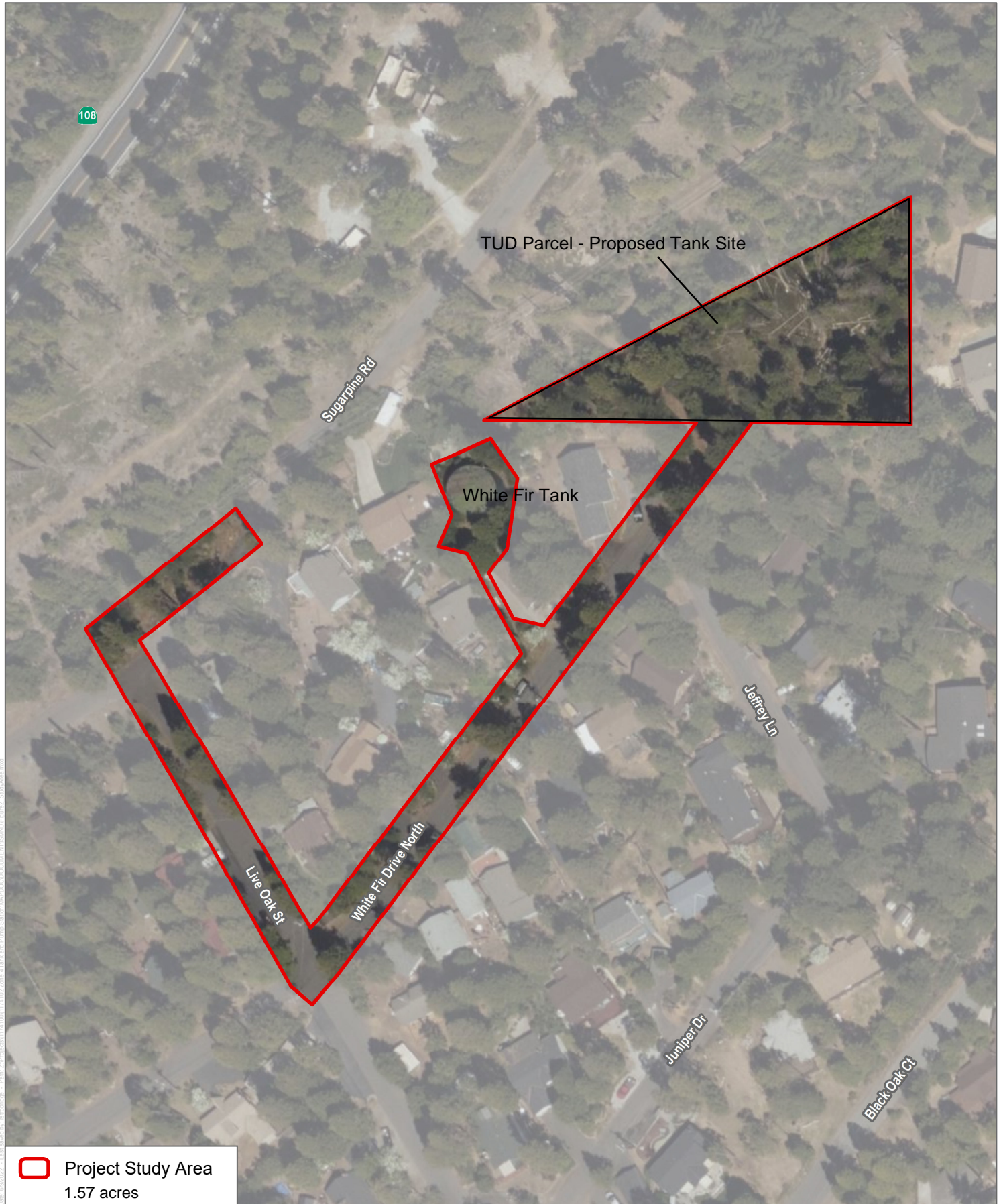
2.3 Project Components

Please refer to Project Exhibits included in Appendix B for further details of the Project components described below.

Zone 4 Tank

The proposed Zone 4 tank would have storage capacity of 400,000 gallons to replace the storage capacity of the White Fir Tank (210,000 gallons) and the 125,000-gallon Zone 3 tank, which failed in late 2021, resulting in an increase in approximately 65,000 gallons of water storage within Zones 3 and 4 of TUD's system.

The proposed steel storage tank would be approximately 24 feet tall and 55 feet in diameter. Final tank color selection will be done with consideration of the surrounding natural environment. The tank would be located in the central portion of the TUD-owned parcel, approximately 150 feet from the nearest residence to the east. A fence and gate would be placed at the entrance to the site at the northern terminus of White Fir Drive but the fence will



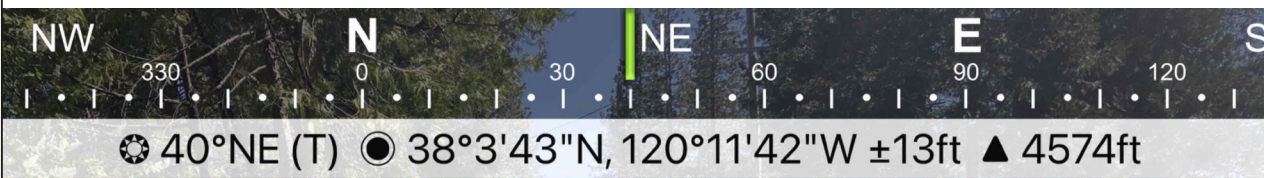
SOURCE: Bing Maps 2021, OpenStreetMap 2021



Facing west
Proposed location of new tank and pump station on TUD-owned parcel.



Facing south
Existing White Fir Tank proposed for removal.



Facing northeast
View of developed roadway within the Project site where pipeline installation will occur.

FIGURE 3

Site Photos

not enclose the entire parcel. Construction activities that would be undertaken to construct the tank would include trucking materials to the site, site preparation and grading, concrete work, onsite welding, sandblasting, and painting/application of coatings.

Pump Station

The proposed pump station would be located adjacent to the storage tank, at the western portion of the Project site. The pump station would be approximately 250 square-feet and approximately 8 feet tall. Two pumps will be enclosed within the pump station and under typical operations would cycle on for short periods of time to provide appropriate operating pressure to the distribution system. The pump station would be constructed of tan, split-face concrete masonry units and a standing seam metal roof. Roof color would be selected to coordinate with the tank color and in consideration of the surrounding natural environment. Lighting would be installed at the door of the pump station for nighttime security and would be activated by a motion sensor or photocell. This pump station will replace the pump station currently located at the White Fir Tank.

Water Mains

Implementation of the Project would require the installation of new 6-inch water mains within the existing road section of White Fir Drive and Live Oak Street to connect the proposed storage tank and pump station to TUD's existing water mains located within Sugarpine Road and Jeffrey Lane. Installation of the proposed piping would include saw cutting, trenching, installing piping, sand and aggregate base, and patching pavement. Permanent paving with hot mix asphalt would be completed following Project construction.

Removal of White Fir Tank

The Project includes dismantling and removing the existing White Fir tank and pump station, which is located approximately 500 feet west of the site of the proposed new tank. Removal will include cutting the tank into pieces to haul offsite, cutting all above ground pipes and abandoning below-ground piping, and removing and disposing of all tank, pipe, and pump station materials. Removing the tank could require temporary relocation of a nearby shed. Following tank removal the site would be stabilized by regrading to smooth out the ground surface and placing mulch and wattles with seed and straw to protect against erosion.

2.4 Project Construction and Phasing

Schedule

Construction activities would occur between the hours of 7 a.m. and 7 p.m., Monday through Friday, and 8 a.m. and 5 p.m. on weekends if necessary. Zone 4 Tank and Pump Station construction activities are anticipated to occur over an approximately six-month period beginning in spring of 2023 and ending by October of 2023.

Construction Activities and Methods

Construction materials would be staged in the open space within the TUD-owned parcel. Construction traffic would generally access the Project site from White Fir Drive with possible access from Sugarpine Road. Construction debris and materials would be off-hauled in accordance with applicable local, state, and federal regulations to disposal facilities in Tuolumne County.

Approximately four construction personnel would be on-site for proposed construction and tank removal activities, along with equipment vendors and delivery personnel that would occasionally visit the site. Typical construction equipment that would operate on any given day at the Project site during construction could include light trucks, chainsaws, an excavator, backhoe, haul trucks and trailers, a tampering compactor, concrete pump, crane, sandblasting machine and other standard construction equipment.

Grading will include removal of vegetation and topsoil for the storage tank pad, pump station foundation, and the proposed driveway which will provide future access to the tank site from White Fir Drive. The required grading would require less than 120 cubic yards of import soil. Grading would also be included around the proposed storage tank and pump station to accommodate vehicle access around the tank. Concrete will be placed for the ringwall of the storage tank and the pump station foundation. Crushed rock and sand will then be placed in the over-excavated area of the storage tank pad.

Approximately 20 truck trips may be required for off hauling throughout the construction period and approximately 20 truck trips may be required for delivery of material during the anticipated construction period.

Tree Removal

Project construction would include removal of up to 13 trees under 12-inches in diameter to accommodate the Project. Project construction would require the removal of two trees with a diameter of over 12-inches. Trees that would be removed are a mix of conifer species, including pines and cedars. No oak trees over 12-inches in diameter will be removed.

Onsite Drainage and Erosion Control

To reduce runoff and erosion, all construction shall be carried out in compliance with the California Stormwater Quality Association's Stormwater Best Management Practices Handbook and Erosion and the Tuolumne County Water Quality Manual (2007) or other appropriate erosion control reference.

Project Operations

Upon completion of construction, facility operations and maintenance would be similar to that of the existing White Fir Tank and pump station. It is anticipated that a TUD operator or operations and maintenance staff will perform maintenance checks on the pump station and tank site approximately twice per week and that these maintenance visits would be combined with visits to the White Fir Tank until the White Fir Tank is taken offline and removed. Implementation of the Project is intended to consolidate existing smaller infrastructure into larger and more strategically located infrastructure.

2.5 Required Approvals

The Project would not require approvals or permits from other public agencies.

3 Initial Study Checklist

Project Title:

Zone 4 Tank and Pump Station Project

Lead Agency Name and Address:

Tuolumne Utilities District
18885 Nugget Boulevard
Sonora, California 95370

Contact: Elizabeth Merchant-Wells, E.I.T., Assistant Engineer

Phone: (209) 532-5536 ext. 517

Email: emerchant-wells@tudwater.com

Project Sponsor's Name and Address:

Tuolumne Utilities District
18885 Nugget Boulevard
Sonora, California 95370

Project Summary:

The Project would include constructing a 400,000-gallon steel storage tank and hydropneumatic pump station and associated onsite 6-inch underground water main piping and approximately 1,182 linear feet of 6-inch underground water main piping that would be installed within offsite roadways. The project also includes removing the existing 210,000-gallon White Fir Tank and pump station.

Project Location:

The Project is located in the unincorporated community of Sugarpine, approximately 11 miles northeast of the City of Sonora in Tuolumne County (see Figure 1).

General Plan Land Use Designation and Zoning

Land Use Designation: Timberland Production District (TPZ)

Zoning: Timberland Production District (TPZ)

Surrounding land uses and setting (Briefly describe the project's surroundings):

The Project is surrounded by existing residential development, open space, public land, and recreational uses. Refer to Section 2.1 for additional detail regarding surrounding land uses and setting.

Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

The Project would not require approvals or permits from other public agencies.

Environmental Factors Potentially Affected

This Initial Study analyzes the environmental impacts of the Project consistent with the format and analysis prompts provided in Appendix G of the CEQA Guidelines. The analysis determined that the Project would result in impacts associated with the following resource categories checked in the table below: Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, and Hydrology and Water Quality. The analysis determined that all impacts identified in this Initial Study would be less than significant with implementation of mitigation measures to avoid or minimize the impacts identified. Detailed analyses of impacts are provided under each resource section evaluated in this Initial Study.

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

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

Determination (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

Erik Johnson

Erik Johnson (Sep 30, 2022 14:59 PDT)

Signature

Erik Johnson, P.E., TUD District Engineer

Sep 30, 2022

Date

Impact Analysis

3.1 Aesthetics

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

Setting

The Project site is located in the western foothills of the Sierra Nevada and is generally characterized by local roadways, existing utility infrastructure (the White Fir Tank and pump station), and remnant mixed conifer forest on the undeveloped TUD-owned parcel. The study area is surrounded by existing residential development, local roadways and SR 108, and small undeveloped lots that support stands of conifers (refer to Figure 2). No formally designated scenic vistas are identified in the Project area by the County's general plan (Tuolumne County 2018). The Project site is not an important component within the viewshed of any designated or known important scenic vista. State Route 108 in the vicinity of the Project site is designated by the California Department of Transportation as eligible for designation as a State Scenic Highway (Caltrans 2022). However, the proposed tank site is approximately 500 feet southeast of State Route 108 and is not visible from the highway due to intervening topography and forest vegetation. Views of the Project site are limited to areas in close proximity, such as adjacent residential properties, and White Fir Road, Jeffrey Lane and Sugarpine Road. In general, forest trees and shrubs and existing residential development obstruct mid- and long-range views in the vicinity of the Project site, including the existing White Fir Tank (refer to Figure 3).

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

No Impact. Scenic vistas generally refer to views that are accessible from public vantage points, such as public roadways and parks. The County's general plan identifies no formally designated scenic vistas in the Project area (Tuolumne County 2018). Construction activities would be temporarily visible to adjacent residences and would not be located within view of any designated or known scenic vista or publicly accessible view. As such, visual impacts associated with the Project and associated temporary construction activities would result in no impact to a scenic vista.

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

No Impact. The nearest eligible scenic highway to the Project site is the State Route (SR) 108 segment between SR 49 and SR 395, which is approximately 500 feet northwest of the proposed new tank site (Caltrans 2022). Due to intervening topography and forest trees and vegetation, the Project site is not visible from SR 108. Thus, the proposed Project, including construction activities and required tree removal would result in no impact resulting from substantial damage of scenic resources visible from a state scenic highway.

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

Less-than-Significant Impact. The Project site is located within the unincorporated community of Sugarpine, a small non-urbanized residential community in Tuolumne County. The proposed storage tank and pump station would be located on a 0.5-acre TUD-owned parcel located approximately 240 feet east of the existing White Fir Tank. The proposed tank and pump station would be visible to adjacent residences, though views would be somewhat obstructed by existing forest vegetation. The new facilities would be painted to blend with the existing natural surroundings and would be typical of utility infrastructure within residential areas. The Project would require the removal of approximately 15 trees from the site. However, public views of the Project site are largely obstructed by existing forest vegetation and residential structures and tree removal would not be inconsistent with surrounding residential development.

The existing White Fir Tank, located immediately adjacent to residential structures, would be removed at a later date as part of the Project. The proposed new tank and pump station would be located on the TUD-owned parcel at a greater distance from existing residential structures than the existing White Fir Tank and are anticipated to reduce visibility of utility infrastructure as viewed from surrounding residences. Impacts to public views from construction activities would be temporary and consistent with typical utility maintenance and construction that occurs intermittently within residential areas. Construction staging would largely occur within the TUD-owned parcel and away from public areas to the extent possible. Impacts resulting from degradation of the existing visual character or quality of public views of the Project site and the surrounding area would be less than significant.

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

Less-than-Significant Impact. The Project includes installing security lighting at the door of the proposed pump station. The security lighting would be a downward facing light that is on a photocell. Security lighting would be typical of utility services infrastructure and other lighting in the vicinity for residential uses. As such, the security lighting would not create a substantial amount of light or glare. Impacts would be less than significant.

3.2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

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

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

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

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

No Impact a) – e). The proposed new tank and pump station would be located on an approximately 0.5-acre vacant site that carries Timber Production District land use and zoning designations. This land use and zoning designation does not extend to any of the adjacent parcels, which are designated for public facilities and residential uses. According to the California Important Farmland Finder provided by the California Department of Conservation (DOC), the Project site is designated as Urban and Built-Up Land (DOC 2022a). The Project site is not actively managed as timberland and no timber operations occur on the 0.5-acre TUD-owned parcel. Section 17.52.060 of the Tuolumne County Ordinance Code provides that public utility distribution facilities, such as the proposed water tank and pump station, are permitted uses within all zone districts, except the open space, design control, and historical area combining districts. Additionally, California Government Code Section 53091(d) and 53091(e) provide that County zoning shall not apply to water storage or distribution facilities. Implementation of the Project would therefore not be in conflict with the underlying zoning. Thus, since existing zoning on the site allows for water utility infrastructure, the Project itself would not result in a significant impact related to the loss of forest land or conversion of forest land to non-forest use. The Project site is surrounded by existing residential development and open space and would not conflict with a Williamson Act contract (DOC 2017). Lastly, the Project would include the construction of the proposed storage tank and pump station to provide reliable water storage to the community, which would not involve changes in the existing environment resulting in the conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use. Therefore, implementation of the Project would result in no impact associated with conversion of designated Farmland or conflict with existing zoning for agricultural or forestry use, or a Williamson Act contract or conversion of forestland to non-forest uses.

3.3 Air Quality

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Setting

The Project site is located within the Mountain Counties Air Basin (MCAB), which includes Plumas, Sierra, Nevada, Placer (middle portion), El Dorado (western portion), Amador, Calaveras, Tuolumne, and Mariposa Counties. The MCAB lies along the northern Sierra Nevada Mountain Range, close to or contiguous with the Nevada border, and covers an area of roughly 11,000 square miles within the jurisdictional boundaries of the Tuolumne County Air Pollution Control District (TCAPCD). TCAPCD is the primary agency responsible for planning to meet National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) in the County and is responsible for implementing emissions standards and other requirements of federal and state laws regarding most types of stationary emission sources. The TCAPCD does not meet the state 1-hour standard for ozone (O₃) or for particulate matter with an aerodynamic diameter less than or equal to 2.5 microns (PM_{2.5}; fine particulate matter). The TCAPCD is designated as unclassified for the State particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM₁₀; coarse particulate matter) standards, since no PM₁₀ data is available for this area. The TCAPCD is either in attainment or in an unclassified area for the remainder of all other air pollutants, due to the lack of available data.

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

Less-than-Significant Impact. Tuolumne County does not currently have an air quality plan. Tuolumne County's 2018 General Plan contains an Air Quality Element. The Project has been reviewed for consistency with the Air Quality Element of the 2018 General Plan. The following goals, policies, and implementation programs of the Air Quality Element apply to the Project:

Policy 15.A.1: *Accurately determine and fairly mitigate the local and regional air quality impacts of land development projects proposed in the County.*

Policy 15.A.4: *Reduce air emissions from project construction.*

To address the consistency with the policy, Project-generated criteria air pollutant emissions have been estimated and analyzed for significance and are addressed under Section 3.3(b). Detailed results of this analysis are included in Appendix C, *Air Quality and Greenhouse Gas Emissions CalEEMod Output Files*. As presented in that analysis and summarized in Section 3.3(b) below, the proposed Project would not generate construction or operational criteria air pollutant emissions that exceed the TCAPCD's thresholds, and the Project would therefore be consistent with the Air Quality Element of the 2018 General Plan. The following dust-control measures, as specified in the Air Quality Element of the County's 2018 General Plan, would be implemented during Project-related site preparation activities (i.e., grading, excavation and associated materials hauling) to reduce air quality impacts:

- Exposed soils shall be watered as needed to control wind borne dust.
- Exposed piles of dirt, sand, gravel, or other construction debris shall be enclosed, covered and/or watered as needed to control wind borne dust.
- Vehicle trackout shall be minimized through the use of rumble strips and wheel washers for all trucks and equipment leaving the site.
- Sweep streets once a day if visible soil materials are carried to adjacent streets (recommend water sweepers with reclaimed water).
- On-site vehicle speed shall be limited to 15 miles per hour on unpaved surfaces.
- Loads on all haul/dump trucks shall be covered securely or at least two feet of freeboard shall be maintained on trucks hauling loads.
- Construction equipment shall be maintained and tuned at the interval recommended by the manufacturers to minimize exhaust emissions.
- Equipment idling shall be kept to a minimum when equipment is not in use.
- Construction equipment shall be in compliance with the California Air Resources Board (CARB) off-road and portable equipment diesel particulate matter regulations.

The Project would upgrade and replace failed water infrastructure and serve an existing need for community-serving utility infrastructure and is anticipated to improve system reliability and reduce maintenance needs over the long term and thereby reduce vehicle trips associated with system operations and maintenance. The Project does not include any changes in zoning or require additional operations staffing or result in additional housing that could contribute to an increase in vehicle or household emissions. Accordingly, the Project would result in a less than significant impact associated with increased emissions that would affect implementation of the Air Quality Element and no mitigation is required.

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

Less-than-Significant Impact. Air pollution is largely a cumulative impact. Project-level thresholds of significance for criteria pollutants are used to determine whether a project's individual emissions would have a cumulatively considerable contribution to air quality. If a project's emissions would exceed the

TCAPCD significance thresholds, it would be considered to have a cumulatively considerable contribution. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant.

A quantitative analysis was conducted to determine whether the Project might result in emissions of criteria air pollutants that may cause exceedances of the NAAQS or CAAQS, or cumulatively contribute to existing nonattainment of ambient air quality standards. Criteria air pollutants include ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide, PM₁₀, PM_{2.5}, and lead. Pollutants that are evaluated herein include reactive organic gases (ROG) (also referred to as volatile organic compounds [VOCs]), and oxides of nitrogen (NO_x), which are important because they are precursors to O₃, as well as CO, sulfur oxides (SO_x), PM₁₀, and PM_{2.5}. As previously discussed, regarding NAAQS and CAAQS attainment status,¹ Tuolumne County is designated as an attainment area for state O₃ and PM_{2.5} standards and is either in attainment or in an unclassified area for the remainder of the air pollutants (EPA 2022a; CARB 2020).

The TCAPCD sets forth quantitative emission significance thresholds for criteria air pollutants, which, if exceeded, would indicate that air quality impacts from project implementation would be significant. The TCAPCD significant thresholds are as follows:

- ROG – 1,000 pounds per day or 100 tons per year.
- NO_x – 1,000 pounds per day or 100 tons per year.
- PM₁₀ – 1,000 pounds per day or 100 tons per year.
- CO – 1,000 pounds per day or 100 tons per year

The California Emissions Estimator Model (CalEEMod) Version 2020.4.0 was used to estimate emissions from construction and operation of the Project. CalEEMod is a statewide computer model developed in cooperation with air districts throughout the state to quantify criteria air pollutant emissions associated with construction and operational activities from a variety of land use projects, including residential development. The following discussion summarizes the quantitative construction and operational emissions and impacts that would be generated from implementation of the proposed Project. Detailed assumptions and results of this analysis are provided in Appendix C, *Air Quality and Greenhouse Gas Emissions CalEEMod Output Files*.

Construction Emissions

Construction activities are anticipated to begin in spring of 2023 and be completed by October of 2023. Construction of the Project would include site preparation, grading, trenching, building construction, paving, and application of architectural coatings. While demolition and removal of the existing White Fir Tank and pump station would be completed at a future date, modeling inputs assumed that this would occur during the 2023 construction window to model greatest potential construction intensity. These construction activities would result in the temporary addition of pollutants to the local airshed caused by on-site sources

¹ An area is designated as in attainment when it is in compliance with the National Ambient Air Quality Standards and/or the California Ambient Air Quality Standards. These standards for the maximum level of a given air pollutant that can exist in the outdoor air without unacceptable effects on human health or the public welfare are set by the U.S. Environmental Protection Agency and CARB, respectively. Attainment = meets the standards; attainment/maintenance = achieves the standards after a nonattainment designation; nonattainment = does not meet the standards.

(e.g., off-road construction equipment, soil disturbance, and VOC off-gassing from architectural coatings and asphalt pavement application) and off-site sources (e.g., vendor trucks, haul trucks, and worker vehicle trips). Specifically, entrained dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil, resulting in PM₁₀ and PM_{2.5} emissions. Internal combustion engines used by construction equipment, haul trucks, vendor trucks (i.e., delivery trucks), and worker vehicles would result in emissions of ROG, NO_x, CO, PM₁₀, and PM_{2.5}. Application of architectural coatings, such as exterior paint and other finishes, and application of asphalt pavement would also produce ROG emissions. Construction emissions can vary substantially from day to day depending on the level of activity; the specific type of operation; and, for dust, the prevailing weather conditions.

Project construction emissions were estimated using a combination of CalEEMod default assumptions, and information provided the applicant. It was assumed that grading will include removal of vegetation and topsoil for the storage tank pad, pump station foundation, and the proposed driveway which will provide future access to the tank site from White Fir Drive. The required grading would require less than 160 cubic yards of import soil. Grading would also be included around the proposed storage tank and pump station to accommodate vehicle access around the tank. Concrete would be placed for the ringwall of the storage tank and the pump station foundation. Crushed rock and sand would then be placed in the over-excavated area of the storage tank pad. Approximately 20 haul truck trips may be required for off-hauling throughout the construction period and approximately 20 vendor truck trips may be required for delivery of material over a 6-month period. Default values provided in CalEEMod including the equipment fleet mix, horsepower, and load factor were used in the construction modeling. For the analysis, it was generally assumed that heavy-duty construction equipment would be operating at the site five days per week, up to a maximum of 8 hours per day. Detailed construction equipment modeling assumptions are provided in Appendix C, *Air Quality and Greenhouse Gas Emissions CalEEMod Output Files*.

Table 3.3-1 shows the estimated maximum daily and annual construction emissions associated with the construction of the Project occurring in 2023.

Table 3.3-1. Estimated Maximum Daily and Annual Construction Criteria Air Pollutant Emissions

	ROG	NO _x	CO	SO _x	PM ₁₀ ^a	PM _{2.5} ^a
Construction Year	Pounds per Day					
2023	102.22	12.51	7.82	0.02	3.04	1.61
<i>TCAPCD threshold</i>	<i>1,000</i>	<i>1,000</i>	<i>1,000</i>	<i>N/A</i>	<i>1,000</i>	<i>N/A</i>
Threshold exceeded?	No	No	No	N/A	No	N/A
	Tons per Year					
2023	0.30	0.40	0.44	<0.01	0.03	0.02
<i>TCAPCD threshold</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>N/A</i>	<i>100</i>	<i>N/A</i>
Threshold exceeded?	No	No	No	N/A	No	N/A

Notes: ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM₁₀ = particulate matter with a diameter less than or equal to 10 microns (coarse particulate matter); PM_{2.5} = particulate matter with a diameter less than or equal to 2.5 microns (fine particulate matter); TCAPCD = Tuolumne County Air Pollution Control District; N/A = not applicable; <0.01 = value less than reported 0.01.

See Appendix C for detailed results.

As shown in Table 3.3-1, the Project's maximum daily construction emissions would not exceed TCAPCD thresholds for any criteria pollutant. Impacts would be less than significant.

Operational Emissions

Once Project construction is complete, facility operations and maintenance would be similar to that of the existing White Fir Tank and pump station located within the Project site. It is anticipated that a TUD operator or operations and maintenance staff would perform maintenance checks on the pump station and tank site approximately twice per week and that these maintenance visits would be combined with visits to the White Fir Tank until the White Fir Tank is taken offline and removed. Implementation of the Project is intended to improve system reliability, relocate critical infrastructure away from existing residential uses, and provide a greater margin of excess capacity to serve existing users and planned buildout within TUD's service area.

As depicted in **Error! Reference source not found.** 3.3-2, the on-road vehicle activity would result in a negligible increase in criteria air pollutant emissions and would not exceed the applicable TCAPCD significance thresholds. Therefore, this impact would be less than significant.

Table 3.3-2. Estimated Maximum Daily and Annual Operational Criteria Air Pollutant Emissions

	ROG	NO _x	CO	SO _x	PM ₁₀ ^a	PM _{2.5} ^a
Construction Year	Pounds per Day					
Mobile	0.01	0.02	0.09	<0.01	0.01	<0.01
TCAPCD threshold	1,000	1,000	1,000	N/A	1,000	N/A
Threshold exceeded?	No	No	No	N/A	No	N/A
	Tons per Year					
Mobile	<0.01	<0.01	0.01	<0.01	<0.01	<0.01
TCAPCD threshold	100	100	100	N/A	100	N/A
Threshold exceeded?	No	No	No	N/A	No	N/A

Notes: ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM₁₀ = particulate matter with a diameter less than or equal to 10 microns (coarse particulate matter); PM_{2.5} = particulate matter with a diameter less than or equal to 2.5 microns (fine particulate matter); TCAPCD = Tuolumne County Air Pollution Control District; N/A = not applicable; <0.01 = value less than reported 0.01.
See Appendix C for detailed results.

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

Less-Than-Significant Impact. The Project would not expose sensitive receptors to substantial pollutant concentrations as evaluated below.

Health Effects of Criteria Air Pollutants

Construction and operational emissions of the Project would not exceed the TCAPCD thresholds for any criteria air pollutants, including ROG, NO_x, CO, and PM₁₀.

Health effects associated with O₃ include respiratory symptoms, worsening of lung disease leading to premature death, and damage to lung tissue (CARB 2019). ROG and NO_x are precursors to O₃, for which the Tuolumne County is designated as nonattainment with respect to the CAAQS. The contribution of ROG and NO_x to regional ambient O₃ concentrations is the result of complex photochemistry. The increases in O₃ concentrations in the MCAB due to O₃ precursor emissions tend to be found downwind of the source

location because of the time required for the photochemical reactions to occur. Further, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the ROG emissions would occur, because exceedances of the O_3 NAAQS and CAAQS tend to occur between April and October when solar radiation is highest. Due to the lack of quantitative methods to assess this complex photochemistry, the holistic effect of a single project's emissions of O_3 precursors is speculative. However because Project emissions would be well below TCAPCD's thresholds, the Project would not be considered a contributor to health effects associated with O_3 .

Health effects associated with NO_x include lung irritation and enhanced allergic responses (CARB 2019). Because Project-related NO_x emissions would not exceed the TCAPCD thresholds, and because the MCAB is a designated attainment area for NO_2 (and NO_2 is a constituent of NO_x) and the existing NO_2 concentrations in the area are well below the NAAQS and CAAQS standards, it is not anticipated that the Project would cause an exceedance of the NAAQS and CAAQS for NO_2 or result in potential health effects associated with NO_2 and NO_x .

Health effects associated with CO include chest pain in patients with heart disease, headache, light-headedness, and reduced mental alertness (CARB 2019). CO tends to be a localized impact associated with congested intersections. Given the considerably low level of CO concentrations in the Project area, and the minimal increase in daily trips, Project-related mobile emissions are not expected to contribute significantly to CO concentrations, and a CO hotspot is not anticipated to occur. Thus, the Project's CO emissions would not contribute to significant health effects associated with CO.

Health effects associated with PM_{10} include premature death and hospitalization, primarily for worsening of respiratory disease (CARB 2019). Construction of the Project would not exceed thresholds for PM_{10} or $PM_{2.5}$, would not contribute to exceedances of the NAAQS and CAAQS for particulate matter, and would not obstruct the MCAB from coming into attainment for these pollutants. The Project would not result in substantial diesel particulate matter emissions during construction. Due to the minimal contribution of particulate matter during construction, the Project is not anticipated to result in health effects associated with PM_{10} or $PM_{2.5}$.

In summary, construction and operation of the Project would not result in exceedances of the TCAPCD significance thresholds for criteria pollutants, and potential health effects associated with criteria air pollutants would be less than significant.

Toxic Air Contaminants

Toxic air containments (TACs) are defined as substances that may cause or contribute to an increase in deaths or in serious illness, or that may pose a present or potential hazard to human health. State law has established the framework for California's TAC identification and control program, which is generally more stringent than the federal program and aimed at TACs that are a problem in California. The state has formally identified more than 200 substances as TACs, including the federal HAPs, and is adopting appropriate control measures for sources of these TACs. During Proposed Project construction, diesel

particulate matter would be the primary TAC emitted from diesel-fueled equipment and trucks. The following measures are required by state law to reduce diesel particulate matter emissions:

- Fleet owners of mobile construction equipment are subject to the CARB Regulation for In-Use Off-Road Diesel Vehicles (13 CCR Chapter 9, Section 2449), the purpose of which is to reduce DPM and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles.
- All commercial diesel vehicles are subject to Title 13, Section 2485 of the California Code of Regulations, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading shall be limited to 5 minutes; electric auxiliary power units should be used whenever possible.

Sensitive receptors are located immediately adjacent to or in close proximity to the Project site. Health effects from carcinogenic air toxics are usually described in terms of cancer risk. “Incremental cancer risk” is the net increased likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 9-, 30-, and 70-year exposure period will contract cancer based on the use of standard Office of Environmental Health Hazard Assessment risk-assessment methodology (OEHHA 2015).

Diesel particulate matter emissions would be emitted from heavy equipment operations and diesel-fueled trucks. Heavy-duty construction equipment and commercial trucks are subject to CARB Air Toxic Control Measures to reduce diesel particulate emissions. As described in **Error! Reference source not found.** through **Error! Reference source not found.** above, maximum daily total PM₁₀ emissions generated by construction equipment operation and trucks (exhaust particulate matter, or diesel particulate matter, combined with fugitive dust generated by equipment operation and vehicle travel), would be well below the TCAPCD significance thresholds. Moreover, construction of the Project would be short term, after which Project-related TAC emissions (e.g., diesel emissions) would cease and the extensive use of heavy-duty construction equipment or diesel trucks at the Project site would not be required, which would limit the duration of exposure for proximate sensitive receptors. No long-term sources of TAC emissions would be required for operation of the storage tank and pump station. Due to the relatively short period of exposure at any individual sensitive receptor and minimal particulate emissions generated, TACs emitted during construction would not be expected to result in concentrations that would represent a health risk. Impacts would be less-than-significant.

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

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

Odors would be potentially generated from vehicles, equipment exhaust emissions, and construction materials (coatings, fuels, paving materials) intermittently during Project construction. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment, architectural coatings, and asphalt pavement application. Such odors are typical of construction projects in residential areas, would disperse rapidly from the Project construction site, would generally occur at levels that would not be detectable by substantial numbers of people, and would occur only temporarily during construction. Therefore, impacts associated with odors during construction would be less than significant.

Typical sources of odors include landfills, rendering plants, chemical plants, agricultural uses, wastewater treatment plants, and refineries. Regarding operations, the Project involves improvements to water infrastructure and any odors produced would be minimal and would be similar to existing conditions. Overall, the Project would not result in odors that would affect a substantial number of people. Therefore, impacts associated with odors during operation would be less than significant.

3.4 Biological Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES – Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

A Biological Resources Assessment (BRA) was prepared for the Project by Dudek and is included as Appendix D to this Initial Study. The analyses and determinations provided in this section are based on the content and findings of the BRA. Full details regarding regulatory setting, methodology, and other information can be found in Appendix D.

The Project site is located in the Central Sierra Lower Montane Forest section of the Sierra Nevada Ecoregion in the central Sierra Nevada Mountains, in the watershed of the Upper North Fork Tuolumne River. The area is characterized by ridge tops and sloping terrain draining south to the Tuolumne River. The Land cover on the Project site and surrounding area consists of terrestrial non-vegetative land covers (Developed, Developed/Landscaped) and natural vegetation communities (Mixed Conifer Forest). The Developed and Developed / Landscaped land cover is represented by residential development and paved roadways within the Project site, while the Mixed Conifer Forest vegetation community is found on the undeveloped TUD-owned parcel and is characterized by a mix of Ponderosa pine (*Pinus ponderosa*), white fir (*Abies conolor*), live oak (*Quercus wislizenii*), and black oak (*Quercus kelloggii*). Elevations at the Project site range from approximately 4,571 to 4,594 feet above mean sea level.

The Project site occurs within the Johnie Gulch subwatershed, within the greater Upper North Fork Tuolumne River Watershed (Hydrologic Unit Code 180400090901; EPA 2022b). The Project site is located on a generally east-west trending ridge in the central Sierra Nevada Mountains between the North Fork Tuolumne River basin on the south and the South Fork Stanislaus River to the north. Water from the site drains generally by sheetflow and overland drainage south to an unnamed drainage southeast of the Project site, which drains south to the North Fork Tuolumne River approximately 1.4 miles south of the Project site. No depressions, drainages or other aquatic resources were noted during the site survey. Snowmelt and rainwater runoff appears to be channeled from roadways and residential parcels via culverts under roadways, draining water in a southern direction. No potential federal or state jurisdictional aquatic resources were observed on-site during the 2022 field survey. No aquatic resources are mapped as present in the Project site or directly adjacent (USFWS 2022, USGS 2022).

No sensitive natural communities, as defined by CDFW, were documented within the Project site. A floristic survey of the site identified no special-status plant species within the Project site.

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

Less-Than-Significant Impact with Mitigation Incorporated. There are 36 special-status plant species and 35 special-status wildlife species that are known to occur within the surrounding area. Based on an evaluation of habitat type and conditions on the Project site, it was determined that 15 of these special-status plant species are not expected to occur on the Project site, and that 21 of these special-status plant species have a low potential to occur within the Project site. A floristic survey of the Project site was conducted in May 2022 to determine if any special-status plants are present within the Project site; the survey recorded no special-status plant species.

Of the special-status wildlife species known to occur in the region, 22 species are not expected to occur, nine species have a low potential to occur, and four species were determined to have a moderate potential to occur within the Project site. The biological assessment determined that the Project site provides suitable habitat for bats and numerous local and migratory bird species and raptors, including the sharp-shinned

hawk which is protected by the federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (FGC). Construction of the Project would require clearing vegetation and removing approximately 13 conifer trees, which provide suitable habitat for nesting birds and roosting habitat for bats. As such, construction of the Project has the potential to result in direct impacts to special status wildlife species as a result of destruction or disturbance of active bird nests or bat roost sites and individuals. The Project would implement mitigation measures **MM-BIO-1** and **MM-BIO-2**, which would require pre-construction surveys and habitat assessments to determine the presence of nesting birds and bats and protective measures should active nests or roosting sites be identified. With the implementation of mitigation measure **MM-BIO-1** and **MM-BIO-2**, impacts to special-status nesting birds and roosting bats would be avoided and impacts would be less than significant.

MM-BIO-1: Nesting Birds. If avoidance of nesting birds is not feasible and construction would occur during the nesting season (February through August), the following measures shall be implemented to avoid or minimize impacts to nesting birds:

- A qualified biologist shall conduct a pre-construction survey for nesting birds no more than 14 days prior to vegetation or structure removal or ground-disturbing activities conducted during the nesting season (February through August). The survey shall cover the limits of construction and suitable nesting habitat within 500 feet of the Project site for raptors and 100 feet for other nesting birds, as feasible and accessible.
- If any active nests are observed during surveys, a qualified biologist shall establish a suitable avoidance buffer from the active nest. The buffer distance will typically range from 50 to 500 feet and shall be determined based on factors such as the species of bird, topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule. Limits of construction to avoid active nests shall be established in the field with flagging, fencing, or other appropriate barriers and shall be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist.
- If vegetation removal activities are delayed, additional nest surveys shall be conducted such that no more than 7 days elapse between the prior survey and vegetation removal activities.
- If an active nest is identified in or adjacent to the construction limits after construction has started, work in the vicinity of the nest shall be halted until the qualified biologist can provide appropriate avoidance and minimization measures to ensure that the nest is not disturbed by construction. Appropriate measures may include a no-disturbance buffer until the birds have fledged and/or full-time monitoring by a qualified biologist during construction activities conducted near the nest.

MM-BIO-2: Bats. To avoid or minimize the potential for take of roosting bats, the following shall be implemented:

- A qualified biologist shall conduct a habitat assessment for roosting bats within the Project site. The habitat assessment shall include a visual inspection of potential roosting features (bats need not be present) and presence of guano within the Project site, access routes, and 50 feet around these areas. The biologist shall survey these areas between 30 and 120 days prior to the start of work. Potential roosting features found during the survey shall be flagged or marked.
- If a maternity roost is located, that roost shall remain undisturbed with a buffer until a qualified biologist has determined that the roost is no longer active. If Project activities must occur in close proximity to

the buffer during the maternity roosting season, monitoring during construction may be required as determined by a qualified biologist.

- If the maternity roost is located in a tree or building that is planned for removal, roost exclusion must occur outside of the maternity roosting season prior to the removal of the roost. An Exclusion Plan shall be developed detailing the methods for exclusion and replacement roost installation (such as the placement of bat boxes). The Exclusion Plan shall also include monitoring to ensure that all bats have left the roost prior to demolition or removal.
- If a non-maternity roost in a tree is found, the qualified biologist shall coordinate with TUD and the Contractor to avoid impacts to the roost if possible.
- Trees with suitable roosting opportunities shall be removed in pieces, rather than felling the entire tree. Any potential roost location in a tree where absence of roosting could not be confirmed will be monitored to determine if any bats are leaving or falling out of a tree.

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

No Impact. The Project site supports two land cover types (Developed and Developed/Landscaped). The vegetation community present within the Project site consists of Mixed Conifer Forest. The Project site does not contain any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service. No impact would occur.

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

No Impact. As discussed in response to Threshold 3.4 (c), the Project site does not contain any state or federally protected wetlands. As such, no impacts to state or federally protected wetlands would occur as a result of the Project.

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

Less-Than-Significant Impact. While common local wildlife likely move through and use portions of the Project site, the Project site is within an area of residential development and existing roadways and does not function as an important wildlife corridor or habitat linkage used by wildlife during migration and does not occur within any designated wildlife corridors or habitat linkages. Therefore, impacts to wildlife movement and migratory corridors and habitat connectivity would be less than significant.

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

No Impact. Chapter 9.24 of the Tuolumne County Municipal Code discourages the premature removal of native oak trees. According to Chapter 9.24, the premature removal of native oak trees would include the removal of native oak trees resulting in a 10% or more (>10%) average decrease in native oak canopy cover within an oak woodland; removal of any old growth oak trees; or the removal of any valley oak measuring five inches or greater in diameter. Construction of the Project would require the removal of approximately 13 trees from within a conifer forest and no valley oaks or oak trees over 12" DBH would be removed for the Project. As such, the required tree removal would not conflict with Chapter 9.24 of the County's Municipal Code and no impacts associated with a tree preservation policy or ordinance would occur.

- f) **Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

No Impact. The Project site is not within any habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan (CDFW 2019). As such, the Project would not conflict with the provisions of an adopted conservation plan and no impact would occur.

3.5 Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Setting

Dudek prepared a Cultural Resources Letter Report (Cultural Report) for the Project which is included as Appendix E to this MND. This section summarizes the results of the cultural report. Full details regarding regulatory setting, methodology, and other information can be found in Appendix E.

Records Search

Central California Information Center (CCaIC) staff conducted a cultural resources records search of the Project site and a 0.5-mile buffer on May 17, 2022. The records search identified 25 previous studies that have been performed within the 0.5-mile search radius of the Project, one of which includes portions of the Project site. The search also

identified six previously recorded cultural resources within the search area. Of the six resources, only one resource, the Tuolumne Main Canal (P-55-003115), was determined eligible for the NRHP/CRHR. The Tuolumne Main Canal is located approximately 0.45 miles north of the Project site and no portion of the canal is within the Project site. Refer to Appendix E for additional details.

Archival Search

In addition to the records search, Dudek consulted historic maps and aerial photographs of the Project area and general vicinity to help determine the possible development and land use of the Project area in the past. Historic aerial photographs of the Project site were available for 1959, 1962, 1967, 1980, 1988, 2004, 2012, 2015, and 2018 (Appendix E). The historic topographic maps show very little change to the Project area over time. All of the current roads in the vicinity are evident on the 1959 topographic maps, although fewer structures are present. The resolution and building density increase on the 1980 map and are depicted identically on the 1988 and 2004 maps. The 2012, 2015, and 2018 maps do not depict residential structures, however the roadways remain unchanged. Historic aerial photographs were available for the Project area from 1973, 1984, 1993, 1998, 2005, 2009, 2010, 2012, 2014, 2016, and 2018 (Appendix E). The aerial images indicate that the area around the Project site has been sparsely developed with a mix of residential buildings since 1973. Several commercial buildings appear to have been constructed along SR 108 between the 1973 and 1984 images, but no other development is evident because most of the area is obscured by forest canopy in the aerial images.

Native American Heritage Commission and Tribal Correspondence

Dudek requested a Native American Heritage Commission (NAHC) search of their Sacred Lands File on May 13, 2022 for the Project site. The NAHC results, received July 8, 2022, indicated the Sacred Lands File search did not identify any cultural resources within the records search area. The NAHC then provided a list of Native American tribes culturally affiliated with the Project site area and recommended contacting them for further information. None of the Native American tribes were contacted by Dudek. On July 9, 2022, TUD sent letters to Native American tribes pursuant to Assembly Bill (AB) 52. No responses have been received to date.

The Project is subject to compliance with Assembly Bill 52 (PRC Section 21074), which requires consideration of impacts to Tribal Cultural Resources as part of the CEQA process and requires the CEQA lead agency to notify any groups (who have requested notification) of the Project who are traditionally or culturally affiliated with the geographic area of the Project. Because AB 52 is a government-to government process, all records of correspondence related to AB 52 notification and any subsequent consultation are on file with TUD. Further discussion regarding Tribal Cultural Resources and AB 52 consultation is included in Section 3.18, Tribal Cultural Resources.

Intensive Pedestrian Survey

A Dudek archaeologist inspected all portions of the Project site on May 26, 2022, using standard archaeological procedures and techniques that meet the Secretary of Interior's Standards and Guidelines for cultural resources inventory. Exposed ground surfaces were observed for surface artifacts, undisturbed areas, archaeological deposits, and historic structures and periodic ground surface scrapes were employed to expose additional ground surface for inspection. Evidence of artifacts and archaeological deposits were also opportunistically sought in animal burrows. Surface visibility was very low (less than 5-percent) throughout the Project site, due to development and vegetation. In the area proposed for construction of the proposed storage tank, soils consisted of brown loam with low gravel content (less than 5-percent), with low visibility due to vegetation including pine, fir, mountain misery,

seasonal grasses and pine duff and leaf litter. Several small boulders were found and inspected in the southeastern portion of this undeveloped area, however no bedrock milling features were identified. Numerous felled and/or fallen trees were identified in this area in addition to scattered modern refuse. The remainder of the Project site is previously disturbed by development of roadways, residences, and the existing White Fir tank and pump station. No historic structures or archaeological resources were observed within the Project site during the field survey.

Geomorphology

Potential for cultural resources to be found in the vicinity of the Project site was reviewed against geologic and topographic GIS data for the area and information from other nearby projects. The “archaeological sensitivity,” or potential to support the presence of a buried prehistoric archaeological deposits, is generally interpreted based on geologic landform and environmental parameters (i.e., distance to water and landform slope).

The Project site is located within the western foothills of the Sierra Nevada Geomorphic Province of California, a nearly 400 miles long mountain range formed by a tilted fault block. The western portion of this geomorphic province is characterized by gentle slopes with numerous canyons and valleys formed by rivers flowing west to the Central Valley. The Project site specifically is located on a generally east-west ridge between the North Fork Tuolumne River to the south and the South Fork Stanislaus River to the north. The nearest waterway is an unnamed drainage approximately 0.2 miles southeast of the Project site.

Soils within the Project site are characterized primarily as Musick-Wukusick complex with 3 to 15 percent slope, with a smaller portion of Devilsnose-Lilygap complex with 30 to 60-percent slopes (Appendix E). Musick-Wukusick complex soils consists of 50 percent Music series soils, 45 percent Wukusick series soils, and 5 percent minor components. Both Musick series and Wukusick series are very deep well drained soils forming on the slopes of foothills and mountains in colluvium over residuum from intrusive igneous rocks and mafic plutonic rocks, respectively (Appendix E). Devilsnose-Lilygap complex soils consist of 40 percent Devilsnose series soils, 35 percent Lilygap series soils, and 25 percent minor components. Devilsnose series and Lilygap series are both very deep, well drained soils forming on mountainflanks of lahars in ashy colluvium over weathered colluvium and residuum from andesitic tuff breccia (Appendix E). Based on review of this information, the topography and underlying geology indicate the Project site has low-to-moderate potential to support the formation or continued presence of buried cultural deposits or surface manifestations.

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

No Impact. A historical resource is one that meets the eligibility criteria for the California Register of Historical Resources. This includes “any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California” (PRC Section 5020.1[j]). The significance of an historic resource is impaired when a project demolishes or materially alters those physical characteristics that convey its significance.

As discussed in the Cultural Report, the Tuolumne Main Canal (P-55-003115) is the only eligible historical resource located within 0.5-mile search radius of the Project. The Tuolumne Main Canal is located approximately 0.45 miles north of the Project site. As such, implementation of the Project would not result in any adverse change in this resource. No impacts would occur.

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

Less-than-Significant with Mitigation Incorporated. The Project site is located within the western foothills of the Sierra Nevada Geomorphic Province of California, on a generally east-west ridge between the North Fork Tuolumne River to the south and the South Fork Stanislaus River to the north (Appendix E). Soils within the Project site are characterized primarily as Musick-Wukusick complex with 3 to 15 percent slope, with a smaller portion of Devilsnose-Lilygap complex with 30 to 60-percent slopes (Appendix E). Based on review of this information, the topography and underlying geology indicate the Project site has low-to-moderate potential to support the formation or continued presence of buried cultural deposits or surface manifestations. No archaeological resources were observed within the Project site during the pedestrian survey. The CCalC records search did not identify the presence of archaeological resources within the Project site or the 0.5-mile search radius and the NAHC Sacred Lands File search was negative. As such, there is a low likelihood that construction ground disturbance would encounter cultural deposits.

In the unlikely event that construction encounters unanticipated archaeological resources, mitigation measure **MM-CUL-1** would be implemented. MM-CUL-1 requires that construction be halted if archaeological materials are encountered to allow for evaluation of the find by a qualified archaeologist who will make recommendations for appropriate treatment and additional study. With implementation of MM-CUL-1, impacts would be less than significant.

MM-CUL-1: Unanticipated Discovery of Archaeological Resources. In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the Project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, can evaluate the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the find under CEQA (14 CCR 15064.5(f); PRC Section 21082), the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted.

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

Less-Than-Significant Impact. The Project site is not within a known cemetery or burial ground. In the highly unlikely event that human remains are uncovered during ground-disturbing activities, there are regulatory provisions to address the handling of human remains in California Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98, and CEQA Guidelines Section 15064.5(e). Pursuant to these codes, in the event that human remains are discovered, disturbance of the site would be halted until the County coroner has conducted an investigation into the circumstances, manner, and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code. The County coroner is required to make a determination within 2 working days of notification of the discovery of the human remains. If the County coroner determines that the remains are not subject to his or her authority, and if he or she recognizes or has reason to believe the human remains to be those of a Native American, he or she shall consult with the Native American Heritage Commission by telephone within 24 hours, to designate a Most Likely Descendant who shall recommend appropriate measures to the landowner regarding the treatment of the remains. If the owner does not accept the Most Likely Descendant's recommendations, the owner or the

Most Likely Descendant may request mediation by the Native American Heritage Commission. Therefore, with compliance with existing state law, impacts associated with human remains would be less than significant.

3.6 Energy

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. Energy – Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

Less-Than-Significant Impact. Implementation of the Project would result in energy use for construction and operation, including use of electricity and petroleum-based fuels. The electricity used for construction of the Project would be temporary, would be substantially less than that required for Project operation, and would have a negligible contribution to the Project's overall energy consumption.

The Project's impact on energy resources is discussed separately below for construction and operation. Energy consumption (electricity, natural gas, and petroleum consumption) was estimated using CalEEMod data from the air quality and GHG assessment. For further detail on the assumptions and results of the energy analysis, please refer to Appendix C, *Air Quality and Greenhouse Gas Emissions CalEEMod Output Files*.

Construction Energy Use

Electricity

Electricity consumed during Project construction would vary throughout the construction period based on the construction activities being performed. Various construction activities would require electricity, including the conveyance of water that would be used for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power. Such electricity demand would be temporary, nominal, and would cease upon the completion of construction. Pacific Gas and Electric (PG&E) is the electricity provider to the Project site and provided approximately 78,518 Gigawatt-hours of electricity in 2020 (CEC 2021). Overall, construction activities associated with the Project would require limited electricity consumption that would

not be expected to have an adverse impact on available PG&E electricity supplies and infrastructure. The use of electricity during Project construction would be typical of small-scale construction projects and would not be wasteful, inefficient, or unnecessary.

Petroleum-Based Fuels

Petroleum-based fuel usage represents most energy consumed during construction. Petroleum fuels would be used to power off-road construction vehicles and equipment on the Project site, construction worker travel to and from the Project site, as well as delivery and haul truck trips (e.g. hauling of material to disposal facilities).

Fuel consumption from construction equipment and vehicles was estimated by converting the total carbon dioxide (CO₂) emissions from each construction phase to gallons using the conversion factors for CO₂ to gallons of gasoline or diesel. All off-road equipment and hauling and vendor trucks are assumed to be diesel, while worker vehicles are assumed to be gasoline. Construction is estimated to occur in 2023, over a 6-month duration. The conversion factor for gasoline is 8.78 kilograms per metric ton CO₂ per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO₂ per gallon (The Climate Registry 2021). The estimated diesel fuel usage from construction equipment of the Project is shown in Table 3.6-1.

Table 3.6-1 Estimated Construction Fuel Use

Construction Year	Fuel Use (gallons)		
	Off-Road Equipment (Diesel)	On-Road Trucks (Diesel)	On-Road Workers (Gasoline)
2023	5,873.36	603.41	380.10

Notes: Conversion factors from The Climate Registry (2021).
See Appendix C for complete results.

As shown in Table 3.6-1, construction of the Project is anticipated to consume 380 gallons of gasoline and 6,477 gallons of diesel fuel. The Project would be required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. Furthermore, the proposed project would be subject to CARB's In-Use Off-Road Diesel Vehicle Regulation that requires the vehicle fleet to reduce emissions by retiring, replacing, and repowering older engines, or installing Verified Diesel Emissions Control Strategies. Therefore, impacts associated with construction would be less than significant.

Operational Energy Use

As discussed in Section 2, Project Description, the Project consists of constructing and operating a proposed 400,000-gallon steel storage tank and pump station. The Project would require electricity for the pump station to boost operating pressures in the water system. Electrification of the pump requires establishing an additional connection to PG&E's distribution facilities, which currently serve the Project site. Facility operations and maintenance would be similar to that of the existing White Fir Tank and pump station located within the Project site and near the proposed new tank. It is anticipated that a TUD operator or operations and maintenance staff will perform maintenance checks on the pump station and tank site approximately twice per week and that these maintenance visits would be combined with visits to the White

Fir Tank until the White Fir Tank is taken offline and removed. It should also be noted that the Project would install a new tank, pump station and underground piping, which are expected to operate more efficiently and require fewer service visits in comparison with the White Fir Tank and associated equipment, which will be taken offline at a future date, and thereby reduce vehicle trips for service purposes over the long term. Thus, there would minimal additional operational activities associated with the new tank and pump station and impacts associated with the Project's operational energy use would be less than significant.

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

Less-Than-Significant Impact. The Project would follow applicable energy standards and regulations during the construction and operational phases. Operations and maintenance vehicles would meet the applicable standards of Assembly Bill (AB) 1493 (vehicles manufactured 2009 or later) and, as a result, would consume less energy as fuel efficiency standards are increased and vehicles are replaced. As such, impacts related to the Project's potential to conflict with plans for renewable energy and energy efficiency would be less than significant.

3.7 Geology and Soils

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS – Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

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

and

ii) **Strong seismic ground shaking?**

Less-than-Significant Impact. The Project site is not located in an Alquist-Priolo Fault Zone and no known faults intersect the Project area (DOC 2022b). The closest known fault zone is the Antelope Valley fault zone located approximately 50 miles east of the Project site. However, the Project site, like most of the surrounding region, could be subject to seismic activity along nearby faults that could result in ground shaking.

The Project would contain no habitable structures or other structural development intended for human occupancy that could result in risk of loss, injury, or death in the event of strong seismic ground shaking. The Project would go through full design which would include engineering design standards associated with seismic events and the incorporation of pertinent geotechnical information. As such, construction and operation of the Project would not create a potential risk to either people or structures in the event of strong seismic ground shaking. Therefore, impacts would be less than significant.

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

No Impact. Liquefaction occurs when a buildup of pore water pressure in the affected soil layer to a point where a total loss of shear strength may occur during a seismic event, causing the soil to behave as a liquid. The Project site is not located within a liquefaction zone, as mapped by the California DOC (DOC 2022b).

Therefore, liquefaction is not considered to be a hazard on the proposed development, and the Project would not increase the risk from seismic-related ground failure, including liquefaction. No impact would occur.

iv) Landslides?

No Impact. Landslides typically occur on moderate to steep slopes that are affected by such physical factors as slope height, slope steepness, shear strength, and orientation of weak layers in the underlying geologic units that contribute to landslide susceptibility. The Project site and surroundings are generally flat to moderately sloping, the area does not have evidence of landslide activity, and the site is not located in a landslide zone, as mapped by the California DOC (DOC 2022b). No impact is anticipated from landslides.

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

Less-Than-Significant Impact with Mitigation Incorporated. Project construction would require ground-disturbing activities that could result in erosion and runoff. To minimize potential for soil erosion and loss of topsoil, the Project would implement mitigation measure **MM-GEO-1**, which would require the preparation of an Erosion Control Plan. The Erosion Control Plan would require implementation of erosion control measures in accordance with the California Stormwater Quality Association's Stormwater Best Management Practices Handbook. Erosion control best management practices (BMPs) would include measures to implement both during and after construction. Additionally, construction and operation of the Project would comply with the Tuolumne County Water Quality Manual. Therefore, with implementation of mitigation measure **MM-GEO-1** and application of stormwater and erosion control best practices, impacts would be less than significant.

MM-GEO-1: In order to reduce runoff and erosion, and minimize the potential of sedimentation as a result of the Project, all construction shall be carried out in compliance with an erosion control plan providing site-specific measures for sediment and erosion control in accordance with the California Stormwater Quality Association's *Stormwater Best Management Practices Handbook* and *Erosion and Sediment Control Guidelines for Developing Areas of the Sierra Foothills and Mountains* or other erosion control reference determined to be appropriate by the Project Engineer. Specific minimum site stabilization and erosion control measures identified in project plans shall include:

- Installing erosion-control filter/silt fence;
- Revegetating all disturbed areas with appropriate "weed-free" seed mixes and native species;
- Installing a gravel apron or equivalent BMP device or appropriate measures at off-site access points onto paved roadways to control soil track out onto area roadways;
- Applying mulch or an erosion control blanket to inactive disturbed areas.

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less-than-Significant Impact. The Project site is not located within a landslide or liquefaction zone, or near a known active fault zone (DOC 2022b). The Project would continue through full project design, which would include site-specific geotechnical investigations to inform final design and construction of the Project to minimize potential geotechnical risks, including soil and geologic conditions on the Project site.

Therefore, the Project would not exacerbate geotechnical hazards related to an unstable geologic unit or soils and impacts would be less the significant.

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

Less-than-Significant Impact. Expansive soils are clay-based and tend to increase in volume due to water absorption and decrease in water volume due to drying. As previously discussed in response to Threshold 3.5 (b), Soils within the Project site are characterized primarily as Musick-Wukusick complex with 3 to 15 percent slope, with a smaller portion of Devilsnose-Lilygap complex with 30 to 60-percent slopes (Appendix E). Both Musick series and Wukusick series are very deep well drained soils forming on the slopes of foothills and mountains in colluvium over residuum from intrusive igneous rocks and mafic plutonic rocks (Appendix E). As such, soils found within the Project site would not be considered expansive and would not pose a geologic concern for the Project. The Project would be constructed in accordance with the Uniform Building Code, California Waterworks Standards for water distribution systems, and local building codes that address local soils and geologic conditions. As such, the Project would employ standard engineering protocols to limit the potential effects of soils conditions on Project-related infrastructure. Therefore, impacts would be less than significant.

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

No Impact. The Project would not involve the use of septic tanks or alternative wastewater disposal systems. Therefore, no impact would occur.

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

No Impact. The Mehrten Formation (Tm) is known to yield fossils in various regions in California. However, this sedimentary unit is mapped to the southwest and northeast of the Project site and does not occur within or adjacent to the Project site (Wagner et al. 1981). The Project site and surrounding area is underlain by Mesozoic granitic rocks, which do not yield unique paleontological resources (Wagner et al. 1981). Additionally, the County's general plan does not identify any unique paleontological resources or geologic features within the County. Therefore, because the Project site is not located within a geologic area where Paleontological resources would likely be present, construction activities resulting from the Project would not directly or indirectly result in destruction of a unique paleontological resource or geologic feature. No impact would occur.

3.8 Greenhouse Gas Emissions

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

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

Less-Than-Significant Impact. Greenhouse gases (GHG) are those that absorb infrared radiation (i.e., trap heat) in the Earth’s atmosphere. The trapping and buildup of heat in the atmosphere near the Earth’s surface (the troposphere), is referred to as the “greenhouse effect,” and is a natural process that contributes to the regulation of Earth’s temperature, creating a livable environment on Earth. The Earth’s temperature depends on the balance between energy entering and leaving the planet’s system, and many factors (natural and human) can cause changes in Earth’s energy balance. Human activities that generate and emit GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth’s surface temperature to rise. This rise in temperature has led to large-scale changes to the Earth’s system (e.g., temperature, precipitation, wind patterns, etc.), which are collectively referred to as climate change. Global climate change is a cumulative impact; a project contributes to this impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. Thus, GHG impacts are recognized exclusively as cumulative impacts (CAPCOA 2008).

As defined in California Health and Safety Code Section 38505(g) for purposes of administering many of the state’s primary GHG emissions reduction programs, GHGs include CO₂, methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride (see also CEQA Guidelines Section 15364.5). The primary GHGs that would be emitted by project-related construction and operations include CO₂, CH₄, and N₂O.²

The Intergovernmental Panel on Climate Change developed the global warming potential (GWP) concept to compare each GHG’s ability to trap heat in the atmosphere relative to another gas. The reference gas used

² Emissions of hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride are generally associated with industrial activities, including the manufacturing of electrical components and heavy-duty air conditioning units and the insulation of electrical transmission equipment (substations, power lines, and switch gears.). Therefore, emissions of these GHGs were not evaluated or estimated in this analysis because the project would not include these activities or components and would not generate hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride in measurable quantities.

is CO₂; therefore, GWP-weighted emissions are measured in metric tons (MT) of CO₂ equivalent (CO₂e). Consistent with CalEEMod Version 2020.4.0, this GHG emissions analysis assumed the GWP for CH₄ is 25 (i.e., emissions of 1 MT of CH₄ are equivalent to emissions of 25 MT of CO₂), and the GWP for N₂O is 298, based on the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007).

As described in Section 3.3, Air Quality, of this Initial Study, the Project is located within the MCAB and under the jurisdiction of the TCAPCD which, to date, has not adopted significance criteria or thresholds for project level or plan level analyses. Therefore, because there is no regional or jurisdiction-specific threshold, significance of the Project's GHG-related impacts were determined by considering whether the Project's GHG emissions meet the 900 MT CO₂e per year screening level threshold identified by the CAPCOA (CAPCOA 2008). The 900 MT CO₂e per year threshold was developed based on various land use densities and future discretionary project types to determine the size of projects that would likely have a less than cumulatively considerable contribution to climate change. The CAPCOA threshold was developed to ensure capture of 90% or more of likely future discretionary developments with the objective to set the emissions threshold low enough to capture a substantial percentage of future development while setting the emission threshold high enough to exclude small development projects that would be relatively small contributors to cumulative statewide GHG emissions.

CAPCOA's 900 MT CO₂e per year threshold was developed to meet the target identified by Assembly Bill (AB) 32 of reducing emissions to 1990 levels by year 2020. Subsequent to CAPCOA identifying the 900 MT CO₂e per year threshold, SB 32 was passed and set a revised statewide reduction target to reduce emissions to 40% below 1990 levels by year 2030. Though the CAPCOA threshold does not consider the reduction targets set by SB 32, the CAPCOA threshold was developed with an aggressive project-level GHG emission capture rate of 90%. Due to the aggressive GHG emission capture rate, the CAPCOA threshold has been determined to be a viable threshold to reduce project GHG emissions and meet SB 32 targets beyond 2020. Furthermore, more stringent state legislative requirements such as Building Energy Efficiency Standards and transportation-related efficiency measures will act to further reduce future project GHG emissions and help in meeting state emissions reduction targets. Projects that generate emissions beyond the 900 MT CO₂e per year screening level threshold are required to implement feasible on-site mitigation measures to reduce their impacts on climate change. Projects that meet or fall below CAPCOA's screening level threshold of 900 MT CO₂e per year of GHG emissions require no further analysis and are not required to implement mitigation measures to reduce GHG emissions. As such, the CAPCOA threshold of 900 MT CO₂e per year is used as a quantitative threshold for the analysis of impacts related to GHG emissions generated by the Project.

CalEEMod Version 2020.4.0 was used to calculate the annual GHG emissions based on the construction scenario described in Section 3.3, *Air Quality*. Construction of the Project is anticipated to commence in spring 2023 and would last approximately 6 months. On-site sources of GHG emissions include off-road equipment, and off-site sources include haul trucks, vendor trucks, and worker vehicles. Table 3.8-1 presents the GHG emissions resulting from construction of the Project. For further detail on the assumptions and results of this analysis, please refer to Appendix C, *Air Quality and Greenhouse Gas Emissions CalEEMod Output Files*.

Table 3.8-1 Estimated Annual Construction GHG Emissions

Construction Year	CO ₂	CH ₄	N ₂ O	CO ₂ e
	Metric Tons per Year			
2023	69.27	0.02	<0.01	70.04

Notes: GHG = greenhouse gas; CO₂ = carbon dioxide; CH₄ = methane; N₂O = nitrous oxide; CO₂e = carbon dioxide equivalent; <0.01 = value less than reported 0.01.
See Appendix C for complete results.

As shown in Table 3.8-1, the estimated total GHG emissions in 2023 would be approximately 70 MT CO₂e. Amortized over 30 years, construction GHG emissions would be approximately 2 MT CO₂e per year. In addition, as with Project-generated construction criteria air pollutant emissions, GHG emissions generated during proposed construction activities would be short term, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions.

Operational Emissions

As indicated in Section 3.3, Air Quality, once Project construction is complete, operations would entail a minimal increase in on-road vehicle trips associated with routine inspection and maintenance of the new facilities by TUD staff. Operational emissions associated with these on-road vehicles were estimated and are depicted in Table 3.8-2.

As depicted in Table 3.8-2, the minimal increase in on-road vehicle activity would result in a negligible increase in GHG emissions and would not exceed the CAPCOA threshold of 900 MT CO₂e per year. Therefore, this impact would be less than significant. It should also be noted that the new tank and pumps will consist of upgraded equipment and are anticipated to require fewer operations and maintenance trips than the existing White Fir Tank and pump station. Upon removal of the White Fir Tank and pump station, therefore, vehicle trips associated with operations and maintenance would be reduced from existing conditions resulting in a net decrease in operational emissions.

Table 3.8-2 Estimated Annual Operational GHG Emissions

Construction Year	CO ₂	CH ₄	N ₂ O	CO ₂ e
	Metric Tons per Year			
Mobile	1.56	<0.01	<0.01	1.60

Notes: GHG = greenhouse gas; CO₂ = carbon dioxide; CH₄ = methane; N₂O = nitrous oxide; CO₂e = carbon dioxide equivalent; <0.01 = value less than reported 0.01.
See Appendix C for complete results.

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

Less-than-Significant Impact. The Project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing GHG emissions. Applicable plans for the Project site include CARB's 2017 Scoping Plan, Senate Bill (SB) 32 and Executive Order (EO) S-3-05. Each of these plans is described below along with an analysis of the Project's potential to conflict with the related GHG emission reduction goals.

Project Consistency with CARB's Scoping Plan

The Scoping Plan (approved by CARB in 2008 and updated in 2014 and 2017) provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to specific projects, nor is it intended to be used for project-level evaluations.³ Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., Low Carbon Fuel Standard), among others. To the extent that these regulations are applicable to the Project, the Project would comply with all regulations adopted in furtherance of the Scoping Plan to the extent required by law.

Project Consistency with Senate Bill 32 and Executive Order S-3-05

The Project would not impede the attainment of the most recent state GHG reduction goals identified in SB 32 and EO S-3-05 and. SB 32 establishes a statewide goal of reducing GHG emissions to 40% below 1990 levels by 2030, while EO S-3-05 establishes a statewide goal of reducing GHG emissions to 80% below 1990 levels by 2050. While there are no established protocols or thresholds of significance for that future year analysis, CARB forecasts that compliance with the current Scoping Plan puts the state on a trajectory of meeting these long-term GHG goals, although the specific path to compliance is unknown (CARB 2014).

CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update to the Climate Change Scoping Plan that "California is on track to meet the near-term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32" (CARB 2014, p. ES2). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, the First Update to the Climate Change Scoping Plan states the following (CARB 2014, p. 34):

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

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

³ The Final Statement of Reasons for the amendments to the CEQA Guidelines reiterates the statement in the Initial Statement of Reasons that "[t]he Scoping Plan may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009).

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

As discussed previously, the Project's GHG emissions from construction and operations would be minimal and would not conflict with CARB's 2017 Scoping Plan and with the state's trajectory toward future GHG reductions. In September 2018, EO B-55-18 was signed which commits the state to total carbon neutrality by 2045. However, since the specific path to compliance for the state to achieve these long-term goals will likely require development of technology or other changes that are not currently known or available, specific additional reduction measures for the Project would be speculative and cannot be identified at this time. The Project's consistency with existing GHG reduction measures and policy would assist in meeting the County's contribution to GHG emission reduction targets in California.

With respect to future GHG targets under SB 32 and EO S-3-05, CARB has also made clear its legal interpretation is that it has the requisite authority to adopt whatever regulations are necessary, beyond the AB 32 horizon year of 2020, to meet SB 32's 40% reduction target by 2030 and EO S-3-05's 80% reduction target by 2050; this legal interpretation by an expert agency provides evidence that future regulations will be adopted to continue the state on its trajectory toward meeting these future GHG targets.

3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

Less-Than-Significant Impact with Mitigation Incorporated. Project-related transportation, use, and disposal of hazardous materials would be limited to common substances used to maintain and operate construction equipment (such as fuels and lubricants). Storage, handling, and transport of potentially hazardous materials would occur in compliance with applicable local, state, and federal regulations implemented to minimize risk of hazardous materials release. Project construction activities would involve the use of common hazardous materials used in construction, including bonding agents, paints and sealant coatings, and petroleum-based fuels, hydraulic fluids, and lubricants used in vehicles and equipment. Large quantities of these materials would not be stored at or transported to the construction site. All construction waste materials would be disposed of in compliance with state and federal hazardous waste requirements and at appropriate facilities. Inadvertent spills or releases of even small quantities of some of these materials could have adverse effects to habitat quality and groundwater or surface water quality and could result in undesirable Project impacts. mitigation measure **MM-HAZ-1**, therefore, requires specific measures for spill prevention and containment of hazardous materials on the Project site during construction. With implementation of mitigation measures and requirements identified above, impacts associated with transport, use, inadvertent release, or disposal of hazardous materials would be less than significant with mitigation incorporated.

MM-HAZ-1: The following measures shall be implemented prior to and during construction and shall be incorporated into Project plans and specifications.

- All equipment shall be inspected by the contractor for leaks prior to the start of construction and regularly throughout Project construction. Leaks from any equipment shall be contained and the leak remedied before the equipment is again used on the site.
- Best management practices for spill prevention shall be incorporated into Project plans and specifications and shall contain measures for secondary containment and safe handling procedures according to the Product Safety Data Sheets.
- A spill kit shall be maintained on site throughout all construction activities and shall contain appropriate items to absorb, contain, neutralize, or remove hazardous materials stored or used in large quantities during construction.
- Project plans and specifications shall identify construction staging areas and designated areas where equipment refueling, lubrication, and maintenance may occur. Areas designated for refueling, lubrication, and maintenance of equipment shall be approved by the District and shall be located away from any drainage or waterway.
- In the event of any spill or release of any chemical or wastewater during construction, the contractor shall immediately notify the District.
- Hazardous substances shall be handled in accordance with labeling, Product Safety Data Sheets and applicable codes.

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

Less-than-Significant Impact with Mitigation Incorporated. As discussed in response to Threshold 3.9(a), implementation of standard construction BMPs and mitigation measure **MM-HAZ-1** would minimize potential for accidental release of hazardous materials associated with the Project into the environment. Project BMPs would include spill prevention and control practices to reduce the potential impact of accidental spills during construction. Additionally, operation and maintenance of the Project would require the use of small quantities of potentially hazardous materials to maintain sufficient operation of the proposed pump station. The Project would comply with applicable local, state, and federal regulations implemented for the minimization of hazardous materials risk. Therefore, impacts related to the accidental release of hazardous materials would be less than significant with mitigation incorporated.

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

No Impact. The school nearest to the Project site is Twain Harte Long-Barn Union School (18995 Twain Harte Drive) which is located approximately 2.38 miles west of the Project site. Therefore, the Project is not located within 0.25 miles of a school and no impact would occur.

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

No Impact. According to the DTSC's EnviroStor database and the SWRCB's GeoTracker database, there are no active clean-up sites located within or near the Project site (DTSC 2022) (SWRCB 2022). Therefore, no impact would occur.

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

No Impact. The Project is not located within an airport land use plan or within two miles of a public use airport. The nearest airport is the Pine Mountain Lake Airport located approximately 14.4 miles south of the Project site. No impact related to hazards near airports would occur.

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

Less-than-Significant Impact. The Project would require the temporary partial closure of White Fir Drive and Live Oak Street during installation of the proposed piping. These roadways are primarily used by residents of the surrounding area and are not designated evacuation routes. In addition, the temporary partial closure of White Fir Drive and Live Oak Street would not prevent emergency access to the Project site or surrounding area. Emergency responders would use surrounding streets to access the Project site and surrounding area in the event of an emergency and emergency access to all residential parcels would be maintained throughout construction. Implementation of the Project does not require any amendments or revisions to the County's 2018 Multi-Jurisdictional Hazard Mitigation Plan and would not result in any interference of adopted emergency response or evacuations. Therefore, impacts would be less than significant.

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

Less-Than-Significant Impact with Mitigation Incorporated. Operation and maintenance of the Project would not substantially differ from existing practices and protocol of the existing White Fir Tank and pump station located within the Project site. Typical operation of a tank and pump station does not pose a substantial risk of fire ignition and all operations and maintenance work would be carried out in accordance with existing District procedures for fire safety and there would be no substantial increase in risk of fire hazard associated with Project operation. Therefore, Project operation would not increase exposure to a significant risk of loss, injury or death involving wildland fires. Impacts would be less than significant.

Project construction would be conducted in accordance with local and state regulations governing fire prevention and safety. Chapter 15.20.110 of the County's Ordinance Code, which adopts the California Fire Code (CFC). Chapter 33 of the CFC outlines general fire safety precautions during construction and demolition that are intended to maintain minimum levels of fire protection and limit the spread of fire (California Fire Code 2019). However, Project construction would temporarily introduce potential sources of fire ignition from equipment operation and other construction and demolition activities, which could temporarily increase the risk of wildfire ignition. According to the CalFire Fire Hazard Severity Zone (FHSZ) Viewer, the Project site is located within a Very High Fire Hazard Severity Zone within a State Responsibility

Area (CAL FIRE 2022) where wildfire ignition represents a potentially significant impact to the environment and surrounding development and residents. Mitigation measure **MM-HAZ.2** requires that project plans and specifications include a Fire Prevention Plan for construction activities. The Fire Prevention Plan would require that fire safe practices be followed, and that basic fire suppression equipment is maintained on site at all times to reduce the risk of fire associated with construction activities. Through compliance with existing codes and implementation of the Fire Prevention Plan as required by mitigation measure **MM-HAZ.2**, risks associated with an elevated risk of wildfire would be **less than significant with mitigation incorporated**.

MM-HAZ-2: To minimize the risk of accidental ignition of surrounding wildlands, plans and specifications shall include a Fire Prevention Plan. The construction contractor shall abide by the requirements of the Fire Prevention Plan throughout construction activities on the Project site. Measures may include but are not limited to fire suppression equipment requirements; guidelines for activities such as soldering, welding and blasting; designating a fire supervisor on site; rules for smoking onsite, requirements for parking and equipment and materials storage and storage areas; restrictions on certain activities during red flag conditions; and designating a fire patrol person as necessary during red flag conditions.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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;	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

Less-than-Significant Impact with Mitigation Incorporated. Construction activities resulting from Project implementation would disturb soils, which could increase siltation of nearby drainage ditches. As discussed in response to Threshold 3.7 (b), the Project would incorporate mitigation measure **MM-GEO-1**, which would require the preparation of an Erosion Control Plan to ensure appropriate measures are implemented to control erosion and protect water quality during Project construction and operation. Additionally, standard construction BMPs would be implemented during Project construction to prevent and control erosion and avoid sediment transport. Compliance with construction measures would ensure that the Project would not violate any water quality standards or waste discharge requirements set forth by the Central Valley RWQCB or result in the degradation of surface and groundwater quality. Therefore, with the implementation of mitigation measure **MM-GEO-1**, impacts would be less than significant.

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

Less-than-Significant Impact. The Project site is within the TUD water service boundary. The Project would include the construction of the proposed storage tank, pump station and water mains, with water supply provided by TUD facilities from existing permitted water sources. Implementation of the Project would not result in the use of groundwater and, therefore, would not decrease or interfere with existing groundwater or sustainable groundwater management. The Project would include a driveway to the site and around the proposed storage tank to provide maintenance access. The rest of the site would remain undeveloped and would allow for water infiltration within the Project area. Project implementation would not introduce a substantial amount of impervious surfaces or result in a substantial change to existing drainage patterns or watercourses in the Project vicinity and the site is within an existing area of residential development and is not identified for groundwater recharge purposes. Additional impervious surfaces resulting from the Project would have no impact to groundwater supplies and no substantial effect related to interference with groundwater recharge. It is also noted that the Project includes removing the White Fir Tank and pump

station and restoration of that site to a naturalized condition that would remove existing impervious surfaces. Impacts would be less than significant.

- c) ***Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:***

- i) ***Result in substantial erosion or siltation on- or off-site?***

Less-than-Significant Impact with Mitigation Incorporated. Because the location of the proposed pump storage tank and pump station are currently vacant, surface runoff occurs naturally. Implementation of the Project would result in new impervious surfaces at the site, including the proposed pump storage tank and pump station, and the proposed driveway. Construction would include land clearing, grading/excavation, foundation pouring, and building construction. Implementation of a Project-specific Erosion Control Plan (MM-GEO-1) would ensure erosion is minimized during construction and the Project would result in no substantial alteration of drainage pattern within the Project site or Project area that would result in substantial erosion or siltation. Therefore, impacts would be less than significant with the incorporation of mitigation measure **MM-GEO-1**.

- ii) ***Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?***

Less-than-Significant Impact. As discussed in response to Threshold 3.10(c)(ii), implementation of the Project would result in new impervious surfaces within the Project site associated with the tank, pump station structure and parking areas. While these facilities on the TUD-owned parcel would not result in a substantial increase in stormwater runoff, the facility would be designed to in accordance with the California Stormwater Quality Association's Stormwater Best Management Practices Handbook and the Tuolumne County Water Quality Manual, which would ensure that stormwater is controlled onsite and runoff to adjacent properties does not increase over existing conditions. The Project also includes removing the existing White Fir Tank and pump station, which would eliminate the impervious surfaces associated with that facility and associated increased runoff. Because the Project would result in negligible increases in surface runoff, impacts would be less than significant.

- iii) ***Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?***

Less-than-Significant Impact. As discussed in response to Threshold 3.10(c)(ii), implementation of the Project would result in new impermeable surfaces within the Project area. Operation of the Project would not substantially create or contribute to an increase in stormwater runoff. Existing stormwater infrastructure serving the Project area, would be sufficient in collecting and conveying any surface runoff during Project operation. Further, as discussed in Section 3.10, Hazards and Hazardous Materials, the likelihood of polluted runoff would be minimal as construction and operation of the Project would adhere to applicable laws, regulations, and protocols related to worker, user, and public safety. Impacts would be less than significant.

iv) Impede or redirect flood flows?

No Impact. According to Federal Emergency Management Agency (FEMA) flood maps, the Project is not located within a designated high risk or special flood hazard area (FEMA 2022). Implementation of the Project would not impede or redirect flood flows. Therefore, no impact would occur.

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

No Impact. As discussed above, the Project site is not located within a designated flood hazard area (FEMA 2022). Additionally, the Project site is not located within a tsunami inundation zone and seiches do not pose a hazard to the Project site (DOC 2022c). During construction the Project would implement BMPs to ensure flows from the project site would not release pollutants into downstream receiving waters. Upon completion of construction, the Project would not require the storage of pollutants that, in the event of inundation, could be released. Therefore, no impacts would result associated with the risk of releasing pollutants within a flood hazard, tsunami, or seiche zone due to Project inundation.

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

Less-than-Significant Impact. A Water Quality Plan was prepared for the County in 2007. Construction and operation of the Project would not interfere with implementation of the plan and the Project would comply with applicable permits and construction measures that would ensure that the Project would not violate any water quality standards. Therefore, this impact would be less than significant

3.11 Land Use and Planning

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. LAND USE AND PLANNING – Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The Project site is surrounded by rural residential development and undeveloped mixed conifer forest within the unincorporated community of Sugarpine.

a) **Would the project physically divide an established community?**

No Impact. The physical division of an established community typically refers to the construction of a linear feature (such as a major highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community or between a community and outlying area. During construction, the Project would require the temporary partial closures of White Fir Drive and Live Oak Street to install the required water mains. Upon completion of construction these roadways would be return to service as under existing conditions. Additionally, closure of these roadways would only impact a limited number of nearby residents. Thus, the temporary partial closures of White Fir Drive and Live Oak Street would not physical divide a community. The Project includes no barrier or other component that would act to physically divide an established community and no impacts would occur.

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

No Impact. The Project entails the construction of the proposed storage tank and pump station and the demolition of the existing White Fir Tank and pump station. Operation and maintenance of the Project would not substantially differ from existing practices and protocol of the existing White Fir Tank and pump station and would not require a change in zoning or land use designations applicable to the Project site. Furthermore, according to Government Code Section 53091 (d) and (e), zoning ordinances do not apply to water infrastructure, including the Project. Compliance with plans, policies and regulations with the purpose of avoiding or mitigating environmental effects is discussed and evaluated throughout this Initial Study. Project implementation would not be in conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. No environmental impacts would occur as a result of conflict with plans, policies or regulations adopted to avoid or mitigate an environmental effect.

3.12 Mineral Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES – Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

And

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

No Impact a) – b). The Project site is located within a Mineral Resource Zone (MRZ) 2b (DOC 2022d). Areas with an MRZ-2b designation are areas with significant inferred mineral resources (DOC 2022d). Despite this designation, the Project site is mostly surrounded by existing residential development, and the site is not zoned or designated for commercial mineral extraction and no mineral extraction activities currently occur on the Project site and the site is not a suitable location for mining since it is adjacent to residential uses. No impact would occur.

3.13 Noise

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. NOISE – Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting and Background

Noise sources in the Project site area are typical of residential areas and include vehicle operation, landscaping equipment, construction activities and other sources typical of rural residential settings. Noise-sensitive land uses in the vicinity of the Project site are limited to residential uses.

Tuolumne County General Plan Policy 5.A.5 requires “that construction activity and temporary construction impacts do not expose existing noise-sensitive land uses to excessive noise levels. Require all new construction activities to implement all feasible noise-reducing measures as necessary to limit construction noise exposure...” Policy 5.A.g requires that “equipment and trucks used for Project construction utilize the best available noise control techniques.” Tuolumne County does not have a noise ordinance that specifies thresholds for acceptable noise limits. However, it should be noted that it is common for city and county codes to exempt temporary construction noise generated during normal daylight hours from identified noise standards that apply to non-construction activities.

Noise and Vibration Characteristics

Noise

Noise is defined as unwanted sound. Sound may be described in terms of level or amplitude (measured in decibels [dB]), frequency or pitch (measured in hertz [hz] or cycles per second), and duration (measured in seconds or minutes). The standard unit of measurement of the amplitude of sound is the decibel. Because the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale is used to relate noise to human sensitivity. The A-weighted dB (dBA) scale performs this compensation by discriminating against low and very high frequencies in a manner approximating the sensitivity of the human ear. Several descriptors of noise (noise metrics) exist to help predict average community reactions to the adverse effects of environmental noise, including traffic-generated noise, on a community. These descriptors include the energy-equivalent noise level over a given period (L_{eq}), the statistical sound level (L_{xx} , where “xx” is a cumulative percentage of time within the measurement period for which the indicated level is exceeded), the day–night average noise level (L_{dn}), and the CNEL. Table 3.13-1 provides examples of A-weighted noise levels from common sounds. In general, human sound perception is such that a change in sound level of 3 dB is barely noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level.

Table 3.13-1. Typical Sound Levels in the Environment and Industry

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

Source: Caltrans 2013

Note: dBA = A-weighted decibel.

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

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

Vibration

Vibration is an oscillatory motion through a solid medium in which the motion’s amplitude can be described in terms of displacement, velocity, or acceleration. Vibration can be a serious concern, causing buildings to shake and rumbling sounds to be heard. In contrast to noise, vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of vibration are trains, buses on rough roads, and construction activities, such as blasting, pile driving, base compaction, and heavy earthmoving equipment.

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

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

Sensitive Receptors

Noise- and vibration-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. According to the County’s General Plan, residences, schools, hospitals, guest lodging, churches, and some passive recreation areas would typically be considered noise and vibration sensitive and may warrant unique measures for protection from intruding noise (Tuolumne County 2018). Sensitive receptors in the vicinity of the Project site include residential single-family homes located between Sugarpine Road and White Fir Drive North. These sensitive receptors represent the nearest sensitive land uses with the potential to be impacted by construction of the Project.

Applicable Noise Regulations and Standards

Local

County of Tuolumne General Plan Noise Element

Tuolumne County's current (2018) Noise Element establishes noise standards for the range of uses present in and around the County. These standards are used to determine whether proposed new development in the County requires mitigation to avoid potential land use conflicts. Land use categories where a quiet environment is particularly desirable include residential, transient lodging (e.g., hotels, motels, and RV parks), and noise-sensitive institutional uses (e.g., hospitals, school, nursing homes, churches, and libraries). The County of Tuolumne General Plan prescribes noise standards for interior and exterior noise, as well as maximum residential/non-residential noise levels. Refer to Table 3.13-2 for a summary of County noise standards.

Table 3.13-2 MAXIMUM ALLOWABLE NOISE EXPOSURE-STATIONARY NOISE SOURCES¹

	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly L_{eq} , dB ²	50	45
Maximum level, (L_{max}) dB ³	70	65

Source: County of Tuolumne General Plan

¹This table applies to noise exposure as a result of stationary noise sources. For a development project or land use change involving a noise-sensitive land use, the noise from nearby noise sources will be considered during design and approval of the project, or in determining whether the land use change is appropriate. For development projects which may produce noise, land use changes and project review will consider the effects of the noise on possible noise-sensitive land uses. When considering modification or expansion at a site that already produces noise levels which exceed these standards at noise-sensitive land uses, the modification or expansion shall be reviewed to consider if the proposed action will further raise the existing noise levels received at the noise-sensitive land use(s). Noise-sensitive land uses include urban residential land uses, libraries, churches, and hospitals, in addition to nursing homes or schools which have over 6 beds or students, respectively. Transient lodging establishments which are considered noise sensitive land uses include hotels, motels, or homeless shelters, but not bed and breakfast establishments located in rural areas, campgrounds, or guest ranches.

²The sound equivalent level as measured or modeled for a one-hour sample period. The daytime or nighttime value should not be exceeded as determined at the property line of the noise-sensitive land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers or other property line noise mitigation measures.

³Similar to the hourly L_{eq} , except this level should not be exceeded for any length of time

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

Less than Significant Impact.

Construction

Construction activities would result in short-term noise. Construction activities would consist of demolition of the existing tank, grading and site preparation, paving activities, and building construction, all of which require the use of heavy-duty equipment that generate varying noise levels. Construction activities would be limited to the less noise-sensitive hours (e.g., daytime) of 7:00 a.m. to 7:00 p.m., Monday through Saturday.

Construction-generated noise levels would fluctuate depending on the type, number, and duration of equipment used. The effects of construction noise largely depend on the type of construction activities occurring on any given day, noise levels generated by those activities, distances to noise -sensitive receptors, and the existing ambient noise environment at nearby receptors. Construction equipment would vary by phase, but the entire construction process would include operation of light trucks, chainsaws, an excavator, backhoe, haul trucks and trailers, a tampering compactor, concrete pump, crane, grinders, welders, sandblasting machine, and other standard construction equipment. Noise generated from these pieces of equipment would be intermittent and short-term as typical use is characterized by periods of full-power operation followed by extended periods of operation at lower power, idling, or powered-off conditions.

The grading and site preparation phase typically generates the most substantial noise levels because of the onsite equipment associated with grading, compacting, and excavation typically generate the highest noise levels. Site preparation equipment and activities would include an excavator, a backhoe and chainsaws. Because this is typically the loudest phase, it was assumed that one excavator, one backhoe, and one chainsaw could be operating simultaneously, generating the loudest anticipated noise levels for the overall construction activities. Noise emission levels from these types of construction equipment are shown in Table 3.13-3.

Table 3.13-3: Noise Levels Generated by Typical Construction Equipment

Equipment Type	Maximum Noise Level (dB L _{max}) at 50 feet ¹	Typical Noise Level (dB L _{eq}) at 50 feet ^{1,2}
Excavator	81	77
Backhoe	78	74
Chainsaw	90	83
Combined Noise Level at 50 feet	90.8	84.3

Notes: dB= decibels; L_{max} = maximum sound level; L_{eq} = equivalent continuous sound level

¹ Assumes all equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications.

Noise levels listed are manufacture-specified noise levels for each piece of heavy construction equipment.

² Assumes typical usage factors.

Source: Federal Transit Administration 2018

Based on the reference noise levels listed in Table 3.13-3 and accounting for typical usage factors for each piece of equipment, onsite construction activities could generate a combined average noise level of approximately 84 dB L_{eq} and 91 dB L_{max} at 50 feet from the Project site boundary.

Sandblasting activities anticipated to be included with the Project have also been identified as a Project activity with potential to generate elevated noise levels in the Project area. Dudek performed noise level monitoring at a recent tank repair and refinishing project to characterize the noise sources associated with the sandblasting activities. Sandblasting activities were found to include noise sources such as an air compressor, a generator, a pressure pot, a dehumidifier, a forklift for material handling, and the noise from the blasting media impacting the tank. Sound levels recorded from individual pieces of equipment used in the sandblasting activities ranged from approximately 63 to 73 dBA L_{eq}, with maximum levels reaching 83 dBA L_{max}. The combined noise level from all equipment associated with the sandblasting would result in approximately 76 dBA L_{eq} and 83 dBA L_{max} at a distance of 50 feet. Sandblasting would occur over a period of up to five days, would be conducted during normal daylight hours, and would not occur concurrently with grading activities.

Tuolumne County does not have adopted daytime construction noise standards. However, when evaluating potential noise impacts, temporary short-term noise occurring during the less sensitive times of the day, when people are active, out of their homes, or otherwise not sleeping, are generally considered less of a nuisance and less likely to disrupt sleep, or otherwise result in adverse effects from noise exposure. Since construction activities would occur during daytime hours in accordance with typical County-required conditions of approval limiting construction activities to Monday through Saturdays from 7:00 a.m. to 7:00 p.m., overall construction activities would be temporary and construction noise levels would vary widely depending on the specific activities occurring, and the highest noise levels would occur over a short duration during grading and sandblasting phases, it is anticipated that existing nearby sensitive receptors would not be substantially adversely affected. Therefore, short-term construction impacts are expected to be typical of smaller and shorter-term construction projects that could be expected to occur in association with residential construction or associated utilities and that impacts from noise would be **less than significant**.

Operation

As discussed in Section 2, Project Description, once Project construction is complete, facility operations and maintenance would be similar to that of the existing White Fir Tank and pump station located within the Project site. It is anticipated that a TUD operator or operations and maintenance staff will perform maintenance checks on the pump station and tank site approximately twice per week and that these maintenance visits would be combined with visits to the White Fir Tank until the White Fir Tank is taken offline and removed. Implementation of the Project is intended to improve system reliability, relocate critical infrastructure away from existing residential uses, and provide a greater margin of excess capacity to serve existing users and planned buildout within TUD's service area.

These added Project trips would not result in a noticeable increase in traffic noise. Noise generated by operation of the proposed Project would be less than significant

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

Less than Significant Impact. Caltrans has collected groundborne vibration information related to construction activities (Caltrans 2020). Information from Caltrans indicates that continuous vibrations with a PPV of approximately 0.2 ips is considered "annoying." For context, heavier pieces of construction equipment, such as a bulldozer that may be expected on the Project site, have peak particle velocities of approximately 0.089 ips or less at a reference distance of 25 feet (Caltrans 2020).

Groundborne vibration attenuates rapidly—even over short distances. And when groundborne vibration encounters a building foundation, a coupling loss occurs depending on the mass and design. For typical wood-framed houses, like those near the proposed Project, this coupling loss is 5 vibration velocity decibels according to FTA guidance (FTA 2018). The attenuation of groundborne vibration as it propagates from source to receptor through intervening soils and rock strata can be estimated with expressions found in FTA and Caltrans guidance. By way of example, for a backhoe operating on site and as close as the western Project boundary (that is 20 feet from the nearest receiving sensitive land use) the estimated vibration velocity level would be 0.11 ips and thus less than the annoyance threshold recommended by Caltrans. Therefore, vibration-induced annoyance to occupants of nearby existing homes would be less than significant.

Construction vibration, at sufficiently high levels, can also present a building damage risk. However, anticipated construction vibration from conventional heavy equipment associated with this proposed Project would not yield

levels that surpass this risk. Per Caltrans, the recommended PPV threshold for newer residential structures is 0.5 ips and 0.3 ips for older residential structures—both of which are less stringent than the aforementioned threshold to annoy occupants of such structures; thus vibration damage risk to nearby structures is considered less than significant.

Once operational, the proposed Project would not generate noticeable groundborne vibration. Anticipated mechanical systems like pumps, ventilation, and air-conditioning units are designed and manufactured to include rotating (fans, motors) and reciprocating (compressors) components that are well-balanced with isolated vibration within or external to the equipment casings. On this basis, vibration due to proposed Project operation 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 near an airport or private airstrip. Therefore, there would be no impact from exposure of people residing or working in the Project area to excessive noise levels from airports or airstrips.

3.14 Population and Housing

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

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

Less-than-Significant Impact. The Project would include the construction of a storage tank and pump station and distribution pipeline on an approximately 1.44-acre Project site. The proposed 400,000-gallon storage tank would replace the storage capacity of the existing White Fir Tank (210,000 gallons) and Zone 3 Tank (125,000 gallons). The purpose of the Project is to improve system reliability and is not intended to allow for new development within the County. The Project would not include the construction of new residential uses, businesses, roads, or other infrastructure that may result in an increase in unplanned

population. As such, the Project would not induce substantial unplanned population growth; impacts would be less than significant.

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

No Impact. The Project site includes a 0.5-acre TUD-owned parcel, the existing White Fir Tank and pump station, and existing roadways. The Project would not affect any existing housing or necessitate construction of replacement housing in the area. Therefore, implementation of the Project would result in no impacts associated with displacement of people or housing.

3.15 Public Services

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

Fire protection? Police protection? Schools? Parks? Other public facilities?

No Impact. As discussed in Section 3.14, Population and Housing, the Project would not induce population growth in the area. Therefore, the Project would not result in an increase in demand of public services and facilities. Operation and maintenance of the Project would not substantially differ from existing practices and protocol of the existing White Fir Tank and pump station. As such, implementation of the Project would not require new or physically altered facilities associated with fire protection, police protection, schools, parks, or other public facilities. Therefore, no impacts would occur.

3.16 Recreation

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

No Impact. The Project would not result in the construction of new homes, businesses, or recreational facilities. As such, implementation of the Project would not induce any population growth or increase the use of existing parks and recreational facilities. Therefore, no impacts to recreational facilities would occur.

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

No Impact. The Project does not include or require the construction or expansion of recreational facilities. Therefore, no impacts would occur.

3.17 Transportation

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION – Would the project:				
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

Less-than-Significant Impact. As discussed in Section 3.9, Hazards and Hazardous Materials, partial closure of White Fir Drive and Live Oak Street would be required to install distribution pipelines in the paved road section. The Project site is located in a rural area with low traffic volumes and without dedicated bicycle or formal pedestrian facilities. The nearest transit facility in a bus stop along SR 108, approximately 0.44 miles north of the Project site. Project implementation, including the temporary roadway closures, would not conflict with operation of the bus stop or impede use of bicycle or pedestrian facilities. Access for bicycles and pedestrians would be maintained around the work area throughout Project construction on neighborhood streets. As such, the Project would not impede access, plans, programs, or policies related to these facilities. Operation and maintenance of the Project would not substantially differ from existing practices and protocol of the existing White Fir Tank and pump station; thus, the Project would not result in an increase in permanent traffic. Impacts would be less than significant.

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

Less-than-Significant Impact. The Project is not a land use or transportation project, and therefore neither Section 15064.3(b)(1) nor Section 15064.3(b)(2) of the CEQA Guidelines apply. Instead, the Project would be categorized under Section 15064.3(b)(3) qualitative analysis. The updated CEQA Guidelines do not establish a significance threshold, however, recommend a threshold of significance for land use development (residential, office, and other land uses) and transportation projects. It should be noted that there is no significance threshold for construction or maintenance projects.

The Project would involve construction that would generate temporary construction related traffic over 3-months of construction in a 6-month period and would thus be categorized under Section 15064.3(b)(3), qualitative analysis. Section 15064.3(b)(3) recognizes that lead agencies may not be able to quantitatively estimate VMT for every project type. For many projects, a qualitative analysis of construction traffic may be appropriate. This is because construction related trips are temporary and would not generate permanent trips. Per OPR, heavy vehicle traffic is not required to be included in the estimation of a project's VMT. Even though worker and vendor trips would generate VMT, but once construction is completed, the construction-related traffic would cease and would return to pre-construction conditions. Measures to reduce the VMT generated by workers and trucks are limited, and there are no thresholds or significance criteria for temporary, construction related VMT. Construction would result in approximately 20 truck trips for off hauling throughout the construction period and approximately 20 truck trips may be required for delivery

of material over a 6-month period. The increase in VMT associated with Project construction would be temporary and would therefore not cause a significant impact.

Once completed, the operation and maintenance of the Project can be considered a “small project” per the OPR technical advisory given that it would not generate greater than 110 daily trips and would therefore be presumed to have a less than significant impact. Operation and maintenance of the Project would not substantially differ from existing practices and protocol of the White Fir Tank and pump station located within the Project site. As such, the Project is not anticipated to result in an increase in routine maintenance trips.

Therefore, the Project would not conflict or be inconsistent with CEQA Guidelines Sections 15064.3(b)(1) and 15064.3(b)(3), and impacts would be less than significant.

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

No Impact. The Project would not include any new public roadway design features, nor would it alter roadway geometry. During construction, all truck drivers would adhere to California Vehicle Code regulations pertaining to licensing, size, weight, and load of vehicles operated on highways and local roads; safe operation of vehicles; and the transport of any hazardous materials. As such, Project-related construction traffic would not increase hazards due to incompatible uses.

The Project does not entail constructing new public roads or realigning existing roads, so the Project would not increase traffic hazards due to geometric design features. The Project includes a new access driveway at the end of White Fir Drive to serve the new tank and pump station. The driveway and access would be used approximately twice a week and would be designed in accordance with Tuolumne County standards to provide safe ingress and egress; no roadway design or geometry issues have been identified. Therefore, impacts associated with hazards due to geometric design features or incompatible uses would not occur.

d) *Would the project result in inadequate emergency access?*

Less-than-Significant Impact. The Project would generate temporary construction traffic, which would cease upon completion of construction. Project construction would obey all traffic laws and maintain access to private property. During construction, the Project would require the temporary partial closure of portions of White Fir Drive and Live Oak Street. The temporary partial closures of these roadways would not substantially impair emergency access to the Project site or surrounding area. Use of White Fir Drive and Live Oak Street would return to existing conditions upon completion of construction. Thus, implementation of the Project would not result in inadequate emergency access and impacts would be less than significant.

3.18 Tribal Cultural Resources

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

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- a) *Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?*
- b) *A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.*

The presence of tribal cultural resources (TCRs) is generally identified by California Native American Tribes through the process of consultation. Under AB 52, a TCR must have tangible, geographically defined properties that could be impacted by implementation of a project. To initiate formal consultation under AB 52 a California Native American Tribe is required to provide a written request to be notified of any projects that require consultation under AB 52. To date, TUD has received no written requests from a California Native American Tribe for notification under AB 52.

In coordination with TUD, Dudek requested a NAHC search of their Sacred Lands File on May 13, 2022 for the Project site. The results of NAHC's search of the Sacred Lands File, received July 8, 2022, identified no cultural resources within the records search area. The NAHC provided a list of Native American tribes culturally affiliated with the location of the Project site and recommended contacting them for further information. On July 8, 2022, TUD provided formal notification to all groups listed on the NAHC Sacred Lands File search that are traditionally or culturally affiliated with the geographic area of the Project. To date, no responses to the notification have been received by TUD.

An analysis of the potential impacts of the proposed Project to cultural resources identified during field surveys, records and databases searches, and consultation with Native American tribal representatives is provided in Section 3.5(b) of this IS/MND. As discussed in Section 3.5(b), the cultural resources study prepared by Dudek concluded there is a low likelihood that construction ground disturbance would encounter cultural deposits. However, in the unlikely event that construction encounters unanticipated archaeological resources, mitigation measure **MM-CUL-1** would be implemented. Mitigation measure **MM-CUL-1** requires that construction be halted if archaeological materials are encountered to allow for evaluation of the find by a qualified archaeologist who will make recommendations for appropriate treatment and additional study. It is anticipated that impacts to Tribal Cultural Resources would be **less than significant with mitigation incorporated**.

3.19 Utilities and Service Systems

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS – Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

Less-than-Significant Impact. The Project would remove the White Fir Tank and pump station and construct a new storage tank and pump station to improve water system reliability and replace storage capacity lost with the Zone 3 tank failure. The proposed storage tank would have a capacity of 400,000 gallons and would replace the storage capacity of the existing White Fir Tank (210,000 gallons) and Zone 3 Tank (125,000 gallons). The proposed pump station would be electrically powered, thus requiring an additional connection to PG&E's distribution facilities, which currently serve the Project site. Additionally, the Project would require the installation of the proposed water mains to connect the proposed storage tank and pump station to existing TUD water mains. Connection to these existing facilities would be sufficient for providing power and water to the Project and would not require any other relocation or construction of electrical power, natural gas, or telecommunications facilities.

The overall impacts of Project construction and operation are discussed throughout this MND and are not anticipated to result in significant environmental effects with incorporation of mitigation measures. Operation of the Project would not substantially differ from existing practices or protocols for the White Fir Tank and pump station located on the Project site. Impacts would be less than significant.

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

No Impact. The Project is proposed to ensure adequate water storage capacity to serve existing service connections, replace storage capacity lost with failure of TUD's Zone 3 tank, and to improve operational flexibility. Other than minimal water required for construction purposes, the Project would not result in any water consumption and existing water supplies are adequate to serve operational needs of the Project. No impacts would result from the Project's use of water.

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

No Impact. The Project includes the construction of the proposed storage tank and pump station, and the installation of water mains to connect to TUD's existing water mains within Sugarpine Road. Operation of the Project would provide reliable water storage capacity for the community and replace capacity lost with failure of TUD's Zone 3 tank. As such, the Project would result in no increase in wastewater generation or wastewater treatment capacity. No impacts would occur.

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

No Impact. During construction, the Project would generate typical solid construction waste, such as packaging waste materials, asphalt and concrete waste, form lumber, and soils. Additionally, the Project would include removal and disposal of the existing White Fir tank. Construction-generated solid waste would be temporary and would cease once construction is completed. Solid waste generated by Project construction would be properly disposed of at designated landfill facilities with permitted capacity to accept construction waste. Operation of the Project would not generate any additional solid waste compared to existing conditions. The Project would be served by the Highway 59 Landfill (7040 N. Highway 59 Merced, CA 95348), approximately 48.5 miles southwest of the Project site, which has a remaining capacity of 28,025,334 tons (CalRecycle 2022). As such, solid waste generated by the Project would not exceed State or local standards, or the capacity of local infrastructure. No impact.

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

No Impact. As discussed in response to Threshold 3.19(d), construction-generated solid waste would be temporary, and operation of the Project would not generate solid waste beyond existing conditions. Solid waste generated by the Project would be disposed of at designated landfill facilities in compliance with federal, state, and local regulation. No impact.

3.20 Wildfire

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XX. WILDFIRE – If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

Less-than-Significant Impact. As discussed in Section 3.9, Hazards and Hazardous Materials, the Project site is located within a VHFHSZ within an SRA (CAL FIRE 2022). In 2018, the County prepared the Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP), which identifies plans, programs, and mitigation measures to minimize impacts of identified hazards. The MJHMP is a document that contains information to assist in planning for the occurrence of natural and man-made hazards; it contains strategies to help mitigate the impact of these hazards (Tuolumne County 2018). The Project would include the installation of the proposed water mains within a portion of White Fir Drive and Live Oak Street, which would require the partial temporary closure of these roadways. The temporary partial closure would not substantially impair emergency access during construction. Additionally, these roadways are primarily used by residents of the surrounding area and are not designated evacuation routes. Upon completion of construction, use of White Fir Drive and Live Oak Street would resume similar to existing conditions. Therefore, impacts would be less than significant.

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

No Impact. Construction of the Project would comply with Chapter 15.20.110 of the County's Ordinance Code, which adopts the California Fire Code (CFC). Chapter 33 of the CFC outlines general fire safety precautions during construction and demolition that are intended to maintain minimum levels of fire protection and limit the spread of fire (California Fire Code 2019). The Project would not include structures intended for long-term occupancy. The Project site is generally flat and is characterized by natural vegetation including conifer forest and associated understory shrubs and herbaceous vegetation. In the event of a wildfire, vegetation on the Project site could ignite and contribute to fire spread, but neither the location of the Project site or any components of the Project would contribute to heightened fire risk. No impact. Please also refer to the discussion provided under Threshold 3.9(g).

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

Less-than-Significant Impact. As discussed in response to Threshold 3.20(a), the Project would include the installation of proposed water mains within White Fir Drive and Live Oak Street. Additionally, following

construction, permanent paving and hot mix asphalt would be completed within the affected portions of White Fir Drive and Live Oak Street. Construction would comply with CFC requirements to manage and minimize fire risk during construction. The new tank and pump station would be operated and maintained by TUD consistent with the District's fire-safe operational practices and would not be expected to increase risk of wildfire ignition. As such, Project construction and maintenance are not expected to exacerbate fire risk and impacts would be less than significant.

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

Less-Than-Significant Impact. For reasons described previously in responses to Thresholds 3.9(g), and 3.20(a), (b), and (c), the Project would not contribute to a substantial risk of wildfire. The Project would be located on relatively flat land and is not susceptible to landslides or slope instability and includes no defined drainage features and would not be expected to represent or contribute to a substantial risk of post-fire slope instability or mass debris flows, drainage changes or flooding within onsite or offsite areas. The Project does not include habitable structures or other structural development intended for human occupancy. As such, implementation of the Project would not expose people or structures to significant risks from post-fire slope instability or drainage changes. Impacts would be less than significant.

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XXI. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

Less than Significant with Mitigation Incorporated. Potential impacts related to nesting birds and bats are discussed in Section 3.4, Biological Resources. As discussed in Section 3.4, all potentially significant impacts to biological resources would be reduced to a level below significance with incorporation of mitigation measures (**MM-BIO-1** and **MM-BIO-2**). The Project would not substantially degrade the quality of the environment, impact fish or wildlife species, or plant communities. As discussed in Section 3.5, Cultural Resources, potential impacts to archaeological resources would be reduced to a level below significance with incorporation of **MM-CUL-1**. The Project would not eliminate important examples of the major periods of California history or prehistory. Overall, Impacts would be less than significant with incorporation of mitigation measures.

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

Less than Significant with Mitigation Incorporated. Given the nature of the Project, potential cumulative impacts could occur during the temporary construction work if other projects occur in the same timeframe and area. Project construction would occur within an undeveloped 0.5-acre parcel within Tuolumne County in a rural residential area and no other substantial projects are known from the same area. The Project would replace the failed Zone 3 tank and capacity from the White Fir Tank which would be removed at a future date. Mitigation measures are incorporated to reduce Project impacts and would reduce the Project's contribution to cumulative impacts to less than significant.

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

Less than Significant. The potential for adverse direct or indirect impacts to human beings was considered throughout Chapter 3 of this Initial Study. Based on this evaluation, there is no substantial evidence that construction or operation of the Project would result in a substantial adverse effect on human beings. Impacts would be less than significant.

4 References and Preparers

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4.2 List of Preparers

Tuolumne Utilities District

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Nicholas Hanten – Archaeologist

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Appendix A

Mitigation, Monitoring, and Reporting Program

Mitigation, Monitoring, and Reporting Program

Zone 4 Tank and Pump Station Project

Initial Study and Mitigated Negative Declaration

OCTOBER 2022

Prepared for:

TUOLUMNE UTILITIES DISTRICT

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Sonora, California 95370

Contact: Elizabeth Merchant-Wells, E.I.T., Assistant Engineer

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DUDEK

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The California Environmental Quality Act (CEQA) requires that public agencies adopting a Mitigated Negative Declaration (MND) take affirmative steps to determine that approved mitigation measures and project design features are implemented subsequent to project approval. The lead or responsible agency must adopt a monitoring and reporting program for the mitigation measures incorporated into a project or included as conditions of approval. The program must be designed to ensure compliance with the MND during project implementation (Public Resources Code, Section 20181.6; CEQA Guidelines, Section 15074(d)).

This Mitigation, Monitoring, and Reporting Program (MMRP) will be used by the Tuolumne Utilities District (TUD) to track compliance with adopted mitigation measures associated with the implementation of the proposed Zone 4 Tank and Pump Station Project (Project). The TUD, as Lead Agency pursuant to CEQA, will ensure that all design features and mitigation measures identified for the Project are carried out in accordance with the adopted MMRP.

This MMRP consists of a checklist (Table 1) that identifies the mitigation measures, organized by environmental impact category discussed in the MND. The table identifies the mitigation monitoring and reporting requirements, including the timing of verification (prior to, during, or after construction) and the party responsible for implementing the measure. Space is provided for sign-off following completion/implementation of the design feature or mitigation measure. The responsible parties listed in Table 1 include the TUD, and the contractor who will be hired by the TUD to construct the Project. These references in the table indicate the party responsible for implementing the respective measures, but the TUD will ultimately be responsible for verifying compliance with each measure listed in the table.

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Table 1. Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Measure	Timing of Verification			Responsible Party	Completed		Comments
		Pre Const	During Const	Post Const		Initials	Date	
Biological Resources								
MM-BIO-1	<p>If avoidance of nesting birds is not feasible and construction would occur during the nesting season (February through August), the following measures shall be implemented to avoid or minimize impacts to nesting birds:</p> <ul style="list-style-type: none">• A qualified biologist shall conduct a pre-construction survey for nesting birds no more than 14 days prior to vegetation or structure removal or ground-disturbing activities conducted during the nesting season (February through August). The survey shall cover the limits of construction and suitable nesting habitat within 500 feet of the Project site for raptors and 100 feet for other nesting birds, as feasible and accessible.• If any active nests are observed during surveys, a qualified biologist shall establish a suitable avoidance buffer from the active nest. The buffer distance will typically range from 50 to 500 feet and shall be determined based on factors such as the species of bird, topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule. Limits of construction to avoid active nests shall be established in the field with flagging, fencing, or other appropriate barriers and shall be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist.• If vegetation removal activities are delayed, additional nest surveys shall be conducted such that no more than 7 days elapse between the prior survey and vegetation removal activities.• If an active nest is identified in or adjacent to the construction limits after construction has started, work in the vicinity of the nest shall be halted until the qualified biologist can provide appropriate avoidance and minimization measures to ensure that the nest is not disturbed by construction. Appropriate measures may include a no-disturbance buffer until the birds have fledged and/or full-time monitoring by a qualified biologist during construction activities conducted near the nest.	X	X		Tuolumne Utilities District Qualified biologist			

Table 1. Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Measure	Timing of Verification			Responsible Party	Completed		Comments
		Pre Const	During Const	Post Const		Initials	Date	
MM-BIO-2	<p>To avoid or minimize the potential for take of roosting bats, the following shall be implemented:</p> <ul style="list-style-type: none">• A qualified biologist shall conduct a habitat assessment for roosting bats within the project site. The habitat assessment shall include a visual inspection of potential roosting features (bats need not be present) and presence of guano within the project site, access routes, and 50 feet around these areas. The biologist shall survey these areas between 30 and 120 days prior to the start of work. Potential roosting features found during the survey shall be flagged or marked.• If a maternity roost is located, that roost shall remain undisturbed with a buffer until a qualified biologist has determined that the roost is no longer active. If project activities must occur in close proximity to the buffer during the maternity roosting season, monitoring during construction may be required as determined by a qualified biologist.• If the maternity roost is located in a tree or building that is planned for removal, roost exclusion must occur outside of the maternity roosting season prior to the removal of the roost. An Exclusion Plan shall be developed detailing the methods for exclusion and replacement roost installation (such as the placement of bat boxes). The Exclusion Plan shall also include monitoring to ensure that all bats have left the roost prior to demolition or removal.• If a non-maternity roost in a tree is found, the qualified biologist shall coordinate with TUD and the Contractor to avoid impacts to the roost if possible.• Trees with suitable roosting opportunities shall be removed in pieces, rather than felling the entire tree. Any potential roost location in a tree where absence of roosting could not be confirmed will be monitored to determine if any bats are leaving or falling out of a tree.	X	X		Tuolumne Utilities District Qualified biologist			
Cultural Resources								

Table 1. Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Measure	Timing of Verification			Responsible Party	Completed		Comments
		Pre Const	During Const	Post Const		Initials	Date	
MM-CUL-1	Unanticipated Discovery of Archaeological Resources. In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the Project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior’s Professional Qualification Standards, can evaluate the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the find under CEQA (14 CCR 15064.5(f); PRC Section 21082), the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted.		X		Tuolumne Utilities District Contractor			
Geology and Soils								
MM-GEO-1	In order to reduce runoff and erosion, and minimize the potential of sedimentation as a result of the Project all construction shall be carried out in compliance with an erosion control plan providing site-specific measures for sediment and erosion control in accordance with the California Stormwater Quality Association’s <i>Stormwater Best Management Practices Handbook</i> and <i>Erosion and Sediment Control Guidelines for Developing Areas of the Sierra Foothills and Mountains</i> or other erosion control reference determined to be appropriate by the Project Engineer. Specific minimum site stabilization and erosion control measures identified in project plans shall include: <ul style="list-style-type: none">• Installing erosion-control filter/silt fence;• Revegetating all disturbed areas with appropriate “weed-free” seed mixes and native species;• Installing a gravel apron or equivalent BMP device or appropriate measures at off-site access points onto paved roadways to control soil track out onto area roadways;• Applying mulch or an erosion control blanket to inactive disturbed areas.				Tuolumne Utilities District Contractor			

Table 1. Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Measure	Timing of Verification			Responsible Party	Completed		Comments
		Pre Const	During Const	Post Const		Initials	Date	
MM-HAZ-1	<p>The following measures shall be implemented prior to and during construction and shall be incorporated into project plans and specifications.</p> <ul style="list-style-type: none">• All equipment shall be inspected by the contractor for leaks prior to the start of construction and regularly throughout project construction. Leaks from any equipment shall be contained and the leak remedied before the equipment is again used on the site.• Best management practices for spill prevention shall be incorporated into project plans and specifications and shall contain measures for secondary containment and safe handling procedures according to the Product Safety Data Sheets.• A spill kit shall be maintained on site throughout all construction activities and shall contain appropriate items to absorb, contain, neutralize, or remove hazardous materials stored or used in large quantities during construction.• Project plans and specifications shall identify construction staging areas and designated areas where equipment refueling, lubrication, and maintenance may occur. Areas designated for refueling, lubrication, and maintenance of equipment shall be approved by the District and shall be located away from any drainage or waterway.• In the event of any spill or release of any chemical or wastewater during construction, the contractor shall immediately notify the District.• Hazardous substances shall be handled in accordance with labeling, Product Safety Data Sheets and applicable codes.	X	X		Tuolumne Utilities District Contractor			
MM-HAZ-2	<p>To minimize the risk of accidental ignition of surrounding wildlands, plans and specifications shall include a Fire Prevention Plan. The construction contractor shall abide by the requirements of the Fire Prevention Plan throughout construction activities on the project site. Measures may include but are not limited to fire suppression equipment requirements; guidelines for activities such as soldering, welding and blasting; designating a fire supervisor on site; rules for smoking onsite, requirements for parking and equipment and materials storage and storage areas; restrictions on certain activities during red flag conditions; and designating a fire patrol person as necessary during red flag conditions.</p>		X		Tuolumne Utilities District Contractor			

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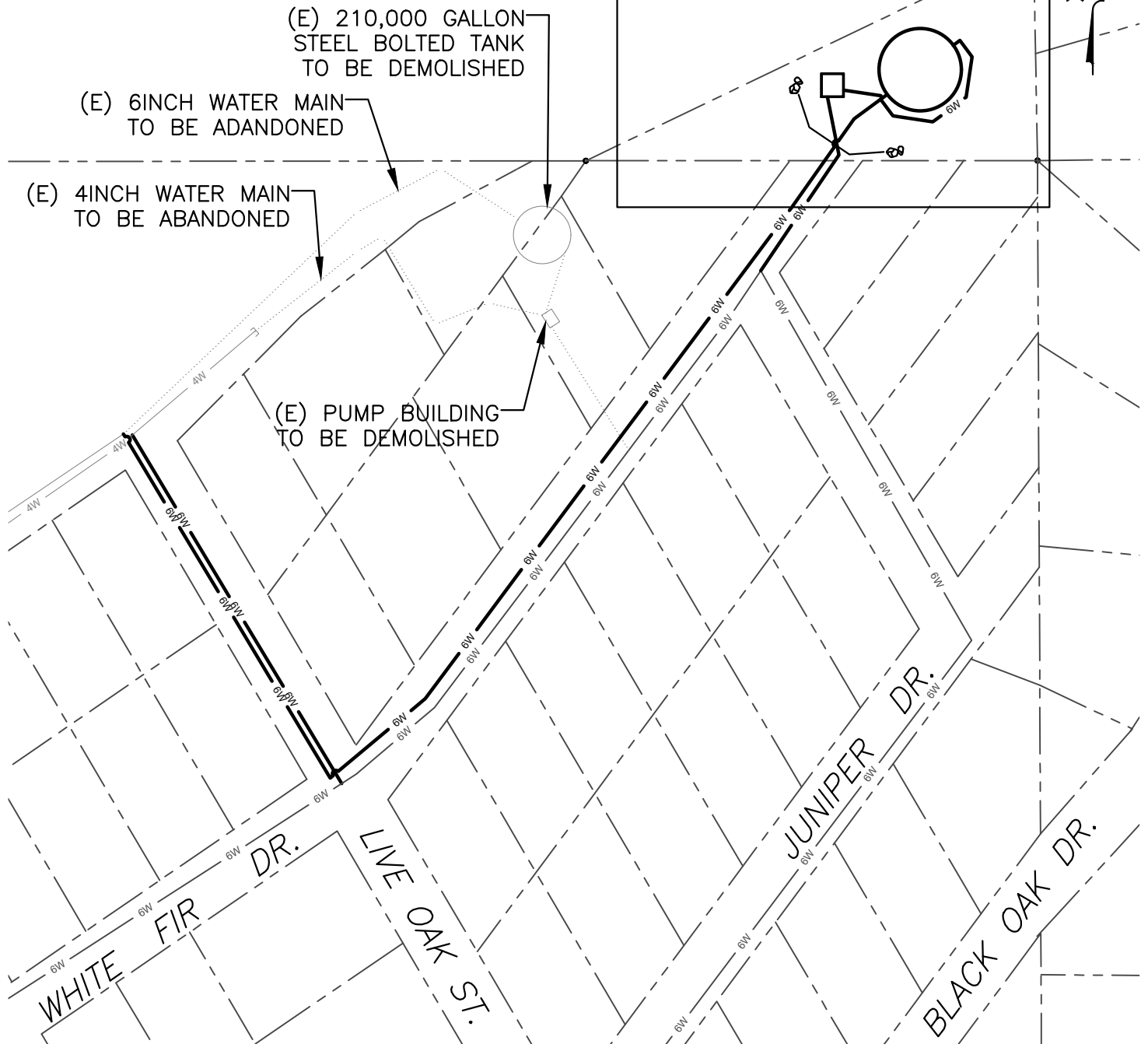
Appendix B

Project Exhibits

LEGEND

ABANDONING
FENCE LINE	— x — x — x — x — x —
PROPERTY LINE	— — — — —
(E) 4" WATER LINE	— 4W — 4W —
(E) 6" WATER LINE	— 6W — 6W —
(N) 6" WATER LINE	— 6W — 6W —

SEE EXHIBIT 2



DATE: 08-26-2022

SHEET: XX

SCALE: NTS

DRAWING NO.: XXX-XX-XXX

DRAWN BY: EMW

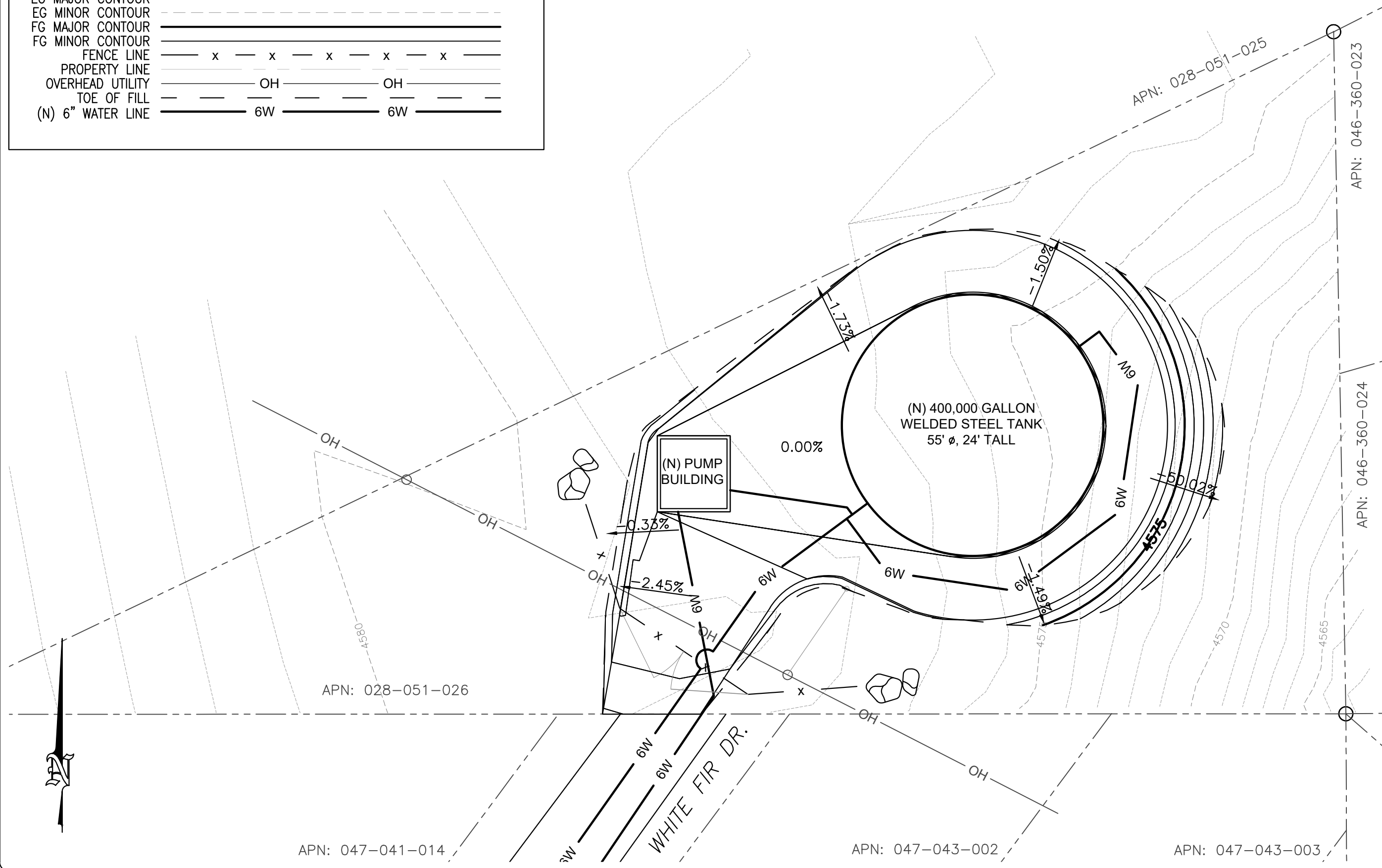
ZONE 4 TANK AND PUMP STATION PROJECT EXHIBIT 1

TUOLUMNE UTILITIES DISTRICT
18885 NUGGET BLVD.
SONORA, CALIFORNIA 95370
(209) 532-5536



LEGEND

EG MAJOR CONTOUR	----
EG MINOR CONTOUR	-----
FG MAJOR CONTOUR	=====
FG MINOR CONTOUR	-----
FENCE LINE	— x — x — x — x —
PROPERTY LINE	----
OVERHEAD UTILITY	— OH — OH —
TOE OF FILL	----
(N) 6" WATER LINE	— 6W — 6W —



TUOLUMNE UTILITIES DISTRICT
18885 NUGGET BLVD.
SONORA, CALIFORNIA 95370
(209) 532-5536

ZONE 4 TANK AND PUMP STATION PROJECT EXHIBIT 2

REVISIONS			
NO.	BY	DATE	DESCRIPTION
DATE: 8-26-2022			
SCALE: NTS			
DRAWN BY: EMW			
SHEET: XXXX			
DRAWING NO: XXX-XX-XXX			

Appendix C

Air Quality and Greenhouse Gas Emissions CalEEMod Output Files

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Zone 4 Tank and Pump Station Project
Tuolumne County, Annual****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	22.00	1000sqft	0.51	22,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	66
Climate Zone	1			Operational Year	2024
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 - Zone 4 Tank and Pump Station Project

Zone 4 Tank and Pump Station Project

Land Use - Pump station and tank assumed to be 0.50 acres or 22 ksf

Construction Phase - Default phasing assumed

Off-road Equipment - Default equipment assumed

Off-road Equipment - Default equipment assumed

Off-road Equipment - Default equipment assumed

Off-road Equipment - Default equipment assumed

Off-road Equipment - Default equipment assumed

Zone 4 Tank and Pump Station Project - Tuolumne County, Annual

CalEEMod Version: CalEEMod.2020.4.0

Date: 6/30/2022 10:23 PM

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

Off-road Equipment - Default equipment assumed

Trips and VMT - Assume 4 construction personal. Assume 20 haul trucks for offsite hauling and a water truck for demolition, site preparation, and grading.

Grading - Approximately 120 cy of soil imported

Construction Off-road Equipment Mitigation - Water site twice daily.

Vehicle Trips - Assume an operator or maintance staff to perform checks on pump station (2 trips daily).

Energy Use - No energy use

Water And Wastewater - No water use

Solid Waste - No soild waste

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.56	0.00
tblEnergyUse	T24NG	3.17	0.00
tblGrading	MaterialImported	0.00	120.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	27.28	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	8.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	9.00	8.00

Zone 4 Tank and Pump Station Project - Tuolumne County, Annual

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

tblTripsAndVMT	WorkerTripNumber	18.00	8.00
tblTripsAndVMT	WorkerTripNumber	2.00	8.00
tblVehicleTrips	ST_TR	1.99	0.00
tblVehicleTrips	SU_TR	5.00	0.00
tblVehicleTrips	WD_TR	4.96	0.09
tblWater	IndoorWaterUseRate	5,087,500.00	0.00

2.0 Emissions Summary**2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.2966	0.4034	0.4442	7.8000e-004	0.0112	0.0190	0.0301	4.1100e-003	0.0175	0.0216	0.0000	69.2651	69.2651	0.0186	1.0300e-003	70.0358
Maximum	0.2966	0.4034	0.4442	7.8000e-004	0.0112	0.0190	0.0301	4.1100e-003	0.0175	0.0216	0.0000	69.2651	69.2651	0.0186	1.0300e-003	70.0358

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					
2023	0.2966	0.4034	0.4442	7.8000e-004	8.0700e-003	0.0190	0.0270	2.6800e-003	0.0175	0.0202	0.0000	69.2651	69.2651	0.0186	1.0300e-003	70.0357

Zone 4 Tank and Pump Station Project - Tuolumne County, Annual

CalEEMod Version: CalEEMod.2020.4.0

Date: 6/30/2022 10:23 PM

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

Maximum	0.2966	0.4034	0.4442	7.8000e-004	8.0700e-003	0.0190	0.0270	2.6800e-003	0.0175	0.0202	0.0000	69.2651	69.2651	0.0186	1.0300e-003	70.0357
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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	27.62	0.00	10.20	34.79	0.00	6.61	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mobile	1.4600e-003	2.1100e-003	0.0120	2.0000e-005	1.5300e-003	2.0000e-005	1.5500e-003	4.1000e-004	2.0000e-005	4.3000e-004	0.0000	1.5634	1.5634	1.5000e-004	1.0000e-004	1.5960

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					
Mobile	1.4600e-003	2.1100e-003	0.0120	2.0000e-005	1.5300e-003	2.0000e-005	1.5500e-003	4.1000e-004	2.0000e-005	4.3000e-004	0.0000	1.5634	1.5634	1.5000e-004	1.0000e-004	1.5960

Zone 4 Tank and Pump Station Project - Tuolumne County, Annual

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
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	5/1/2023	5/12/2023	5	10	
2	Site Preparation	Site Preparation	5/13/2023	5/15/2023	5	1	
3	Grading	Grading	5/16/2023	5/17/2023	5	2	
4	Building Construction	Building Construction	5/18/2023	10/4/2023	5	100	
5	Paving	Paving	10/5/2023	10/11/2023	5	5	
6	Architectural Coating	Architectural Coating	10/12/2023	10/18/2023	5	5	

Acres of Grading (Site Preparation Phase): 0.5**Acres of Grading (Grading Phase): 1.5****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 33,000; Non-Residential Outdoor: 11,000; Striped Parking Area: 0 (Architectural****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

Zone 4 Tank and Pump Station Project - Tuolumne County, Annual

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

Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Graders	1	6.00	187	0.41
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	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	4	8.00	2.00	20.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	8.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	2.00	15.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	8.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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

Zone 4 Tank and Pump Station Project - Tuolumne County, Annual

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.1 Mitigation Measures Construction**

Water Exposed Area

3.2 Demolition - 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	3.2300e-003	0.0289	0.0370	6.0000e-005		1.4100e-003	1.4100e-003		1.3500e-003	1.3500e-003	0.0000	5.2091	5.2091	9.5000e-004	0.0000	5.2328
Total	3.2300e-003	0.0289	0.0370	6.0000e-005		1.4100e-003	1.4100e-003		1.3500e-003	1.3500e-003	0.0000	5.2091	5.2091	9.5000e-004	0.0000	5.2328

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	2.8200e-003	3.0000e-004	1.0000e-005	1.7000e-004	2.0000e-005	1.9000e-004	5.0000e-005	2.0000e-005	6.0000e-005	0.0000	0.7094	0.7094	0.0000	1.1000e-004	0.7427
Vendor	2.0000e-005	7.7000e-004	1.4000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2216	0.2216	0.0000	3.0000e-005	0.2313
Worker	2.5000e-004	1.6000e-004	1.5600e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.2713	0.2713	1.0000e-005	1.0000e-005	0.2750

Zone 4 Tank and Pump Station Project - Tuolumne County, Annual

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

Total	3.1000e-004	3.7500e-003	2.0000e-003	1.0000e-005	5.6000e-004	2.0000e-005	5.8000e-004	1.5000e-004	2.0000e-005	1.7000e-004	0.0000	1.2023	1.2023	1.0000e-005	1.5000e-004	1.2489
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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	3.2300e-003	0.0289	0.0370	6.0000e-005		1.4100e-003	1.4100e-003		1.3500e-003	1.3500e-003	0.0000	5.2091	5.2091	9.5000e-004	0.0000	5.2328
Total	3.2300e-003	0.0289	0.0370	6.0000e-005		1.4100e-003	1.4100e-003		1.3500e-003	1.3500e-003	0.0000	5.2091	5.2091	9.5000e-004	0.0000	5.2328

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	2.8200e-003	3.0000e-004	1.0000e-005	1.7000e-004	2.0000e-005	1.9000e-004	5.0000e-005	2.0000e-005	6.0000e-005	0.0000	0.7094	0.7094	0.0000	1.1000e-004	0.7427
Vendor	2.0000e-005	7.7000e-004	1.4000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2216	0.2216	0.0000	3.0000e-005	0.2313
Worker	2.5000e-004	1.6000e-004	1.5600e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.2713	0.2713	1.0000e-005	1.0000e-005	0.2750
Total	3.1000e-004	3.7500e-003	2.0000e-003	1.0000e-005	5.6000e-004	2.0000e-005	5.8000e-004	1.5000e-004	2.0000e-005	1.7000e-004	0.0000	1.2023	1.2023	1.0000e-005	1.5000e-004	1.2489

Zone 4 Tank and Pump Station Project - Tuolumne County, Annual

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Date: 6/30/2022 10:23 PM

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.3 Site Preparation - 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					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	3.0900e-003	1.9600e-003	0.0000		1.1000e-004	1.1000e-004		1.0000e-004	1.0000e-004	0.0000	0.4275	0.4275	1.4000e-004	0.0000	0.4309
Total	2.7000e-004	3.0900e-003	1.9600e-003	0.0000	2.7000e-004	1.1000e-004	3.8000e-004	3.0000e-005	1.0000e-004	1.3000e-004	0.0000	0.4275	0.4275	1.4000e-004	0.0000	0.4309

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	8.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0222	0.0222	0.0000	0.0000	0.0231

Zone 4 Tank and Pump Station Project - Tuolumne County, Annual

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Date: 6/30/2022 10:23 PM

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

Worker	3.0000e-005	2.0000e-005	1.6000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0271	0.0271	0.0000	0.0000	0.0275
Total	3.0000e-005	1.0000e-004	1.7000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0493	0.0493	0.0000	0.0000	0.0506

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.2000e-004	0.0000	1.2000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	3.0900e-003	1.9600e-003	0.0000		1.1000e-004	1.1000e-004		1.0000e-004	1.0000e-004	0.0000	0.4275	0.4275	1.4000e-004	0.0000	0.4309
Total	2.7000e-004	3.0900e-003	1.9600e-003	0.0000	1.2000e-004	1.1000e-004	2.3000e-004	1.0000e-005	1.0000e-004	1.1000e-004	0.0000	0.4275	0.4275	1.4000e-004	0.0000	0.4309

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	8.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0222	0.0222	0.0000	0.0000	0.0231

Zone 4 Tank and Pump Station Project - Tuolumne County, Annual

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

Worker	3.0000e-005	2.0000e-005	1.6000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0271	0.0271	0.0000	0.0000	0.0275
Total	3.0000e-005	1.0000e-004	1.7000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0493	0.0493	0.0000	0.0000	0.0506

3.4 Grading - 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					
Fugitive Dust					5.3200e-003	0.0000	5.3200e-003	2.5700e-003	0.0000	2.5700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3000e-004	0.0102	5.5500e-003	1.0000e-005		4.2000e-004	4.2000e-004		3.9000e-004	3.9000e-004	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2481
Total	9.3000e-004	0.0102	5.5500e-003	1.0000e-005	5.3200e-003	4.2000e-004	5.7400e-003	2.5700e-003	3.9000e-004	2.9600e-003	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2481

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					

Zone 4 Tank and Pump Station Project - Tuolumne County, Annual

CalEEMod Version: CalEEMod.2020.4.0

Date: 6/30/2022 10:23 PM

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

Hauling	3.0000e-005	2.1100e-003	2.2000e-004	1.0000e-005	1.3000e-004	1.0000e-005	1.4000e-004	3.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.5321	0.5321	0.0000	8.0000e-005	0.5570
Vendor	0.0000	1.5000e-004	3.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0443	0.0443	0.0000	1.0000e-005	0.0463
Worker	5.0000e-005	3.0000e-005	3.1000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0543	0.0543	0.0000	0.0000	0.0550
Total	8.0000e-005	2.2900e-003	5.6000e-004	1.0000e-005	2.0000e-004	1.0000e-005	2.1000e-004	5.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.6306	0.6306	0.0000	9.0000e-005	0.6583

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	1.1600e-003	0.0000	1.1600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3000e-004	0.0102	5.5500e-003	1.0000e-005		4.2000e-004	4.2000e-004		3.9000e-004	3.9000e-004	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2481
Total	9.3000e-004	0.0102	5.5500e-003	1.0000e-005	2.3900e-003	4.2000e-004	2.8100e-003	1.1600e-003	3.9000e-004	1.5500e-003	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2481

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					

Zone 4 Tank and Pump Station Project - Tuolumne County, Annual

CalEEMod Version: CalEEMod.2020.4.0

Date: 6/30/2022 10:23 PM

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

Hauling	3.0000e-005	2.1100e-003	2.2000e-004	1.0000e-005	1.3000e-004	1.0000e-005	1.4000e-004	3.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.5321	0.5321	0.0000	8.0000e-005	0.5570
Vendor	0.0000	1.5000e-004	3.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0443	0.0443	0.0000	1.0000e-005	0.0463
Worker	5.0000e-005	3.0000e-005	3.1000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0543	0.0543	0.0000	0.0000	0.0550
Total	8.0000e-005	2.2900e-003	5.6000e-004	1.0000e-005	2.0000e-004	1.0000e-005	2.1000e-004	5.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.6306	0.6306	0.0000	9.0000e-005	0.6583

3.5 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	0.0316	0.3209	0.3549	5.7000e-004		0.0160	0.0160		0.0147	0.0147	0.0000	50.1042	50.1042	0.0162	0.0000	50.5093
Total	0.0316	0.3209	0.3549	5.7000e-004		0.0160	0.0160		0.0147	0.0147	0.0000	50.1042	50.1042	0.0162	0.0000	50.5093

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					

Zone 4 Tank and Pump Station Project - Tuolumne County, Annual

CalEEMod Version: CalEEMod.2020.4.0

Date: 6/30/2022 10:23 PM

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1000e-004	0.0154	2.8600e-003	5.0000e-005	1.3000e-003	9.0000e-005	1.4000e-003	3.8000e-004	9.0000e-005	4.7000e-004	0.0000	4.4314	4.4314	2.0000e-005	6.5000e-004	4.6258
Worker	2.5100e-003	1.5700e-003	0.0156	3.0000e-005	3.1600e-003	2.0000e-005	3.1800e-003	8.4000e-004	2.0000e-005	8.6000e-004	0.0000	2.7132	2.7132	1.4000e-004	1.1000e-004	2.7499
Total	2.9200e-003	0.0170	0.0185	8.0000e-005	4.4600e-003	1.1000e-004	4.5800e-003	1.2200e-003	1.1000e-004	1.3300e-003	0.0000	7.1446	7.1446	1.6000e-004	7.6000e-004	7.3756

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	0.0316	0.3209	0.3549	5.7000e-004		0.0160	0.0160		0.0147	0.0147	0.0000	50.1042	50.1042	0.0162	0.0000	50.5093
Total	0.0316	0.3209	0.3549	5.7000e-004		0.0160	0.0160		0.0147	0.0147	0.0000	50.1042	50.1042	0.0162	0.0000	50.5093

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					

Zone 4 Tank and Pump Station Project - Tuolumne County, Annual

CalEEMod Version: CalEEMod.2020.4.0

Date: 6/30/2022 10:23 PM

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1000e-004	0.0154	2.8600e-003	5.0000e-005	1.3000e-003	9.0000e-005	1.4000e-003	3.8000e-004	9.0000e-005	4.7000e-004	0.0000	4.4314	4.4314	2.0000e-005	6.5000e-004	4.6258
Worker	2.5100e-003	1.5700e-003	0.0156	3.0000e-005	3.1600e-003	2.0000e-005	3.1800e-003	8.4000e-004	2.0000e-005	8.6000e-004	0.0000	2.7132	2.7132	1.4000e-004	1.1000e-004	2.7499
Total	2.9200e-003	0.0170	0.0185	8.0000e-005	4.4600e-003	1.1000e-004	4.5800e-003	1.2200e-003	1.1000e-004	1.3300e-003	0.0000	7.1446	7.1446	1.6000e-004	7.6000e-004	7.3756

3.6 Paving - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.5300e-003	0.0138	0.0176	3.0000e-005		6.6000e-004	6.6000e-004		6.2000e-004	6.2000e-004	0.0000	2.3498	2.3498	6.8000e-004	0.0000	2.3669
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.5300e-003	0.0138	0.0176	3.0000e-005		6.6000e-004	6.6000e-004		6.2000e-004	6.2000e-004	0.0000	2.3498	2.3498	6.8000e-004	0.0000	2.3669

Unmitigated Construction Off-Site

Zone 4 Tank and Pump Station Project - Tuolumne County, Annual

CalEEMod Version: CalEEMod.2020.4.0

Date: 6/30/2022 10:23 PM

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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	8.0000e-005	7.8000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1357	0.1357	1.0000e-005	1.0000e-005	0.1375
Total	1.3000e-004	8.0000e-005	7.8000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1357	0.1357	1.0000e-005	1.0000e-005	0.1375

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.5300e-003	0.0138	0.0176	3.0000e-005		6.6000e-004	6.6000e-004		6.2000e-004	6.2000e-004	0.0000	2.3498	2.3498	6.8000e-004	0.0000	2.3669
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.5300e-003	0.0138	0.0176	3.0000e-005		6.6000e-004	6.6000e-004		6.2000e-004	6.2000e-004	0.0000	2.3498	2.3498	6.8000e-004	0.0000	2.3669

Mitigated Construction Off-Site

Zone 4 Tank and Pump Station Project - Tuolumne County, Annual

CalEEMod Version: CalEEMod.2020.4.0

Date: 6/30/2022 10:23 PM

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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	8.0000e-005	7.8000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1357	0.1357	1.0000e-005	1.0000e-005	0.1375
Total	1.3000e-004	8.0000e-005	7.8000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1357	0.1357	1.0000e-005	1.0000e-005	0.1375

3.7 Architectural Coating - 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					
Archit. Coating	0.2549					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8000e-004	3.2600e-003	4.5300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6393
Total	0.2554	3.2600e-003	4.5300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6393

Zone 4 Tank and Pump Station Project - Tuolumne County, Annual

CalEEMod Version: CalEEMod.2020.4.0

Date: 6/30/2022 10:23 PM

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	8.0000e-005	7.8000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1357	0.1357	1.0000e-005	1.0000e-005	0.1375
Total	1.3000e-004	8.0000e-005	7.8000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1357	0.1357	1.0000e-005	1.0000e-005	0.1375

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					
Archit. Coating	0.2549					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8000e-004	3.2600e-003	4.5300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6393
Total	0.2554	3.2600e-003	4.5300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6393

Zone 4 Tank and Pump Station Project - Tuolumne County, Annual

CalEEMod Version: CalEEMod.2020.4.0

Date: 6/30/2022 10:23 PM

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	8.0000e-005	7.8000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1357	0.1357	1.0000e-005	1.0000e-005	0.1375
Total	1.3000e-004	8.0000e-005	7.8000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1357	0.1357	1.0000e-005	1.0000e-005	0.1375

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	1.4600e-003	2.1100e-003	0.0120	2.0000e-005	1.5300e-003	2.0000e-005	1.5500e-003	4.1000e-004	2.0000e-005	4.3000e-004	0.0000	1.5634	1.5634	1.5000e-004	1.0000e-004	1.5960
Unmitigated	1.4600e-003	2.1100e-003	0.0120	2.0000e-005	1.5300e-003	2.0000e-005	1.5500e-003	4.1000e-004	2.0000e-005	4.3000e-004	0.0000	1.5634	1.5634	1.5000e-004	1.0000e-004	1.5960

4.2 Trip Summary Information

	Average Daily Trip Rate	Unmitigated	Mitigated
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Zone 4 Tank and Pump Station Project - Tuolumne County, Annual

CalEEMod Version: CalEEMod.2020.4.0

Date: 6/30/2022 10:23 PM

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

Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	1.98	0.00	0.00	4,129	4,129
Total	1.98	0.00	0.00	4,129	4,129

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.409773	0.074310	0.207884	0.166228	0.063246	0.011231	0.007472	0.003645	0.001136	0.000418	0.044154	0.002041	0.008462

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Zone 4 Tank and Pump Station Project
Tuolumne County, Summer****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	22.00	1000sqft	0.51	22,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	66
Climate Zone	1			Operational Year	2024
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 - Zone 4 Tank and Pump Station Project

Zone 4 Tank and Pump Station Project

Land Use - Pump station and tank assumed to be 0.50 acres or 22 ksf

Construction Phase - Default phasing assumed

Off-road Equipment - Default equipment assumed

Off-road Equipment - Default equipment assumed

Off-road Equipment - Default equipment assumed

Off-road Equipment - Default equipment assumed

Off-road Equipment - Default equipment assumed

Zone 4 Tank and Pump Station Project - Tuolumne County, Summer

CalEEMod Version: CalEEMod.2020.4.0

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

Off-road Equipment - Default equipment assumed

Trips and VMT - Assume 4 construction personal. Assume 20 haul trucks for offsite hauling and a water truck for demolition, site preparation, and grading.

Grading - Approximately 120 cy of soil imported

Construction Off-road Equipment Mitigation - Water site twice daily.

Vehicle Trips - Assume an operator or maintance staff to perform checks on pump station (2 trips daily).

Energy Use - No energy use

Water And Wastewater - No water use

Solid Waste - No soild waste

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.56	0.00
tblEnergyUse	T24NG	3.17	0.00
tblGrading	MaterialImported	0.00	120.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	27.28	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	8.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	9.00	8.00

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tblTripsAndVMT	WorkerTripNumber	18.00	8.00
tblTripsAndVMT	WorkerTripNumber	2.00	8.00
tblVehicleTrips	ST_TR	1.99	0.00
tblVehicleTrips	SU_TR	5.00	0.00
tblVehicleTrips	WD_TR	4.96	0.09
tblWater	IndoorWaterUseRate	5,087,500.00	0.00

2.0 Emissions Summary**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	102.2165	12.3629	7.8173	0.0207	5.5274	0.4361	5.9636	2.6262	0.4018	3.0281	0.0000	2,064.0772	2,064.0772	0.4460	0.1015	2,105.4662
Maximum	102.2165	12.3629	7.8173	0.0207	5.5274	0.4361	5.9636	2.6262	0.4018	3.0281	0.0000	2,064.0772	2,064.0772	0.4460	0.1015	2,105.4662

Zone 4 Tank and Pump Station Project - Tuolumne County, Summer

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	102.2165	12.3629	7.8173	0.0207	2.6021	0.4361	3.0383	1.2130	0.4018	1.6148	0.0000	2,064.0772	2,064.0772	0.4460	0.1015	2,105.4662
Maximum	102.2165	12.3629	7.8173	0.0207	2.6021	0.4361	3.0383	1.2130	0.4018	1.6148	0.0000	2,064.0772	2,064.0772	0.4460	0.1015	2,105.4662

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	52.92	0.00	49.05	53.81	0.00	46.67	0.00	0.00	0.00	0.00	0.00	0.00

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Unmitigated Operational

[illegible]

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**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	5/1/2023	5/12/2023	5	10	
2	Site Preparation	Site Preparation	5/13/2023	5/15/2023	5	1	
3	Grading	Grading	5/16/2023	5/17/2023	5	2	
4	Building Construction	Building Construction	5/18/2023	10/4/2023	5	100	
5	Paving	Paving	10/5/2023	10/11/2023	5	5	
6	Architectural Coating	Architectural Coating	10/12/2023	10/18/2023	5	5	

Acres of Grading (Site Preparation Phase): 0.5**Acres of Grading (Grading Phase): 1.5****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 33,000; Non-Residential Outdoor: 11,000; Striped Parking Area: 0 (Architectural****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Graders	1	6.00	187	0.41
Site Preparation	Graders	1	8.00	187	0.41

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Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	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	4	8.00	2.00	20.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	8.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	2.00	15.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	8.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.1 Mitigation Measures Construction**

Water Exposed Area

3.2 Demolition - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6463	5.7787	7.3926	0.0120		0.2821	0.2821		0.2698	0.2698		1,148.4055	1,148.4055	0.2089		1,153.6290
Total	0.6463	5.7787	7.3926	0.0120		0.2821	0.2821		0.2698	0.2698		1,148.4055	1,148.4055	0.2089		1,153.6290

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.8100e-003	0.5362	0.0590	1.4800e-003	0.0345	3.9000e-003	0.0384	9.4300e-003	3.7300e-003	0.0132		156.3996	156.3996	4.2000e-004	0.0246	163.7311
Vendor	4.1200e-003	0.1468	0.0281	4.6000e-004	0.0135	9.3000e-004	0.0144	3.8700e-003	8.9000e-004	4.7600e-003		48.8521	48.8521	1.9000e-004	7.1700e-003	50.9924
Worker	0.0549	0.0263	0.3376	6.3000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		63.9555	63.9555	2.8400e-003	2.1800e-003	64.6761
Total	0.0678	0.7094	0.4247	2.5700e-003	0.1137	5.3100e-003	0.1190	0.0307	5.0600e-003	0.0358		269.2071	269.2071	3.4500e-003	0.0339	279.3996

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6463	5.7787	7.3926	0.0120		0.2821	0.2821		0.2698	0.2698	0.0000	1,148.4055	1,148.4055	0.2089		1,153.6290
Total	0.6463	5.7787	7.3926	0.0120		0.2821	0.2821		0.2698	0.2698	0.0000	1,148.4055	1,148.4055	0.2089		1,153.6290

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.8100e-003	0.5362	0.0590	1.4800e-003	0.0345	3.9000e-003	0.0384	9.4300e-003	3.7300e-003	0.0132		156.3996	156.3996	4.2000e-004	0.0246	163.7311
Vendor	4.1200e-003	0.1468	0.0281	4.6000e-004	0.0135	9.3000e-004	0.0144	3.8700e-003	8.9000e-004	4.7600e-003		48.8521	48.8521	1.9000e-004	7.1700e-003	50.9924
Worker	0.0549	0.0263	0.3376	6.3000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		63.9555	63.9555	2.8400e-003	2.1800e-003	64.6761
Total	0.0678	0.7094	0.4247	2.5700e-003	0.1137	5.3100e-003	0.1190	0.0307	5.0600e-003	0.0358		269.2071	269.2071	3.4500e-003	0.0339	279.3996

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.3 Site Preparation - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.5348	6.1887	3.9239	9.7300e-003		0.2266	0.2266		0.2084	0.2084		942.4317	942.4317	0.3048		950.0517
Total	0.5348	6.1887	3.9239	9.7300e-003	0.5303	0.2266	0.7568	0.0573	0.2084	0.2657		942.4317	942.4317	0.3048		950.0517

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1200e-003	0.1468	0.0281	4.6000e-004	0.0135	9.3000e-004	0.0144	3.8700e-003	8.9000e-004	4.7600e-003		48.8521	48.8521	1.9000e-004	7.1700e-003	50.9924
Worker	0.0549	0.0263	0.3376	6.3000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		63.9555	63.9555	2.8400e-003	2.1800e-003	64.6761

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Total	0.0590	0.1732	0.3657	1.0900e-003	0.0792	1.4100e-003	0.0806	0.0213	1.3300e-003	0.0226		112.8076	112.8076	3.0300e-003	9.3500e-003	115.6685
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Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.5348	6.1887	3.9239	9.7300e-003		0.2266	0.2266		0.2084	0.2084	0.0000	942.4317	942.4317	0.3048		950.0517
Total	0.5348	6.1887	3.9239	9.7300e-003	0.2386	0.2266	0.4652	0.0258	0.2084	0.2342	0.0000	942.4317	942.4317	0.3048		950.0517

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1200e-003	0.1468	0.0281	4.6000e-004	0.0135	9.3000e-004	0.0144	3.8700e-003	8.9000e-004	4.7600e-003		48.8521	48.8521	1.9000e-004	7.1700e-003	50.9924
Worker	0.0549	0.0263	0.3376	6.3000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		63.9555	63.9555	2.8400e-003	2.1800e-003	64.6761

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

Total	0.0590	0.1732	0.3657	1.0900e-003	0.0792	1.4100e-003	0.0806	0.0213	1.3300e-003	0.0226		112.8076	112.8076	3.0300e-003	9.3500e-003	115.6685
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3.4 Grading - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.3187	0.0000	5.3187	2.5696	0.0000	2.5696			0.0000			0.0000
Off-Road	0.9335	10.1789	5.5516	0.0141		0.4201	0.4201		0.3865	0.3865		1,364.7713	1,364.7713	0.4414		1,375.8062
Total	0.9335	10.1789	5.5516	0.0141	5.3187	0.4201	5.7388	2.5696	0.3865	2.9561		1,364.7713	1,364.7713	0.4414		1,375.8062

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0330	2.0109	0.2213	5.5400e-003	0.1295	0.0146	0.1442	0.0354	0.0140	0.0494		586.4983	586.4983	1.5700e-003	0.0921	613.9915
Vendor	4.1200e-003	0.1468	0.0281	4.6000e-004	0.0135	9.3000e-004	0.0144	3.8700e-003	8.9000e-004	4.7600e-003		48.8521	48.8521	1.9000e-004	7.1700e-003	50.9924

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Worker	0.0549	0.0263	0.3376	6.3000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		63.9555	63.9555	2.8400e-003	2.1800e-003	64.6761
Total	0.0920	2.1840	0.5870	6.6300e-003	0.2087	0.0161	0.2248	0.0567	0.0153	0.0720		699.3059	699.3059	4.6000e-003	0.1015	729.6600

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.3934	0.0000	2.3934	1.1563	0.0000	1.1563			0.0000			0.0000
Off-Road	0.9335	10.1789	5.5516	0.0141		0.4201	0.4201		0.3865	0.3865	0.0000	1,364.7713	1,364.7713	0.4414		1,375.8062
Total	0.9335	10.1789	5.5516	0.0141	2.3934	0.4201	2.8135	1.1563	0.3865	1.5428	0.0000	1,364.7713	1,364.7713	0.4414		1,375.8062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0330	2.0109	0.2213	5.5400e-003	0.1295	0.0146	0.1442	0.0354	0.0140	0.0494		586.4983	586.4983	1.5700e-003	0.0921	613.9915
Vendor	4.1200e-003	0.1468	0.0281	4.6000e-004	0.0135	9.3000e-004	0.0144	3.8700e-003	8.9000e-004	4.7600e-003		48.8521	48.8521	1.9000e-004	7.1700e-003	50.9924

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

Worker	0.0549	0.0263	0.3376	6.3000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		63.9555	63.9555	2.8400e-003	2.1800e-003	64.6761
Total	0.0920	2.1840	0.5870	6.6300e-003	0.2087	0.0161	0.2248	0.0567	0.0153	0.0720		699.3059	699.3059	4.6000e-003	0.1015	729.6600

3.5 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	lb/day										lb/day					
Off-Road	0.6322	6.4186	7.0970	0.0114		0.3203	0.3203		0.2946	0.2946		1,104.6089	1,104.6089	0.3573		1,113.5402
Total	0.6322	6.4186	7.0970	0.0114		0.3203	0.3203		0.2946	0.2946		1,104.6089	1,104.6089	0.3573		1,113.5402

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.2400e-003	0.2937	0.0561	9.3000e-004	0.0269	1.8600e-003	0.0288	7.7400e-003	1.7800e-003	9.5200e-003		97.7042	97.7042	3.9000e-004	0.0143	101.9849

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

Worker	0.0549	0.0263	0.3376	6.3000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		63.9555	63.9555	2.8400e-003	2.1800e-003	64.6761
Total	0.0631	0.3200	0.3937	1.5600e-003	0.0927	2.3400e-003	0.0950	0.0252	2.2200e-003	0.0274		161.6597	161.6597	3.2300e-003	0.0165	166.6610

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6322	6.4186	7.0970	0.0114		0.3203	0.3203		0.2946	0.2946	0.0000	1,104.6089	1,104.6089	0.3573		1,113.5402
Total	0.6322	6.4186	7.0970	0.0114		0.3203	0.3203		0.2946	0.2946	0.0000	1,104.6089	1,104.6089	0.3573		1,113.5402

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.2400e-003	0.2937	0.0561	9.3000e-004	0.0269	1.8600e-003	0.0288	7.7400e-003	1.7800e-003	9.5200e-003		97.7042	97.7042	3.9000e-004	0.0143	101.9849

Zone 4 Tank and Pump Station Project - Tuolumne County, Summer

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

Worker	0.0549	0.0263	0.3376	6.3000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		63.9555	63.9555	2.8400e-003	2.1800e-003	64.6761
Total	0.0631	0.3200	0.3937	1.5600e-003	0.0927	2.3400e-003	0.0950	0.0252	2.2200e-003	0.0274		161.6597	161.6597	3.2300e-003	0.0165	166.6610

3.6 Paving - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6112	5.5046	7.0209	0.0113		0.2643	0.2643		0.2466	0.2466		1,036.0878	1,036.0878	0.3018		1,043.6331
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6112	5.5046	7.0209	0.0113		0.2643	0.2643		0.2466	0.2466		1,036.0878	1,036.0878	0.3018		1,043.6331

Unmitigated Construction Off-Site

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

Zone 4 Tank and Pump Station Project - Tuolumne County, Summer

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0549	0.0263	0.3376	6.3000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		63.9555	63.9555	2.8400e-003	2.1800e-003	64.6761
Total	0.0549	0.0263	0.3376	6.3000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		63.9555	63.9555	2.8400e-003	2.1800e-003	64.6761

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6112	5.5046	7.0209	0.0113		0.2643	0.2643		0.2466	0.2466	0.0000	1,036.0878	1,036.0878	0.3018		1,043.6331
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6112	5.5046	7.0209	0.0113		0.2643	0.2643		0.2466	0.2466	0.0000	1,036.0878	1,036.0878	0.3018		1,043.6331

Mitigated Construction Off-Site

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

Zone 4 Tank and Pump Station Project - Tuolumne County, Summer

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0549	0.0263	0.3376	6.3000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		63.9555	63.9555	2.8400e-003	2.1800e-003	64.6761
Total	0.0549	0.0263	0.3376	6.3000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		63.9555	63.9555	2.8400e-003	2.1800e-003	64.6761

3.7 Architectural Coating - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	101.9700					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	102.1617	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690

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
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Zone 4 Tank and Pump Station Project - Tuolumne County, Summer

CalEEMod Version: CalEEMod.2020.4.0

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

Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0549	0.0263	0.3376	6.3000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		63.9555	63.9555	2.8400e-003	2.1800e-003	64.6761
Total	0.0549	0.0263	0.3376	6.3000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		63.9555	63.9555	2.8400e-003	2.1800e-003	64.6761

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	101.9700					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	102.1617	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690

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
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Zone 4 Tank and Pump Station Project - Tuolumne County, Summer

CalEEMod Version: CalEEMod.2020.4.0

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

Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0549	0.0263	0.3376	6.3000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179	63.9555	63.9555	2.8400e-003	2.1800e-003	64.6761	
Total	0.0549	0.0263	0.3376	6.3000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179	63.9555	63.9555	2.8400e-003	2.1800e-003	64.6761	

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0127	0.0146	0.0911	1.4000e-004	0.0123	1.7000e-004	0.0124	3.2800e-003	1.6000e-004	3.4400e-003	13.8954	13.8954	1.1600e-003	7.6000e-004	14.1509	
Unmitigated	0.0127	0.0146	0.0911	1.4000e-004	0.0123	1.7000e-004	0.0124	3.2800e-003	1.6000e-004	3.4400e-003	13.8954	13.8954	1.1600e-003	7.6000e-004	14.1509	

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
General Light Industry	1.98	0.00	0.00	4,129	4,129
Total	1.98	0.00	0.00	4,129	4,129

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by

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

General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
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4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.409773	0.074310	0.207884	0.166228	0.063246	0.011231	0.007472	0.003645	0.001136	0.000418	0.044154	0.002041	0.008462

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Zone 4 Tank and Pump Station Project
Tuolumne County, Winter****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	22.00	1000sqft	0.51	22,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	66
Climate Zone	1			Operational Year	2024
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 - Zone 4 Tank and Pump Station Project
Zone 4 Tank and Pump Station Project

Land Use - Pump station and tank assumed to be 0.50 acres or 22 ksf

Construction Phase - Default phasing assumed

Off-road Equipment - Default equipment assumed

Off-road Equipment - Default equipment assumed

Off-road Equipment - Default equipment assumed

Off-road Equipment - Default equipment assumed

Off-road Equipment - Default equipment assumed

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

Off-road Equipment - Default equipment assumed

Trips and VMT - Assume 4 construction personal. Assume 20 haul trucks for offsite hauling and a water truck for demolition, site preparation, and grading.

Grading - Approximately 120 cy of soil imported

Construction Off-road Equipment Mitigation - Water site twice daily.

Vehicle Trips - Assume an operator or maintance staff to perform checks on pump station (2 trips daily).

Energy Use - No energy use

Water And Wastewater - No water use

Solid Waste - No soild waste

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.56	0.00
tblEnergyUse	T24NG	3.17	0.00
tblGrading	MaterialImported	0.00	120.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	27.28	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	8.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	9.00	8.00

Zone 4 Tank and Pump Station Project - Tuolumne County, Winter

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tblTripsAndVMT	WorkerTripNumber	18.00	8.00
tblTripsAndVMT	WorkerTripNumber	2.00	8.00
tblVehicleTrips	ST_TR	1.99	0.00
tblVehicleTrips	SU_TR	5.00	0.00
tblVehicleTrips	WD_TR	4.96	0.09
tblWater	IndoorWaterUseRate	5,087,500.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**2.0 Emissions Summary****2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	102.2158	12.5086	7.7989	0.0207	5.5274	0.4362	5.9636	2.6262	0.4019	3.0281	0.0000	2,059.0211	2,059.0211	0.4464	0.1019	2,100.5550
Maximum	102.2158	12.5086	7.7989	0.0207	5.5274	0.4362	5.9636	2.6262	0.4019	3.0281	0.0000	2,059.0211	2,059.0211	0.4464	0.1019	2,100.5550

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	102.2158	12.5086	7.7989	0.0207	2.6021	0.4362	3.0383	1.2130	0.4019	1.6149	0.0000	2,059.0211	2,059.0211	0.4464	0.1019	2,100.5550
Maximum	102.2158	12.5086	7.7989	0.0207	2.6021	0.4362	3.0383	1.2130	0.4019	1.6149	0.0000	2,059.0211	2,059.0211	0.4464	0.1019	2,100.5550

Zone 4 Tank and Pump Station Project - Tuolumne County, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	52.92	0.00	49.05	53.81	0.00	46.67	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mobile	0.0113	0.0171	0.0978	1.3000e-004	0.0123	1.7000e-004	0.0124	3.2800e-003	1.6000e-004	3.4400e-003		13.1463	13.1463	1.3400e-003	8.5000e-004	13.4346

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mobile	0.0113	0.0171	0.0978	1.3000e-004	0.0123	1.7000e-004	0.0124	3.2800e-003	1.6000e-004	3.4400e-003		13.1463	13.1463	1.3400e-003	8.5000e-004	13.4346

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2023	5/12/2023	5	10	
2	Site Preparation	Site Preparation	5/13/2023	5/15/2023	5	1	
3	Grading	Grading	5/16/2023	5/17/2023	5	2	
4	Building Construction	Building Construction	5/18/2023	10/4/2023	5	100	
5	Paving	Paving	10/5/2023	10/11/2023	5	5	
6	Architectural Coating	Architectural Coating	10/12/2023	10/18/2023	5	5	

Acres of Grading (Site Preparation Phase): 0.5**Acres of Grading (Grading Phase): 1.5****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 33,000; Non-Residential Outdoor: 11,000; Striped Parking Area: 0 (Architectural**

Zone 4 Tank and Pump Station Project - Tuolumne County, Winter

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

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Graders	1	6.00	187	0.41
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	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	4	8.00	2.00	20.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	8.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	2.00	15.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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Building Construction	5	8.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Zone 4 Tank and Pump Station Project - Tuolumne County, Winter

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.1 Mitigation Measures Construction**

Water Exposed Area

3.2 Demolition - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6463	5.7787	7.3926	0.0120		0.2821	0.2821		0.2698	0.2698		1,148.4055	1,148.4055	0.2089		1,153.6290
Total	0.6463	5.7787	7.3926	0.0120		0.2821	0.2821		0.2698	0.2698		1,148.4055	1,148.4055	0.2089		1,153.6290

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.6500e-003	0.5705	0.0597	1.4800e-003	0.0345	3.9200e-003	0.0385	9.4300e-003	3.7500e-003	0.0132		156.3928	156.3928	4.1000e-004	0.0246	163.7247
Vendor	4.2000e-003	0.1559	0.0292	4.6000e-004	0.0135	9.4000e-004	0.0144	3.8700e-003	9.0000e-004	4.7700e-003		48.8423	48.8423	1.9000e-004	7.1800e-003	50.9857
Worker	0.0542	0.0345	0.3174	5.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		58.9346	58.9346	3.2600e-003	2.6200e-003	59.7955
Total	0.0670	0.7608	0.4063	2.5200e-003	0.1137	5.3400e-003	0.1191	0.0307	5.0900e-003	0.0358		264.1697	264.1697	3.8600e-003	0.0344	274.5059

Zone 4 Tank and Pump Station Project - Tuolumne County, Winter

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6463	5.7787	7.3926	0.0120		0.2821	0.2821		0.2698	0.2698	0.0000	1,148.4055	1,148.4055	0.2089		1,153.6290
Total	0.6463	5.7787	7.3926	0.0120		0.2821	0.2821		0.2698	0.2698	0.0000	1,148.4055	1,148.4055	0.2089		1,153.6290

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.6500e-003	0.5705	0.0597	1.4800e-003	0.0345	3.9200e-003	0.0385	9.4300e-003	3.7500e-003	0.0132		156.3928	156.3928	4.1000e-004	0.0246	163.7247
Vendor	4.2000e-003	0.1559	0.0292	4.6000e-004	0.0135	9.4000e-004	0.0144	3.8700e-003	9.0000e-004	4.7700e-003		48.8423	48.8423	1.9000e-004	7.1800e-003	50.9857
Worker	0.0542	0.0345	0.3174	5.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		58.9346	58.9346	3.2600e-003	2.6200e-003	59.7955
Total	0.0670	0.7608	0.4063	2.5200e-003	0.1137	5.3400e-003	0.1191	0.0307	5.0900e-003	0.0358		264.1697	264.1697	3.8600e-003	0.0344	274.5059

Zone 4 Tank and Pump Station Project - Tuolumne County, Winter

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.3 Site Preparation - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.5348	6.1887	3.9239	9.7300e-003		0.2266	0.2266		0.2084	0.2084		942.4317	942.4317	0.3048		950.0517
Total	0.5348	6.1887	3.9239	9.7300e-003	0.5303	0.2266	0.7568	0.0573	0.2084	0.2657		942.4317	942.4317	0.3048		950.0517

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2000e-003	0.1559	0.0292	4.6000e-004	0.0135	9.4000e-004	0.0144	3.8700e-003	9.0000e-004	4.7700e-003		48.8423	48.8423	1.9000e-004	7.1800e-003	50.9857
Worker	0.0542	0.0345	0.3174	5.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		58.9346	58.9346	3.2600e-003	2.6200e-003	59.7955

Zone 4 Tank and Pump Station Project - Tuolumne County, Winter

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

Total	0.0584	0.1903	0.3466	1.0400e-003	0.0792	1.4200e-003	0.0806	0.0213	1.3400e-003	0.0226		107.7769	107.7769	3.4500e-003	9.8000e-003	110.7812
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Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.5348	6.1887	3.9239	9.7300e-003		0.2266	0.2266		0.2084	0.2084	0.0000	942.4317	942.4317	0.3048		950.0517
Total	0.5348	6.1887	3.9239	9.7300e-003	0.2386	0.2266	0.4652	0.0258	0.2084	0.2342	0.0000	942.4317	942.4317	0.3048		950.0517

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2000e-003	0.1559	0.0292	4.6000e-004	0.0135	9.4000e-004	0.0144	3.8700e-003	9.0000e-004	4.7700e-003		48.8423	48.8423	1.9000e-004	7.1800e-003	50.9857
Worker	0.0542	0.0345	0.3174	5.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		58.9346	58.9346	3.2600e-003	2.6200e-003	59.7955

Zone 4 Tank and Pump Station Project - Tuolumne County, Winter

CalEEMod Version: CalEEMod.2020.4.0

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

Total	0.0584	0.1903	0.3466	1.0400e-003	0.0792	1.4200e-003	0.0806	0.0213	1.3400e-003	0.0226		107.7769	107.7769	3.4500e-003	9.8000e-003	110.7812
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3.4 Grading - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.3187	0.0000	5.3187	2.5696	0.0000	2.5696			0.0000			0.0000
Off-Road	0.9335	10.1789	5.5516	0.0141		0.4201	0.4201		0.3865	0.3865		1,364.7713	1,364.7713	0.4414		1,375.8062
Total	0.9335	10.1789	5.5516	0.0141	5.3187	0.4201	5.7388	2.5696	0.3865	2.9561		1,364.7713	1,364.7713	0.4414		1,375.8062

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0324	2.1394	0.2237	5.5400e-003	0.1295	0.0147	0.1442	0.0354	0.0141	0.0494		586.4729	586.4729	1.5300e-003	0.0921	613.9676
Vendor	4.2000e-003	0.1559	0.0292	4.6000e-004	0.0135	9.4000e-004	0.0144	3.8700e-003	9.0000e-004	4.7700e-003		48.8423	48.8423	1.9000e-004	7.1800e-003	50.9857

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

Worker	0.0542	0.0345	0.3174	5.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		58.9346	58.9346	3.2600e-003	2.6200e-003	59.7955
Total	0.0908	2.3298	0.5704	6.5800e-003	0.2087	0.0161	0.2248	0.0567	0.0154	0.0721		694.2498	694.2498	4.9800e-003	0.1019	724.7488

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.3934	0.0000	2.3934	1.1563	0.0000	1.1563			0.0000			0.0000
Off-Road	0.9335	10.1789	5.5516	0.0141		0.4201	0.4201		0.3865	0.3865	0.0000	1,364.7713	1,364.7713	0.4414		1,375.8062
Total	0.9335	10.1789	5.5516	0.0141	2.3934	0.4201	2.8135	1.1563	0.3865	1.5428	0.0000	1,364.7713	1,364.7713	0.4414		1,375.8062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0324	2.1394	0.2237	5.5400e-003	0.1295	0.0147	0.1442	0.0354	0.0141	0.0494		586.4729	586.4729	1.5300e-003	0.0921	613.9676
Vendor	4.2000e-003	0.1559	0.0292	4.6000e-004	0.0135	9.4000e-004	0.0144	3.8700e-003	9.0000e-004	4.7700e-003		48.8423	48.8423	1.9000e-004	7.1800e-003	50.9857

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

Worker	0.0542	0.0345	0.3174	5.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		58.9346	58.9346	3.2600e-003	2.6200e-003	59.7955
Total	0.0908	2.3298	0.5704	6.5800e-003	0.2087	0.0161	0.2248	0.0567	0.0154	0.0721		694.2498	694.2498	4.9800e-003	0.1019	724.7488

3.5 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	lb/day										lb/day					
Off-Road	0.6322	6.4186	7.0970	0.0114		0.3203	0.3203		0.2946	0.2946		1,104.6089	1,104.6089	0.3573		1,113.5402
Total	0.6322	6.4186	7.0970	0.0114		0.3203	0.3203		0.2946	0.2946		1,104.6089	1,104.6089	0.3573		1,113.5402

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.4000e-003	0.3118	0.0584	9.3000e-004	0.0269	1.8800e-003	0.0288	7.7400e-003	1.8000e-003	9.5400e-003		97.6846	97.6846	3.8000e-004	0.0144	101.9714

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Worker	0.0542	0.0345	0.3174	5.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		58.9346	58.9346	3.2600e-003	2.6200e-003	59.7955
Total	0.0626	0.3462	0.3758	1.5100e-003	0.0927	2.3600e-003	0.0950	0.0252	2.2400e-003	0.0274		156.6192	156.6192	3.6400e-003	0.0170	161.7669

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6322	6.4186	7.0970	0.0114		0.3203	0.3203		0.2946	0.2946	0.0000	1,104.6089	1,104.6089	0.3573		1,113.5402
Total	0.6322	6.4186	7.0970	0.0114		0.3203	0.3203		0.2946	0.2946	0.0000	1,104.6089	1,104.6089	0.3573		1,113.5402

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.4000e-003	0.3118	0.0584	9.3000e-004	0.0269	1.8800e-003	0.0288	7.7400e-003	1.8000e-003	9.5400e-003		97.6846	97.6846	3.8000e-004	0.0144	101.9714

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Worker	0.0542	0.0345	0.3174	5.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		58.9346	58.9346	3.2600e-003	2.6200e-003	59.7955
Total	0.0626	0.3462	0.3758	1.5100e-003	0.0927	2.3600e-003	0.0950	0.0252	2.2400e-003	0.0274		156.6192	156.6192	3.6400e-003	0.0170	161.7669

3.6 Paving - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6112	5.5046	7.0209	0.0113		0.2643	0.2643		0.2466	0.2466		1,036.0878	1,036.0878	0.3018		1,043.6331
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6112	5.5046	7.0209	0.0113		0.2643	0.2643		0.2466	0.2466		1,036.0878	1,036.0878	0.3018		1,043.6331

Unmitigated Construction Off-Site

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

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Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0542	0.0345	0.3174	5.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		58.9346	58.9346	3.2600e-003	2.6200e-003	59.7955
Total	0.0542	0.0345	0.3174	5.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		58.9346	58.9346	3.2600e-003	2.6200e-003	59.7955

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6112	5.5046	7.0209	0.0113		0.2643	0.2643		0.2466	0.2466	0.0000	1,036.0878	1,036.0878	0.3018		1,043.6331
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6112	5.5046	7.0209	0.0113		0.2643	0.2643		0.2466	0.2466	0.0000	1,036.0878	1,036.0878	0.3018		1,043.6331

Mitigated Construction Off-Site

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

Zone 4 Tank and Pump Station Project - Tuolumne County, Winter

CalEEMod Version: CalEEMod.2020.4.0

Date: 6/30/2022 10:33 PM

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0542	0.0345	0.3174	5.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		58.9346	58.9346	3.2600e-003	2.6200e-003	59.7955
Total	0.0542	0.0345	0.3174	5.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		58.9346	58.9346	3.2600e-003	2.6200e-003	59.7955

3.7 Architectural Coating - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	101.9700					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	102.1617	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690

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
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Zone 4 Tank and Pump Station Project - Tuolumne County, Winter

CalEEMod Version: CalEEMod.2020.4.0

Date: 6/30/2022 10:33 PM

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

Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0542	0.0345	0.3174	5.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		58.9346	58.9346	3.2600e-003	2.6200e-003	59.7955
Total	0.0542	0.0345	0.3174	5.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		58.9346	58.9346	3.2600e-003	2.6200e-003	59.7955

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	101.9700					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	102.1617	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690

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
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Zone 4 Tank and Pump Station Project - Tuolumne County, Winter

CalEEMod Version: CalEEMod.2020.4.0

Date: 6/30/2022 10:33 PM

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

Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0542	0.0345	0.3174	5.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179	58.9346	58.9346	3.2600e-003	2.6200e-003	59.7955	
Total	0.0542	0.0345	0.3174	5.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179	58.9346	58.9346	3.2600e-003	2.6200e-003	59.7955	

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0113	0.0171	0.0978	1.3000e-004	0.0123	1.7000e-004	0.0124	3.2800e-003	1.6000e-004	3.4400e-003	13.1463	13.1463	1.3400e-003	8.5000e-004	13.4346	
Unmitigated	0.0113	0.0171	0.0978	1.3000e-004	0.0123	1.7000e-004	0.0124	3.2800e-003	1.6000e-004	3.4400e-003	13.1463	13.1463	1.3400e-003	8.5000e-004	13.4346	

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	1.98	0.00	0.00	4,129	4,129
Total	1.98	0.00	0.00	4,129	4,129

4.3 Trip Type Information

	Miles	Trip %	Trip Purpose %
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Zone 4 Tank and Pump Station Project - Tuolumne County, Winter

CalEEMod Version: CalEEMod.2020.4.0

Date: 6/30/2022 10:33 PM

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

Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.409773	0.074310	0.207884	0.166228	0.063246	0.011231	0.007472	0.003645	0.001136	0.000418	0.044154	0.002041	0.008462

Zone 4 Tank and Pump Station Project

Project Construction Energy Demand

Construction Worker Gasoline Demand

Phase	Trips	Vehicle CO ₂ (MT)	Kg CO2/Gallon	Gallons
Demolition	10	0.27	8.78	30.90
Site Preparation	16	0.03	8.78	3.09
Grading	16	0.05	8.78	6.18
Building Construction	16	2.71	8.78	309.02
Paving	12	0.14	8.78	15.46
Architectural Coating	20	0.14	8.78	15.46
Total				380.10

Construction Haul Diesel Demand

Phase	Trips	Vehicle CO ₂ (MT)	Kg CO2/Gallon	Gallons
Demolition	2	0.71	10.21	69.48
Site Preparation	175	0.00	10.21	0.00
Grading	0	0.53	10.21	52.12
Building Construction	15	0.00	10.21	0.00
Paving	0	0.00	10.21	0.00
Architectural Coating	47	0.00	10.21	0.00
Total				121.60

Construction Vendor Diesel Demand

Phase	Trips	Vehicle CO ₂ (MT)	Kg CO2/Gallon	Gallons
Demolition	0	0.22	10.21	21.70
Site Preparation	0	0.22	10.21	21.74
Grading	40	0.04	10.21	4.34
Building Construction	10	4.43	10.21	434.03
Paving	8	0.00	10.21	0.00
Architectural Coating	20	0.00	10.21	0.00
Total				481.81

Construction Equipment Diesel Demand

Phase	Pieces of Equipment	Equipment CO ₂ (MT)	Kg CO2/Gallon	Gallons
Demolition	3	5.21	10.21	510.20
Site Preparation	3	0.43	10.21	41.87
Grading	3	1.24	10.21	121.26
Building Construction	11	50.10	10.21	4,907.37
Paving	3	2.35	10.21	230.15
Architectural Coating	3	0.64	10.21	62.52
Total				5,873.36

Construction Equipment Usage

Phase	Hours of Use
Demolition	504
Site Preparation	720
Grading	720
Building Construction	960
Paving	528
Architectural Coating	960
Total	4,392

Total6,856.87

Appendix D

Biological Resources Assessment

Elizabeth Merchant-Wells, EIT, Engineering Assistant
Tuolumne Utilities District
18885 Nugget Boulevard
Sonora, CA 95370

Subject: Biological Resources Assessment for the Tuolumne Utilities District (TUD) Zone 4 Tank Project in Tuolumne County, California

Dear Elizabeth Merchant-Wells:

Dudek has prepared this Biological Resources Assessment (BRA) for the Tuolumne Utilities District (TUD) Zone 4 Tank and Pump Station Project (Project) located in the unincorporated community of Sugarpine in Tuolumne County, California. The Project would include constructing a 400,000-gallon steel storage tank and booster pump station and removing the existing White Fir Tank and pump station. The purpose of the BRA is to identify and characterize existing on-site biological resources, with particular focus on the potential of the Project site to support special-status plant and wildlife species and other sensitive resources, such as wetlands and other aquatic resources potentially under the regulatory jurisdiction of state and/or federal resource agencies. This assessment also identifies potential constraints to Project implementation posed by the presence or potential presence of sensitive resources, as well as recommendations to minimize and/or avoid impacts to these resources.

1 Project Location

The Project site consists of approximately 1.57 acres located within the community of Sugarpine in Tuolumne County (Figure 1, Project Location). The Project site is approximately 0.8 miles east of State Route (SR) 108. The main access to the Project site is provided via White Fir Drive. The Project Site can be mapped within Township 3 North, Range 16 East, and Section 34 of the *Twain Harte* 7.5-minute U.S. Geological Survey (USGS) quadrangle. The approximate center of the site corresponds to 38.063215 north latitude and -120.194099 west longitude.

2 Project Description

TUD is proposing the Project which involves removing the existing White Fir Tank and pump station and constructing a 400,000-gallon steel storage tank and pump station within an approximately 0.5-acre parcel owned by TUD, and installing offsite 6-inch water main piping within the paved roadway section to connect the new tank into TUD's existing water distribution system (Figure 2, Project Site). The proposed storage tank would replace storage for the 125,000-gallon Zone 3 tank that failed last year. Implementation of the Project would improve water service reliability to better serve TUD's customers.

Methods

3.1 Preliminary Site Evaluation

Prior to conducting the survey, Dudek performed a review of pertinent online and literature sources. This consisted of a review of the following online databases and reports: the U.S. Fish and Wildlife Service (USFWS) Information,

Planning, and Consultation (IPaC), California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB), and the California Native Plant Society (CNPS) Rare Plant Inventory (USFWS 2022a; CDFW 2022; CNPS 2022a). The IPaC report was based on a query for the Project site. The CNDDDB and CNPS databases were queried for the nine USGS 7.5-minute quadrangles centered on the Project quadrangle (Twain Harte) and immediately surrounding the Project site (Crandall Peak, Duckwall Mtn., Tuolumne, Hull Creek, Strawberry, Standard, Columbia SE, and Stanislaus). Following a review of these resources, Dudek biologists determined the potential for special-status plant and wildlife species to occur on-site (Attachments 1 and 2). Determinations were based on a review of habitat types, soils, and elevation preferences, as well as the known geographic range and nearest occurrence records of each species. No protocol-level surveys for special-status species were conducted.

For this report, “special-status” species are those that are (1) listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act; (2) listed or candidates for listing as threatened or endangered under the California Endangered Species Act; (3) a state fully protected species; (4) a California Department of Fish and Wildlife (CDFW) Species of Special Concern; (5) a CDFW watch list species; (6) a species included on the CDFW Special Animals List; or (7) a species listed on the California Native Plant Society Inventory of rare and Endangered Plants with a California Rare Plant Rank (CRPR) of 1B or 2B.

3.2 Field Surveys

3.2.1 Biological Field Survey

Dudek biologist Laura Burris performed a biological field survey of the Project site on May 7, 2022. The survey was conducted when weather conditions were favorable, with no cloud cover, wind speeds of 0 to 2 miles per hour, and temperatures ranging from 61°F to 65°F. The survey was conducted on foot to visually cover the entire Project site. Representative site photographs of the Project site are included in Attachment 3.

All plant species encountered were identified to the lowest taxonomic level needed to determine rarity. Those species that could not be immediately identified were brought into the laboratory for further investigation. Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2022), and common names follow the U.S. Department of Agriculture Natural Resources Conservation Service PLANTS Database (USDA 2022a).

Wildlife species detected during the field survey by sight, calls, tracks, scat, or other signs were recorded directly into a field notebook. The site was also scanned with binoculars to aid in the identification of wildlife. A list of plant and wildlife species identified on the Project site during the survey is included in Attachment 4.

3.2.2 Aquatic Resources Delineation

Concurrent with the fieldwork on May 7, 2022, Dudek biologist Laura Burris performed a preliminary field survey to identify and map the extent of aquatic resources within or adjacent to the Project site that are potentially subject to regulation under federal Clean Water Act (CWA) Sections 401 and 404, California Fish and Game Code Section 1600, or the provisions of the Porter-Cologne Water Quality Act.

The aquatic resources delineation was performed at a reconnaissance-level and is not intended to support aquatic resources permitting. Additional investigation and data collection will be required if aquatic resources permitting is necessary. Results of the aquatic resources delineation are incorporated into this assessment.

4 Results

4.1 Site Description

The Project site is located in the Central Sierra Lower Montane Forest section of the Sierra Nevada Ecoregion in the central Sierra Nevada Mountains, in the watershed of the Upper North Fork Tuolumne River. The area is characterized by ridge tops and sloping terrain draining south to the Tuolumne River. The Land cover on the Project site and surrounding area consists of terrestrial non-vegetative land covers and natural vegetation communities including Ponderosa pine forest.

Elevations at the Project site range from approximately 4,571 to 4,594 feet above mean sea level. The climate is temperate and dry with average annual temperatures ranging from approximately 30°F lows in January to 85°F highs in July (BestPlaces 2022). The average annual snowfall is 65 inches and the average annual rainfall is 44 inches, with highest average snowfall. On average, the month with the highest snowfall is February, the greatest amount of rainfall is received in March, and the month with the least precipitation is August (BestPlaces 2022).

4.2 Soils

There are three soil map units mapped within the Project site: Musick-Wukusick complex, 3 to 15 percent slopes; Musick-Wukusick complex, 15 to 30 percent slopes, low precipitation; and Devilsnose-Lilygap complex, 30 to 60 percent slopes, low precipitation (USDA 2022b; Figure 3, Soils). These soil series are described below. No exposed serpentine soils or outcrops were observed on the Project site during the field survey. According to Calflora (2022), no serpentine soils are mapped on the Project site; the nearest serpentine soils are mapped near Jamestown southwest of the Project site. Soils on the Project site are neutral (Calflora 2022). None of these soils are considered hydric (USDA 2022c).

Musick-Wukusick complex, 3 to 15 percent slopes and 30 to 60 percent slopes, low precipitation: This soil map unit is dominated by Musick and similar soils (50 percent), 45 percent Wukusick and similar soils, and 5 percent minor components (USDA 2022). Musick soils consist of well drained soils formed from colluvium over residuum derived from diorite. Textures include course sandy loam, sandy loam, loam, clay loam, and sandy clay loam. They occur on mountain slopes. This soil type comprised the vast majority of the Project site is composed of Musick-Wukusick complex, 3 to 15 percent slopes.

Devilsnose-Lilygap complex, 30 to 60 percent slopes, low precipitation; This soil map unit is dominated by Devilsnose and similar soils (40 percent), 35 percent Lilygap and similar soils, and 25 percent minor components (USDA 2022). Devilnose soils consist of very deep, well drained soils formed in ashy colluvium over weathered colluvium and residuum from andesitic tuff breccia. Texture is typically sandy loam. This soil occurs on northwest facing slopes. Lilygap soils consist of very deep, well drained soils formed in ashy colluvium over weathered colluvium and residuum from andesitic tuff breccia. Texture of this soil is typically sandy loam. They most often

occur on northwest facing slopes. Minor components included in this soil series include Redapple, Iron mountain, and rock outcrop.

4.3 Hydrology

The Project site occurs within the Johnie Gulch subwatershed, within the greater Upper North Fork Tuolumne River Watershed (Hydrologic Unit Code 180400090901; EPA 2022). The Project site is located on generally east-west ridge in the central Sierra Nevada Mountains between the North Fork Tuolumne River basin on the south and the South Fork Stanislaus River to the north. Water from the site drains generally by sheetflow and overland drainage south to an unnamed drainage southeast of the project site, which drains south to the North Fork Tuolumne River approximately 1.4 miles south of the project site.

No aquatic resources are mapped as present in the Project site or directly adjacent (USFWS 2022b, USGS 2022). These datasets are mapped at a coarse scale, providing reconnaissance-level data on the presence, location, and size of waters. No aquatic resources were observed on the Project site.

4.4 Vegetation Communities and Land Cover Types

Land cover in the Project site consists of natural vegetation communities. The vegetation communities and land covers have been adapted from the Manual of California Vegetation, Online Edition (CNPS 2022b). The following vegetation communities and land cover types were documented on the Project site and are described in further detail below: montane forest (Figure 4, Vegetation Communities and Land Cover Types).

Table 1. Vegetation Communities Mapped on the Project Site

Abbreviation	Vegetation Community/ Land Cover Type	Vegetation Alliance and CDFW Alliance Code	Sensitive? (Y/N)	Acreage
Vegetation Communities				
<i>Forest</i>				
MCF	Mixed Conifer Forest	<i>Pinus ponderosa</i> – <i>Abies concolor</i> / <i>Chamaebatia foliolosa</i> Association	No	0.73
Land Cover				
DEV	Developed	NA	No	0.78
DEV-L	Developed/Landscaped	NA	No	0.06
Total:				1.57

Notes: Totals may not sum due to rounding. NA: not applicable.

4.4.1 Mixed Conifer Forest

Approximately half the Project site is dominated by an open forest with Ponderosa pine (*Pinus ponderosa*), white fir (*Abies conolor*), live oak (*Quercus wislizenii*), and black oak (*Quercus kelloggii*). The coniferous trees were large and

mature, while the oak trees were smaller and younger. The understory is further comprised of a shrub layer including mountain misery (*Chamaebatia foliolosa*), buckbrush (*Ceanothus cuneatus*), and deer brush (*Ceanothus integerrimus*). The herb layer in this vegetation type is sparse.

4.4.2 Developed and Developed/Landscaped

Just over half of the Project site is comprised of land that has been significantly altered by land development and associated disturbance or conversion of natural habitat. The developed portion of the Project site consists of hardscapes and buildings, roads, and landscaped areas associated with private homes. Vegetation within this land cover type contained some native species similar to those found in the mixed conifer forest described above, with the addition of cultivated non-native species.

4.4.3 Sensitive Natural Communities

No sensitive natural communities, as defined by CDFW, were documented within the Project site.

4.5 Aquatic Resources

The Project site is located on a ridge. There were no depressions or drainages noted during the survey. Snowmelt and rainwater runoff appears to be channeled from roadways and residential parcels via culverts under roadways, draining water in a southern direction. No potential federal or state jurisdictional aquatic resources were observed on-site during the 2022 field survey.

4.6 Plant and Wildlife Species Observed

A total of 45 species of native or naturalized plants, 29 native (64%) and 16 non-native (36%), was recorded on the site (see Attachment 4). The Dudek biologist directly observed, or documented via scat, sign, or call, three native wildlife species on the Project site during the field survey. Observed wildlife species included western wood-pewee (*Contopus sordidulus*), American crow (*Corvus brachyrhynchos*), and Steller's jay (*Cyanocitta stelleri*). A list of the plant and wildlife species identified on the Project site during the field survey is included in Attachment 4. No special-status plant or wildlife species were observed during the field survey. No focused surveys for special-status species were conducted.

4.7 Special-Status Plant and Wildlife Species

Based on the known habitat and life history requirements (e.g., vegetation types, soils, and elevation preferences) of the target list of special-status plant and wildlife species identified as a result of the literature and database review described in Section 3.1, and the known geographic range and nearest occurrence records of each of these species, the potential for each of these species to occur on or adjacent to the Project site was determined (Attachments 1 and 2). The potential for occurrence of each species was summarized according to the categories listed below. Because not all species are accommodated precisely by a given category (i.e., category definitions may be too restrictive), an expanded rationale for each category assignment is provided.

- Known to occur: the species has been documented on the Project site by a reliable source.

- High potential to occur: the species has not been documented on the Project site but is known from recent recorded observations in the vicinity and suitable habitat is present.
- Moderate potential to occur: the species has not been documented on the Project site or in the Project vicinity, but the site is within the known range of the species and suitable habitat for the species is present.
- Low potential to occur: the species has not been documented in the Project vicinity or on the Project site, but the site is within the known range of the species; however, suitable habitat for the species on-site is of low quality.
- Not expected to occur: the Project site is outside the known geographic or elevational range of the species and/or the site does not support suitable habitat for the species.

4.7.1 Special-Status Plant Species

Results of the IPaC, CNDDb, and CNPS database searches returned 36 special-status plant species that are known to occur in the Project site region (Figure 5, Special Status Species). Of these 36 species, 15 are not expected to occur, and 21 have low potential to occur; these species are identified in Attachment 1, which provide a brief discussion of the potential for each species to occur on the Project site.. No special-status plants were observed during the May 2022 floristic survey. Species not expected to occur and with low potential to occur are determined by the lack of suitable habitat or the presence of very low-quality habitat within or adjacent to the Project site, the lack of documented occurrences near the Project site, and/or the site being outside of the species' known geographic or elevation range; these species are identified in Attachment 1, but not addressed further in this report.

4.7.2 Special-Status Wildlife Species

Results of the IPaC and CNDDb database searches returned 35 special-status wildlife species that are known to occur in the Project site region (Figure 5, Special Status Species). This included several special-status species records within two miles of the Project site (Figure 5, Special-Status Species Records from CNDDb). Of these 35 species, 22 are not expected to occur, nine have low potential to occur, four have a moderate potential to occur, and none have high potential to occur; these species are identified in Attachment 2 along with a brief discussion of their potential to occur on the Project site.

4.7.2.1 Nesting Birds and Raptors, including Sharp-shinned Hawk

The Project site provides suitable nesting habitat for numerous local and migratory bird or raptor species, including the sharp-shinned hawk (*Accipiter striatus*; CDFW Watch List species) protected by the federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (FGC). Specifically, trees, shrubs, and open habitat on the Project site provide suitable nesting habitat. Common native bird species detected during the May 2022 field survey included western wood-pewee (*Contopus sordidulus*), American crow (*Corvus brachyrhynchos*), and Steller's jay (*Cyanocitta stelleri*). No special-status avian species were detected (refer to Attachment 4).

4.7.2.2 Bats

The following special-status bats have a moderate potential to occur at the Project site given potentially suitable roosting habitat (e.g., tree foliage, cavities, buildings). and may be impacted by Project activities. If bats are roosting on the Project site, direct impacts to individual bats could result from the removal of roosting sites, such as trees and structures.

Hoary Bat

The hoary bat (*Lasiurus cinereus*) is on the CDFW Special Animals List and designated as a “moderate priority” species by the Western Bat Working Group (WBWG). The hoary bat winters in Southern California and the southeastern United States (Shump and Shump 1982). However, in California during the fall and winter, males and females appear to have elevational separation, with males occurring at higher elevations in the foothills and mountains, and females at lower elevations in the lowlands and coastal valleys; however, these patterns are still not well understood (Cryan 2003; Shump and Shump 1982; Vaughn and Kruttsch 1954). Hoary bats typically roost in tree foliage and sometimes cavities, such as woodpecker holes, 3 to 5 meters (9.8 to 16.4 feet) above the ground (Constantine 1966; Shump and Shump 1982). A torpid hoary bat was reported in a squirrel’s nest in Georgia (Neill 1952). In Iowa, Constantine (1966) observed that foliage provided dense shade and cover above the roost. However, even on a particular tree, they may select roost sites that provide an appropriate microclimate and open flyways.

Pallid Bat

The pallid bat (*Antrozous pallidus*) is a California Species of Special Concern and designated as a “high priority” species by the WBWG. It occurs throughout California except for the high Sierra Nevada from Shasta to Kern Counties, and the northwestern corner from Del Norte and western Siskiyou Counties to Mendocino County. Pallid bats use a wide variety of habitats (e.g., grassland, scrub, woodland, forest) but are most common in open, dry areas with rock outcrops or cliffs for roosting. Day roosting sites include caves, crevices, mines, and occasionally in hollow trees and buildings. Night roosts may be in more open sites such as porches and open buildings (Harris 1990a). Roosts generally have unobstructed entrances/exits, are high above the ground, warm, and inaccessible to terrestrial predators (Rambaldini 2005).

Townsend’s Big-eared Bat

The Townsend's big-eared bat (*Corynorhinus townsendii*) is a California Species of Special Concern and designated as a "high priority" species by the WBWG. It occurs throughout California in a variety of habitats but is most abundant in mesic habitats. Roosting sites include caves, mines, tunnels, buildings, and other human-made structures. Townsend's big-eared bats forage by gleaning moths and other soft-bodied insects from trees or brush along habitat edges (Harris 1990b).

5 Conclusions and Recommendations

5.1 Sensitive Natural Communities

No sensitive natural communities were observed on-site or nearby during the May 2022 survey. Thus, no impacts to sensitive natural communities are expected as a result of Project implementation, and no avoidance and minimization measures are recommended.

5.2 Aquatic Resources

Given no potentially jurisdictional aquatic resources were observed on-site or nearby during the May 2022 survey and thus no impacts are expected as a result of Project implementation, no avoidance and minimization measures are recommended.

5.3 Special-Status Plants

Based on a field assessment and literature review, there are no CRPR 1 or 2 plant species with a moderate or high potential to occur on the Project site. No special-status plant species were identified at the Project site during the May 2022 field survey. The field survey was outside the bloom season for Coleman's rein orchid (*Piperia colemanii*); however, this species has distinct vegetative characteristics that allow for identification to genus before it blooms. No plants resembling those in the genus *Piperia* were noted within the Project site during the May 2022 survey.

Given no impacts to special-status plants are expected as a result of Project implementation, no avoidance and minimization measures are recommended to reduce impacts to special-status plants.

5.4 Special-Status Wildlife

Several species of nesting birds and bats have a moderate potential to occur on the Project site. The following measures would reduce or avoid impacts to nesting birds and bats.

Nesting Birds. Eventual development on the Project site could involve tree and vegetation removal, which has the potential to impact nesting birds protected by the federal MBTA and state FGC. Direct or indirect impacts to nesting birds would likely be considered a potentially significant impact under CEQA. To avoid impacting active nests, Dudek recommends conducting tree or vegetation removal outside of the nesting season (September through February). If not feasible and construction will occur during the nesting season (February through August), Dudek recommends implementing the following measures to avoid or minimize impacts to nesting birds:

- A qualified biologist shall conduct a pre-construction survey for nesting birds no more than two days prior to vegetation or structure removal or ground-disturbing activities conducted during the nesting season (February through August). The survey should cover the limits of construction and suitable nesting habitat within 500 feet of the Project site for raptors and 100 feet for other nesting birds, as feasible and accessible.
- If any active nests are observed during surveys, a qualified biologist shall establish a suitable avoidance buffer from the active nest. The buffer distance will typically range from 50 to 500 feet and should be determined based on factors such as the species of bird, topographic features, intensity and extent of the

disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule. Limits of construction to avoid active nests should be established in the field with flagging, fencing, or other appropriate barriers and should be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist.

- If vegetation removal activities are delayed, additional nest surveys should be conducted such that no more than 7 days elapse between the prior survey and vegetation removal activities.
- If an active nest is identified in or adjacent to the construction limits after construction has started, work in the vicinity of the nest should be halted until the qualified biologist can provide appropriate avoidance and minimization measures to ensure that the nest is not disturbed by construction. Appropriate measures may include a no-disturbance buffer until the birds have fledged and/or full-time monitoring by a qualified biologist during construction activities conducted near the nest.

Bats.

If bats are roosting on the Project site, direct impacts to individual bats could result from the removal of roosting sites, such as trees and buildings. Should individual bats be roosting during construction activities, removal of active day roost sites that would result in the harm or mortality of native bats and would be considered a violation of the take provisions of Section 4150 of the California Fish and Game Code for non-game mammals (including native bats). To avoid or minimize the potential for take of roosting bats, Dudek recommends implementing the following measures:

- A qualified biologist shall conduct a habitat assessment for roosting bats within the project site. The habitat assessment shall include a visual inspection of potential roosting features (bats need not be present) and presence of guano within the project site, access routes, and 50 feet around these areas. The biologist shall survey these areas between 30 and 120 days prior to the start of work. Potential roosting features found during the survey shall be flagged or marked.
- If a maternity roost is located, that roost will remain undisturbed with a buffer until a qualified biologist has determined that the roost is no longer active. If project activities must occur in close proximity to the buffer during the maternity roosting season, monitoring during construction may be required as determined by a qualified biologist.
- If the maternity roost is located in a tree or building that is planned for removal, roost exclusion must occur outside of the maternity roosting season prior to the removal of the roost. An Exclusion Plan will be developed detailing the methods for exclusion and replacement roost installation (such as the placement of bat boxes) that will require approval of CDFW prior to implementing exclusion. The Exclusion Plan will also include monitoring to ensure that all bats have left the roost prior to demolition or removal.
- If a non-maternity roost in a tree is found, the qualified biologist shall coordinate with TUD and the Contractor to avoid impacts to the roost if possible.
- Trees with suitable roosting opportunities will be removed in pieces, rather than felling the entire tree. Any potential roost location in a tree where absence of roosting could not be confirmed will be monitored to determine if any bats are leaving or falling out of a tree.

If you have any questions or concerns regarding the content of this report, please contact me at 916.835.9671 or lburris@dudek.com.

Sincerely,



Laura Burris
Senior Biologist

Att.: *Figures 1-5*
Att. 1 – *Special-status Plant Species Potential to Occur*
Att. 2 – *Special-status Wildlife Species Potential to Occur*
Att. 3 – *Site Photographs*
Att. 4 – *Species Compendium*

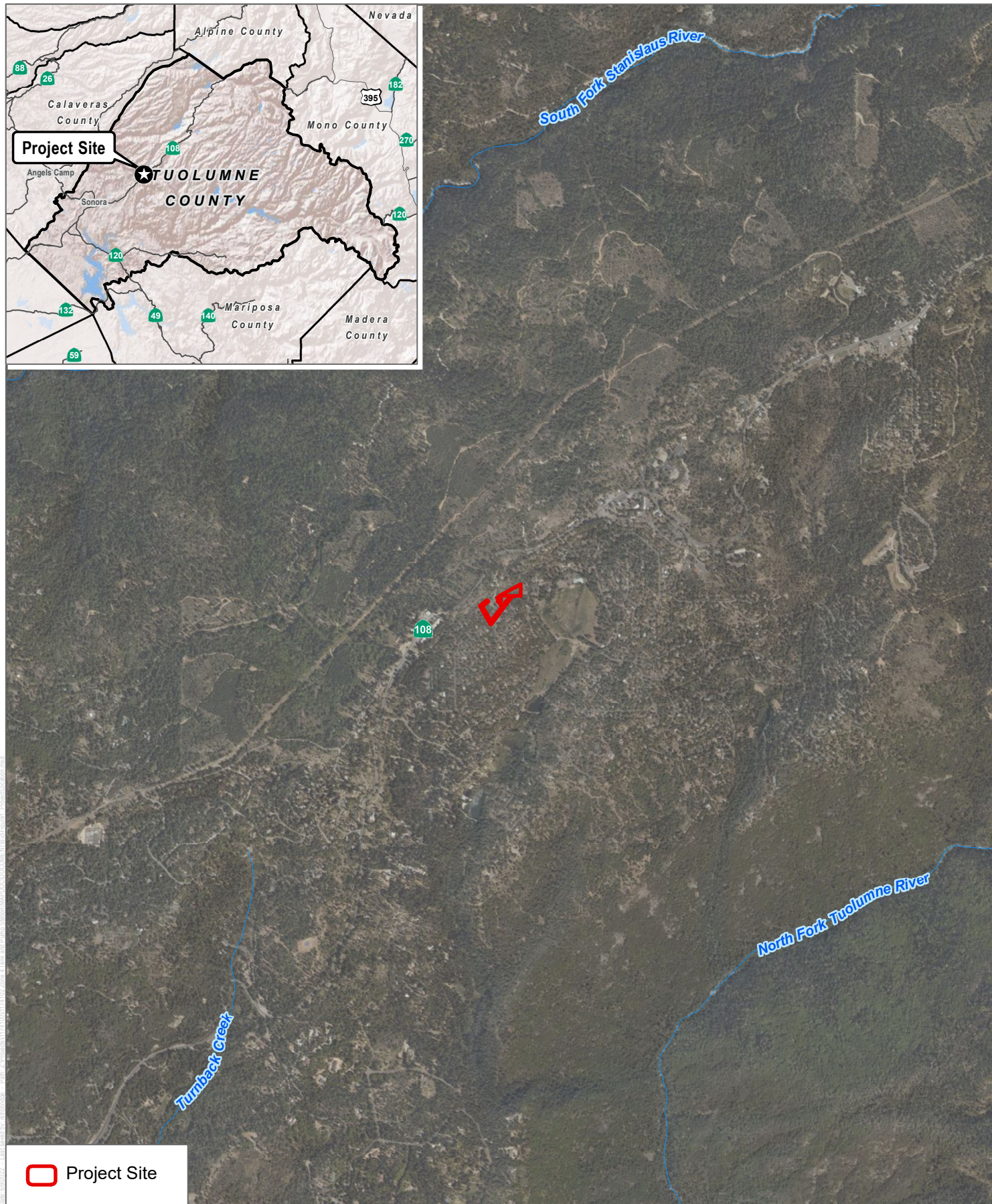
cc: Markus Lang, Dudek
Elizabeth Meisman, Dudek

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Figures 1-5



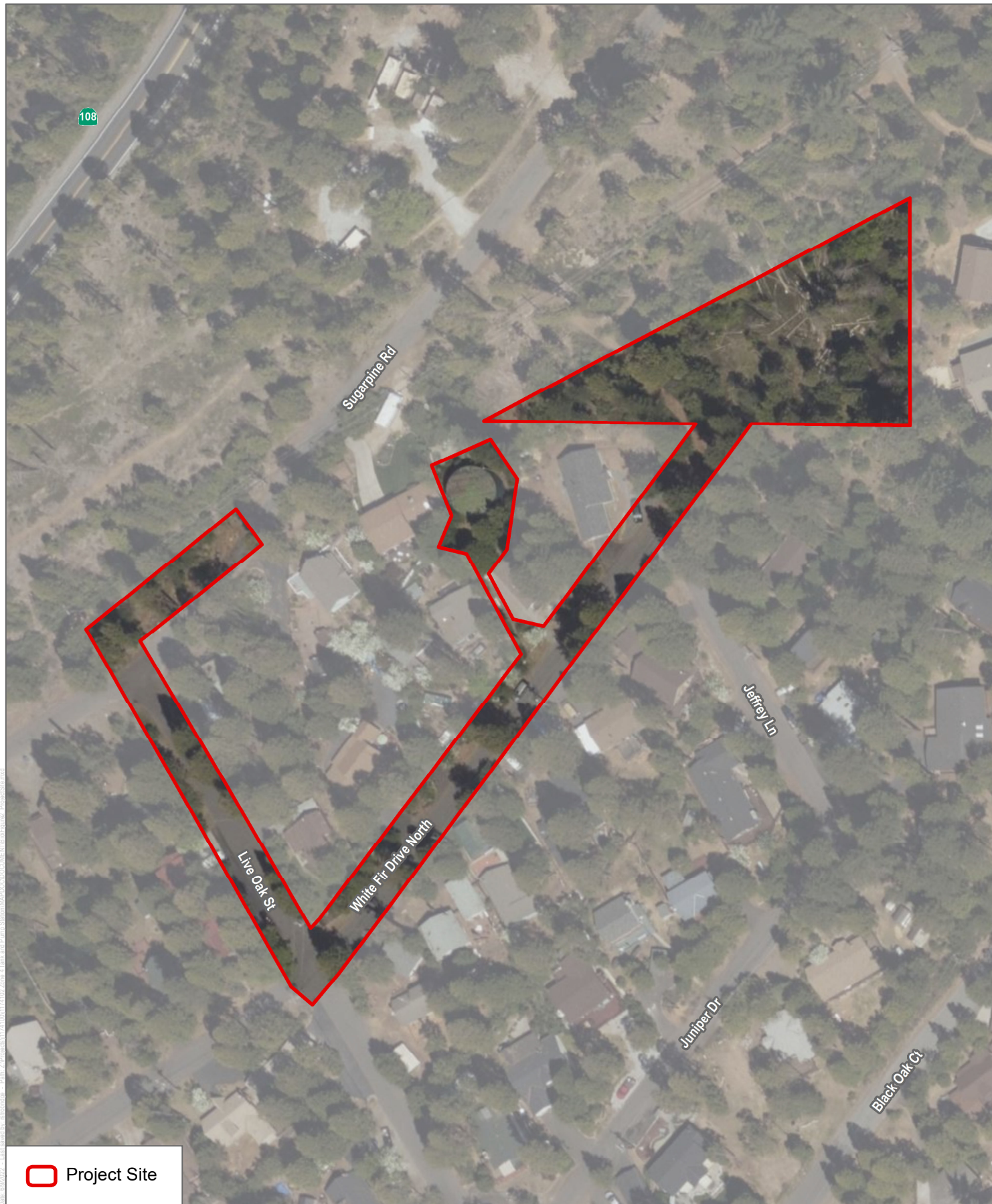
SOURCE: Bing Maps 2021, NHD

DUDEK



0 1,000 2,000 Feet

FIGURE 1
Project Site and Vicinity
 Biological Resource Assessment for the Tuolumne Utilities District Zone 4 Tank and Pump Station Project

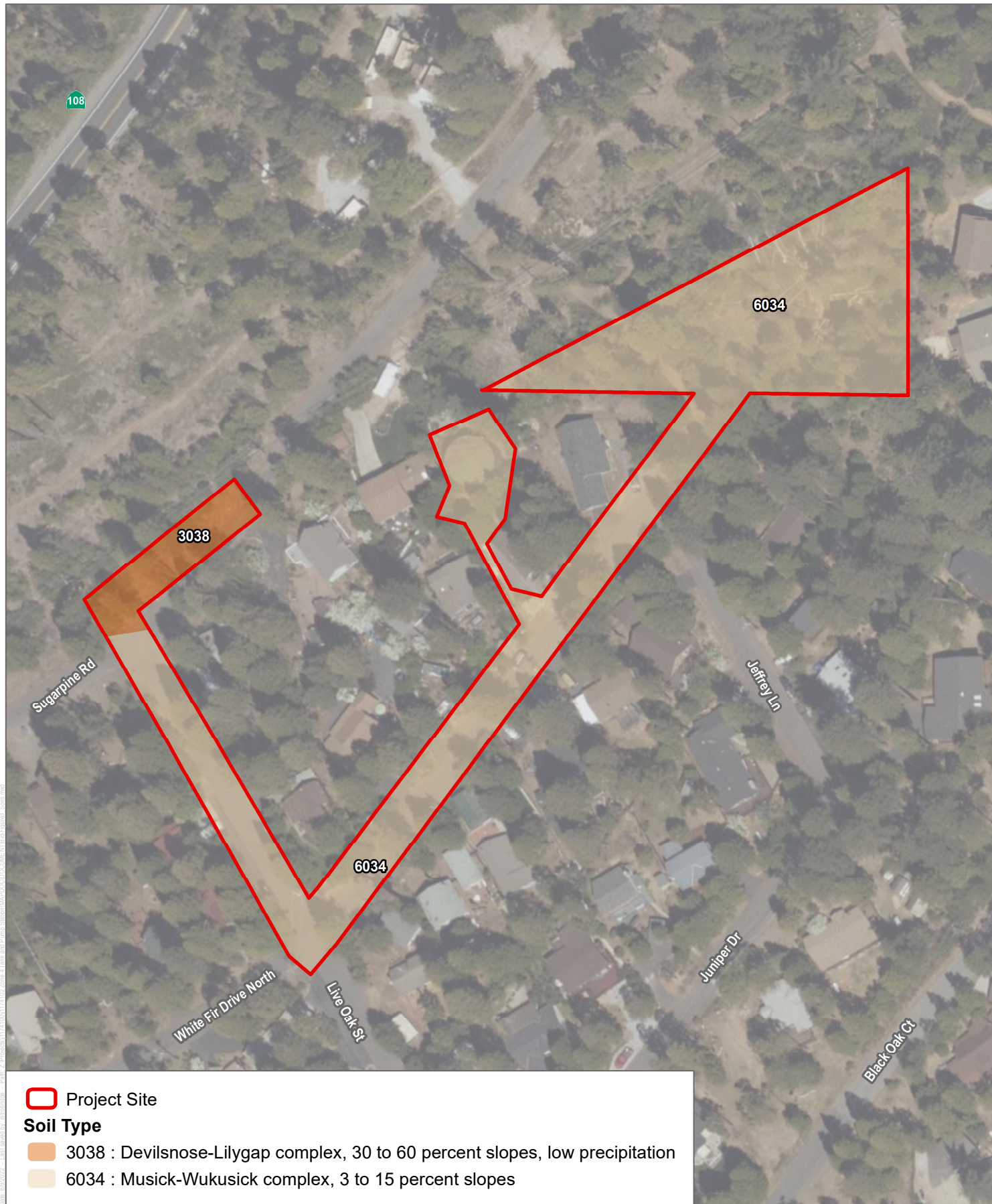


SOURCE: Bing Maps 2021, OpenStreetMap 2021

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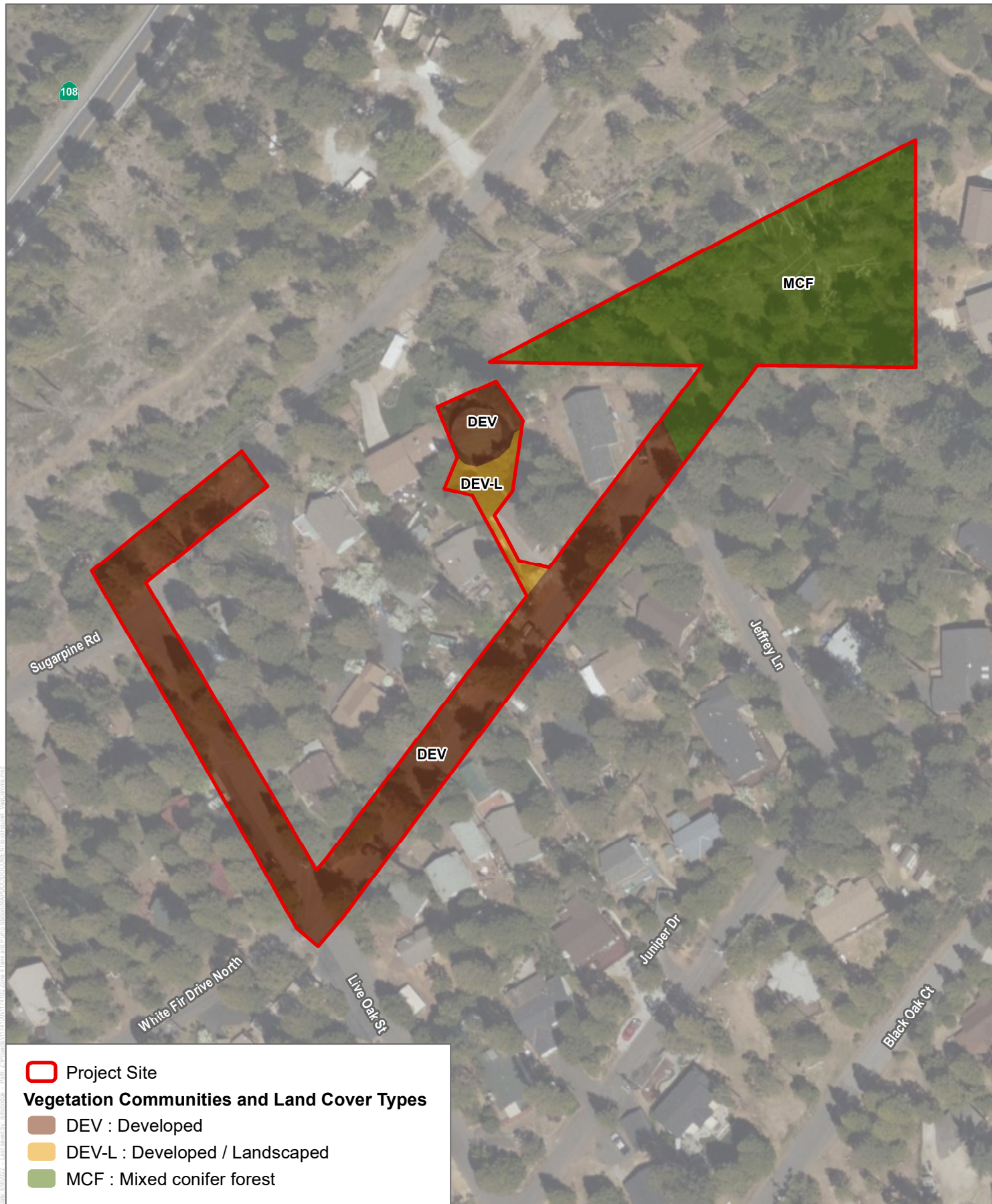
FIGURE 2
Project Site



SOURCE: Bing Maps 2021, OpenStreetMap 2021, USGS SSURGO

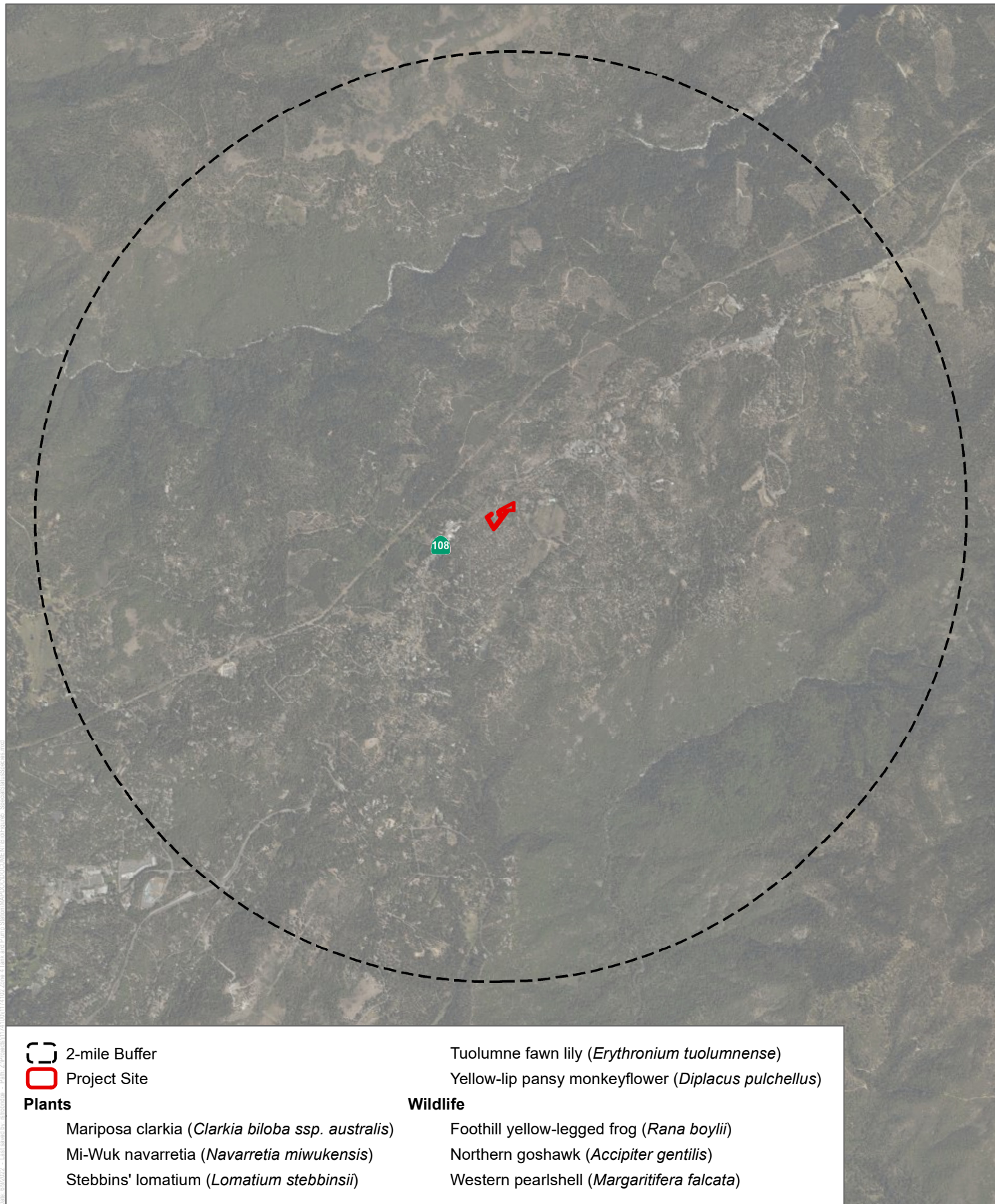
FIGURE 3

Soils



SOURCE: Bing Maps 2021, OpenStreetMap 2021

FIGURE 4



SOURCE: Bing Maps 2021, OpenStreetMap 2021, CDFW 2022

Attachment 1

Special-Status Plant Species Potential to Occur at the Project Site

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Allium tribracteatum</i>	three-bracted onion	None/None/1B.2	Chaparral, Lower montane coniferous forest, Upper montane coniferous forest; Volcanic/perennial bulbiferous herb/Apr–Aug/3,605–9,840	Low potential to occur. Although the Project site contains potentially suitable habitat for this species (e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development. Moreover, this species was not observed during the appropriately-timed floristic survey in May 2022. The nearest documented occurrence is from an unspecified date prior to 2019 approximately 0.4 miles east of the Project site (Calflora 2022; CDFW 2022).
<i>Balsamorhiza macrolepis</i>	big-scale balsamroot	None/None/1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland; Serpentine (sometimes)/perennial herb/Mar–June/150–5,100	Not expected to occur. The Project site lacks suitable habitat (e.g., chaparral, woodland, grassland) and soil (e.g., serpentine) for this species. The nearest documented occurrence is from 1925, approximately 11 miles southwest of the Project site (Calflora 2022, CDFW 2022).
<i>Botrychium crenulatum</i>	scalloped moonwort	None/None/2B.2	Bogs and fens, Lower montane coniferous forest, Marshes and swamps, Meadows and seeps, Upper montane coniferous forest/perennial rhizomatous herb/June–Sep/4,160–10,760	Low potential to occur. Although the Project site contains potentially suitable habitat for this species (e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development. Moreover, this species prefers wetland habitat and was not observed during the appropriately-timed floristic survey in May 2022. The nearest documented occurrence is from an unspecified date prior to 2019 approximately 5 miles east of the Project site (Calflora 2022, CDFW 2022).
<i>Botrychium minganense</i>	Mingan moonwort	None/None/2B.2	Bogs and fens, Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest; Mesic/perennial rhizomatous herb/July–Sep/4,770–7,150	Not expected to occur. The Project site is outside of the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Bruchia bolanderi</i>	Bolander's bruchia	None/None/4.2	Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest/moss//5,575–9,185	Not expected to occur. The Project site is outside of the species' known elevation range.
<i>Carex tompkinsii</i>	Tompkins' sedge	None/SR/4.3	Chaparral, Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest; Granitic (sometimes)/perennial rhizomatous herb/May–July/1,375–6,000	Low potential to occur. Although the Project site contains potentially suitable habitat for this species (e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development. Moreover, this species was not observed during the appropriately-timed floristic survey in May 2022. The nearest documented occurrence is from 1998 approximately 4 miles southeast of the Project site (Calflora 2022, CDFW 2022).
<i>Ceanothus fresnensis</i>	Fresno ceanothus	None/None/4.3	Cismontane woodland, Lower montane coniferous forest/perennial evergreen shrub/(Apr)May–July/2,950–7,250	Low potential to occur. Although the Project site contains potentially suitable habitat for this species (e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development. Moreover, this species was not observed during the appropriately-timed floristic survey in May 2022. The nearest documented occurrence is from an unspecified date prior to 2019 approximately 0.4 miles east of the Project site (Calflora 2022; CDFW 2022).
<i>Clarkia australis</i>	Small's southern clarkia	None/None/1B.2	Cismontane woodland, Lower montane coniferous forest/annual herb/May–Aug/2,620–6,805	Low potential to occur. Although the Project site contains potentially suitable habitat for this species (e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development. Moreover, this species was not observed during the appropriately-timed floristic survey in May 2022. The nearest documented occurrence is from an unspecified date prior to 2019 approximately 0.4 miles east of the Project site (Calflora 2022; CDFW 2022).

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Clarkia biloba ssp. australis</i>	Mariposa clarkia	None/None/1B.2	Chaparral, Cismontane woodland; Serpentine/annual herb/Apr–July/985–4,790	Not expected to occur. The Project site lacks suitable habitat (e.g., chaparral or woodland) and soil (e.g., serpentine) for this species. The nearest documented occurrence is from an unspecified date prior to 2019 approximately 0.4 miles east of the Project site (Calflora 2022; CDFW 2022).
<i>Clarkia mildrediae ssp. lutescens</i>	golden-anthered clarkia	None/None/4.2	Cismontane woodland, Lower montane coniferous forest; Roadsides (often), Rocky (often)/annual herb/June–Aug/900–5,740	Not expected to occur. Although the Project site contains potentially suitable habitat for this species (e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development. Moreover, this species has not been previously documented in Tuolumne County or surrounding counties (Calflora 2022).
<i>Clarkia virgata</i>	Sierra clarkia	None/None/4.3	Cismontane woodland, Lower montane coniferous forest/annual herb/May–Aug/1,310–5,295	Low potential to occur. Although the Project site contains potentially suitable habitat (for this species e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development. Moreover, this species was not observed during the appropriately-timed floristic survey in May 2022. The nearest documented occurrence is from an unspecified date prior to 2019 approximately 0.4 miles east of the Project site (Calflora 2022; CDFW 2022).
<i>Claytonia obovata</i>	Rydberg's spring beauty	None/None/4.3	Subalpine coniferous forest; Openings (usually), Rocky, Talus/perennial herb/(Mar–Apr)May–June(July)/4,540–9,300	Not expected to occur. The Project site lacks suitable habitat (e.g., subalpine coniferous forest) and soil (e.g., rocky, talus) for this species. Moreover, the Project site is located at the lower limits of the species' known elevation range (site elevation = 4,571 to 4,594). No occurrences of this species have been documented in Tuolumne County (Calflora 2022).
<i>Claytonia parviflora ssp. grandiflora</i>	streambank spring beauty	None/None/4.2	Cismontane woodland; Rocky/annual herb/Feb–May/820–3,935	Not expected to occur. The Project site is outside of the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Cypripedium montanum</i>	mountain lady's-slipper	None/None/4.2	Broadleafed upland forest, Cismontane woodland, Lower montane coniferous forest, North Coast coniferous forest/perennial rhizomatous herb/Mar–Aug/605–7,295	Low potential to occur. Although the Project site contains potentially suitable habitat for this species (e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development. Moreover, this species was not observed during the appropriately-timed floristic survey in May 2022. The nearest documented occurrence is from an unspecified date prior to 2019 approximately 0.4 miles east of the Project site (Calflora 2022; CDFW 2022).
<i>Delphinium hansenii</i> ssp. <i>ewanianum</i>	Ewan's larkspur	None/None/4.2	Cismontane woodland, Valley and foothill grassland; Rocky/perennial herb/Mar–May/195–1,965	Not expected to occur. The Project site is outside of the species' known elevation range.
<i>Diplacus pulchellus</i>	yellow-lip pansy monkeyflower	None/None/1B.2	Lower montane coniferous forest, Meadows and seeps; Clay, Disturbed areas (often), Vernally Mesic/annual herb/Apr–July/1,965–6,560	Low potential to occur. Although the Project site contains potentially suitable habitat for this species e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development. Moreover, this species was not observed during the appropriately-timed floristic survey in May 2022. The nearest documented occurrence is from 1917 within approximately 0.25 miles (at geographically unspecified location; CDFW 2022). There is an additional recent record (from an unspecified date prior to 2019) approximately 0.4 miles east of the Project site (Calflora 2022).
<i>Diplacus pygmaeus</i>	Egg Lake monkeyflower	None/None/4.2	Great Basin scrub, Lower montane coniferous forest, Meadows and seeps, Pinyon and juniper woodland; Clay, Streambanks, Vernally Mesic, Volcanic/annual herb/May–Aug/1,640–6,035	Low potential to occur. Although the Project site contains potentially suitable habitat for this species e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development. Additionally, the Project lacks any aquatic habitat or suitable soil (e.g., streambanks, etc.) for this species. Moreover, this species was not observed during the appropriately-timed floristic survey in May 2022. No occurrences

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
				of this species have been documented in Tuolumne County (Calflora 2022).
<i>Eryngium pinnatisectum</i>	Tuolumne button-celery	None/None/1B.2	Cismontane woodland, Lower montane coniferous forest, Vernal pools; Mesic/annual/perennial herb/May–Aug/230–3,000	Not expected to occur. The Project site is outside of the species' known elevation range.
<i>Erythranthe grayi</i>	Gray's monkeyflower	None/None/4.3	Lower montane coniferous forest, Upper montane coniferous forest; Mesic/annual herb/May–July/1,800–9,510	Low potential to occur. Although the Project site contains potentially suitable habitat for this species (e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development. Additionally, the Project lacks any aquatic habitat or suitable soil (e.g., mesic) for this species. Moreover, this species was not observed during the appropriately-timed floristic survey in May 2022. The nearest documented occurrence is from 1998 approximately 23.75 miles southeast of the Project site (Calflora 2022).
<i>Erythranthe laciniata</i>	cut-leaved monkeyflower	None/None/4.3	Chaparral, Lower montane coniferous forest, Upper montane coniferous forest; Granitic, Mesic/annual herb/Apr–July/1,605–8,690	Low potential to occur. Although the Project site contains potentially suitable habitat for this species (e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development. Additionally, the Project lacks any aquatic habitat or suitable soil (e.g., granitic, mesic) for this species. Moreover, this species was not observed during the appropriately-timed floristic survey in May 2022. The nearest documented occurrence is from 1996 approximately 5.4 miles east of the Project site (Calflora 2022).
<i>Erythranthe marmorata</i>	Stanislaus monkeyflower	None/None/1B.1	Cismontane woodland, Lower montane coniferous forest/annual herb/Mar–May/330–2,950	Not expected to occur. The Project site is outside of the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Erythronium tuolumnense</i>	Tuolumne fawn lily	None/None/1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest/perennial bulbiferous herb/Mar–June/1,670–4,475	Not expected to occur. The Project site is outside of the species' known elevation range.
<i>Horkelia parryi</i>	Parry's horkelia	None/None/1B.2	Chaparral, Cismontane woodland/perennial herb/Apr–Sep/260–3,510	Not expected to occur. The Project site is outside of the species' known elevation range.
<i>Iris hartwegii</i> ssp. <i>columbiana</i>	Tuolumne iris	None/None/1B.2	Cismontane woodland, Lower montane coniferous forest/perennial rhizomatous herb/May–June/1,390–4,590	Low potential to occur. Although the Project site contains potentially suitable habitat for this species (e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development. Moreover, this species was not observed during the appropriately-timed floristic survey in May 2022. The nearest documented occurrence is from an unspecified date prior to 2019 approximately 0.4 miles east of the Project site (Calflora 2022; CDFW 2022).
<i>Jepsonia heterandra</i>	foothill japonica	None/None/4.3	Cismontane woodland, Lower montane coniferous forest; Metamorphic, Rocky/perennial herb/Aug–Dec/165–1,640	Not expected to occur. The Project site is outside of the species' known elevation range.
<i>Lewisia kelloggii</i> ssp. <i>hutchisonii</i>	Hutchison's lewisia	None/None/3.2	Upper montane coniferous forest; Openings/perennial herb/(Apr)May–Aug/2,505–7,755	Low potential to occur. Although the Project site contains potentially suitable habitat for this species (e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development. Moreover, this species was not observed during the appropriately-timed floristic survey in May 2022. The nearest documented occurrence is from an unknown date prior to 2019 approximately 7.25 miles east of the Project site (Calflora 2022).
<i>Lilium humboldtii</i> ssp. <i>humboldtii</i>	Humboldt lily	None/None/4.2	Chaparral, Cismontane woodland, Lower montane coniferous forest; Openings/perennial bulbiferous herb/May–July(Aug)/295–4,195	Not expected to occur. The Project site is outside of the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Lomatium stebbinsii</i>	Stebbins' lomatium	None/None/1B.1	Chaparral, Lower montane coniferous forest; Serpentine/perennial herb/Mar–May/4,080–7,790	Low potential to occur. Although the Project site contains potentially suitable habitat for this species e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development. Moreover, this species was not observed during the appropriately-timed floristic survey in May 2022. The nearest documented occurrence is from 2019 approximately 0.4 miles east of the Project site (Calflora 2022; CDFW 2022).
<i>Mielichhoferia elongata</i>	elongate copper moss	None/None/4.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Meadows and seeps, Subalpine coniferous forest; Acidic (usually), Carbonate (sometimes), Metamorphic, Roadsides (often), Vernal Mesic (usually)/moss/0–6,430	Low potential to occur. Although the Project site contains potentially suitable habitat for this species e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development. Additionally, the Project lacks any aquatic habitat or suitable soil (e.g., acidic, carbonate, etc.) for this species. Moreover, this species was not observed during the appropriately-timed floristic survey in May 2022. The nearest documented occurrence is from an unspecified date prior to 2019 approximately 0.4 miles east of the Project site (Calflora 2022 CDFW 2022).
<i>Myrica hartwegii</i>	Sierra sweet bay	None/None/4.3	Cismontane woodland, Lower montane coniferous forest, Riparian forest/perennial deciduous shrub/May–June/490–5,740	Low potential to occur. Although the Project site contains potentially suitable habitat for this species e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development. Additionally, the Project lacks any aquatic habitat. Moreover, this species was not observed during the appropriately-timed floristic survey in May 2022. The nearest documented occurrences are from 1889 and 1935 approximately 10.5 miles east of the Project site (Calflora 2022).
<i>Navarretia miwukensis</i>	Mi-Wuk navarretia	None/None/1B.2	Lower montane coniferous forest; Openings/annual herb/May–June(July)/2,620–4,920	Low potential to occur. Although the Project site contains potentially suitable habitat for this species e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
				development. Moreover, this species was not observed during the appropriately-timed floristic survey in May 2022. The nearest documented occurrence is from 1940 approximately 1.75 miles south of the Project site (Calflora 2022, CDFW 2022).
<i>Peltigera gowardii</i>	western waterfan lichen	None/None/4.2	Riparian forest/foliose lichen (aquatic)/3,490–8,595	Not expected to occur. The Project site lacks suitable habitat (e.g., riparian forest) and soil (e.g., aquatic) for this species.
<i>Perideridia bacigalupii</i>	Bacigalupi's yampah	None/None/4.2	Chaparral, Lower montane coniferous forest/perennial herb/June–Aug/1,475–3,395	Not expected to occur. The Project site is outside of the species' known elevation range.
<i>Piperia colemanii</i>	Coleman's rein orchid	None/None/4.3	Chaparral, Lower montane coniferous forest/perennial herb/June–Aug/3,935–7,545	Low potential to occur. Although the Project site contains potentially suitable habitat for this species e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development. Moreover, this species was not observed during the floristic survey in May 2022, when <i>Piperia</i> species would be vegetatively identifiable. The nearest documented occurrence is from an unknown date prior to 2019 approximately 11 miles northeast of the Project site (Calflora 2022, CDFW 2022).
<i>Rhynchospora capitellata</i>	brownish beaked-rush	None/None/2B.2	Lower montane coniferous forest, Marshes and swamps, Meadows and seeps, Upper montane coniferous forest/perennial herb/July–Aug/150–6,560	Not expected to occur. Although the Project site contains potentially suitable habitat for this species e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development and lacks any aquatic habitat. The nearest documented occurrence is from 2014 approximately 12.5 miles southeast of the Project site (Calflora 2022, CDFW 2022).

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
<i>Stellaria obtusa</i>	obtuse starwort	None/None/4.3	Lower montane coniferous forest, Riparian woodland, Upper montane coniferous forest/perennial rhizomatous herb/May–Sep(Oct)/490–7,510	Low potential to occur. Although the Project site contains potentially suitable habitat for this species e.g., mixed conifer forest), the Project site has been previously cleared and is located in a residential development. Moreover, this species was not observed during the appropriately-timed floristic survey in May 2022. The nearest documented occurrence is from 1938 approximately 23 miles east of the Project site (Calflora 2022, CDFW 2022).

Status Abbreviations:

SR = State rare

CRPR = California Rare Plant Rank

CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere

CRPR 2B: Plants rare, threatened, or endangered in California but more common elsewhere

CRPR 3: Plants about which we need more information

CRPR 4: Plants of limited distribution

.1 Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)

.2 Moderately threatened in California (20–80% occurrences threatened/moderate degree and immediacy of threat)

.3 Not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

Sources:CDFW (California Department of Fish and Wildlife). 2022. Biogeographic Information and Observation System (BIOS), version 5.108.119. Sacramento, California: CDFW, Biogeographic Data Branch. Accessed May 2022. <https://apps.wildlife.ca.gov/bios/?al=ds85>.Calflora. 2022. "Information on California plants for education, research, and conservation, with data contributed by public and private institutions and individuals, including the Consortium of California Herbaria." [web application]. Berkeley, California: Calflora. Accessed May 2022. <http://www.calflora.org/>.

Attachment 2

Special-Status Wildlife Species Potential to Occur at the Project Site

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Invertebrates				
<i>Atractelmis wawona</i>	Wawona riffle beetle	None/SAL	Aquatic; found in riffles of rapid, small to medium clear mountain streams; 2,000 to 5,000 feet above mean sea level	Not expected to occur. The Project site lacks suitable habitat for the species (e.g., aquatic). The nearest documented occurrence is from 1987 approximately 7 miles southwest of the Project site (CDFW 2022).
<i>Banksula melones</i>	Melones Cave harvestman	None/SAL	Limestone caves in the vicinity of New Melones Reservoir on the Stanislaus River, Calaveras/Tuolumne Counties	Not expected to occur. The Project site lacks suitable habitat for the species (e.g., limestone cave). The nearest documented occurrence is from 1986 approximately 11 miles west of the Project site (CDFW 2022).
<i>Banksula tuolumne</i>	Tuolumne cave harvestman	None/SAL	Known only from the type locality Tuolumne Crystal Cave, Tuolumne, Tuolumne County	Not expected to occur. The Project site lacks suitable habitat for the species (e.g., caves). The nearest documented occurrence is from 1979 approximately 13.5 miles south of the Project site (CDFW 2022).
<i>Bombus crotchii</i>	Crotch bumble bee	None/SAL	Open grassland and scrub communities supporting suitable floral resources.	Not expected to occur. The Project site lacks suitable habitat for this species (e.g., grassland and scrub habitat with abundant year-long floral resources). The nearest documented occurrence is from 1919 approximately 14.5 miles west of the Project site. There are no known records of this species in Tuolumne documented in Bumble Bee Watch (Bumblee Bee Watch 2022).
<i>Danaus plexippus</i> pop. 1	monarch	FC/None	Wind-protected tree groves with nectar sources and nearby water sources	Not expected to occur. The Project site lacks suitable habitat for this species (e.g., milkweed, or wind-protected tree groves). The nearest documented occurrence is from 2016 of a single individual approximately 1.5 miles northeast of the Project site (iNaturalist 2022).
<i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	FT/None	Occurs only in the Central Valley of California, in association with blue elderberry (<i>Sambucus nigra</i> ssp. <i>caerulea</i>)	Not expected to occur. The Project site lacks suitable habitat for this species (e.g., elderberry shrubs). The nearest documented occurrence is from 2000 approximately 6.75 miles southwest of the Project site (CDFW 2022).

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
<i>Hydroporus simplex</i>	simple hydroporus diving beetle	None/SAL	Known from aquatic habitats in Tuolumne and San Bernardino Counties	Not expected to occur. The Project site lacks suitable habitat for the species (e.g., aquatic). The nearest documented occurrence is from 1948 approximately 14.15 miles northeast of the Project site (CDFW 2022).
<i>Larca laceyi</i>	Lacey's Cave pseudoscorpion	None/SAL	Caves	Not expected to occur. The Project site lacks suitable habitat for the species (e.g., caves). The nearest documented occurrence is from 1973 approximately 8.75 miles west of the Project site.
<i>Margaritifera falcata</i>	western pearlshell	None/SAL	Aquatic	Not expected to occur. The site lacks suitable (e.g., aquatic) habitat for the species.
<i>Monadenia circumcarinata</i>	keeled sideband	None/SAL	Endemic to the Tuolumne River canyon, in association with steep limestone outcrops and talus slopes	Not expected to occur. The Project site lacks suitable habitat for the species (e.g., aquatic).
<i>Monadenia mormonum buttoni</i>	Button's Sierra sideband	None/SAL	Known from the central Sierra Nevada counties	Low potential to occur. Very little is known about this subspecies' habitat requirements; thus it is unlikely that the Project site contains suitable habitat for this species. The nearest documented occurrence is from an unknown date approximately 23.4 miles west of the Project site (CDFW 2022).
<i>Monadenia mormonum hirsuta</i>	hirsute Sierra sideband	None/SAL	Known only from a few basaltic outcrops in Tuolumne County	Not expected to occur. The Project site lacks suitable habitat for the species (e.g., basaltic outcrops). The nearest documented occurrence is from 1995 approximately 4.6 miles northwest of the Project site (CDFW 2022).
<i>Monadenia tuolumneana</i>	Tuolumne sideband	None/SAL	Endemic to the Tuolumne River canyon, in association with steep limestone outcrops and talus slopes	Not expected to occur. The Project site lacks suitable habitat for the species (e.g., limestone outcrops). There are two nearest documented occurrences from 1949 and 2005 approximately 9.5 miles southwest of the Project site (CDFW 2022).
<i>Pseudogarypus orpheus</i>	Music Hall Cave pseudoscorpion	None/SAL	Caves	Not expected to occur. The Project site lacks suitable habitat for the species (e.g., caves). The nearest documented occurrence is from 1976 approximately 8.75 miles west of the Project site (CDFW 2022).

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
<i>Stygobromus harai</i>	Hara's Cave amphipod	None/SAL	Central California foothills	Not expected to occur. The Project site lacks suitable habitat for the species (e.g., caves and tunnels; NatureServe Explorer 2022). The nearest documented occurrence is from 2015 mapped at a large area approximately 3.15 miles west of the Project site (CDFW 2022).
Fishes				
<i>Hesperoleucus symmetricus symmetricus</i>	central California roach	None/SSC	Generally found in small streams of the Sierra Nevada foothills flowing into the Central Valley and are particularly well adapted to life in intermittent watercourses; dense populations are frequently observed in isolated pools.	Not expected to occur. The site lacks suitable habitat for the species (e.g., aquatic).
<i>Hypomesus transpacificus</i>	Delta smelt	FT/SE	Sacramento–San Joaquin Delta; seasonally in Suisun Bay, Carquinez Strait, and San Pablo Bay	Not expected to occur. The Project site is outside the known geographic of the species and the site lacks suitable habitat for the species (e.g., aquatic, estuarine).
Amphibians				
<i>Rana draytonii</i>	California red-legged frog	FT/SSC	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands	Not expected to occur. The Project site lacks suitable habitat for the species (e.g., perennial aquatic). No suitable breeding habitat is located in the Project vicinity.
Reptiles				
<i>Emys marmorata</i>	western pond turtle	None/SSC	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	Not expected to occur. The Project site lacks suitable habitat for the species (aquatic habitat and adjacent uplands), nor is the site within the typical dispersal distance of this species from a body of water (0.5 km; CDFW 2022).
Birds				
<i>Accipiter gentilis</i> (nesting)	northern goshawk	None/SSC	Nests primarily in middle- and higher-elevation dense conifer forests; winters at lower elevations along coast, foothills, and northern deserts in riparian and pinyon–juniper woodland	Low potential to occur. The species is highly sensitive to disturbance; the Project site is in a residential neighborhood. Forested habitat on-site would be considered low quality habitat for the species due to the high level of disturbance and the open canopy of the forest. The nearest documented occurrence is from 2015 approximately 0.5 miles

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
				southwest of the site (eBird 2022). There are additional records within 1 mile as recently as 1996 (CDFW 2022).
<i>Accipiter striatus</i> (nesting)	sharp-shinned hawk	None/WL	Nests in coniferous forests, ponderosa pine, black oak, riparian deciduous, mixed conifer, Jeffrey pine; winters in lowland woodlands and other habitats	Moderate potential to occur. The species is a common breeder in urban and rural settings. Forested habitat on-site may provide suitable nesting, overwintering, and foraging habitat. The nearest documented occurrence is from 2018 within 0.5 miles (eBird 2022).
<i>Agelaius tricolor</i> (nesting colony)	tricolored blackbird	None/SSC, ST	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberry; forages in grasslands, woodland, and agriculture	Not expected to occur. The Project site lacks suitable breeding habitat for this species (e.g., waterbodies). The nearest documented occurrence is from 2021 approximately 3.25 miles east of the site (eBird 2022).
<i>Athene cunicularia</i> (burrow sites & some wintering sites)	burrowing owl	None/SSC	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	Not expected to occur. The species is only known to overwinter in the Project vicinity. There is no suitable breeding habitat (e.g., grassland, areas with burrows) within the Project site. The nearest documented occurrence is from 2016 approximately 13.75 miles northeast of the site (eBird 2022).
<i>Haliaeetus leucocephalus</i> (nesting & wintering)	bald eagle	FDL/FP, SE	Nests in forested areas adjacent to large bodies of water, including seacoasts, rivers, swamps, large lakes; winters near large bodies of water in lowlands and mountains	Low potential to occur. Although the Project site is in the species' known breeding range, the site and surrounding areas lack large water bodies with suitable nesting sites. The nearest documented occurrence is from 2022 approximately 0.5 miles southwest of the site (eBird 2022).
<i>Pandion haliaetus</i> (nesting)	osprey	None/WL	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast	Low potential to occur. Although the Project site is in the species' known breeding range, the site and surrounding areas lack large water bodies with suitable nesting sites. The nearest documented occurrence is from 2019 approximately 0.5 miles southwest of the site (eBird 2022).
<i>Strix nebulosa</i> (nesting)	great gray owl	None/SE	Nests in old-growth red fir, mixed-conifer, lodgepole pine habitats near wet meadows used for foraging	Low potential to occur. The species is highly sensitive to disturbance; the Project site is in a residential neighborhood. Although the Project site

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
				contains forested habitat, it would be considered low quality habitat for the species due to the high level of disturbance and lack of proximity to wet meadows.
<i>Strix occidentalis occidentalis</i>	California spotted owl		Mixed conifer forest, often with an understory of black oaks and other deciduous hardwoods. Canopy closure >40%. Most often found in deep-shaded canyons, on north-facing slopes, and within 300 meters of water.	Low potential to occur. The Project site is in a residential neighborhood. Although the Project site contains forested habitat, it would be considered low quality habitat for the species due to the high level of disturbance and lack of proximity to water.
Mammals				
<i>Lasiurus cinereus</i>	hoary bat	None/SAL	Forest, woodland riparian, and wetland habitats; also juniper scrub, riparian forest, and desert scrub in arid areas; roosts in tree foliage and sometimes cavities, such as woodpecker holes	Moderate potential to occur. Mature trees on the Project site may provide roosting habitat for the species. The nearest documented occurrence is from 1995 approximately 7.5 miles south of the Project site (CDFW 2022). There is an additional recent record from 2016 approximately 10 miles south of the Project site (BAMVT 2022).
<i>Antrozous pallidus</i>	pallid bat	None/SSC	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and trees	Moderate potential to occur. Mature trees on the Project site may provide roosting habitat for the species. The nearest documented occurrence is from 1939 approximately 3.75 miles northeast of the site (CDFW 2022). There is an additional recent record from 2015 approximately 15 miles southeast of the Project site (BAMVT 2022).
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None/SSC	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, man-made structures, and tunnels	Moderate potential to occur. Buildings and mature trees on the Project site may provide roosting habitat for the species. The nearest documented occurrence is from 1997 approximately 2.8 miles southeast of the site (CDFW 2022). There is an additional recent record from 2015 approximately 15 miles south of the Project site during acoustic surveying on the Stanislaus National Forest (BAMVT 2022). Numerous (13) sites surveyed in the vicinity without detection (BAMVT 2022).

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
<i>Erethizon dorsatum</i>	North American porcupine	None/SAL	Forested habitats in the Sierra Nevada, Cascade, and Coast ranges, with scattered observations from forested areas in the Transverse Ranges (CDFW 2018).	Low potential to occur. The Project site is in a residential neighborhood. Forested habitat on-site would be considered low quality habitat for the species due to the high level of disturbance. The nearest documented occurrence is from 2016 approximately 6 miles southwest of the Project site (CDFW 2022).
<i>Euderma maculatum</i>	spotted bat	None/SSC	Foothills, mountains, desert regions of southern California, including arid deserts, grasslands, and mixed-conifer forests; roosts in rock crevices and cliffs; feeds over water and along washes	Not expected to occur. The Project site lacks suitable roosting habitat for the species (e.g., caves). The nearest documented occurrence is from 1995 approximately 9 miles southwest of the Project site (CDFW 2022). There is an additional recent record from 2016 approximately 12 miles southeast of the Project site during acoustic surveying on the Stanislaus National Forest (BAMVT 2022).
<i>Eumops perotis californicus</i>	western mastiff bat	None/SSC	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees, and tunnels	Not expected to occur. The Project site lacks suitable roosting habitat for the species (e.g., crevices). The nearest documented occurrence is from 1995 approximately 7.5 miles south of the Project site (CDFW 2022). There is an additional recent record from 2015 approximately 12 miles southeast of the Project site (BAMVT 2022).
<i>Gulo gulo</i>	California wolverine	None/FP, ST	Douglas-fir, red fir, lodgepole, subalpine conifer, alpine dwarf shrub, mixed-conifer, and barren habitats	Low potential to occur. The species is highly sensitive to disturbance; the Project site is in a residential neighborhood. Forested habitat on-site would be considered low quality habitat for the species due to the high level of disturbance. The nearest documented occurrence is from 1973 approximately 4 miles northeast of the Project site (CDFW 2022).
<i>Lepus americanus tahoensis</i>	Sierra Nevada snowshoe hare	None/SSC	Riparian with thickets of deciduous trees such as alders and willows, dense thickets of conifers, and sometimes ceanothus and manzanita	Not expected to occur. The Project site lacks suitable habitat for the species (e.g., riparian thickets). Moreover, the Project site is in a residential neighborhood. The nearest documented

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
				occurrence is from approximately 14.5 miles northeast of the Project site (CDFW 2022).

Status Abbreviations

FDL: Federally Delisted
 FT: Federally Threatened
 FP: CDFW Fully Protected Species
 SAL: on the CDFW Special Animals List
 SSC: CDFW Species of Special Concern
 SE: State Endangered
 ST: State Threatened
 WL: CDFW Watch List Species

Sources:

BAMVT (Bat Acoustic Monitoring Visualization Tool). Species Occurrences. Conservation Biology Institute (CBI) and the U.S. Department of Agriculture Forest Service - Pacific Southwest Research Station. Accessed June 2022. <https://batamp.org/>.
 CDFW (California Department of Fish and Wildlife). 2022. Biogeographic Information and Observation System (BIOS), version 5.108.119. Sacramento, California: CDFW, Biogeographic Data Branch. Accessed June 2022. <https://apps.wildlife.ca.gov/bios/?al=ds85>.
 eBird. 2022. eBird Observations. Cornell, New York: Cornell Lab of Ornithology. Accessed June 2022. <https://ebird.org/explore>.

Attachment 3

Representative Project Site Photos



Photo 1. View of landscaped areas within the Project site facing northwest.



Photo 2. View of developed areas within the Project site facing northeast.



Photo 3. View of mixed conifer habitat within the Project site facing northeast.



Photo 4. View of existing tank to be removed within the Project site facing northeast.

Attachment 4

List of Plant and Wildlife Species Observed at the Project Site

Plant Species

Angiosperms (Eudicots)

APIACEAE—CARROT FAMILY

Osmorhiza berteroi—sweetcicely

APOCYNACEAE—DOGBANE FAMILY

Vinca major—bigleaf periwinkle*

ASTERACEAE—SUNFLOWER FAMILY

Hypochaeris radicata—hairy cat's ear*

BORAGINACEAE—BORAGE FAMILY

Phacelia cicutaria—caterpillar phacelia

Phacelia imbricata—imbricate phacelia

Plagiobothrys greenei—Greene's popcornflower

BRASSICACEAE—MUSTARD FAMILY

Capsella bursa-pastoris—shepherd's purse*

CARYOPHYLLACEAE—PINK FAMILY

Stellaria media—common chickweed*

ERICACEAE—HEATH FAMILY

Arctostaphylos viscida—whiteleaf manzanita

FABACEAE—LEGUME FAMILY

Acmispon americanus—Spanish clover

Acmispon wrangelianus—Chilean bird's-foot trefoil

Genista monspessulana—French broom*

Trifolium dubium—suckling clover*

Vicia ludoviciana—Louisiana vetch

FAGACEAE—OAK FAMILY

Quercus kelloggii—California black oak

Quercus wislizeni—interior live oak

GROSSULARIACEAE—GOOSEBERRY FAMILY

Ribes roezlii—Sierra gooseberry

HYPERICACEAE—ST. JOHN'S WORT FAMILY

Hypericum calycinum—Aaron's beard*

MONTIACEAE—MONTIA FAMILY

Claytonia parviflora—streambank springbeauty

Claytonia perfoliata—miner's lettuce

ONAGRACEAE—EVENING PRIMROSE FAMILY

Epilobium brachycarpum—tall annual willowherb

PLANTAGINACEAE—PLANTAIN FAMILY

Collinsia heterophylla—purple Chinese houses

Plantago lanceolata—narrowleaf plantain*

Veronica arvensis—corn speedwell*

RHAMNACEAE—BUCKTHORN FAMILY

Ceanothus integerrimus—deer brush

ROSACEAE—ROSE FAMILY

Chamaebatia foliolosa—mountain misery

Drymocallis glandulosa—sticky cinquefoil

Fragaria virginiana—Virginia strawberry

RUBIACEAE—MADDER FAMILY

Galium aparine—stickywilly

SCROPHULARIACEAE—FIGWORT FAMILY

Verbascum thapsus—common mullein*

Gymnosperms and Gnetophytes

CUPRESSACEAE—CYPRESS FAMILY

Sequoiadendron giganteum—giant sequoia

PINACEAE—PINE FAMILY

Abies concolor—white fir

Pinus ponderosa—Ponderosa pine

Monocots

IRIDACEAE—IRIS FAMILY

Iris hartwegii ssp. *hartwegii*—rainbow iris

JUNCACEAE—RUSH FAMILY

Juncus tenuis—poverty rush

POACEAE—GRASS FAMILY

Aegilops cylindrica—jointed goatgrass*

Bromus hordeaceus—soft brome*

Bromus orcuttianus—Orcutt's brome

Cynosurus echinatus—annual dogtails*

Elymus glaucus—blue wildrye

Festuca microstachys—small fescue

Festuca myuros—rat-tail fescue*

Poa bulbosa—bulbous bluegrass*

Poa pratensis—Kentucky blue grass*

Wildlife Species – Vertebrates

Birds

TYRANNIDAE—TYRANT FLYCATCHERS

Contopus sordidulus—western wood-pewee

CORVIDAE—CROWS & JAYS

Corvus brachyrhynchos—American crow

Cyanocitta stelleri—Steller's jay

* signifies introduced (non-native) species

Appendix E

Cultural Resources Assessment

July 11, 2022

Elizabeth Merchant-Wells, EIT, Assistant Engineer
Tuolumne Utility District
18885 Nugget Blvd.
Sonora, CA 95370

Subject: Cultural Resources Letter Report for the Zone 4 Tank and Pump Station Project

Dear Elizabeth Merchant Wells:

This letter report documents the cultural resources study conducted by Dudek for the proposed Zone 4 Tank and Pump Station Project (Project), located in Tuolumne County, California. The Tuolumne Utility District (TUD) is the lead agency responsible for compliance with the California Environmental Quality Act (CEQA). This cultural resources study included a Central California Information Center (CCaIC) records search, Native American Heritage Commission (NAHC) Sacred Lands File search, and an intensive pedestrian survey for cultural resources. The cultural resources study was conducted by Dudek in accordance with the standards and guidelines defined by the California Office of Historic Preservation and CEQA.

Project Location and Description

The Project site is located in Townships 3 North and 2 North, Range 16 East, Sections 3 and 34 of the Twain Harte 7.5' USGS Quadrangle map (Figure 1). The Project site is located in the unincorporated community of Sugar Pine, approximately 11 miles northeast of the City of Sonora in western Tuolumne County, California. The proposed Project includes the construction of a proposed 400,000-gallon steel storage tank and pump station within an approximately 0.5-acre parcel owned by the TUD. The proposed Project also includes installing underground water main piping within the TUD-owned parcel and local roadways to intertie with TUD's existing water distribution system as well as removal of TUD's existing White Fir Tank located within an easement on a parcel along White Fir Drive. The White Fir Tank is in poor condition and will no longer be required after the proposed storage tank is constructed and operational. Removal of the White Fir Tank would occur after construction of the proposed new steel storage tank.

Project elements are anticipated to include:

- Construction of new 400,000 gallon steel water storage tank.
- Construction of new pump station
- Installation of new 6-inch water mains
- Demolition and removal of existing White Fir Tank, pipe, and pump station.

The maximum vertical extent of ground disturbance over the course of the project implementation is not expected to exceed 15 feet. In total, the Project site is approximately 1.57 acres in size, consisting of the TUD parcel and roadways and developed areas adjacent to the property (Figure 2).

Regulatory Framework

State Regulations

The California Register of Historical Resources

In California, the term “historical resource” includes but is not limited to “any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California” (California Public Resources Code [PRC] Section 5020.1(j)). In 1992, the California legislature established the California Register of Historical Resources (CRHR) “to be used by state and local agencies, private groups, and citizens to identify the state’s historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change” (PRC Section 5024.1(a)). The criteria for listing resources in the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the National Register of Historic Places (NRHP), enumerated below. According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains “substantial integrity,” and (ii) meets at least one of the following criteria:

- (1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- (2) Is associated with the lives of persons important in our past.
- (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- (4) Has yielded, or may be likely to yield, information important in prehistory or history.

In order to understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see California Code Regulations, Title 14, Section 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

California Environmental Quality Act

As described further below, the following CEQA statutes and CEQA Guidelines are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- PRC Section 21083.2(g) defines “unique archaeological resource.”
- PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) defines “historical resources.” In addition, CEQA Guidelines Section 15064.5(b) defines the phrase “substantial adverse change in the significance of an historical resource;” it also defines the circumstances when a project would materially impair the significance of an historical resource.
- PRC Section 21074(a) defines “tribal cultural resources.”
- PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e): Set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- PRC Sections 21083.2(b)-(c) and CEQA Guidelines Section 15126.4: Provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

More specifically, under CEQA, a project may have a significant effect on the environment if it may cause “a substantial adverse change in the significance of an historical resource” (PRC Section 21084.1; CEQA Guidelines Section 15064.5(b)). If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1(q)), it is a “historical resource” and is presumed to be historically or culturally significant for purposes of CEQA (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)).

A “substantial adverse change in the significance of an historical resource” reflecting a significant effect under CEQA means “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired” (CEQA Guidelines Section 15064.5(b)(1); PRC Section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project:

- (1) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
- (2) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

- (3) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA (CEQA Guidelines Section 15064.5(b)(2)).

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any “historical resources,” then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource’s historical significance is materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Section 21083.2[a], [b], and [c]).

PRC Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2(a); CEQA Guidelines Section 15064.5(c)(4)). However, if a non-unique archaeological resource qualifies as tribal cultural resource (PRC Sections 21074(c); 21083.2(h)), further consideration of significant impacts is required.

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in PRC Section 5097.98.

Native American Historic Cultural Sites

State law addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and establishes the Heritage Commission to resolve disputes regarding the disposition of such remains. In addition, the Native American Historic Resource Protection Act makes it a misdemeanor punishable by up to 1 year in jail to deface or destroy a Native American historic or cultural site that is listed or may be eligible for listing in the CRHR.

California Health and Safety Code Section 7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the County coroner has examined the remains (Section 7050.5b). PRC Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the NAHC within 24 hours (Section 7050.5c). The NAHC will notify the Most Likely Descendant (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. Recommendations by the MLD must be provided within 48 hours of being provided access. The MLD may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

Background Research

Cultural Records Search Results

A records search was completed for the current proposed Project site and a ½-mile radius on behalf of Dudek by staff at the CCalC at California State University, Stanislaus on May 17, 2022 (Confidential Appendix A). This search included a review of their collection of mapped prehistoric, historical, and built-environment resources, Department of Parks and Recreation Site Records, technical reports, historical maps, and local inventories. Additional consulted sources included the NRHP, California Inventory of Historical Resources/CRHR and listed Office of Historic Preservation Archaeological Determinations of Eligibility, California Points of Historical Interest, and California Historical Landmarks.

Previously Conducted Studies

CCaIC records indicate that twenty-five (25) previous cultural resources technical investigations have been conducted within ½-mile of the proposed Project site (Table 1). Of these studies, one (1) includes portions of the proposed Project site.

Table 1. Previous Technical Studies

Report Number	Date	Title	Author
Reports intersecting the Project Site			
TO-05438	1997	Confidential Archaeological Addendum for Timber Operations on Non-Federal Lands in California: Mi Wuk THP, 4-97-31/TUO-8	Vroma, M.

Table 1. Previous Technical Studies

Report Number	Date	Title	Author
Reports within ½-mile of the Project Site			
TO-01068	1988	Cultural Resources Investigations for the Phoenix Hydroelectric Project License Application (FERC 1061), Volumes I and II (Vol. II is Confidential Maps and Cultural Site Records [App. K] and Specimen Catalogue [App. L]).	Davis-King, S. and S. K. Goldberg
TO-01090	1987	Letter Report: Mi-Wuk Village Cultural Resources Inventory.	Dietz, S. A.
TO-01104	1989	Short Form Cultural Resource Inventory Report #05-16-51-328: Mi-Wuk Village Post Office Site.	Francis, C. M.
TO-01329	1980	Archaeological Investigations for the Phoenix Project, Tuolumne County, California.	Varner, D. M. and K. L. Cursi
TO-01330	1979	Management Summary of Archaeological Investigations for the Phoenix Project Tuolumne County, California.	Varner, D.
TO-01576	1990	Phoenix Hydroelectric Project FERC License No. 1061 Cultural Resources Management Plan.	Infotec Research, Inc.
TO-01847	1992	Cultural Resources Investigation of the Tramway THP Project Area (4-91-132/TUO-18), Tuolumne County, California.	Napton, L. K. and E. A. Greathouse
TO-02681	1995	Sugar Pine Railroad: Archaeological and Global Positioning Survey, Ralph Station to Lyons Dam.	Davis-King, Shelly and Ozbirn, R.
TO-02917	1995	Evaluation of Significance for the Sonora-Mono Road, CA-TUO-1629H (FS 05-16-53-450); Summit Ranger District, Stanislaus National Forest.	Turner, Kelly and Daniel R. Elliot
TO-04720	2002	Confidential Archaeological Addendum for Timber Operations on Non-Federal Lands in California: South Pearl THP # 4-02-34/TUO-3.	Vroman, M., RPF
TO-04870	2002	Stanislaus National Forest, Heritage Resources 1996 Sierra Nevada Programmatic Agreement Project Certification, Sampson Fuel Reduction Project, CRM 05-16-1204.	Potter, Erin
TO-05185	2003	Stanislaus National Forest, Heritage Resources 1996 Sierra Nevada Programmatic Agreement Project Certification; Highway 108 Hazard Tree SSTS Cultural Resource Management Report 05-16-1251.	Potter, E.
TO-05498	2004	Cultural Resources Inventory of Caltrans District 10 Rural Conventional Highways; Volume I: Summary of Methods and Findings.	Leach-Palm, L., P. Mikkelsen, J. King, J. Hatch, and B. Larson

Table 1. Previous Technical Studies

Report Number	Date	Title	Author
TO-05501	2004	Cultural Resources Inventory of Caltrans District 10 Rural Conventional Highways; Volume III: Geoarchaeological Study.	Rosenthal, J. S. and J. Meyer
TO-05505	2004	Cultural Resources Inventory of Caltrans District 10 Rural Conventional Highways; Volume II H: Tuolumne County.	Leach-Palm, L., J. King, J. Hatch, and B. Larson
TO-05547	2003	Stanislaus National Forest, Heritage Resources 1996 Sierra Nevada Programmatic Agreement Project Certification: Mi Wok RD Administrative Site Thinning, CRMR 05-16-1259.	Potter, Erin
TO-05728	2004	An Archaeological Survey Report for the (South Pearl) Timber Harvesting Plan (Tuolumne), California. 4-04-42/TUO-6	Vroman, M., RPF
TO-06295	2006	An Archaeological Survey Report for the Rucker Timber Harvesting Plan, Tuolumne County, California 4-06-36/TUO-3	Albrecht, M. (RPF)
TO-06480	2005	National Register of Historic Places Eligibility Evaluation of the Donnell-Curtis Transmission Line (FERC No. 2118), Tuolumne County, California.	Baloian, R.
TO-08462	2016	Confidential Archaeological Letter for the Sugar Pine Lake Notice of Emergency Timber Operations	Manich, L. J., RPF
TO-08771	2015	Stanislaus National Forest, Heritage Resources 2013 Regional Programmatic Agreement Project Certification, Mi-Wok Hazard Tree Abatement, Cultural Resource Management Report 05-16-1354	Wisniewski, Peter and Strain, Kathy
TO-09112	2019	Historic Property Survey Report for Caltrans Hazard Tree Removal Project, District 10 Segment 2: Tuolumne and Mariposa Counties, California, State Routes 108, 120, and 140; E-FIS 10-1800-0018, EA 10-1F6423 [Survey area extends in Alpine County]	Whitaker, A.
TO-09112	2018	Archaeological Survey Report. 2018 Hazard Tree Removal Project, State Route 108, Caltrans District 10, Tuolumne and Alpine Counties, California	Ugan, A. & A. Whitaker
TO-09112	2018	Archaeological Survey Report. 2018 Hazard Tree Removal Project, State Route 120, Caltrans District 10, Tuolumne and Mariposa Counties, California	Ugan, A., & A. Whitaker

Table 1. Previous Technical Studies

Report Number	Date	Title	Author
TO-09130	2019	Re: Pacific Gas & Electric Company, Phoenix Hydroelectric Project, FERC Project No. 1061, Historic Resources Inventory and Evaluation Report, October 2019	Walker, Matt
TO-09295	2019	An Archaeological Survey Report for the South Stan Timber Harvest Plan (THP) Tuolumne County, California	Aaron Smith

Previously Identified Cultural Resources

CCaIC records indicate that no archaeological or built-environment resources are on file within or adjacent to the Project site. Six (6) resources were on file within the ½-mile records search area (Table 2). All six of these resources consist of historic resources or historic archaeological sites, only one of which, the Tuolumne Main Canal (P-55-003115), was determined eligible for the NRHP/CRHR. The site records for two other resources have eligibility recommendations: the Sonora-Mono Road (P-55-000054) appears eligible and the Phoenix Hydroelectric Project District is recommended not eligible; however, neither of the site records document SHPO concurrence or official NRHP/CRHR eligibility status.

Table 2. Previously Recorded Cultural Resources

Primary Number	Trinomial	Period	Name	Type	NRHP/CRHR Status
Resources within the Project Site					
None					
Resources within ½-mile of the Project Site					
P-55-000006	CA-TU0-001456H	Historic	Sugar Pine Railroad,	Roads/trails/railroad grades	Not evaluated (7)
P-55-000054	CA-TU0-001629H	Historic	Sonora-Mono Road; Sonora-Mono Toll Road;	Roads/trails/railroad grades; Walls/fences; Engineering structure; Bridge; Monument/mural/gravestone; Highway/trail; Walls/gates/fences	Appears eligible (3)
P-55-000724		Historic	Miner's Ditch; Columbia and Stanislaus River Water Co. Ditch; Columbia Ditch	Water conveyance system	Not evaluated (7)
P-55-003115	CA-TU0-002142H	Historic	Tuolumne Main Canal; Main Tuolumne Ditch	Water conveyance system; Canal/aqueduct	Determined eligible (2S2)

Table 2. Previously Recorded Cultural Resources

Primary Number	Trinomial	Period	Name	Type	NRHP/CRHR Status
P-55-007694	CA-TU0-005002H	Historic	Donnells-Curtis Transmission Line	Engineering structure	Not evaluated (7)
P-55-009840		Historic	Phoenix Hydroelectric Project District, FERC Project No. 1061	Engineering structure; Dam	Not eligible (6)

Archival and Building Development Research

Dudek consulted historic maps and aerial photographs to understand development of the proposed Project site and surrounding properties. Historic topographic maps were available from 1959, 1962, 1967, 1980, 1988, 2004, 2012, 2015, and 2018 (NETR 2022a). The historic topographic maps show very little change to the area over time. All of the current roads in the vicinity are evident on the 1959 topographic maps, however the structures appear to be less dense. The resolution and building density increase on the 1980 map and are depicted identically on the 1988 and 2004 maps. The 2012, 2015, and 2018 maps do not depict residential structures, however the roadways remain unchanged. Historic aerial photographs were available for the project area from 1973, 1984, 1993, 1998, 2005, 2009, 2010, 2012, 2014, 2016, and 2018 (NETR 2022b). The aerial images indicate that vicinity of the Project site was sparsely developed with a mix of residential buildings within a conifer forest since 1973. Several commercial buildings appear to have been constructed along Highway 108 between the 1973 and 1984 images, but no other development is evident because most of the area is obscured by tree canopy in the aerial images.

NAHC and Tribal Correspondence

On May 13, 2022, Dudek requested a NAHC search of their Sacred Lands File for the area of the Project site. The NAHC results, received July 8, 2022, failed to identify any cultural resources within the records search area. The NAHC then provided a list of Native American tribes culturally affiliated with the location of the Project site and recommended contacting them for further information. None of the Native American tribes were contacted by Dudek; follow-up communication and formal consultation with Native American tribes pursuant to Assembly Bill (AB) 52 will be completed by TUD staff.

The proposed Project is subject to compliance with Assembly Bill 52 (PRC Section 21074), which requires consideration of impacts to “tribal cultural resources” as part of the CEQA process and requires the CEQA lead agency to notify any groups (who have requested notification) of the Project who are traditionally or culturally affiliated with the geographic area of the Project. Because AB 52 is a government-to government process, all records of correspondence related to AB 52 notification and any subsequent consultation are on file with TUD.

Intensive Pedestrian Survey

Dudek archaeologist Elizabeth Sivell inspected all portions of the approximately 1.57-acre Project site on May 26, 2022, using standard archaeological procedures and techniques that meet the Secretary of Interior's Standards and Guidelines for cultural resources inventory. Exposed ground surfaces were observed for surface artifacts, undisturbed areas, archaeological deposits, and historic structures and periodic boot scrapes were employed to expose additional ground surface. Evidence of artifacts and archaeological deposits were also opportunistically sought after in animal burrows. Surface visibility was very low (less than 5-percent) throughout the Project site, due to development and vegetation. In the area proposed for construction of the new tank, soils consisted of brown loam with low gravel content (less than 5-percent), with low visibility due to vegetation including pine, fir, mountain misery, seasonal grasses and pine duff. Several small boulders were found and inspected in the southeastern portion of this undeveloped area, however no bedrock milling features were identified. Numerous felled and/or fallen trees were identified in this area in addition to scattered modern refuse. The remainder of the Project site is previously disturbed by development of roadways, residences, and the old storage tank. No historic structures or archaeological resources were observed within the Project site during the field survey.

Geomorphology

Potential for cultural resources in the vicinity was reviewed against geologic and topographic GIS data for the area and information from other nearby projects. The "archaeological sensitivity," or potential to support the presence of buried prehistoric archaeological deposits, is generally interpreted based on geologic landform and environmental parameters (i.e., distance to water and landform slope).

The Project site is located within the western foothills of the Sierra Nevada Geomorphic Province of California, a nearly 400 miles long mountain range formed by a tilted fault block. The western portion of this geomorphic province is characterized by gentle slopes with numerous canyons and valleys formed by rivers flowing west to the Central Valley. The Project site specifically is located on a generally east-west ridge between the North Fork Tuolumne River to the south and the South Fork Stanislaus River to the north. The nearest waterway is an unnamed drainage approximately 350 meters southeast of the Project site.

Soils within the site are characterized primarily as Musick-Wukusick complex with 3 to 15 percent slope, with a smaller portion of Devilsnose-Lilygap complex with 30 to 60-percent slopes (UC Davis 2022). Musick-Wukusick complex soils consists of 50 percent Music series soils, 45 percent Wukusick series soils, and 5 percent minor components. Both Musick series and Wukusick series are very deep well drained soils forming on the slopes of foothills and mountains in colluvium over residuum from intrusive igneous rocks and mafic plutonic rocks, respectively (USDA 2022). Devilsnose-Lilygap complex soils consist of 40 percent Devilsnose series soils, 35 percent Lilygap series soils, and 25 percent minor components. Devilsnose series and Lilygap series are both very deep, well drained soils forming on mountainflanks of lahars in ashy colluvium over weathered colluvium and residuum from andesitic tuff breccia (USDA 2022). Based on review of this information and ignoring surface disturbances observed during the survey, the topography and underlying geology indicate the Project site has low-to-moderate potential to support the formation or continued presence of buried cultural deposits or surface manifestations.

Summary and Management Recommendations

Archaeological Resources

Observation of the present conditions within the proposed Project indicate surface conditions in much of the project area are disturbed from construction of the existing roads, residences, and water storage tank. Visibility in undeveloped portions of the Project site was low. No newly identified archaeological resources were recorded during the pedestrian survey of the proposed Project site. Further, a CCalC records search did not identify the presence of cultural resources within the proposed Project site or the surrounding vicinity and a NAHC Sacred Lands File search was negative. The proposed Project, as currently designed, appears to have a low potential for encountering intact cultural deposits during ground-disturbing activities and would have no impact to known cultural resources. Based on these negative findings and the observed conditions of the present proposed Project site, no additional cultural resources efforts, including archaeological monitoring, are recommended to be necessary beyond standard protection measures for unanticipated discoveries of cultural resources and human remains, as described below.

Unanticipated Discovery of Archaeological Resources

In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed Project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, can evaluate the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the find under CEQA (14 CCR 15064.5(f); PRC Section 21082), the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted.

Unanticipated Discovery of Human Remains

In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County Coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined, within 2 working days of notification of the discovery, if the potential remains are human in origin. If the County Coroner determines that the remains are, or are believed to be, Native American, the County Coroner shall notify the NAHC in Sacramento within 24 hours. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the most likely descendant of the deceased Native American. The most likely descendant shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.

If you have any questions about this report, please contact me at nhanten@dudek.com.

Sincerely,



Nicholas Hanten
Archaeologist

cc: Adam Giacinto, MA, RPA, Dudek
Markus Lang, Dudek

Att.: NADB Information
Figure 1: Project Location
Figure 2: Project Site
Appendix A: CCalC Record Search Results – Confidential
Appendix B: NAHC SLF Search Results

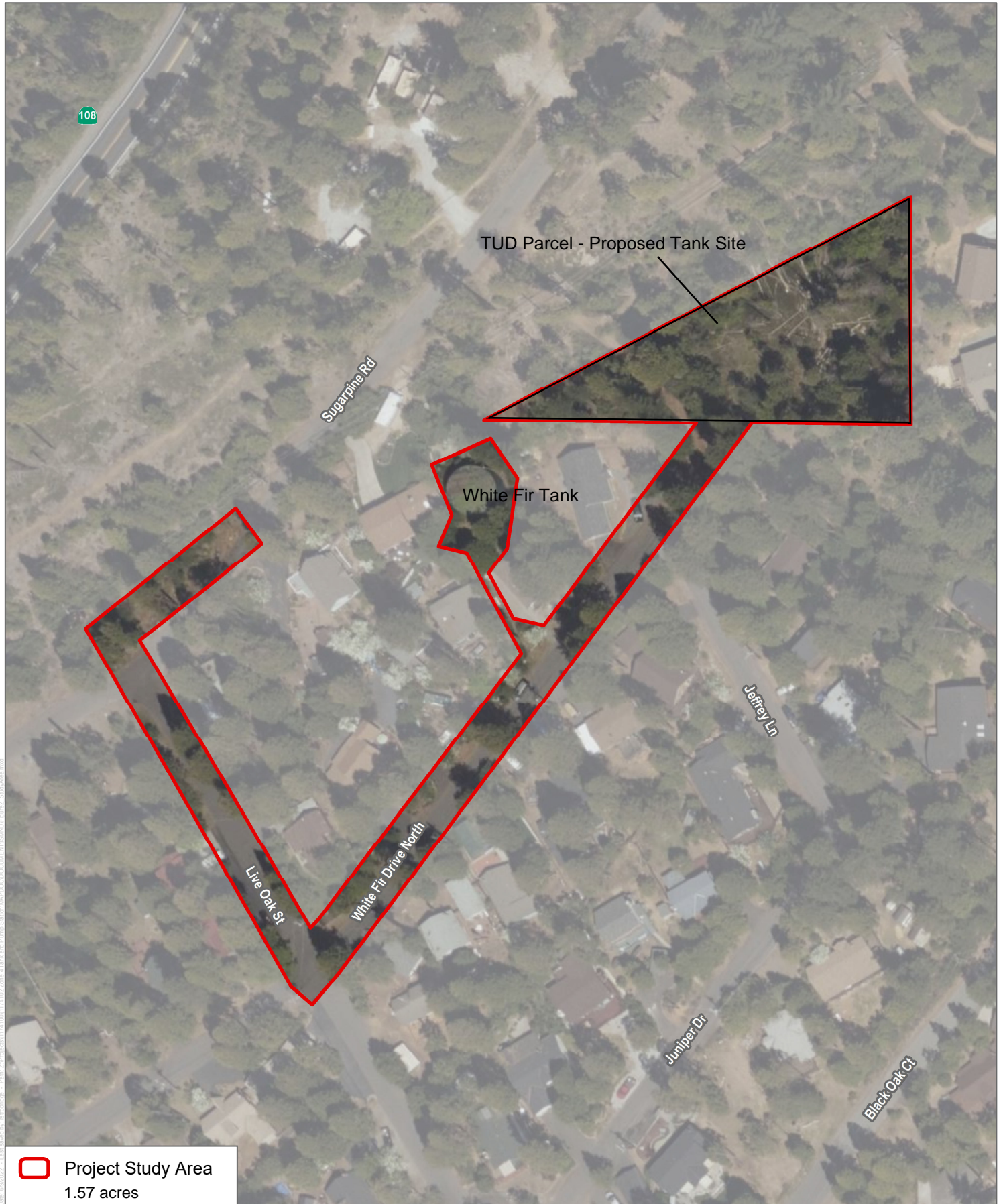
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SOURCE: Bing Maps 2021, OpenStreetMap 2021

Appendix A

CCaIC Record Search Results – Confidential

Appendix B

NAHC SLF Search Results
Confidential

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SOUTHERN CALIFORNIA

Bakersfield
Encinitas (Main)
La Quinta
Pasadena
Riverside
San Diego
San Juan Capistrano

CENTRAL COAST

Santa Barbara
Santa Cruz

NORTHERN CALIFORNIA

Auburn
Oakland
Sacramento

COLORADO

Denver

FLORIDA

Lake Worth Beach

HAWAII

Kailua

OREGON

Portland

HABITAT RESTORATION SCIENCES

A Dudek Subsidiary