TUOLUMNE UTILITIES DISTRICT SIERRA PINES REGIONAL WATER TREATMENT FACILITY

Initial Study/Mitigated Negative Declaration

Prepared for
Tuolumne Utilities District

October 2020

ESA

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NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION FOR THE TUOLUMNE UTILITIES DISTRICT SIERRA PINES REGIONAL WATER TREATMENT FACILITY PROJECT

(Pursuant to CEQA Section 21092 and CEQA Guidelines Section 15072)

In accordance with the California Environmental Quality Act (CEQA) and the CEQA Guidelines, the Tuolumne Utilities District (TUD), has prepared an Initial Study and proposed Mitigated Negative Declaration (IS/MND) for the Sierra Pines Regional Water Treatment Facility Project (the proposed Project). Based on the results of the Initial Study, TUD determined that construction and operation of proposed Project would not have significant impacts on the environment. All potentially significant impacts identified in the Initial Study would be reduced to less than significant levels with implementation of appropriate mitigation measures.

Project Description:

TUD is proposing to construct and operate the proposed Project on 46-acres near Twain Harte, California in unincorporated Tuolumne County. The first phase of the proposed Project (the subject of analysis in the IS/MND) involves construction and operation of a water treatment facility with an initial operational capacity of 3 million gallons per day (mgd). The proposed Project water treatment facilities include a new 30-acre-foot-capacity raw water reservoir, a raw water pump station, filter building, sludge lagoons associated appurtenances and electrical structures, water conveyance pipelines, a stormwater detention basin, as well as new recreational trails and amenities. New water transmission pipelines would be installed offsite (within the franchise position of roadways and other public rights of way) to convey treated water to existing TUD facilities.

Public Comment Period: October 9, 2020 to November 9, 2020.

NOTICE IS HEREBY GIVEN that the TUD Board of Directors intends to adopt a CEQA Mitigated Negative Declaration in December 2020 for TUD's Sierra Pines Regional Water Treatment Facility Project in accordance with the CEQA Guidelines.

The public, all interested agencies and stakeholders are invited to review the IS/MND and submit written comments, pursuant to CEQA. The IS/MND may be accessed at this website: https://tudwater.com/development-services/environmental-documents/

Written comments are due by 5 PM on November 9, 2020 and may be sent via mail to:

Tuolumne Utilities District
Attn. Erik Johnson, District Engineer
18885 Nugget Blvd.
Sonora, CA 95370

Or

Via email to: EJohnson@tudwater.com
Please reference Sierra Pines Comments in the subject line.

Information Public Meeting

Thursday October 22nd, 2020 **3:00pm & 4:30pm** **S. Fork Rd. & Sierra Pines Ave**

Meet at the proposed project site located at the intersection of S. Fork Rd. & Sierra Pines Ave in Twain Harte. TUD signs will be posted. To comply with social distancing the meeting is offered at two sessions. Information will be presented at 3:00pm and 4:30pm. Please attend only one session. Presentation length is estimated at 30 minutes followed by questions and answers. Bring your own chair if desired.

In the event of rain, the public meeting will be held via Zoom. Please visit the TUD website for details

WWW.TUDWATER.COM

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Acronym List

°F	degrees Fahrenheit
AB	Assembly Bill
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act
ASCE	American Society of Civil Engineers
Basin Plan	*Water Quality Control Plan for the Central Valley Region*
BMP	best management practice
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CAFE	Corporate Average Fuel Economy
Cal EMA	California Emergency Management Agency
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Division of Occupational Safety and Health
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CalGEM	California Geologic Energy Management Division
CALGreen	California Green Building Standards Code
California Register	California Register of Historical Resources
Caltrans	California Department of Transportation
CAP	climate action plan
CARB	California Air Resources Board
CaRFG	California Reformulated Gasoline
CBC	California Building Code
CCIC	Central California Information Center
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDP	Census Designated Place
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGP	Construction General Permit
CGS	California Geological Survey
CHP	California Highway Patrol
CNDDB	California Natural Diversity Database

CNPS	California Native Plant Society
CO	carbon monoxide
COLE	coefficient of linear extensibility
County	Tuolumne County
CPUC	California Public Utilities Commission
CVPC	chlorinated polyvinyl chloride
CRPR	California Rare Plant Rank
CSD	Community Services District
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationships
CY	cubic yards
dB	decibels
dBA	A-weighted decibels
DDW	Division of Drinking Water
District	Tuolumne Utilities District
DPM	diesel particulate matter
EA	environmental assessment
EPA	U.S. Environmental Protection Agency
ER	Estate Residential
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FFS	Forest Fire Station
FICAN	Federal Interagency Committee on Aviation Noise
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FPD	Fire Protection District
FRA	Federal Responsibility Area
FTA	Federal Transit Administration
General Plan	Tuolumne County General Plan
GHG	greenhouse gas
GWh	gigawatt-hours
HDPE	high-density polyethylene
HFTD	High Fire Threat District
HMBP	Hazardous Materials Business Plan
HMP	Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan

HVAC	heating, ventilation, and air conditioning
Hz	hertz
in/sec	inches per second
IOU	Investor Owned Utility
IRWMP	Tuolumne-Stanislaus Integrated Regional Water Management Plan
IS	initial study
ISO	Insurance Services Office
kW	kilowatts
kWh	kilowatt-hours
L_{dn}	energy average of the A-weighted sound levels occurring during a 24-hour period
LDR	Low-Density Residential
LED	light-emitting diode
L_{eq}	equivalent sound level, used to describe noise over a specified period of time
LOS	level of service
L_{max}	instantaneous maximum noise level measured during the measurement period of interest
LRA	Local Responsibility Area
MBTA	Migratory Bird Treaty Act
MCAB	Mountain Counties Air Basin
mgd	million gallons per day
MND	mitigated negative declaration
MRDS	Mineral Resources Data System
MRZ	Mineral Resource Zone
MW	megawatts
NAAQS	national ambient air quality standards
National Register	National Register of Historic Places
NECPA	National Energy Conservation Policy Act
NEPA	National Environmental Policy Act
NFP	National Fire Plan
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System

NRCS	U.S. Natural Resources Conservation Service
OES	State Office of Emergency Services
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
OWTS	onsite wastewater treatment system
PG&E	Pacific Gas and Electric Company
PL	Public Law
PM	particulate matter
$PM_{2.5}$	particulate matter with a diameter of less than 2.5 microns
PM_{10}	particulate matter with a diameter of less than 10 microns
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
PPD	pounds per day
PPV	peak particle velocity
PRC	Public Resources Code
proposed Project	Sierra Pines Regional Water Treatment Facility Project
PVC	polyvinyl chloride
Region	Tuolumne-Stanislaus Region
RMS	root mean square
ROG	reactive organic gases
RPS	Renewables Portfolio Standard
RR	Rural Residential
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition
SEL	sound exposure level
SEMS	Standard Emergency Management System
sf	square feet
SHMA	Seismic Hazards Mapping Act
SMARA	Surface Mining and Reclamation Act
SO_2	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasures
SPRWTF	Sierra Pines Regional Water Treatment Facility
SR	State Route
SRA	State Responsibility Area

SVP	Society of Vertebrate Paleontology
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCAPCD	Tuolumne County Air Pollution Control District
TCFD	Tuolumne County Fire Department
TCSO	Tuolumne County Sheriff's Office
TCU	Tuolumne-Calaveras Unit
TPY	tons per day
TUD	Tuolumne Utilities District
UCMP	University of California Museum of Paleontology
UFC	Uniform Fire Code
USACE	U.S. Army Corps of Engineers
USC	United States Code
USGS	U.S. Geological Survey
UV	ultraviolet
VdB	vibration decibels
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	vehicle miles traveled
VPN	Virtual Private Network
WTP	Water treatment plant

CHAPTER 1
Introduction

1.1 Introduction

This initial study and proposed mitigated negative declaration (IS/MND) was prepared pursuant to Article 6, Section 15070 of the California Environmental Quality Act (CEQA) Guidelines. California Public Resources Code (PRC) Division 13, Section 21050 et seq. describes the CEQA process.

Tuolumne Utilities District (TUD), acting as the lead agency under CEQA, is proposing to construct and operate the Sierra Pines Regional Water Treatment Facility Project (proposed Project) on a TUD-owned parcel in Twain Harte, California. The proposed Project would enable consolidation of water treatment facilities throughout the TUD service area, thereby improving long-term sustainability, resiliency, and operating efficiencies. The first phase of the proposed Project involves constructing a water treatment facility with an initial capacity of 3 million gallons per day (mgd). The facility could be expanded in subsequent phases, up to a capacity of 5 mgd.

This IS focuses on the environmental review for the initial phase (Phase 1) of the proposed Project, with the understanding that future phased capacity expansion of the proposed Project may build upon the resource analysis in this IS, but may require subsequent or additional environmental review beyond what is described herein. The analysis presented in this IS assumes that the facilities proposed for consolidation and abandonment may be used by TUD (or other responsible parties) for storage and that equipment may be removed from these facilities; however, demolition of these structures is outside of the scope of this IS. Should TUD decide on future improvements to the facilities proposed for consolidation (i.e., demolition, site grading, or other construction), such activities may require separate or subsequent CEQA review.

1.2 Organization of the Document

This document is organized to assist the reader in understanding the potential impacts of the proposed Project on the environment and to fulfill CEQA requirements. The IS contains the following sections:

Chapter 1, *Introduction*, describes this document's purpose under CEQA, describes the public participation process, and summarizes the applicable regulatory requirements and CEQA lead agency contact information.

Chapter 2, *Project Description*, provides an introduction to the Project, including Project background, needs, and objectives, and describes the proposed facilities. This section

provides a detailed description of the proposed Project, its location and components, and the required entitlements anticipated for implementation of the proposed Project.

Chapter 3, *Initial Study*, presents the CEQA Initial Study Environmental Checklist and analyzes the potential environmental impacts of the proposed Project. The checklist identifies environmental issue areas that could be affected by the proposed Project and lists the determination of whether the Project's potential effects on those resources would be significant, less than significant with mitigation, less than significant, or no impact. The checklist also contains the rationale and support for each determination and describes mitigation measures that would avoid or reduce potentially significant impacts on the environment to less-than-significant levels.

Chapter 4, *Report Preparers*, presents a list of the individuals who have contributed to this IS/MND.

Chapter 5, *Mitigation Monitoring and Reporting Plan*, provides a table outlining the Project's mitigation measures for each of the impacted resource areas. The MMRP lists the responsible party, timing, and implementation of each mitigation measure for the proposed Project.

1.3 Purpose of the Mitigated Negative Declaration

The purpose of the IS is to provide a basis for deciding whether to prepare an environmental impact report, an MND, or a negative declaration. Based on its findings, TUD determined that a MND would satisfy the requirements of CEQA (PRC Section 21000 et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.), as noted below.

CEQA encourages lead agencies and applicants to modify their projects to avoid significant adverse impacts on the environment. It is anticipated that this CEQA document will form the basis for state review by California responsible agencies such as the California Department of Fish and Wildlife (CDFW) or the State Water Resources Control Board, Division of Drinking Water. Federal review under the National Environmental Policy Act (NEPA) will follow the CEQA process, as an environmental assessment (EA) will be prepared to support federal NEPA review. For more detail regarding agency uses of this IS, see Section 1.6, *Agency Use of this Document*.

Section 15063(d) of the CEQA Guidelines states the content requirements of an IS as follows:

15063(d) Contents. An Initial Study shall contain in brief form:

(1) A description of the project including the location of the project;

(2) An identification of the environmental setting;

(3) An identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries;

(4) A discussion of the ways to mitigate the significant effects identified, if any;

(5) An examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls;

(6) The name of the person or persons who prepared or participated in the Initial Study.

1.4 Decision to Prepare a Mitigated Negative Declaration for this Project

As noted above, this Project is subject to the requirements of CEQA and TUD is the CEQA lead agency for this Project. Before making a decision to approve a project, the lead agency must identify and document the potential significant environmental effects of the project in accordance with CEQA. This IS/MND has been prepared under the direction of TUD to fulfill these requirements.

The IS analysis indicates that some impacts would be potentially significant, but that Project modifications (such as resource avoidance and impact minimization measures) as well as the recommended mitigation measures would result in the impacts being reduced to less-than-significant levels. In accordance with CEQA Guidelines Section 15070, an MND is the appropriate document for this Project because the IS identifies potentially significant effects. However:

a. Revisions to the project plan were made that would avoid, or reduce, the effects to a point where clearly no significant effects would occur; and

b. There is no substantial evidence that the project, as revised, may have a significant effect on the environment.

1.5 Public Review Process

The draft IS/MND is being circulated to state and local agencies, interested organizations, and individuals who might have had interest in, and wish to review and provide comments on, the project description, the proposed mitigation measures, or other aspects of the report. The 30-day public review period per CEQA Guidelines Section 15105(b) will take place from October 9, 2020 through November 9, 2020.

This draft IS/MND and supporting documentation is posted on the TUD website during this public review period:

https://tudwater.com/development-services/environmental-documents/

Printed copies of the draft IS/MND and supporting documents are also available for review at:

Tuolumne Utilities District 18885 Nugget Blvd. Sonora, CA 95370	Via written request for a paper copy or CD from TUD (see contact information below)

Written comments regarding the draft IS/MND should be directed to the attention of Erik Johnson at the address provided below.

Erik Johnson
Tuolumne Utilities District
18885 Nugget Blvd.
Sonora, CA 95370

Phone: 209-532-5536
e-mail: ejohnson@tudwater.com

1.6 Agency Use of This Document

CEQA *responsible agencies* are state and local agencies that have some responsibility or authority for carrying out or approving a project. In many instances, these public agencies must make a discretionary decision to issue an approval or permit, provide a right-of-way or encroachment, or provide funding or other resources critical to the execution of a project. *Trustee agencies* are state agencies that have the authority by law for the protection of natural resources held in trust for the public. CDFW is an example of a trustee agency anticipated to have jurisdiction over resources potentially affected by the proposed Project.

Following the CEQA process, a NEPA document is anticipated to be prepared to allow federal agencies, including potential funders such as the U.S. Department of Agriculture (the federal agency responsible for implementing the Rural Utilities Grant Program) and/or responsible agencies such as the U.S. Army Corps of Engineers (USACE) (tasked with resource permitting jurisdiction) with an adequate basis of information to facilitate decision making for permitting or for potential fiscal support of the proposed Project.

This IS/MND is intended to assist federal, state, and local agencies with some form of discretionary jurisdiction to carry out their responsibilities for permit review or approval authority over various aspects of a project. The proposed Project would likely require specific permitting and/or review by the agencies listed in **Table 1-1**.

TABLE 1-1
ANTICIPATED PERMITS AND APPROVALS

Potential Permit or Approval	Agency
• Clean Water Act Section 404—Nationwide Permit 18—Minor Discharges	U.S. Army Corps of Engineers (USACE), Sacramento District
• Clean Water Act Section 401 with Waste Discharge Requirements and Water Quality Certification	Central Valley Regional Water Quality Control Board (Region 5)
• Storm Water Pollution Prevention Plan (SWPPP) under the General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order No. 2009-0009 DWQ) under the NPDES • Post-Construction Stormwater Management Requirements for Development Projects	Central Valley Regional Water Quality Control Board (Region 5)
• Amendment to Water Supply Permit /Authority to Operate a Public Water System	State Water Resources Control Board, Division of Drinking Water
• Air Permit for use of standby generator	Tuolumne County Air Pollution Control District
• Conditional Use Permit for development and operation of a water treatment facility on lands with R-1 and K zoning designations	Tuolumne County Planning and Community Development
• Hazardous Materials Business Plan • Encroachment Permit—County Roadways • Construction Traffic Management Plan—installation of off-site pipelines • Grading Permit for Construction	Tuolumne County
• Fish and Game Code Section 1600, Lake and Streambed Alteration Agreement (1602 permit)	California Department of Fish and Wildlife, Central Region
• National Historic Preservation Act, Section 106 Consultation	California State Historic Preservation Officer

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CHAPTER 2
Project Description

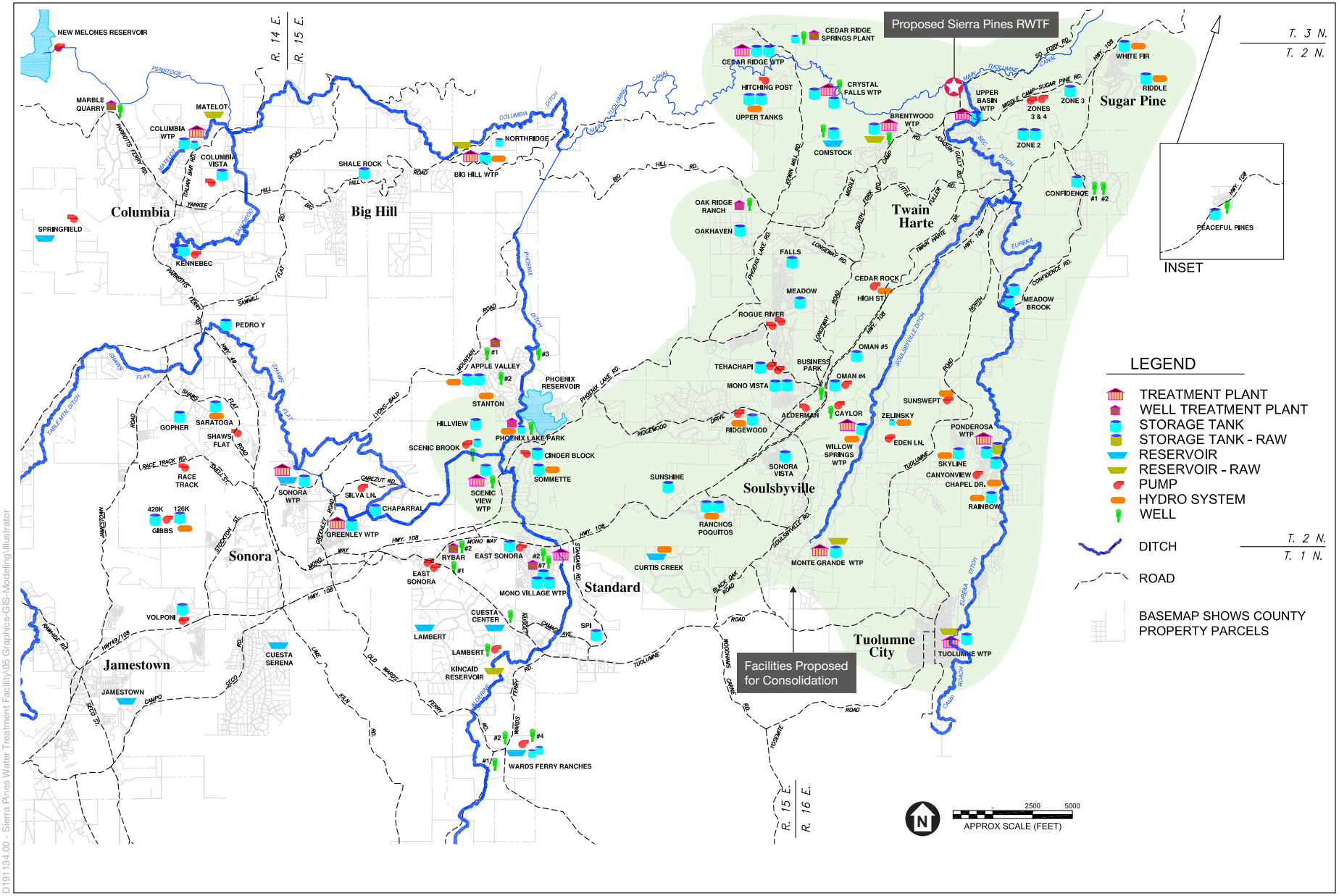
2.1 Project Overview

Tuolumne Utilities District (TUD) is proposing to develop a consolidated regional water treatment facility at the site of the former Sierra Pines Golf Course in Twain Harte, located in unincorporated Tuolumne County. The proposed Sierra Pines Regional Water Treatment Project (proposed Project) would include construction and operation of Sierra Pines Regional Water Treatment Facility (SPRWTF) with an initial operating capacity of 3 million gallons per day (mgd) to be ultimately increased to 5 mgd through future phased buildout. The proposed Project would also include construction and operation of a new 30-acre-foot-capacity raw water reservoir, a raw water pump station, associated appurtenances and electrical structures, water conveyance and transmission pipelines, and a stormwater detention basin. The Project as proposed would support the long-term viability of TUD and provide multiple inter-related benefits to TUD and its customers, discussed in more detail in Section 2.3.

2.2 Introduction

TUD provides water and wastewater services to approximately 44,000 customers in Tuolumne County, California. TUD is the largest single water provider in Tuolumne County, with approximately 14,000 water service connections. Treated water is provided to customers through a series of surface water treatment plants, wells, storage reservoirs, transmission and distribution pipelines throughout TUD's service area.

TUD currently operates eleven surface water treatment facilities, and four groundwater systems, all contained within twelve permitted water systems as depicted in **Figure 2-1, TUD Regional Water Systems**. Many of these water systems were installed by private developers and other entities before being acquired by TUD and are near to or beyond their useful life and in need of replacement or rehabilitation. For TUD, continuing to operate and maintain these facilities presents operational and cost challenges, which has led to the need for water systems upgrades and improvements and, where feasible, to consolidate local systems and create centrally located regional facilities to improve water treatment and conveyance reliability. Refer to Figure 2-1.



SOURCE: TUD, 2016

Sierra Pines Regional Water Treatment Facility Project

Figure 2-1
TUD Water Systems

ESA

2.3 Purpose and Need

A recurring challenge for TUD is to reconcile the costs and complexities of operating and maintaining eleven separate surface water treatment plants and four stand-alone groundwater systems. These water systems were developed independently decades ago, before many of the latest revisions to the Safe Drinking Water Act, and without consideration for the provision of long-term water service in Tuolumne County. Additionally, due to the rural demographics of Tuolumne County, these water systems serve low population densities relative to the overall size of the geographic service area. As a result, TUD is unable to operate on an economy of scale to provide for efficient long-term water treatment in its service area and maintains a relatively large operations and maintenance staff, as well as support staff to operate separate water systems.

In its consolidation study, TUD identified eight TUD-owned treatment facilities, and 11 regulated public water systems, considered as candidates for consolidation under a regional water treatment facility (Kennedy Jenks Consultants, 2019). Development of a regional water treatment facility at the Sierra Pines site presents a unique opportunity for TUD to phase in consolidation of up to six of its own surface water treatment plants, and other neighboring public and private water systems. Although TUD does not have a formal policy to seek acquisition, it is recognized by the State Water Resources Control Board's Division of Drinking Water (DDW) and Tuolumne County Environmental Health as the preferred receiver for many of these local water systems that are struggling to meet drinking water standards and/or to keep up with on-going maintenance requirements (TUD, 2020).

The purpose of the proposed Project is to enhance reliability of the water supply, improve the integrity of TUD's infrastructure, and increase efficiency of service through regional water treatment facility consolidation.

2.4 Project Objectives

TUD's Project's objectives are as follows:

1. Provide for a cost effective consolidated water treatment facility.
2. Reduce vulnerability of the water supply.
3. Maximize available raw water storage for planned and unplanned outages of the raw water ditch system.
4. Increase operation and maintenance flexibility for the ditch system.
5. Improve source water quality and service reliability.
6. Improve robustness of treatment processes to respond to impacts to source water due to natural disasters such as wildfire in the upstream watershed.
7. Consolidate and centralize water storage facilities.
8. Improve efficiency of compliance processes such as sampling and reporting.
9. Centralize TUD's SCADA monitoring.

10. Reduce vehicle miles traveled for maintenance of facilities.
11. Utilize gravity for water systems to reduce pumping and associated costs.
12. Improve the equity of TUD's rate structure.

2.5 Project Location and Setting

The site proposed for TUD's upper regional water treatment facility is a 46-acre property acquired by TUD in 2008 was formerly used as the Sierra Pines Golf Course. The majority of what is proposed (as part of the proposed Project) would occur within the boundaries of the TUD-owned property defined here as "the Project site." The notable exception to this involves off-site water transmission pipelines described in Section 2.6. The Project site is located north of Middle Camp Road and west of South Fork Road, approximately 1.5 miles north of the community of Twain Harte in Tuolumne County, as depicted on **Figure 2-2, Project Location**. The Project site is currently undeveloped and consists of wet meadow and open grassland, surrounded by conifer forest. At the center of the site (not included as part of the proposed Project) is a private residence with access from South Fork Road to the east.

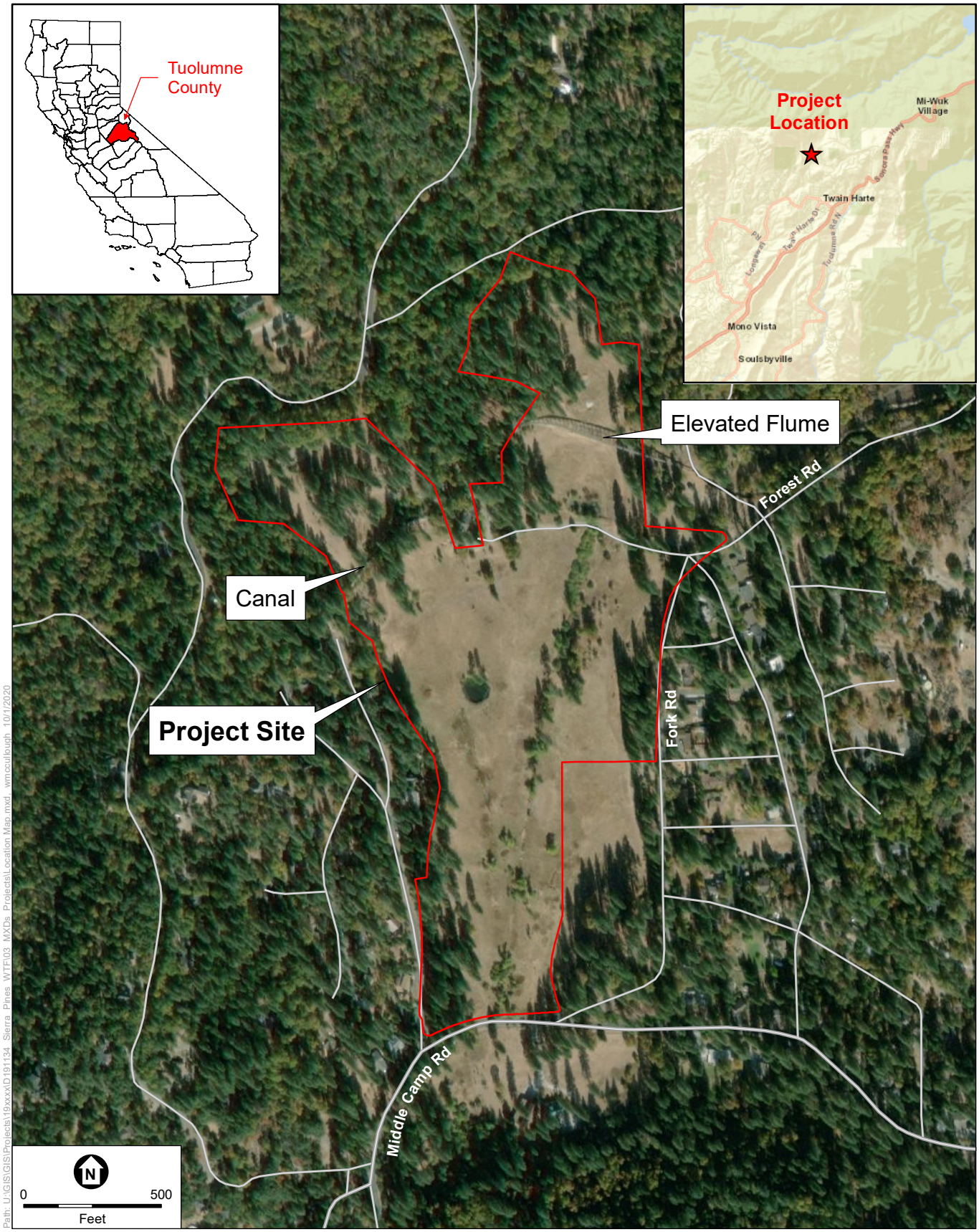
The Project site is located at the confluence of two raw water ditches, fed from Lyons Reservoir. The Tuolumne Main Canal, owned and operated by Pacific Gas and Electric Company (PG&E), conveys raw water from Lyons Reservoir to TUD's Upper Zone. The Tuolumne Main Canal passes through the Sierra Pines site, just to the south of the proposed site of the SPRWTF. The Section IV Ditch, which diverts water from the Tuolumne Main Canal to the south and runs from north to south to the east of the Project site, is owned and operated by TUD. TUD's Lakewood, Ponderosa Hills, Monte Grande, and Tuolumne Water Treatment Plants are served by water conveyed from the Section IV Ditch.

2.6 Overview of Project Implementation

The proposed Project would include consolidation of seven of TUD's surface water treatment facilities, and potentially neighboring public and private water treatment facilities as depicted on Figure 2-1, through construction and operation of a new regional water treatment facility on at the Project site and the construction of new and replacement water transmission pipelines. To accomplish this consolidation, TUD proposes to construct the SPRWTF and expand its treatment capacities in three phases. Each phase is described in detail below. This analysis assumes that the facilities proposed to be consolidated and abandoned may be used by TUD for storage and that equipment may be removed from these facilities; however, demolition of these structures is outside of the scope of this CEQA review.

Project Phasing

The initial phase, Phase 1, includes construction and operation of a 3 mgd treatment facility. The proposed Project would be expanded in two additional phases to 4 mgd (anticipated to be in 2037), and then ultimately to 5 mgd (in 2057), as demand increases (consistent with current projections) and TUD assumes control and management of additional water systems. The Project would be designed with consideration for future expansion.



Sierra Pines Regional Water Treatment Facility

Figure 2-2
Project Location

ESA

Phase 1

Phase 1 would include the consolidation (and ultimate abandonment) of the Cedar Ridge, Crystal Falls, Lakewood (Upper Basin), Ponderosa, Scenic View, and Phoenix Lake Park water treatment plants. The proposed capacity of 3 mgd (in Phase 1) includes reserve capacity (of 0.9 mgd) for potential consolidation of other private and public water systems in the area. Phase 1 includes the following:

- Raw water diversion via gravity from TUD's Section IV ditch just downstream of the point of diversion from the Tuolumne Main Canal with installation of a fish screen and sediment trap
- Excavation and construction of a Raw Water Reservoir;
- Installation of a raw water pump station and associated infrastructure;
- Trenching and installation of raw water piping to the raw water storage reservoir;
- Construction of the SPRWTF with pretreatment flocculation and sediment basins, flash mixing facility, and sludge lagoons;
- In-road and overland water transmission pipeline upgrades;
- Construction of on-site access roads, and
- Construction of recreational trails and amenities; installation of landscape materials.

Phase 2

This expansion is projected to occur within 20 years following Phase 1 implementation, or when treated water demand dictates. Phase 2 would expand the SPRWTF to 4 mgd, assuming that TUD would begin providing service to Twain Harte Community Services District, Phoenix Lake Country Club Estates, MiWuk Mutual Water Company, and other small private mutual water companies. Construction activities associated with Phase 2 will be evaluated with subsequent CEQA analysis.

Phase 2 would include the following:

- Install an additional 1 mgd pump at the raw water pump station.
- Uprate the flocculation/sedimentation basins to a plate loading rate of 0.4 gpm/sf. The uprating process involves conducting studies and submitting data to the Division of Drinking Water. No physical construction or modifications are anticipated to the flocculation/ sedimentation basins.
- Uprate the filters to a loading rate of 8 gpm/sf. The uprating process involves conducting studies and submitting data to the Division of Drinking Water. No physical construction or modifications are anticipated to the filters.
- Construct an additional sludge lagoon.
- Implement additional recreational improvements, as funding permits. Such improvements may include on-site walking paths, interpretive signage, and/or picnic areas.

- Construction of various off-site distribution system improvements that are not the subject of this environmental document.

Phase 3

This expansion is projected to occur within the next 40 years. Expansion of the SPRWTF to a buildout capacity of 5 mgd with the consolidation of Monte Grande and Tuolumne City water treatment plants. Construction activities associated with Phase 3 will be evaluated with subsequent CEQA analysis.

The Phase 3 expansion would include the following:

- Installation of an additional 1 mgd pump at the raw water pump station.
- Expansion of the treatment building to accommodate various process improvements.
- Construction of an additional flocculation/sedimentation basin.
- Construction of an additional filter resulting in 3 operational filters with one out of service.
- Install an additional UV reactor, which would result in two online reactors at a given time, with one standby reactor.
- Construction of an additional sludge lagoon.
- Construction of various off-site distribution system improvements that are not the subject of this environmental document.

2.6.1 Phase 1 Project Elements

The proposed Project would consist of site access, raw water facilities (including diversion and conveyance, a storage reservoir, and a pump station), piping, a treatment facility (including pre-treatment, treatment, disinfection, and treated water storage) and electrical facilities and appurtenant structures (as described below), which would be installed for phased capacity increases to accommodate new service connections over the next 40 years. An overview of proposed Project elements is provided in **Figure 2-3, Project Site Plan.**

Access and Site Security

The Sierra Pines site is currently accessed by a dirt/gravel road that connects the existing private residence adjacent to the Project site with South Fork Road. A new paved access road to the SPRWTF would be constructed along the alignment of this existing road. The new paved access road would turn away from this alignment shortly before the existing private residence, and a turning circle and 20-foot motor-operated access gate would be installed at this intersection. The entrance to the SPRWTF would be secured with a gate and security fence.

SOURCE: KLA, Inc., 2020

Sierra Pines Regional Water Treatment Facility

Figure 2-3
Project Site Plan

ESA

Raw Water Intake

There are two raw water conveyance ditches at the northern limit of the Sierra Pines site including the Tuolumne Main Canal (owned and operated by PG&E) and the Section IV Ditch (owned and operated by TUD). The Main Canal conveys water approximately 4 miles from Lyons Reservoir to the Section IV Ditch, where water is diverted south along the east side of the Sierra Pines site. From the Section IV Ditch, the Main Canal continues west via gravity through the Sierra Pines site. The Tuolumne Main Canal and the Section IV Ditch would provide the source of water for the SPRWTF, with the proposed tie-in point located on the Section IV Ditch immediately downstream of where it intersects the Tuolumne Main Canal.

Raw water would be diverted from the Tuolumne Main Canal via a new intake structure which would include a fish screen, sediment trap, and control weir. A small weir installed across the ditch would raise the upstream hydraulic grade line to create a sufficient amount of drop for raw water to pass over a sloped Coanda-style screen.[1] The screen would be installed on the downstream face of an overflow weir that allows water to flow across the surface of the screen. The screen wires/bars, perpendicular to the direction of flow, allow the screen to "slice" a portion of the water off of the bottom of the flow, while leaving fish and debris to pass over the top, and downstream end of the screen.

After passing through the screen, water would enter a sediment trap, flow over a hydraulic control weir, and would be conveyed to the proposed Project's raw water reservoir via a 16" conveyance pipeline. The flow rate delivered from the Tuolumne Main Canal would be limited by an operator-adjustable weir. A flow meter and modulating butterfly valve would be operated to control flows to the raw water reservoir. This allows the raw water reservoir to fill at maximum rate if the water level drops too low, with the goal of maintaining the water level within a desirable depth to maintain flow and water quality during normal operation. Additionally, the flow meter allows TUD to account for water volume withdrawn from the Tuolumne Main Canal.

Raw Water Reservoir

The estimated volume of the raw water reservoir would be approximately 30 acre-feet and would enable TUD to maximize available raw water storage for planned and unplanned outages of the raw water ditch system. This not only supports TUD's mission to provide reliable water to its customers but also allows for operational flexibility and improves water service reliability throughout its service area. Every fall, PG&E takes the Tuolumne Main Canal offline for approximately 1 week for maintenance and repairs, meaning that the TUD must rely on its raw and treated water storage in this Upper Zone throughout the duration of the shutdown. Therefore, to accommodate this annual period of outage, the TUD must maintain a minimum of 7-days of water storage capacity.

Additionally, the TUD operates a large number of treated water storage tanks in its system, and all are operated at 75–100 percent of capacity to provide protection against unplanned shutdowns

[1] A Coanda screen is a passive, self-cleaning screen that uses a tilted wedge wire or bar screen to exclude fish and debris from the intake stream.

of the raw water supply (i.e., failure of elevated flumes due to falling trees, wildfires, etc.). The resulting high volume of treated water storage results in high water age[2] throughout the system. The TUD intends to reduce the number of treated water storage tanks by as much as 50 percent in the future and offset this reduction in treated water storage with enhanced raw water storage capacity.

The proposed Project's layout for the raw water reservoir maximizes the use of available space reduces reservoir depth, provides contouring to integrate and soften the appearance of the reservoir at Project site, while generally avoiding wetland features. This "low profile" design reduces the visible aesthetic impact.

Raw Water Pump Station

A new pump station would be located at the raw water reservoir to lift raw water from the reservoir and convey it to the treatment facility. The pump station would be in an enclosure positioned below the adjoining grade to reduce operational noise and shield the view from adjacent residents. The Project's proposed pump station under Phase 1 would include three short-setting vertical turbine pumps installed in a wetwell configuration at the raw water reservoir (two duty pumps, and one standby pump). The pumps would be initially sized such that each pump provides the Phase 1 average-day demand of 1.5 mgd. In the future, 1 mgd capacity pumps may be installed to achieve the 4 mgd and 5 mgd max day demand flows required for Phases 2 and 3, respectively.

Under Phase 1, the raw water pump station would be required to provide a maximum flow of 3 mgd based on the projected maximum day demand. The pumps must also be able to accommodate flows less than 1 mgd during initial operation (the 2020 average day demand is 1.1 mgd, and the TUD has estimated that the proposed SPRWTF would initially be operating at approximately 1 mgd). Water level in the reservoir would also be monitored, and the pumps are designed to automatically shut down in the event of a low water level.

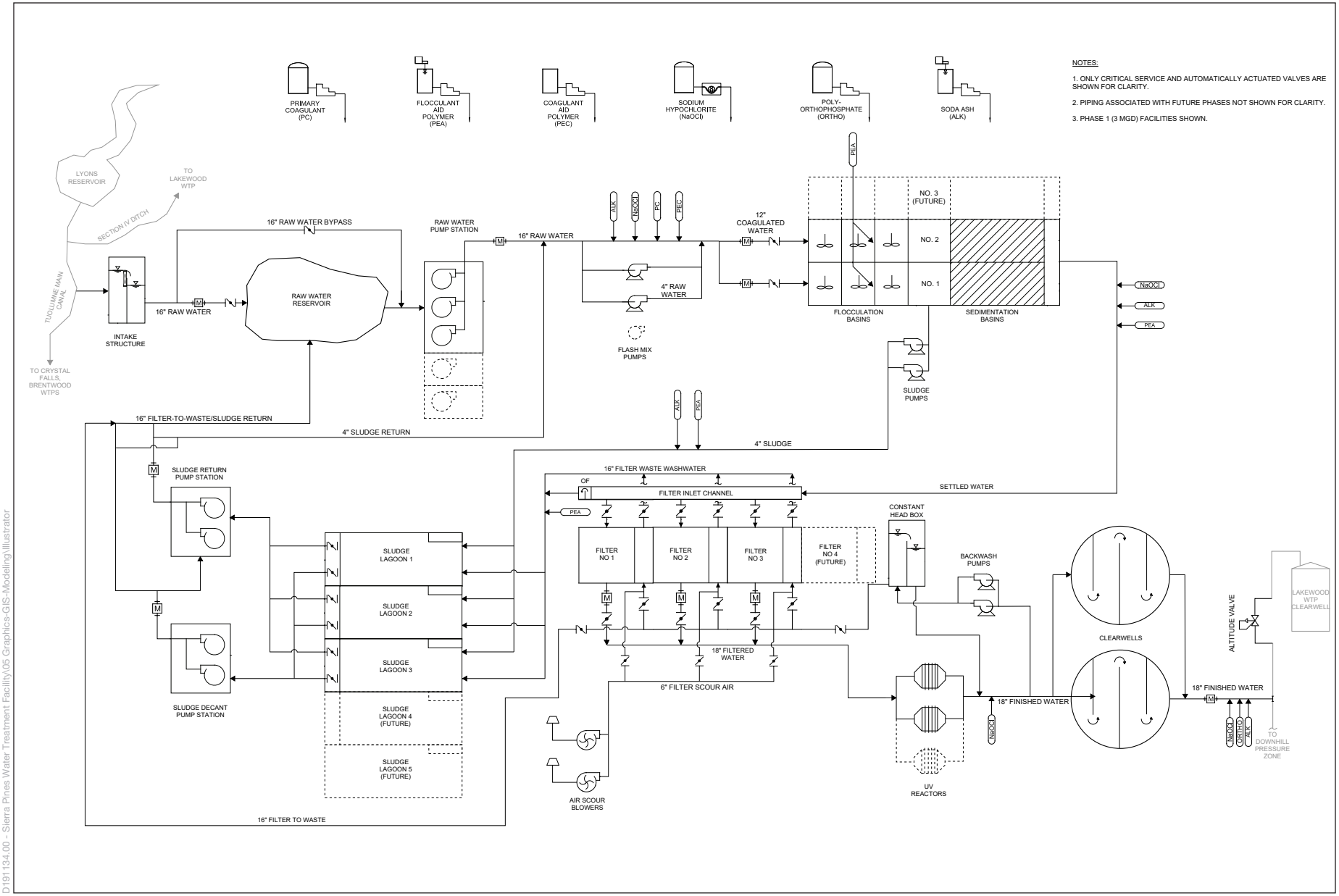
On-site Conveyance Pipelines

Severalwater conveyance pipelines would be installed as depicted in Figure 2-2, Site Plan. All pipelines would be sized such that velocities would not exceed 6 feet per second in any of the piping under all flow conditions. Sizing for major conveyance pipelines is based on the ultimate (Phase 3) buildout capacity of 5 mgd. Pipeline sizing (diameter) is designed to accommodate flow, consistent with American Water Works Association standards, as shown in **Table 2-1**.

Sierra Pines Water Treatment Facility

The proposed Project's water treatment facility processes (listed in order of the treatment train) consist of pre-treatment (including coagulation/flash mixing, flocculation, and sedimentation using plate settlers); treatment (granular media filtration); disinfection (including ultraviolet (UV) disinfection and free chlorine disinfection), and pH corrosion control. Process design criteria would be consistent with DDW and TUD water quality objectives. A process flow diagram of the proposed treatment plant is depicted in **Figure 2-4, Process Flow Diagram**.

[2] High water age can contribute to issues such as disinfection byproduct formation, chlorine residual decay, biological activity, taste and odor problems, and sediment deposition.



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SOURCE: Carollo, 2019

Sierra Pines Regional Water Treatment Facility

Figure 2-4
Process Flow Diagram

ESA

TABLE 2-1
PIPELINE SIZING

Piping Description	Diameter (in inches)
Raw Water Conveyance from intake to Raw Water Reservoir	16-inch
Raw Water Conveyance from Raw Water Pump Station to Treatment Facility	16-inch
Individual Filter Effluent and UV Reactor Piping	12-inch
Combined Filter Effluent from Treatment Facility to Clearwells	18-inch
Finished Water from Clearwells to Distribution Tie-In	18-inch
Filter Backwash	16-inch
Filter-to-Waste and Spent Backwash Water	16-inch

SOURCE: Carollo Engineers, 2019

Pretreatment

The pretreatment process would consist of two, 1.5 mgd treatment trains; each train would include a flocculation basin and a sedimentation basin. A coagulant chemical application and pumped-diffusion flash mixing facility would be provided for each of the two basins. The flash mixing facility would consist of a flash mix pump and primary diffuser and nozzle, as well as a standby pump in the event that the primary flash mix pump is out of service. The flocculation area would consist of six vertical shaft flocculators in each train, divided into three stages each. Each stage of flocculation would be separated by a diffuser wall, with openings sized to maintain uniform flow through the basin.

Treatment with Granular Media Filtration

The filtration process for the SPRWTF would consist of three conventional, dual media filters. Each of the filters would consist of a single cell, with a filter underdrain system. At Phase 1 operating capacity, the filters would be capable of a maximum loading rate of 6 gpm/sf. Backwashing and filter-to-waste of one filter would occur concurrently with the operation of the other two filters

Disinfection and Finished Water Storage

The disinfection process would include the process of UV and free chlorine treatment. The UV disinfection process would consist of two closed-vessel, low-pressure lamp UV reactors; one in service, and one as standby. The UV system would provide for disinfection (or inactivation) of biological contaminants such as Giardia and Cryptosporidium. When combined with the conventional filtration process, this would allow the SPRWTF to meet the TUD's disinfection standards required by the DDW Surface Water Treatment Rule. Finished water storage would require two clearwells with combined storage volume of 1 million gallons. The clearwells would be 73-foot-diameter bolted steel tanks with a sidewall height of 20 feet (17-foot maximum water level with 3 foot assumed freeboard). The two clearwells provides redundancy, allows for maintenance, and accommodates fluctuations in demand.

Chemical Storage Tanks

Chemical storage tanks may be constructed of fiber reinforced plastic or high-density polyethylene (HDPE), which are acceptable materials for contact with chemicals required for disinfection processes. If located outdoors to minimize degradation from heat and UV exposure tanks and piping would be UV-resistant and insulated. Soda ash would be applied at the SPRWTF for pH control. Acceptable materials for contact with soda ash solution include black steel, polyvinyl chloride (PVC), and chlorinated polyvinyl chloride (CPVC).

Electrical Connections

As there are no TUD electrical facilities at the Sierra Pines site, a new electrical service would need to be established through PG&E. The existing private residence in the center of the Sierra Pines site is served by a PG&E high-voltage overhead electrical line. The capacity of this existing high-voltage overhead electrical line must be confirmed or modified by PG&E, to accommodate the additional loads planned for the proposed Project's treatment facility.

The new electrical utility service would feed a new plant-owned, 480-volt, service entrance rated switchboard which would distribute power to two facilities: the SPRWTF and the raw water pump station. All on-site electrical lines from the point of service to locations around the site would be installed underground. Coordination with PG&E is expected to be required to confirm allocation of power loads and to minimize interruptions to the electrical service at the existing private residence.

The new electrical system would have the following major equipment:

- New 480-volt, 1,200-amp, service entrance rated switchboard.
- Standby diesel generator and automatic transfer switch, which would automatically transition the facility to generator power in the event of a power outage.
- A new motor control center containing starters and variable frequency drives for SPRWTF pumps and treatment equipment.
- A new motor control center containing starters and variable frequency drives for raw water pump station pumps and equipment.
- A new dry-type transformer and 120/208 volt panelboard at each facility.

Electrical Process Loads

The proposed combined operating load is approximately 750 kilovolt-amperes including loads associated with future phases. It is assumed that site lighting, heating, ventilation, and air conditioning (HVAC), and miscellaneous power loads may total up to 50 kW. The proposed Project is anticipated to consume up to 700,000 kilowatts of electricity annually.

Instrumentation, Communication, and Control Systems

The proposed Project would include two dedicated networks for an automated control system at the SPRWTF. One network would be dedicated to Programmable Logic Controller communication. A second network would be dedicated to the Supervisory Control and Data Acquisition (SCADA) communication, to allow for security and critical alarm remote monitoring

and system management. Off-site communication with the SPRWTF would be achieved via a wireless Virtual Private Network (VPN) cellular cradlepoint.

Site Security and Safety

Security and critical alarms would be included for the SPRWTF, and monitored through the SCADA system. Site security cameras and would be installed for intrusion detection.

Emergency shower/eye wash systems would be installed in chemical containment and spill prevention areas, served with a potable water system. All hose bibs or other connections to the potable water loop shall be fitted with backflow prevention devices.

Lighting

All lighting fixtures shall be LED, dark sky type, shielded, or directed downward to limit effects to the surroundings and local residences. The lighting fixtures would be controlled by motion sensors, lighting controllers, and photocells to comply with Title 24, Part 6, or the California Energy Code. Lighting levels shall be based on Illuminating Engineering Society guidelines.

Connection to Water Distribution System

A new treated water conveyance pipeline would be installed between the SPRWTF and the tie-in at Middle Camp Road. Per DDW and County requirements, installation shall not occur within 25 horizontal feet of any existing or proposed septic tank or sewage leach field. Potable and utility water would be supplied from the finished water line downstream of the clearwells. Separate booster pumps would be provided for the potable and utility water systems. Due to the relative elevations of the SPRWTF and the existing Lakewood Water Treatment Plant (WTP) clearwell, a control valve would be required to be installed at the inlet pipe to the clearwell to maintain the water level in the Lakewood clearwell and prevent overflowing. After the treatment facility is operational, the Lakewood Clearwell will be abandoned and a new booster pump station will be constructed at the existing Lakewood WTP site to serve uphill pressure zones. An altitude valve would be utilized as an interim solution until that work is completed.

Any connections to the TUD's water distribution system that could constitute a reasonable cross-connection hazard shall be protected with reduced pressure backflow preventers.

Offsite Water Transmission Pipelines

The proposed Project would include installation of three pipelines to safely deliver treated water from the proposed SPRWTF. Of these, two would be upgrades to existing pipelines; one would be a new pipeline within an existing road or TUD right-of-way. The purpose of the pipelines is to allow for increased capacity necessary to convey high volumes of treated water to TUD's existing service areas. The proposed off site pipelines depicted on **Figure 2-5**, **Offsite Transmission Pipelines** would consist of the following:

- The new 14-inch-diameter pipeline would connect from distribution tie-in at the southern limit of the Project site at South Fork Road, and extend along Middle Camp Road to the intersection of Tanager Drive within the roadway for a length of approximately 0.8 miles.

- The proposed pipeline replacement upgrade to an existing one-mile segment would be installed overland from the water tank east of the terminus of High Grade Lane, extending south for a length of 0.4 miles; extending east for approximately 0.2 miles, then within the Middle Camp Road roadway for a length of approximately 0.4 miles. The proposed pipeline would be 12 inches in diameter, replacing the existing 4-inch-diameter welded steel pipeline which would be abandoned in place.
- A proposed 10-inch-diameter pipeline would replace and upgrade a 4-inch-diameter existing pipeline (south of Phoenix Reservoir). The upgrade would be installed within a 0.3-mile spur of Ridgewood Drive extending north to the intersection of Phoenix Lake Road; southwest for a length of 1.5 miles along Phoenix Lake Road to the intersection of Meadow Brook Drive; and south for a 0.35-mile spur along Sommette Drive to connect to an existing TUD water tank. The proposed pipeline would be 10 inches in diameter, replacing existing sections of 4-inch-diameter pipelines (to be abandoned in place) for a total length of approximately 2.15 miles.

Recreational Improvements and Amenities

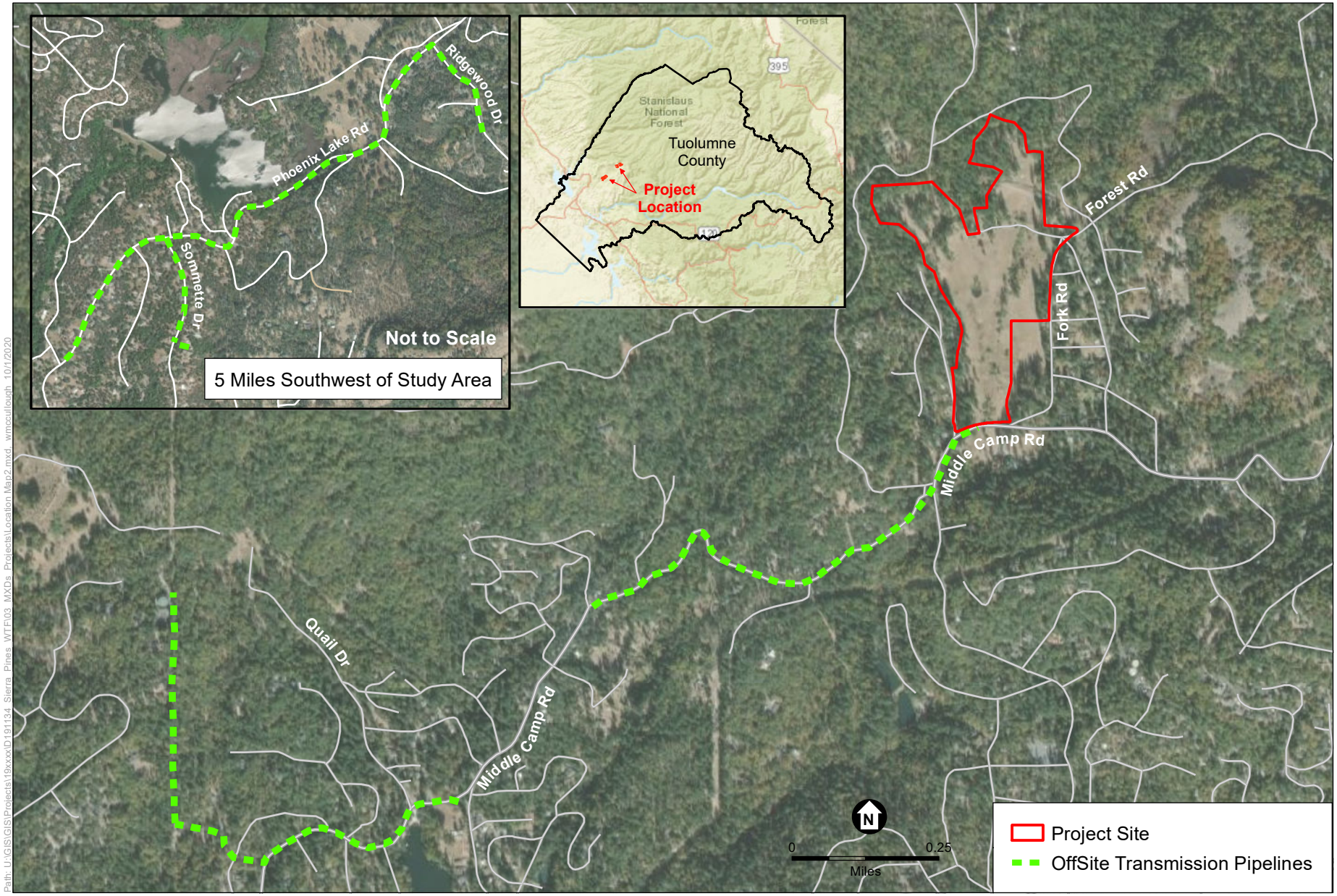
The proposed Project includes the phased construction and installation of new recreational improvements and amenities to further enhance the Sierra Pines Project site for local users and the community of Twain Harte. As proposed, recreational improvements and amenities would include 1.8 miles (9,700 feet) of designated trails, 550 feet of elevated boardwalk above sensitive wetland habitat, picnic areas, benches, two parking lots and a public restroom. These improvements are described in detail below:

Recreational trails and elevated boardwalk:

Approximately 1.5 miles of new trails are proposed to be developed to complement the existing 0.3 miles of existing trails. The trails would consist of 6-foot-wide paths constructed of compacted native soils. The trail network would extend from the northern portion of the site to the southern boundary and would establish several loops to allow the user to depart and return to the parking areas on different trails. There are four locations where the trail would cross wetland areas. Elevated boardwalk structures would be constructed with sonotube or equivalent pier footings and wood decking with timber side rails (toe kicks) to channelize pedestrian traffic and discourage users from disembarking from the boardwalk to protect the integrity of the wetland areas. Interpretive signs may be strategically located along the trail to explain the historical significance of the gold rush era flume structure or to identify the flora and fauna on the site.

Picnic areas with seating:

A total of three picnic areas are proposed. Each area would consist of two picnic tables. No barbeque facilities will be provided and open fire and any form of cooking will be prohibited. In addition, multiple locations have been identified for park benches for walkers and hikers to rest. No drinking fountains or garbage receptacles are proposed along the trail system.



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Sierra Pines Regional Water Treatment Facility

Figure 2-5
Offsite Transmission Pipelines

ESA

Parking Facilities:

Two parking lot areas have been identified to the east and to the south of the site, as depicted on Figure 2-3, Site Plan. The eastern lot may be accessed from South Fork Road and would accommodate up to 20 vehicles. The southern lot may be accessed from Middlecamp-Sugarpine Road and would have capacity for up to 10 vehicles. Access to the lots would be controlled by an entrance and exit gate that would be opened in the morning and closed at dusk each day by TUD staff. Parking facilities would be surfaced with gravel or asphalt. Garbage receptacles may be provided at the parking lot areas.

Public Restrooms:

One public restroom facility is proposed adjacent to the eastern parking lot area. The restroom would likely include a single flush toilet and sink. The building would be constructed of split-faced concrete masonry units and a standing seam metal roof. A drinking fountain may be installed along the exterior wall of the restroom building. The restroom would be locked each day at the same time the parking lot gates are locked. One photocell light is proposed above the restroom entrance, which would be installed with light directed downward, consistent with Tuolumne County General Plan Policy 1.B.5 (see Section 3.1, *Aesthetics*, for the text of this policy).

Stormwater Controls

With the proposed Project's introduction of approximately 230,000 square feet (sf) of impervious surfaces, site runoff would need to be managed through a stormwater collection system designed to incorporate runoff minimization measures, runoff collection, storage and treatment, and the ultimate discharge of accumulated runoff.

Runoff from the treatment building and associated facilities would be collected using gutters, catch basins, and collection pipes, before being discharged to a 20,000 square-foot stormwater detention pond, depicted on Figure 2-3, Site Plan. A stormwater pipe, approximately 700 feet long (of corrugated HDPE or reinforced concrete) would convey collected runoff from the treatment facility site, south across the ditch, and to the stormwater detention pond designed to accommodate the volume of runoff from the site generated by a 100-year, 24-hour event. The detention pond would provide volume equalization during storm events to reduce the intensity of runoff discharged to the watershed, and to remove pollutants. The design of the stormwater detention pond would incorporate a permanent pool or forebay, which would allow suspended solids and other pollutants to be removed by settling. The invert of the detention basin outlet pipe would be situated above the bottom of the basin to create the permanent pool. As the basin continues to fill during a storm event, collected stormwater would eventually be discharged from the basin into the wetlands or watershed lands of the Sierra Pines site.

Overflow/outflow from the basin would be conveyed to the existing meadow drainage via a vegetated swale. This design assumes that runoff from the Project's access roads would not be collected (in the raw water reservoir) but would be conveyed as sheet flow into the meadow and to the west of the raw water reservoir.

Sanitary Waste Handling

As there is no sewer service on or near the site, it is assumed that any sanitary waste generated by the SPRWTF would utilize two on-site septic systems. The primary septic system would be located to the northeast of the treatment process building, which would provide sufficient distance (a minimum of 300 feet upslope) from the Tuolumne Main Canal to safeguard surface and groundwater quality and prevent contamination of the raw water reservoir. A secondary septic system would be installed near the eastern parking area at a sufficient distance from aquatic features and water conveyance infrastructure consistent with Tuolumne County Department of Public Health guidelines. If geotechnical analysis (along with soil and percolation tests) determine that soils at the Project site are incapable of providing adequate percolation and leaching, TUD would install alternative sanitary waste system such as, on-site storage and off-hauling. This is considered unlikely given the volume of anticipated waste and the fact residences in the vicinity of the site all rely on septic systems.

2.6.2 Construction

The proposed Project would construct to support water supply facilities, a raw water storage reservoir, a new raw water pump station, piping, office and facilities buildings, sludge lagoons, and appurtenant structures to accommodate new service connections over the next 40 years. The following section summarizes the construction process, identifies construction access roads, and conveys the anticipated construction schedule for the Project.

Construction Schedule

The majority of Project construction would take place for up to 370 days, over a period of 18-months, and is expected to occur predominantly in the months between May and October (weather permitting). **Table 2-2** provides a summary of anticipated construction activity. Internal work such as wiring and instrumentation within constructed buildings may occur in the winter months. Construction activities would occur between the hours of 7 a.m. and 7 p.m. (Monday through Saturday).

TABLE 2-2
SUMMARY OF CONSTRUCTION ACTIVITY

Proposed Project Component	Activity	Duration of construction
Site Work	• Mobilization • Vegetation clearing • grading	• 120 days
Raw Water Basin	• Mass excavation • Berm construction • Liner installation • Berm access road	• 60 days
Access Roads	• Rough grade roads, • spread and compact base rock • Construct bridge or box culvert over canal • Curbs, gutters, overside drainage • Final paving and striping	• 60 days

TABLE 2-2
SUMMARY OF CONSTRUCTION ACTIVITY

Proposed Project Component	Activity	Duration of construction
Raw Water Pump Station	• Excavation • Pump station structure • Mechanical • Electrical	• 60 days
Pretreatment	• Excavation • Underslab Piping and Electrical • Place Floor Slabs • Place Walls • Place Decks and walkways • Install Mechanical • Install Electrical and Instrumentation	• 125 days
Stormwater Detention Basin	• Excavation of basin, • outlet structure • discharge swale	• 5 days
Pipeline upgrades	• Transmission pipelines	• 150 days
Filters	• Excavation • Underslab Piping and Electrical • Place Floor Slabs • Place Walls • Place Decks/Walkways • Install Mechanical • Install Electrical and Instrumentation	• 175 days
Filter Operations Building	• Install Building Framing and Shell • Building Interior Walls • Building Plumbing and HVAC • Building Electrical • Building Furnishings	• 60 days
Clearwell	• Underslab Piping • Tank Foundation • Set Tank • Install Tank Mechanical • Install Tank Electrical and Instrumentation	• 110 days
Sludge Lagoon	• Excavation • Underslab Piping • Place Floor Slabs • Place Walls • Mechanical • Electrical and Instrumentation	• 140 days
Electrical Distribution and Generator	• PG&E Connection and Transformer • Set Switchgear • Pull Wires • Install Generator Slab • Set Generator	• 310 days

TABLE 2-2
SUMMARY OF CONSTRUCTION ACTIVITY

Proposed Project Component	Activity	Duration of construction
Construction Demobilization, Landscaping, Fencing	• Site clean up • Removal of equipment • Trails, benches, restroom facility, parking areas • Revegetation, landscape improvements • Install gates and fencing	• 30-60 days
Start up and Commissioning	• Testing • Start up	• 60 days

Preconstruction Activities

Preconstruction activities would include initial site preparation, mobilization of contractors, construction office trailers, and equipment to the site, as well as preparation of access and staging.

Staking, Staging, Access

Prior to the start of construction, two staging, access and laydown areas would be established. The upper staging area would be approximately 16,500 sf in area located near the proposed filter building. The lower staging area would be approximately 21,000 sf in area located near the proposed stormwater detention basin. Construction best management practices would be implemented including flagging resource areas to minimize impacts to wetlands and surface waters and other sensitive resources at the Project site. Resource impact avoidance measures are described in Section 2.6.3. The Project Site would be accessed through the PG&E gated point of access. All equipment, vehicles, and materials required to construct the Project would be staged in a designated location within the Project site, and would avoid environmentally sensitive features, as depicted on the Figure 2-3, Site Plan.

Construction Mobilization

Equipment and materials will be mobilized to the Project site prior to the start of construction. Ingress and egress to the site will occur through the existing access road. All materials will be dumped or off-loaded in the designated staging/stockpile area(s). At the completion of construction, the contractor will restore the pre-Project grade, seed and stabilize the staging/ stockpile area(s).

Installation of Construction Best Management Practices

Prior to construction, the designated construction contractor would install erosion and sediment control measures to limit siltation, reduce track out and minimize erosive conditions on site. Such measures could include installation of straw wattles, silt fences, and/or gravel bags to minimize impacts associated with site runoff.

Equipment

Table 2-3 summarizes the anticipated vehicles and equipment required for the proposed Project's construction.

TABLE 2-3
SUMMARY OF REQUIRED CONSTRUCTION VEHICLES AND EQUIPMENT

Equipment Type	Use	Associated Component	Quantity	Estimated days of Use
Site Work/Raw Water Reservoir/Pump Station/Stormwater Detention Basin/Sludge Lagoons/Pipeline installation				
Dozer	Grubbing, earthwork, foundation prep.	RW Reservoir, SW detention	1	68
Excavator	Excavation	Reservoir, stormwater basin, clearwell inlet/outlet underground piping and vaults	2	50
Backhoe Loader	Pad construction (generators, transformers, and switch gear)	Berms, Electrical work	2	50
Front Loader	Overall site work	Site work, berm construction	1	20
Sheep's Foot Compactor	Compaction outlet, discharge swale	Site work, RW reservoir, SW detention basin	1	20
Roller Compactor	Compaction	Site work, stabilization	1	4
Dump Truck	Soil movement	Excavation Raw Water Reservoir, SW Basin	3	50
Paving Machine	Final site stabilization	Site work	1	4
Telehandler	Tank placement	Clearwell	1	40
Concrete pumps	Concrete pad construction	Sludge Lagoons,	1	15
Crane	Barrel pump placement	RW Pump Station	1	1
Drill Rig	Foundation support piers	Treatment process building	As-needed	As-needed
Water truck	Dust control	earth disturbing activities	1	50
Access Roads, Landscaping, and Fencing				
Dozer	Rough grading, baserock compaction	Access roads,	1	20
Excavator	Excavation	Access roads, Landscaping	1	20
Backhoe Loader	Rough grade roads; spreading base rock with box scraper attachment	Access Roads, Recreational pathways	1	30
Motor Grader	grading	Access roads	1	10
Dump Truck	Soil movement	landscaping	2	20
Paving Machine	Paving access	Access roads	1	5
Concrete Pumps	Signage	Recreational, fencing	1	8
Roller Compactor	pathways	Recreational pathways	1	5
Small Trencher	irrigation	Fencing, irrigation,	1	10
Skidsteer with Auger	fencing	Pathways, boardwalks Fencing	1	10

NOTES:

SOURCES: Carollo, 2019; TUD, 2020

Construction Workforce

Project construction is anticipated to require a up to 4 crews at 4-5 per crew for a maximum of 30 workers, on site on at the peak of construction; there would be an average of 15-20 workers on site, on any given day during construction. It is estimated that the required construction staff would be drawn from a regional labor pool (in Sonora) and would commute an estimated 20 miles total per day (round trip) to build the proposed Project. Designated parking for workers would be established within the site.

Worker Truck Trips and Haul Routes

Construction truck trips would be required for the import and off-haul of materials, equipment and staff to the site. It is assumed that excess soil from excavations (not otherwise reused for construction of the Project) would be hauled to a site no more than 10 miles from the Project site (20-mile round trip), using 20 CY dump trucks.

Access Roads

Access roads for the Raw Water Reservoir and SPRWTF would consist of 20-foot-wide 4-inch asphalt cement paving over 8-inches of Class 2 aggregate (gravel) base. The route would be constructed to allow for circulation along the facility's main (east to west) access road. An existing route would be improved and extended beyond the proposed stormwater detention basin, where an intersection would extend south to access the raw water reservoir. The main facility access route would continue at a 10 percent grade toward the proposed SPRWTF and turn north to cross the V-ditch where a precast box culvert or railroad bridge would be installed to facilitate crossing the waterway, to be determined at the time of final design. The embankments surrounding the treatment process building and the clear wells would be engineered with a similar graveled base and paved surfaces to allow for vehicles to access and operate on SPRWTF and RW Reservoir Project site.

Raw Water Intake Connection

The connection to the raw water system would require tying in to an existing earthen ditch, and installing an intake control weir to control the flow of water to the plant. The intake structure would allow the ditch to be isolated from the SPRWTF in the event of raw water quality excursions and would facilitate inspection and maintenance of the raw water reservoir. A bypass pipe would be provided to allow raw water to be diverted directly to the proposed Project's raw water pump station in the event the raw water reservoir is taken out of service. The intake structure would include a fish screen, sediment trap, and control weir, which would be installed perpendicular to the flow to control the hydraulic grade.

Reservoir Excavation

Reservoir construction would require excavation of approximately 60,000 CY of soil. These materials include native soils, sediments, and alluvium. Dewatering is assumed to be required for this construction. Excavation may be conducted using a 7 CY crawler excavator. Spoils from the excavation would be temporarily stockpiled on site and reused or hauled to a location 10 miles away (20-mile round trip) using a 20 CY dump truck. It is anticipated that the reservoir bottom and sides, would be compacted using a sheepsfoot roller running 8-inch lifts. Finish grading

would occur for the reservoir bottom and sides. The reservoir would be lined with HDPE or other suitable pond liner, consistent with regulatory requirements. The liner would include a protective soil cover. The embankment sides would be backfilled with native structural materials, compacted, landscaped, and reseeded with native seed appropriate to the region. [Please consider referring to KLA's proposed cross section of the reservoir for slopes and vegetation details]

Pump Stations

A raw water pump station and raw water electrical building would be constructed on the western side of the embankment (berm) for the raw water reservoir. Shoring would be required for construction of the raw water pump station. The proposed Project would also include construction of sludge decant pump stations adjacent to the sludge lagoons. The combined area for the Project's pump stations would be 600 sf.

Treatment Process Building

A deep foundation system may need to be constructed for the Project's 8,680 sf treatment process building, which would consist of two pre-engineered metal building systems installed independent of one another.[3] If necessary, the deep foundation system would include drilled concrete piers to support the structures' foundation due to liquefaction potential, which has been documented within one-quarter mile of the Project site (Carollo Engineers, 2019). Concrete required for foundations would be trucked in from an off-site batch plant, approximately 10 miles from the site. Concrete piers would keep the foundation slabs in place vertically and resist forces that could dislodge the structure, in the event of a seismic disturbance. Expansion joint couplings would be installed, per geotechnical engineer's recommendations, for process piping and electrical conduits entering and exiting the structure. Alternatively, these utilities may be supported by drilled piers within the liquefaction zone and fitted with flexible couplings as they transition to buried, soil-supported encasements beyond the liquefaction zone.

Note that if the liquefaction potential is low, the geotechnical engineer may recommend a shallow foundation system such as a mat slab. Process piping and electrical conduits need flexible couplings at the connections to the structure that will enable the pipes to deflect enough during a seismic event that causes the anticipated settling.

Foundation Design Approach

Four different elevations of base slabs are tied together in one structure. Expansion joints will not be used although the maximum plan dimension is more than 150 feet. The assumption is that pour strips would be utilized to achieve the same result. A pour strip is a width of concrete left open for at least 28 days. After the concrete on each side has fully cured and has reached its full shrinkage volume, lapping reinforcement can be tied and the concrete in the pour strip can be placed. Piping can be installed across the pour strip prior to placing the concrete if expansion fittings are provided.

[3] The deep foundation system is conservatively recommended, and would be confirmed following an updated site geotechnical evaluation.

Existing finish grade slopes down in the same direction that the slabs step down. All of the drilled piers have been assumed to be 45 feet in length; 35 feet to the top of the bedrock with a 10-foot embedment into the rock. Installation would be carried out using a drill rig. Walls would extend from the bottom of one slab down to the top of the next. This would enable the slabs to be as independent of each other as possible. The walls will be stout enough to resist the static surcharged soil pressures as well as the moments cranked into them during seismic events. The final design of the structure would be determined based on load combinations consistent with the CBC and ACI 350.

Conduits, Cables, Low-Voltage Transformers, Panels, and Emergency Power

Exposed conduits located indoors (within the treatment facility's electrical room) would utilize galvanized rigid steel conduit materials; while exposed conduits and in corrosive environments (and outdoor locations) shall utilize PVC-coated rigid steel conduit materials. Concrete encased, embedded, and concrete capped, pea gravel-bedded conduits would consist of Schedule 40 PVC with PVC-coated rigid steel elbows and risers.

A new utility-owned service transformer would be installed near the new SPRWTF to step PG&E transmission voltage down to 480 volts. Power would be delivered from the transformer to the SPRWTF through a utility meter and a new plant-owned, 480-volt, 1,200-amp, service entrance rated switchboard. This switchboard would distribute power to two facilities: the rest of SPRWTF and the raw water pump station. The switchboard would be installed in the Treatment Process Building Electrical Room. It would feed the 480-volt, 600-amp SPRWTF MCC in the same room, and the 480-volt, 600-amp raw water pump station MCC which is approximately 1,200 feet away at the raw water pump station. To reduce capital costs of the switchboard feeder to the raw water pump station, the raw water pump station MCC main breaker and the feeder cables could be sized for only pumps to be installed now. Spare raw water pump station MCC bus capacity and spare feeder conduits would also be installed during Phase 1, to allow for the build-out pump station loads when those pumps are needed in the future phases.

Sludge Lagoon Excavation and Concrete Work

Phase 1 would include construction of three sludge rectangular lagoons between the treatment process building and the clearwells. Up to two additional sludge lagoons would be constructed for future phased buildout to accommodate increased treatment capacity. The initial sludge lagoons would require excavation of 1,500 CY of soil, installation of underslab piping, and placement of conduits. Concrete (obtained from an off-site batch plant) would be poured for the lagoon floors slabs and lined. Concrete would also be required for vertical wall structures.

Site Finish Work, Landscaping, and Recreational Improvements

Following construction of the raw water reservoir and SPRWTF, excess debris would be removed from the construction site, and native landscaping would be installed to restore disturbed soils and establish a vegetative and visual site buffer. The proposed Project would also include (compacted earthen) recreational pathways, boardwalks, picnic tables, benches, a restroom and small parking area, and interpretive signage to showcase the site, pending future funding and partnerships for site maintenance.

2.6.3 Operation and Maintenance

On-site staff and deliveries

Although many components of the proposed Project would operate via the SCADA system, the SPRWTF would also require up to two of TUD's existing staff to be on-site to operate and maintain components of the SPRWTF. The staff would be supported by adjunct personnel for delivery of materials and supplies, and for solids handling, including periodic off-haul for residuals as described below.

Residuals Handling

All routine maintenance can be performed on the flocculators from the upper deck level where the drive unit is located. The sedimentation and filtration processes at the SPRWTF would produce residual materials that must be periodically collected, dewatered, and disposed of at the Merced Landfill, a facility capable of receiving such wastes. It is assumed that a volume of 32 dry tons of residual solids would be exported from the SPRWTF once per year. Residuals consist of particles removed from the water (soil, biological material) as well as chemical precipitates resulting from the treatment process. Because of the remote nature of the Sierra Pines site and the unavailability of sewer service, it would be necessary to provide treatment and recovery for the waste streams from both the sedimentation and filtration processes. It is assumed the Project would include maintenance of two on-site septic systems in accordance with County and state water quality protection standards.

Sludge Bed Maintenance

Lagoons would be engineered and implemented for handling sedimentation sludge and spent backwash water streams, requiring minimal maintenance for waste recovery and dewatering. All flows would be equalized and treated in the lagoons before being pumped back to the raw water reservoir. Lagoons would provide collection and thickening (solar drying) of the sedimentation sludge, as well as equalization and settling for spent backwash water at the SPRWTF.

Two small pump stations would return clarified backwash waste from one active lagoon (Sludge Return), and to decant another lagoon prior to drying (Sludge Decant). Both pump stations would have the ability to send flows either to the raw water reservoir, or to the raw water feed to the treatment facility.

Three lagoons would be sized to treat residual solids at a maximum loading rate of 4 lbs. of dry solids per sf of lagoon area per year based on average turbidity conditions from Lakewood Water Treatment Plant raw water data. Additionally, each lagoon would be sized such that 4.9 backwashes may be stored above the maximum sludge blanket depth, consistent with identified solids handling criteria (Carollo Engineers, 2019). Lagoons would also accommodate other waste streams at the proposed Project's treatment facility. For functionality, the sand trap filter would also require periodic maintenance and off-hauling of process residuals, anticipated to occur twice a year in the fall and spring seasons.

Hydraulic Profile

Pumping would be required to deliver raw water to the treatment facility due to its elevation relative to the canal. Due to the topography and the need for a significant volume of raw water storage, raw water would need to be lifted from the raw water reservoir up to the treatment facility. The selected location of the raw water reservoir is at a lower elevation than both the Tuolumne Main Canal and the treatment facility, meaning that raw water would be conveyed to the reservoir by gravity, and then pumped up to the treatment facility. The treatment facility itself would be positioned such that water would flow by gravity from the head of the plant to the distribution system (with a target distribution system hydraulic grade line of at least 3,974 feet based on the maximum water surface elevation in the Lakewood WTP clearwell). The hydraulic profile within the plant is based on the buildout plant flow rate of 5 mgd. The hydraulic profile of the distribution system is based on peak hourly flow rates. This allows plant facilities to be set at elevations that would accommodate the Project's future (phased) increases in flow and head loss.[4]

Chemical Systems

The drinking water treatment process would require several chemicals to be stored on-site for proper process function and to meet water quality objectives. Tanks for chemical systems would be sized to facilitate four weeks of use, conservatively estimated based on the maximum plant flow and average dosing.

Redundancy

The initial phase of the proposed Project's treatment facility includes some designed redundancy for raw water pumps, backwash pumps, filter air scour blowers, chemical injectors, chemical metering pumps, and UV reactors. The proposed SPRWTF design criteria have been developed to meet a maximum flow capability of 3 mgd at Phase 1, and 5 mgd at buildout.

Granular Media Filter Maintenance and Disposal

The granular media filter underdrain system would consist of nozzle style underdrains. Access hatches would be provided for access from the pipe gallery to the underside of each filter floor, and to each lower gullet. The filters would be provided in a configuration, allowing for filter exchange at operating capacity. Spent materials would be periodically off-hauled and disposed of at a facility permitted to accept these wastes

Performance Standards

The SPRWTF would be designed in a manner that would be consistent with operational performance standards for noise, air quality, stormwater management. Treated water conveyance pipelines would be installed and maintained with adequate separations and setbacks within TUD-owned and public rights-of way.

4 "Head loss" refers to the measurement of energy dissipated in a system due to friction; and accounts for the total of energy losses due to the length of a pipe and those due to the function of fittings, valves and other system structures.

Resource Avoidance Impact Minimization Measures

The proposed Project would implement design measures to establish buffers to avoid known sensitive resources such as wetlands, surface waters, and biological and cultural resources (that may be present on the Project site. To protect the Tuolumne Main Canal Flume or other eligible wooden historic resources on the Project site, vibratory equipment should not be operated within 50 feet of an existing historic structure; when 50 feet is infeasible, then a minimum of a 30-foot buffer would be implemented along with monitoring of the historic structures for any disturbance and deformation during all vibratory construction activities.

2.6.4 List of Anticipated Permits and Approvals

In addition to this CEQA documentation, the Project is anticipated to require an aquatic resources delineation and the following permits and regulatory approvals prior to construction and operation of the facility.

Permits for Construction:

- US Army Corps of Engineers: Clean Water Act Section 404 Nationwide Permit (Nationwide Permit 18, Minor Discharges, with impacts to wetlands)
- California Department of Fish and Wildlife Section 1602 Permit (for construction potentially affecting a waterway)
- National Historic Preservation Act, Section 106 consultation with the State Historic Preservation Office for potential effects to historic resources;
- Regional Water Quality Control Board: coverage under the Construction General Permit;

Permits for Operation

- State Water Resources Control Board, Division of Drinking Water (DDW), permit to operate a Public Water System in compliance with DDW standards;
- Tuolumne County Department of Planning and Community Development, Conditional Use Permit for development of a water treatment facility upon lands with R-1 and K zoning designations.;
- Tuolumne County Department of Environmental Health: submission of a hazardous materials business plan (for on-site storage and use of chemicals and fuels);
- Tuolumne County Air Pollution Control District: air permit for use of standby generator.

2.7 References

Carollo Engineers, Inc. 2019. Sierra Pines Water Treatment Facility Preliminary Design Report Final. Prepared for Tuolumne Utilities District. September 2019.

KLA, Inc., 2020. Sierra Pines Water Treatment Facility Preliminary Site Plan, prepared for Tuolumne Utilities District.

Kennedy/Jenks Consultants, Inc., 2019. Treated Water System Optimization Plan Water Treatment Consolidation Alternatives Final Technical Memorandum. Prepared for Tuolumne Utilities District, February 20, 2019.

Tuolumne Utilities District (TUD), 2020. TUD Responses to ESA Sierra Pines Project Data Request. July 9, 2020.

CHAPTER 3
Initial Study

1. Project Title:	TUD Sierra Pines Regional Water Treatment Facility Project
2. Lead Agency Name and Address:	Tuolumne Utilities District 18885 Nugget Blvd. Sonora, CA 95370
3. Contact Person and Phone Number:	Erik Johnson, District Engineer, 209-532-5536, ext. 520
4. Project Location:	Twain Harte, California
5. Project Sponsor's Name and Address:	Tuolumne Utilities District 18885 Nugget Blvd. Sonora, CA 95370
6. General Plan Designation(s):	Parks and Recreation (R/P), Public (P), and Low Density Residential (LDR).
7. Zoning:	General Recreational District (K), and partially as a Single-family Residential District (R-1) with a Mobilehome Exclusion Combining District (MX) for each.

8. Description of Project:

The proposed Project would include construction and operation of a consolidated water treatment facility, raw water reservoir, pump stations, conveyance pipelines, and associated appurtenances, as well as recreational trails upon 46 acres of Tuolumne Utilities District (TUD)–owned property in unincorporated Tuolumne County. Off-site new and replacement water transmission pipeline upgrades in roadways or in existing rights-of-way would also be implemented. The proposed Project would enable consolidation of water treatment facilities throughout the TUD service area, thereby improving long-term sustainability, resiliency, and operating efficiencies for TUD. The first phase of the Project involves constructing a water treatment facility with an initial capacity of 3 million gallons per day (mgd). The facility could be expanded in two subsequent phases, for a buildout capacity of 5 mgd. See Chapter 2 for a detailed description of the proposed Project.

9. Surrounding Land Uses and Setting

The 46-acre site (a former golf course) is surrounded by rural residences, open space, and lands of the Stanislaus National Forest. Immediate surrounding properties are designated as Rural Residential (RR), Low-Density Residential (LDR), and Estate Residential (ER).

10. Other Public Agencies Whose Approval May Be Required

- State Water Resources Control Board, Division of Drinking Water (public water systems permit, amendment to water supply permit)
- Central Valley Regional Water Quality Control Board (construction general permit)
- Clean Water State Revolving Fund (financing and environmental review)
- California State Historic Preservation Officer (Section 106 consultation)
- California Department of Fish and Wildlife (streambed alteration agreement)
- Tuolumne County Planning (conditional use permit, hazardous materials business plan review, grading and drainage review, encroachment permit)
- Tuolumne County Environmental Health Department (on-site septic systems review)

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

Pursuant to Public Resources Code (PRC) Section 21080.3.1(d), on September 3, 2020, TUD contacted two Native American tribes with cultural affiliation to the Project site, pipeline alignments, and vicinity, providing a description of the proposed Project and requesting comments on the identification, presence, and significance of tribal cultural resources in the Project vicinity. Tribes that have requested consultation according to the provisions of PRC Section 21080.3.1(b) include the Tuolumne Band of Me-wuk and the Chicken Ranch Rancheria of Me-wuk. TUD sent the letters through certified mail and contacted both tribes by telephone and email on September 17, 2020, to confirm receipt of the letters. TUD has not received any comments or questions as of the close of the 30-day notification period required by PRC Section 21080.3.1(d).

Environmental Factors Potentially Affected

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

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

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial study:

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

Erik D. Johnson

Signature

10/8/2020

Date

Erik Johnson

Name

Tuolumne Utilities District

For

Environmental Checklist

3.1 Aesthetics

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

Environmental Setting

The scenic resources of Tuolumne County are valuable both in that they are a primary determinant of quality of life for area residents and in their capacity to promote tourism. In particular, visitors are attracted to Yosemite National Park; Stanislaus National Forest; the Tuolumne River, a designated Wild and Scenic River; and historic Gold Rush communities. Private vehicles are the primary mode of transportation within Tuolumne County, and views from area roadways are particularly important in defining the aesthetic experience of residents and recreational visitors.

The proposed Project site is currently undeveloped and consists of wet meadow and open grassland, surrounded by conifer forest (see **Figures 3.1-1** and **3.1-2**). Near the center of the site (not included as part of the proposed Project's development) is a private rural residence with access from South Fork Road to the east. Views into the interior of the Project site from roadways, residential locations, and areas adjacent to the site are characterized visually as open meadow with scattered trees and vegetation on the site interior and stands of mature conifer trees flanking the site. A pond in the central portion of the Project site, where the proposed raw water storage reservoir would be located, is a visual reminder of the site's former use as the Sierra Pines Golf Course. A portion of the wooden, elevated Main Tuolumne Canal Flume extends across the northeastern portion of the Project site. Views of the site from more distant locations are largely obscured by trees and other vegetation, as well as hillslopes and other variations in the topography and landforms that surround the site.

The Project site is located within a rural setting where lighting is minimal. Scattered rural residential land uses and passing vehicles generate the primary sources of nighttime light and daytime glare in the Project vicinity.

Viewpoint 1: Grasslands within the Project site interior, with stands of mature conifer trees flanking the site. View facing south.

Viewpoint 2: Open meadow area of the Project site, with mature conifer trees within and flanking the site. View facing southeast.

D191134.00 - Sierra Pines Water Treatment Facility\05 Graphics-GIS-Modeling\Illustrator

SOURCE: ESA, 2020

Sierra Pines Regional Water Treatment Facility

Figure 3.1-1
Existing Visual Character of the Project Site (Viewpoints 1 and 2)

ESA

Viewpoint 3: Pond in the central portion of the Project site, where the proposed raw water storage reservoir would be located. View facing southeast.

Viewpoint 4: A portion of the wooden flume, Tuolumne Main Canal extending across the northeastern portion of the Project site. View facing west.

D191134.00 - Sierra Pines Water Treatment Facility\05 Graphics-GIS-Modeling\Illustrator

SOURCE: ESA, 2020

Sierra Pines Regional Water Treatment Facility

Figure 3.1-2
Existing Visual Character of the Project Site (Viewpoints 3 and 4)

ESA

Regulatory Setting

Federal

There are no federal regulations pertaining to visual resources that are applicable to the proposed Project.

State

California Scenic Highway Program

California's Scenic Highway Program was created by the California Legislature in 1963 and is managed by the California Department of Transportation (Caltrans). The goal of this program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to highways. A highway may be designated "scenic" depending on how much of the natural landscape travelers can see, the scenic quality of the landscape, and the extent to which development intrudes on travelers' enjoyment of the view.

California Energy Commission Building Energy Efficiency Standards for Outdoor Lighting

Title 24, Parts 1 and 6, Building Energy Efficiency Standards, adopted by the California Energy Commission (CEC) on November 5, 2003, includes requirements for outdoor lighting. These standards are updated on a 3-year cycle. The last update will take effect in 2020. These requirements vary according to which "Lighting Zone" in which the equipment is located. The standards contain lighting power (i.e., maximum zonal lumens) allowances for newly installed equipment and specific alterations that are dependent on the Lighting Zone in which the Project is located. Existing outdoor lighting systems are not required to meet these lighting power allowances. However, alterations that increase the connected load, or replace more than 50 percent of the existing luminaires for each outdoor lighting application that is regulated by the standards must meet the lighting power allowances for newly installed equipment.

Local

Tuolumne County General Plan

The following policies and implementation programs from the Tuolumne County General Plan are applicable to the proposed Project (Tuolumne County, 2018).

Community Development and Design Element

> ***Policy 1.B.5:*** Preserve the existing nighttime environment by limiting the illumination of areas surrounding new development. New lighting that is part of residential, commercial, industrial, or recreational development shall be oriented away from off-site sensitive uses, and shall be hooded, shielded, and located to direct light downward and prevent glare.

Natural Resources Element

> ***Policy 16.A.1:*** Recognize that agricultural and timberlands have historically defined the rural character and scenic beauty of Tuolumne County.
>
> ***Policy 16.A.3:*** Conserve the natural scenic quality of hillsides and hilltops throughout Tuolumne County.

Policy 16.A.5: Conserve scenic resources, landmarks and the natural landscape.

Impact Discussion

a) **No Impact.** A scenic vista is generally considered to be a location from which the public can experience unique and exemplary high-quality views, including panoramic views of great breadth and depth, often from elevated vantage points. While scenic views of the Sierra Nevada are prevalent across much of Tuolumne County, principal travel corridors are important to an analysis of scenic vistas because they define the vantage point for the largest number of viewers. These travel corridors include scenic roadways, primarily, as well as Wild and Scenic Rivers.

Although Tuolumne County has many areas of scenic beauty, Caltrans has officially designated only three vista points in the County. The proposed Project has incorporated design measures to reduce visual impacts. Such measures include siting the proposed facilities to allow for natural screening and include enhanced native landscaping that would provide additional vegetative screening of industrial facilities from public viewpoints. The Project site would be contoured to mimic natural conditions and soften the appearance of the proposed new raw water reservoir. The raw water pump station would be installed at a low elevation to decrease its public visibility. The proposed Project would also include compacted earthen recreational pathways, picnic tables, benches, and interpretive signage to showcase the site and provide a visually attractive environment. Finally, no proposed Project buildings or structures would be greater than one story in height, and the majority of Project elements would be low-lying and only intermittently visible from publicly assessable vantage points. For these reasons, the proposed Project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings, and this impact would be less than significant.

d) **Less-than-Significant Impact.** “Light pollution” refers to all forms of unwanted light in the night sky, including glare, light trespass, sky glow, and over-lighting. Views of the night sky can be an important part of the natural environment, particularly in communities surrounded by extensive open space. Excessive light and glare can also be visually disruptive to humans and nocturnal animal species.

In Tuolumne County, sources of light and glare are generally limited to major transportation corridors and clusters of development that include commercial and industrial uses. Nighttime lighting, including security lighting on utility sites and structures, is necessary to provide a safe environment. At night, light pollution is present in and around the County. However, light pollution is primarily confined to the developed urban communities, as the vast majority of the County consists of agricultural, natural resource conservation, and open space uses. Specific sources of nighttime illumination include streetlights and vehicular lights associated with roadways, as well as commercial buildings and residences.

Glare is typically produced by exterior building materials, surface paving materials, and vehicles traveling or parked on roads and driveways. Any highly reflective facade materials are of particular concern, as buildings reflect sunlight.

As described in the Environmental Setting, the Project site is located within a rural setting where lighting is minimal. Scattered rural residential land uses and passing vehicles generate the primary sources of nighttime light and daytime glare in the vicinity of the proposed Project.

The proposed Project must be consistent with applicable Tuolumne County General Plan policies intended to preserve the existing nighttime environment by limiting the illumination of areas surrounding new development. Specifically, Policy 1.B.5 requires that new lighting that is part of residential, commercial, industrial, or recreational development shall be oriented away from off-site areas, and shall be hooded, shielded, and located to direct light downward and prevent glare.

Accordingly, lighting for the proposed Project would be designed and operated to minimize glare, light trespass, sky glow, and over-lighting. All proposed Project lighting fixtures would be light-emitting diode (LED), dark sky type, shielded, or directed downward to limit effects to the surrounding community. The fixtures would be controlled by motion sensors, lighting controllers, and photocells to comply with Title 24, Part 6, of the California Energy Code.

As proposed, the Project does not include building materials such as reflective glass and polished surfaces that would create glare that could result in a public hazard or a substantial annoyance to nearby receptors. Implementation of the proposed Project would not create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area, and this impact would be less than significant.

References

Tuolumne County, 2018. Tuolumne County General Plan Volume 1 Goals and Policies. Available: https://www.tuolumnecounty.ca.gov/889/General-Plan-Update. Accessed July 28, 2020.

3.2 Agricultural and Forest Resources

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant 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. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☒	☐
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Environmental Setting

The Project site is located in the western foothills of the Sierra Nevada and is generally surrounded by sparse rural residential development, and undeveloped areas characterized by mixed oak-conifer forest and xeric chaparral in close proximity to the Stanislaus National Forest. While several land uses within the Project vicinity are related to agriculture, these existing agricultural land uses are considered vacant or underutilized and currently do not support crops or other agricultural operations. The proposed Project site is currently undeveloped and consists of Public (P), Parks and Recreation (R/P), and Low Density Residential (LDR) land use as designated by the Tuolumne County General Plan, and is directly surrounded by LDR and RR as well as Estate Residential (ER) land uses (Tuolumne County, 2018). The proposed Project site is not used as agricultural lands and is not planned to be converted to that use in the future.

Based on the Tuolumne County General Plan Draft EIR map for California Land Conservation Act (Williamson Act) parcels, there are no parcels located within the Project site that are designated as being under Williamson Act contract (see *Regulatory Setting* for a discussion of the Williamson Act). In addition, the proposed Project site is outside the surveyed area for the State's Farmland Mapping and Monitoring Program (FMMP), and the existing trees in the Project site are not considered to be forestry resources per the definitions of Public Resources Code (PRC)

Section 12220(g), timberland as defined by PRC Section 4526, or timberland zoned Timberland Production per Government Code Section 51104(g).

Zoning applied to the site by the Tuolumne County Ordinance Code includes the general recreational district (K) with a mobile home exclusion combining district (MX), and single-family residential district (R-1) also with a MX designation, as described further in Section 3.11, *Land Use and Planning*.

Regulatory Setting

Federal

Farmland Protection Policy Act

The Farmland Protection Policy Act of 1981 (Sections 1539–1549, PL 97-98, December 22, 1981), requires the Secretary of Agriculture to establish and carry out a program to *"minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to the extent practicable, will be compatible with State, units of local government, and private programs and policies to protect farmland"* (7 United States Code [USC] 4201–4209 and 7 USC 658).

State

Williamson Act

The California Land Conservation Act of 1965, *Chapter 7 California Government Code Sections 51200-51297.4* (commonly referred to as the Williamson Act) is California's principal policy for preserving agricultural land. The purpose of the Williamson Act is to preserve agricultural and open space lands and enables private landowners to contract with local jurisdictions to voluntarily restrict their land to agricultural and compatible open space uses in exchange for tax assessments for the agricultural value of the land instead of the market value, which typically means a reduction in property taxes.

California Public Resources Code

PRC Section 12220(g): "Forest land" is land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including: timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.

PRC Section 4526: "Timberland" means land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees.

PRC Section 51104(g): "Timberland Production Zone" or "TPZ" means an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h). With respect to the general plans of cities and counties, "timberland preserve zone" means "timberland production zone."

California Open Space Subvention Act

The California Open Space Subvention Act (California Government Code Section 16143) states that land shall be deemed to be devoted to open space uses of statewide significance if it:

a. Could be developed as prime agricultural land, or

b. Is open-space land as defined in Section 65560 which constitutes a resource whose preservation is of more than local importance for ecological, economic, educational, or other purposes. The Secretary of the Resources Agency shall be the final judge of whether the land is in fact devoted to open-space use of statewide significance.

Local

Tuolumne County General Plan

The following goals and policies pertaining to agricultural and forestry resources from the Community Development and Design Agriculture Elements of the Tuolumne County General Plan are relevant to the proposed Project and discussed in the impact analysis (Tuolumne County, 2018):

Goal 1A: Protect and enhance the quality of life for all residents of Tuolumne County while facilitating growth and development to meet the present and future needs of the County's residents, visitors and businesses.

Policy 1.A.1: Promote the efficient use of land to conserve natural resources.

Policy 1.A.5: Promote infill and clustered patterns of development that facilitate the efficient and timely provision of infrastructure and services.

Goal 1B: Minimize conflicts between incompatible land uses.

Policy 1.B.1: Protect existing land uses from the infringement of and impacts associated with incompatible land uses.

Policy 1.B.2: Protect public facilities from the infringement of incompatible land uses.

Goal 8A: Avoid the conversion of agricultural lands except determined to be infill areas.

Policy 8.A.1: Avoid the conversion of agricultural lands from the Agricultural General Plan land use designation and compatible zonings.

Policy 8.A.4: Development proposed adjacent to land designated Agricultural by the General Plan land use diagrams shall provide a buffer from the agricultural land. The buffer shall be 200 feet in width and located on the development site. No residential or non-agricultural buildings may be erected in the buffer area as long as the adjacent land remains designated Agricultural. The buffer may be reduced in width by the Board of Supervisors after considering the recommendation of the Section B—The Tuolumne County Economy Agricultural Advisory Committee if such a reduction is determined appropriate based upon the topography, vegetation, roads or other physical features of the buffer area or other factors considered by the Committee. If the General Plan land use designation of the adjacent land is amended in the future to a designation other than Agricultural, the need for the buffer area will be eliminated and the land use restrictions imposed pursuant to this Policy will cease at that time.

Goal 8B: Stabilize agricultural use.

Policy 8.B.1: Limit intrusion of urban development into agricultural areas.

Policy 8.B.4: Limit the intrusion of growth-inducing public services, such as public sewer systems and potable public water, into agricultural areas.

Goal 8C: Minimize conflicts between agricultural and non-agricultural uses.

Policy 8.C.2: Establish a buffer between agricultural land uses and residential/non-agricultural land uses. It shall be the obligation of the party seeking the land use change to ensure that a sufficient buffer is established between the parcels. The buffer shall favor protection of the agricultural land.

Tuolumne County Zoning Ordinance

The proposed Project site is zoned partially as a general recreational district (K), and as a single-family residential district (R-1) with a mobile home exclusion (MX) combining district for each (MX) according to the County's Zoning Ordinance (Tuolumne County, 2018).

Impact Discussion

a) **No Impact.** As of July 2019, data for Tuolumne County has not been added to the Farmland Mapping and Monitoring Program of the California Department of Conservation, and the proposed Project lies outside of the survey boundary of the FMMP. Because no portion of the proposed Project site is designated as farmland, the proposed Project would have no impact on designated farmlands. As there are no existing or proposed farmland or agricultural uses within the proposed Project site or in the surrounding area, the proposed Project would have no impact associated with converting designated farmland to non-agricultural uses.

b) **No Impact.** The proposed Project site is currently zoned partially as a general recreational (K) district, and partially as a single-family residential (R-1) district, each with a mobile home exclusion (MX) combining district; public utility facilities are identified by the zoning ordinance as compatible uses within both districts. None of the surrounding parcels are currently zoned for a General Agricultural District (AR-20). In addition, the proposed Project site and the adjacent parcels are not under a Williamson Act contracts. Because the proposed Project site is not zoned for agriculture, does not currently include agricultural uses, and the proposed Project would not convert any land zoned or under agricultural land use designation, construction and operation of the proposed Project would not result in the conversion of farmland to a nonagricultural use, nor would the proposed Project require any revisions to existing zoning designations. Therefore, the proposed Project would have no impact on agricultural resources.

c) **No Impact.** The proposed Project site is currently not zoned as forest land, or timberland, or zoned for timber production. Therefore, the proposed Project would not require any revisions to existing zoning designations.

The proposed Project site is predominantly grassland and is not currently used, or proposed to be used for growing trees for commercial lumber or other forest products, and is therefore not considered timberland. PRC Section 12220(g) defines forest land as: "land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits." By this definition, the proposed Project site could be considered forest land, but is not currently used for, and is not on lands zoned for timber production. The Project site currently supports approximately 10 percent native tree cover and allows for the management of forest resources, which would not be substantially altered by the proposed Project. The proposed Project would be managed in a manner that would support water quality, recreation, and other public health benefits, consistent with the definition of forest lands in PRC Section 12220(g).

Because the proposed Project is not located on land zoned as forest or timber land, would not conflict with existing zoning for forestry or timberland resources, and would not necessitate rezoning of any portion of the Project site, the proposed Project would not conflict with existing zoning. Therefore, there would be no impact with respect to forestry or timberland zoning attributable to the proposed Project.

d) **Less-than-Significant Impact.** The majority of proposed water treatment infrastructure is proposed to be sited in clearings, and to limit tree removal to the minimum level necessary for construction and operation of the proposed Project. It is anticipated that the Project would involve 0.52 acres of temporary impacts and 0.86 acres of permanent impacts to Montane Hardwood conifer forest habitats within the 46-acre Project site, as described in Section 3.4, *Biological Resources*. Given the limited scope of development and use in forested areas within the Project site and the minimal areas where tree removal would be necessary, there would not be substantial loss of forest land or conversion of forest land to non-forest use. The proposed Project would be managed in a manner compatible with forest lands and would allow for recreational public use and enjoyment of forest lands; consequently, construction and operation of the proposed Project would not result in a significant conversion of forestland to non-forestland uses. Impacts, primarily associated with tree removal, would be less than significant.

e) **No Impact.** As discussed above, the proposed Project would not involve changes in the existing environment that could result in the conversion of farmland to nonagricultural use or the conversion of forest land to non-forest use. The proposed Project site is currently zoned K, and R-1, lies outside of the survey boundary of the FMMP, and is not located on land under a Williamson Act Contract. Additionally, as discussed in the setting, the County's General Plan determined that there are no rangelands or agricultural lands at the proposed Project site. The proposed Project would not cause a change in land use that would create conflict between differing types of land uses which could lead to abandonment of agricultural uses. Although several trees present within the proposed Project site may be removed to enable construction of the SPRWTF and to maintain appropriate clearances for the purpose of fire safety, the proposed Project has been

designed in a manner to limit tree removal to the minimum extent practicable. Therefore, as the proposed Project would not involve any other changes to the existing environment that would result in conversion of farmland or forestland to non-agricultural or non-forest use, the proposed Project would have no impact on the conversion of agricultural and forest land.

References

Tuolumne County, 2018. *2018 Tuolumne County General Plan*. Available: https://www.tuolumnecounty.ca.gov/889/General-Plan-Update. Accessed June 12, 2020.

U.S. Department of Agriculture (USDA), 2020. Farmland Protection Policy Act 1981. Available: https://www.nrcs.usda.gov/wps/portal/nrcs/detail/?cid=nrcs143_008275. Accessed June 15, 2020.

3.3 Air Quality

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

Environmental Setting

The proposed Project is located in Tuolumne County, within the Mountain Counties Air Basin (MCAB). The basin lies along the northern Sierra Nevada mountain range and covers roughly 11,000 square miles. Elevations within the MCAB range from over 10,000 feet at the Sierra crest down to several hundred feet above sea level at the Stanislaus County boundary. The climate within the MCAB varies greatly, with the highest levels of precipitation in the mountain elevations and decreasing precipitation toward the western portion of the MCAB. In the summer, temperatures in the mountains are mild, with daytime peaks between 70 and 80 degrees Fahrenheit (°F), while the western end of the basin routinely exceeds 100°F.

The U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established the national ambient air quality standards (NAAQS) and the California ambient air quality standards (CAAQS) for criteria air pollutants, respectively. Areas of California are designated as either attainment or nonattainment for the NAAQS and CAAQS. The MCAB is currently designated as non-attainment for the state ozone standard and the federal 8-hour ozone standard and is listed as unclassified or attainment for all other federal and state criteria pollutant standards.

Some receptors are considered more sensitive than others to air pollutants and may include those with pre-existing health problems, or reside in close proximity to an emissions source, or experience prolonged duration of exposure to air pollutants. Occupants of schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality. Residential areas are also sensitive to poor air quality because people usually stay home for extended periods of time. At the center of the site (not included as part of the proposed Project's development) is a private residence. In addition, the Project site is bounded by residences along Marshall Way and Carson Drive to the west and Middle Camp Road and South Fork Road to the south and east. Other receptors include one residence located approximately 80 feet to the northeast of the Project site on South Fork Road and another approximately 300 feet south of the Project site along South Fork Road.

Regulatory Setting

Federal

Criteria Air Pollutants

EPA is required by the federal Clean Air Act (CAA) to identify and establish NAAQS to protect health and the environment. EPA has identified six criteria air pollutants including ozone, nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), lead, and particulate matter (PM). There are two subcategories of PM regulated under the NAAQS: PM with a diameter of less than 10 microns (PM_{10}) and PM with a diameter of less than 2.5 microns ($PM_{2.5}$).

State

Criteria Air Pollutants

Under the California CAA, CARB has established the CAAQS, which are at least as protective as the NAAQS, and are often more stringent. In addition to the six criteria air pollutants identified by EPA, CARB also regulates sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. Both the NAAQS and the CAAQS are presented in **Table 3.3-1**.

Toxic Air Contaminants

In addition to criteria air pollutants, other pollutants of concern include toxic air contaminants (TACs), which are compounds that have been determined to pose an actual or potential risk to public health by increasing cancer risks or other health risks, such as respiratory diseases like asthma. Sources of TACs may include gasoline stations, automobiles, dry cleaners, industrial operations, hospital sterilizers, and painting operations. TACs of particular concern include diesel particulate matter (DPM) and asbestos. Growing evidence indicates that exposure to emissions from diesel-fueled engines, about 95 percent of which come from diesel-fueled mobile sources, may result in cancer risks that exceed those attributed to other measured TACs. Asbestos is a fibrous mineral, which is both naturally occurring in ultramafic rock (a rock type commonly found in California) and is used as a processed component of building materials. Because asbestos has been proven to cause serious adverse health effects, including asbestosis and lung cancer, it is strictly regulated based on its natural widespread occurrence and its former use as a building material. Geologic mapping does not indicate the presence of naturally occurring asbestos at the Sierra Pines site or along the proposed pipeline alignments; therefore, asbestos is not discussed further in this analysis (CDMG, 2000).

TABLE 3.3-1
FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	State Standard	Federal Primary Standard
Ozone	8 Hour	0.070 ppm	0.070 ppm
	1 Hour	0.09 ppm	–
Carbon Monoxide	8 Hour	9.0 ppm	9 ppm
	1 Hour	20 ppm	35 ppm
Nitrogen Dioxide	Annual Average	0.030 ppm	0.053 ppm
	1 Hour	0.18 ppm	0.100 ppm
Sulfur Dioxide	Annual Average	–	0.030 ppm
	24 Hour	0.04 ppm	0.14 ppm
	1 Hour	0.25 ppm	0.075 ppm
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 $\mu g/m^3$	–
	24 Hour	50 $\mu g/m^3$	150 $\mu g/m^3$
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 $\mu g/m^3$	12.0 $\mu g/m^3$
	24 Hour	–	35 $\mu g/m^3$
Sulfates	24 Hour	25 $\mu g/m^3$	–
Lead	Calendar Quarter	–	1.5 $\mu g/m^3$
	30-Day Average	1.5 $\mu g/m^3$	–
	3-Month Rolling Average	–	0.15 $\mu g/m^3$
Hydrogen Sulfide	1 Hour	0.03 ppm	No Federal Standard
Vinyl Chloride	24 Hour	0.010 ppm	–
Visibility Reducing Particles	8 Hour	Extinction of 0.23/km; visibility of 10 miles or more	No Federal Standard

NOTES:
ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter

SOURCE: BAAQMD, 2017.

Regional

Air quality in Tuolumne County is monitored and regulated by the Tuolumne County Air Pollution Control District (TCAPCD).

Tuolumne County Air Pollution Control District CEQA Thresholds of Significance

The TCAPCD has established thresholds of significance for assessing potential air quality impacts under the California Environmental Quality Act (CEQA) (TCAPCD, 2013). Specifically, the TCAPCD published its *CEQA Thresholds of Significance* document, which states that a project would have a significant impact on air quality if it would result in emissions in excess of:

- 100 tons per year or 1,000 pounds per day of reactive organic gases (ROG);
- 100 tons per year or 1,000 pounds per day of oxides of nitrogen (NO_x);

- 100 tons per year or 1,000 pounds per day of PM_{10}; or
- 100 tons per year or 1,000 pounds per day of CO.

Tuolumne County Air Pollution Control District Rules

In addition to the CEQA Thresholds of Significance, the TCAPCD regulates air quality within the region through various district rules and regulations. TCAPCD rules that would apply to the Project include Rule 202 (Visible Emissions), Rule 205 (Nuisance), Rule 207 (Particulate Matter), and Rule 210 (Specific Contaminants) (CARB, 2020).

Tuolumne County 2018 General Plan Air Quality Element

The 2018 Tuolumne County General Plan (General Plan) was adopted in December 2018 and provides an overall framework for future county development. The Air Quality element to the General Plan includes various goals, policies, and implementation programs to reduce emissions and improve air quality throughout the county. Implementation of many of these programs fall under the responsibility of Tuolumne County (County) and the TCAPCD; however, Policy 15.A.4: Reduce air emissions from project construction, would be applicable to the project. Policy 15.A.4 requires that several dust-control measures be implemented during construction of the project (Tuolumne County, 2018). These control measures are discussed further under the analysis of criterion a), below.

Impact Discussion

a) **Less than Significant with Mitigation Incorporated.** Although designated as a non-attainment area for the state ozone standard, Tuolumne County does not currently have a Clean Air Plan that addresses efforts to reduce ozone precursors within the county. However, the County has developed the County General Plan Air Quality Element, discussed under the Regulatory Setting, above, to improve air quality. In the absence of a TCAPCD Clean Air Plan, the Project is analyzed for consistency with the applicable goals, policies, and implementation measures included in the County General Plan Air Quality Element. Project consistency with the County's General Plan Air Quality Element is summarized in **Table 3.3-2**, below.

As demonstrated in Table 3.3-2, implementation of MM AQ-1 is required to reduce emissions consistent with the applicable policies and programs described in the County's General Plan Air Quality Element. Therefore, the Project would not conflict with or obstruct the goals of the applicable air quality plan, and the impact would be less than significant with mitigation.

TABLE 3.3-2
TUOLUMNE COUNTY GENERAL PLAN AIR QUALITY ELEMENT—CONSISTENCY ANALYSIS

Policy/Implementation Program	Project Consistency
Policy 15.A.2: Integrate land use planning, transportation planning, and air quality planning to make the most efficient use of public resources and to create a more livable environment.	
Implementation Program 15.A.c: Require project applicants to identify alternatives or amendments for proposed projects that would reduce emissions of air pollutants, if air pollutant emissions exceed applicable air quality standards. Require all air quality mitigation to be real, feasible, cost effective, and enforceable.	**Consistent.** The project would not exceed applicable air quality significance thresholds (see criterion b discussion).
Implementation Program 15.A.d: Require project applicants to implement innovative mitigation measures that include best available control technology and/or best management practices as needed to reduce air quality impacts	**Consistent.** Implementation of **Mitigation Measure AQ-1: Dust Control Measures** (MM AQ-1) would reduce air quality impacts from construction activity. No further mitigation is necessary.
Policy 15.A.4: Reduce air emissions from project construction.	
Implementation Program 15.A.k: Require the following dust-control measures during all 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 off-road and portable equipment diesel particulate matter regulations. Alternative construction-related air quality measures may be adopted by the decision-making body after considering a project-specific air quality analysis prepared by a qualified consultant.	**Consistent.** Implementation of MM AQ-1 would ensure that the project proponent implements dust control measures during construction to reduce air quality impacts.

SOURCE: Tuolumne County, 2018.

Mitigation Measures

Mitigation Measure AQ-1: Dust Control Measures.

The Project sponsor, Tuolumne Utilities District, or its designated contractor shall ensure that the following dust control measures described in the Tuolumne County General Plan Air Quality Element are implemented during construction of the Project:

- 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 off-road and portable equipment diesel particulate matter regulations.

b) **Less-than-Significant Impact.** Project-related air quality impacts fall into two categories: short-term impacts due to construction and long-term impacts due to operation of the proposed Project. Construction of the proposed Project would generate fugitive dust and diesel exhaust emissions from the use of heavy-duty construction equipment, material movement, and vehicle trips to and from the site. During Project operation, emissions would be generated by vehicle trips from employees travelling to and from the Project site, occasional maintenance and haul trips, and the occasional use of an on-site, diesel-fueled emergency generator.

Project construction and operational emissions were conservatively estimated using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. Model inputs included estimates of the anticipated construction schedule, construction equipment, material quantities, and construction worker and full-time staff counts. Where Project-specific data was unavailable, CalEEMod defaults were used. Detailed modeling assumptions are included in Appendix A. In order to determine whether the Project would result in a violation of air quality standards or exacerbate existing ozone violations, Project related emissions were estimated and compared to the thresholds of significance established by TCAPCD.

Construction

Construction of the proposed Project is anticipated to begin in 2022 and be complete by the end of 2023. As discussed above, emissions from construction of the proposed Project would result from material movement during grading activities, use of heavy duty construction equipment, and vehicle trips from workers and vendors travelling to and from the Project site. Annual and average daily emissions estimated to result from construction of the Project are summarized in **Table 3.3-3**, below.

TABLE 3.3-3
UNMITIGATED CONSTRUCTION-RELATED CRITERIA POLLUTANT EMISSIONS (TPY/PPD)

Year	ROG	NO_x	PM_{10}	CO
2021	0.36/3.13	4.17/36.06	0.51/4.38	2.70/23.41
2022	0.10/1.09	0.73/7.75	0.07/0.79	0.81/8.55
TCAPCD Thresholds	100/1,000	100/1,000	100/1,000	100/1,000
Exceeds Thresholds?	No	No	No	No

NOTES:
TPY = tons per year
PPD = pounds per day

SOURCE: Data compiled by Environmental Science Associates in 2020 (Appendix A)

As shown in Table 3.3-3, above, the proposed Project would generate emissions of ROG, NO_x, PM_{10}, and CO that would fall below the TCAPCD significance thresholds. However, pursuant to the analysis presented in criterion a, the proposed Project would still be required to comply with the dust-control measures identified in the County's General Plan Air Quality Element. Implementation of MM AQ-1 would reduce average daily PM_{10} construction emissions by approximately 1.3 pounds per day in 2021 and 0.01 pounds per day in 2022; and by 0.15 ton in 2021 and less than 0.01 ton in 2022.[5]

Operation

Operation of the Project would generate emissions from mobile sources (e.g., employees travelling to and from the Project site), area sources (e.g., landscaping and maintenance activities), and one stationary source, a diesel-powered emergency generator. Additionally, TUD expects that vehicle miles traveled by operators would be reduced as travel to the existing facilities (proposed for consolidation) would not be necessary with implementation of the proposed Project. **Table 3.3-4** presents a summary of estimated annual operational emissions that would result from the Project.

As shown in Table 3.3-4, operation of the Project would not generate emissions in exceedance of the TCAPCD thresholds of significance.

[5] Note: it is now anticipated that construction would commence in year 2022; the emissions modeling for year 2021 incorporated into this analysis is considered a conservative approach, as emissions control technology tends to improve from year to year.

Conclusion

Criteria pollutants and precursor emissions generated by construction and operation of the Project would not exceed the TCAPCD thresholds of significance, and the impact would be less than significant.

TABLE 3.3-4
UNMITIGATED OPERATIONAL CRITERIA POLLUTANT EMISSIONS (TPY/PPD)

	ROG	NOx	PM_{10}	CO
Area	0.01/0.04	<0.01/<0.01	<0.01/<0.01	<0.01/<0.01
Mobile	<0.01/0.01	0.01/0.04	<0.01/0.02	0.02/0.13
Stationary	0.03/0.15	0.08/0.42	<0.01/0.02	0.07/0.38
Total Emissions	**0.04/0.20**	**0.08/0.46**	**0.01/0.04**	**0.09/0.51**
TCAPCD Thresholds	100/1,000	100/1,000	100/1,000	100/1,000
Exceed Thresholds?	No	No	No	No

NOTES:
TPY = tons per year
PPD = pounds per day

SOURCE: Data compiled by Environmental Science Associates in 2020 (Appendix A)

c) **Less-than-Significant Impact.** Construction and operation of the proposed Project would result in emissions of pollutants of concern such as CO and TACs. As discussed within the Environmental Setting section, the nearest sensitive receptor that could be affected by Project-related emissions is located at the center of the Project site, though this residence is not part of the proposed Project's development.

Localized CO Emissions

CO is a non-reactive pollutant that is a product of incomplete combustion and is mostly associated with motor vehicle traffic. When inhaled at high concentrations, CO reduces the oxygen-carrying capacity of the blood and can restrict oxygen from reaching vital organs. The Project would result in CO emissions during construction from construction equipment and from workers, vendors, and haul trucks traveling to and from the site, as well as during operation from employees traveling to and from the site.

Localized CO concentrations are generally related to high levels of traffic and congestion along roads and at intersections. Construction of the Project is anticipated to require a maximum of 30 workers and three vendors on any given day, while operation of the Project would only require a maximum of two full-time employees; therefore, implementation of the Project would not substantially increase traffic volumes on streets near the Project area during either construction or operation. Though vehicle trips associated with the Project would generate CO emissions, background localized CO concentrations are relatively low due to the rural setting of the Project site; thus, emissions from the marginal increase in traffic volumes during construction. As discussed in Sections 3.8, *Greenhouse Gas Emissions* and 3.17, *Transportation*, vehicle

miles traveled would be reduced with the Project's consolidation of multiple water treatment facilities; therefore, operation of the Project would not be expected to increase local CO concentrations. Furthermore, CO emissions that would result from the Project are below the TCAPCD thresholds of significance. Localized CO concentrations would not adversely affect sensitive receptors.

TAC Emissions

During construction activities, the Project would generate TACs in the form of DPM from the use of heavy-duty, diesel-fueled construction equipment. However, construction activity would be temporary and would occur over the course of approximately 18 months, beginning in the spring of 2022. In addition, construction activity is expected to be limited to the months between May and October, which would lessen the exposure of sensitive receptors to construction-related TACs. Furthermore, based on the analysis under criterion a, implementation of MM AQ-1 is recommended during construction, which requires that construction equipment be maintained and tuned at the interval recommended by the manufacturers to minimize exhaust emissions, that equipment idling be kept to a minimum when equipment is not in use, and that construction equipment remain in compliance with the CARB off-road and portable equipment diesel particulate matter regulations. These mitigation requirements would reduce TAC emissions from construction equipment; construction of the Project would not adversely affect sensitive receptors.

Once operational, the facility would be run exclusively by electric equipment. The only potential source of TACs would be a diesel-fueled emergency generator for use in case of a power outage. Any testing of the backup generator would be infrequent and would be short in duration. Additionally, it would be operated in compliance with all applicable TCAPCD rules and regulations. Therefore, TAC emissions from operation of the Project would be minimal and would not adversely affect sensitive receptors.

Conclusion

Construction and operation of the Project would generate emissions of CO and TACs; however, the Project would comply with TCAPCD rules and regulations and would implement MM AQ-1, which would reduce emissions. Therefore, emissions of CO and TACs would be minimal and the Project would not expose sensitive receptors to substantial pollutant concentrations. The Project would have a less than significant impact.

d) **Less-than-Significant Impact.** Though odors are generally regarded as an annoyance rather than a health hazard, they can still cause public distress and, depending on severity, can be considered a nuisance. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and overall is quite subjective; people may have different reactions to the same odor. Furthermore, the occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

Construction of the proposed Project would require the use of diesel-powered construction equipment, which can generate short-term, non-persistent odors due to engine exhaust. However, the proposed Project site is located in a rural area with few receptors in close proximity. Additionally, water treatment facilities are not typical sources of odorous emissions. Operation of the Project would utilize electric equipment and would be limited to the processing and treatment of surface water. Given the temporary nature of construction activity and the absence of odors related to Project operation, the Project would result in a **less-than-significant impact** with respect to odorous emissions that could adversely affect a substantial number of people.

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3.4 Biological Resources

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

Environmental Setting

Data Sources/Methodology

This section identifies the existing biological resources at the Project site; identifies the federal, state, and local regulations pertaining to biological resources within the region; and describes Project impacts on those biological resources as well as mitigation measures to reduce Project-related potentially significant impacts. The information and analysis presented in this section is focused on special-status species,[6] wildlife habitats, vegetation communities, and potentially jurisdictional waters of the United States and waters of the state that occur or have the potential to occur on the Project site. The results of the assessment presented in this section are based upon literature review and queries of the California Department of Fish and Wildlife's (CDFW) Natural Diversity Database (CNDDB), the U.S. Fish and Wildlife Service (USFWS) list of federal endangered and threatened species, and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants, as well as field surveys conducted at the Project site by qualified biologists. Field reconnaissance surveys were conducted in March and May 2020;

[6] Species that are protected pursuant to federal or state endangered species laws, or have been designated as Species of Special Concern by CDFW, or species that are not included on any agency listing but meet the definition of rare, endangered or threatened species of the CEQA Guidelines Section 15380(b), are collectively referred to as "special-status species."

special-status plant species surveys were conducted in May and July 2020; and an aquatic resources delineation was conducted in October 2019 and March 2020.

The sources of reference data reviewed for this evaluation included the following:

- Twain Harte U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle;
- Google Earth aerial photographs of the Project site (Google Earth, 2020);
- USFWS list of federal endangered and threatened species that may occur in the proposed Project location, and/or may be affected by the Project (USFWS, 2020a) (see **Appendix B**);
- CNDDB list of special-status species occurrences within the Twain Harte and eight surrounding USGS 7.5-minute topographic quadrangles (Stanislaus, Crandall Peak, Strawberry, Hull Creek, Duckwall Mountain, Tuolumne, Standard, and Columbia SE) (CDFW, 2020a) (see Appendix B);
- CNPS Inventory of Rare and Endangered Plants (v8-03 0.39) known to occur within the Twain Harte and eight surrounding USGS 7.5-minute topographic quadrangles (CNPS, 2020) (see Appendix B);
- USFWS Critical Habitat for Threatened and Endangered Species (online mapping program) (USFWS, 2020b);
- National Wetlands Inventory (USFWS, 2020c);
- CDFW Special Vascular Plants, Bryophytes, and Lichens List (CDFW, 2020b);
- CDFW Special Animals List (CDFW, 2020c);
- Wetland Delineation for the 46.45-acre Sierra Pines Water Treatment Facility Study Area (Salix Consulting, 2020);
- Sierra Pines Golf Links Biological Evaluations (Keyser et al., 2007); and
- Tuolumne County Wildlife Handbook (Tuolumne County, 1987).

During the biological reconnaissance surveys, ESA biologists walked meandering transects through the entire Project site, spaced closely to obtain maximum visual coverage of the habitats present. Existing habitat types, plants, and wildlife species within and adjacent to the Project site were recorded. Vegetation communities and wildlife habitats were identified and mapped using aerial photo interpretation and field reconnaissance. Prior to the field surveys, special-status species characteristics and habitat requirements were reviewed to aid in field recognition of suitable habitats. During the surveys, habitats were evaluated for their potential to support regionally occurring special-status species and the presence of any other biologically sensitive resources such as wetlands, riparian habitat, or drainages.

As noted above, a formal aquatic resource delineation was also conducted (Salix Consulting, 2020). Potentially jurisdictional wetlands and other waters of the United States were delineated according to methods outlined in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (USACE, 2010).

Focused botanical surveys were conducted by botanist Joshua Boldt in May and July 2020. Conditions at the time of the surveys were typical for spring (May 2020) and summer (July 2020) in Tuolumne County. The botanical surveys conducted in May and July each encompassed the entirety of the Project site, meaning the entire Project site was surveyed once in the spring and once in summer. The timing of the surveys corresponded to the flowering season of all species with at least moderate potential to occur at the Project site. All surveys were conducted on foot by walking systematic or meandering transects affording complete visual coverage of the Project site. The survey was floristic in nature, meaning that every plant taxon that occurred in the floristic survey area at the time of the survey was identified to the taxonomic level necessary to determine rarity and listing status. Plant taxa not identified in the field were collected and identified in the laboratory at a later time. All plants were identified using *The Jepson Manual: Vascular Plants of California (Second Edition)* (Baldwin et al., 2012). The surveys followed the procedures described in the California Department of Fish and Wildlife's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW, 2018). Plant nomenclature follows *The Jepson Manual: Vascular Plants of California (Second Edition)* (Baldwin et al., 2012) as revised by the Jepson eFlora (Jepson Flora Project, 2020). Common names of plant species are derived from the Jepson Manual or Calflora (2020).

Regional Setting

Regionally, the proposed Project site is located in the central portion of the Sierra Nevada, within the central Sierra Nevada Foothills subregion of the California Floristic Province (Baldwin et al., 2012). The Sierra Nevada of California is a north-northwest aligned mountain range that is substantially steeper on the eastern slope than the western slope. Elevation of the region ranges from 1,000 to 14,495 feet. Many rapid flowing rivers and streams flow west from the crest to the Great Central Valley and eventually the Pacific Ocean. Regional natural vegetation communities in the vicinity of the Project site include montane hardwood-conifer forests, mixed conifer forests, ponderosa pine forests, oak woodlands, riparian woodlands, chaparral, perennial grasslands, wetlands, and riverine habitat. The climate is typically temperate, to cold and dry. Data from the Western Regional Climate Center for the Sonora Ranger Station weather station indicates that average annual precipitation is 32.14 inches. The average maximum annual temperature is 73.0 degrees Fahrenheit and average minimum annual temperature is 44.5 degrees Fahrenheit (Western Regional Climate Center, 2020).

Within the Project site vegetation communities and wildlife habitats include montane hardwood-conifer forest, annual grassland, seasonal wetland swale, freshwater emergent wetland, montane riparian scrub, and pond. Much of the Project site was formerly used as the Sierra Pines Golf Course. At the center of the site (not included as part of the proposed Project's development) is a private residence with access from South Fork Road to the east. This residence and road would remain unchanged by the proposed Project. The Tuolumne Main Canal passes through the Sierra Pines site, just to the south of the proposed site of the Sierra Pines Water Treatment Facility (SPRWTF). Land use immediately surrounding the Project site is characterized by open space and rural residences. Elevation in the Project site ranges from 3,875 feet above mean sea level in the east to 4,035 feet above mean sea level in the west. The highest point of elevation for the property is in the northwest and the lowest point is near Middle Camp Road at the southern boundary. Terrain is generally gently sloped, and the Project site slopes in general from north to south.

Project Site Setting

Wildlife Habitats and Plant Communities

Wildlife habitats are generally described in terms of dominant plant species and plant communities along with landform, disturbance regime, and other unique environmental characteristics. The wildlife habitats described in this section are based on CDFW's *A Guide to Wildlife Habitats* (Mayer and Laudenslayer, 1988) that is used in CDFW's California Wildlife Habitat Relationships System. The California Wildlife Habitat Relationships (CWHR) habitat classification scheme has been developed to support the CWHR System, a wildlife information system and predictive model for California's regularly occurring birds, mammals, reptiles, and amphibians.

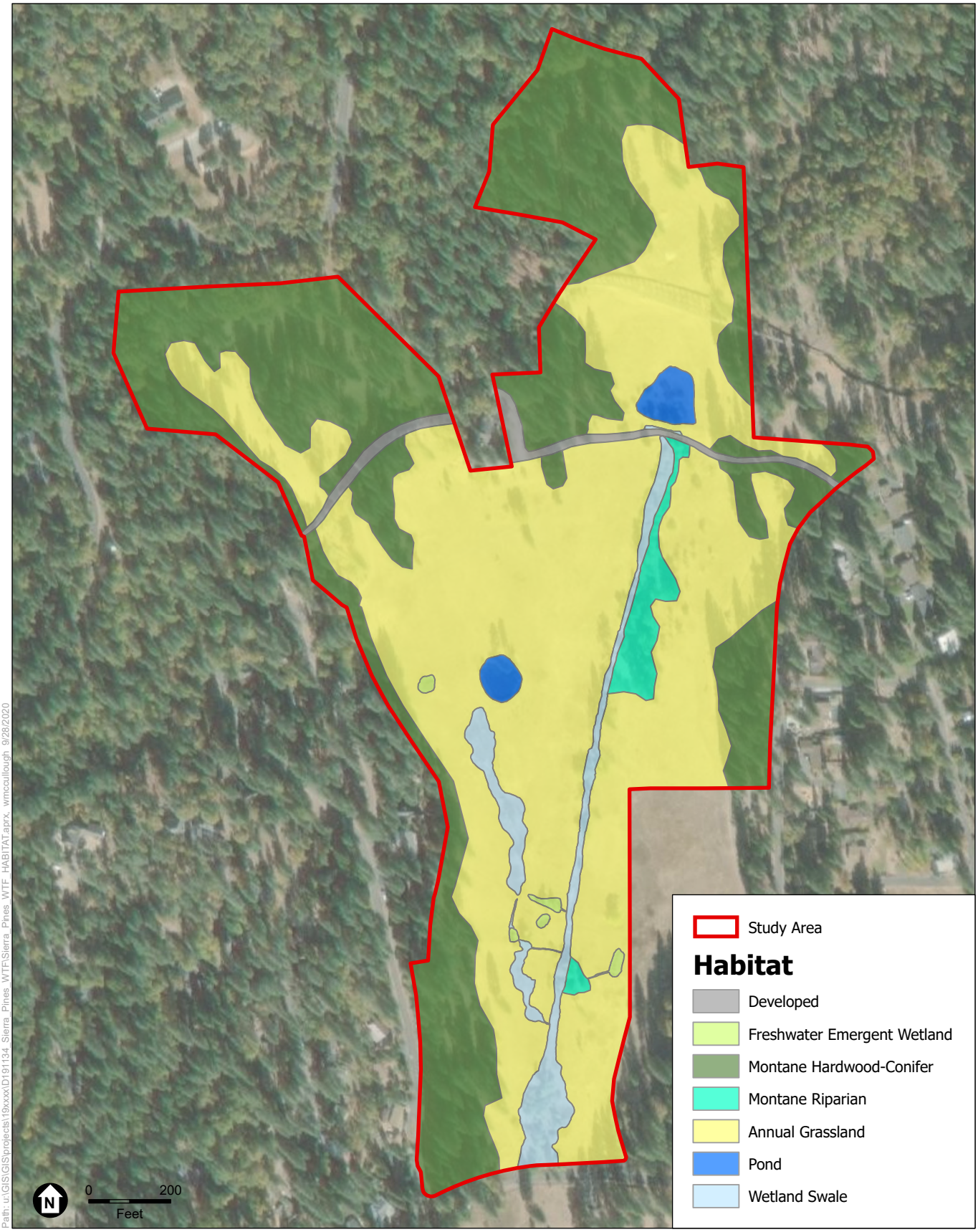
Wildlife habitats generally correspond to plant communities. Plant communities are assemblages of plant species that occur together in the same area and are repeated across landscapes. Both species composition and relative abundance define them. Plant communities within the Project site were identified using field reconnaissance and aerial photography. The vegetation types described in this section were classified according to *A Manual of California Vegetation, 2nd Edition* (Sawyer et al., 2009). Within CDFW's current vegetation classification system, vegetation alliances are the scientifically derived hierarchical class that corresponds best with plant communities and are designed to be the unit for conservation of rare or threatened plant communities. Vegetation alliances typically represent a much finer scale of vegetation description than wildlife habitats but correspond appropriately with one or several wildlife habitat types. CDFW provides crosswalks to help correlate vegetation alliances with wildlife habitats and the descriptions below make use of the crosswalk. A description of each habitat type is presented below. Related vegetation alliances are listed following the wildlife habitat description and are based on the alliance descriptions presented by Sawyer et al. (2009) (vegetation alliances are not listed for some wildlife habitats). Vegetation alliances considered a Sensitive Natural Community by CDFW are marked below by an asterisk (*) and should therefore be considered a sensitive natural community under CEQA regulations.

Table 3.4-1 and **Figure 3.4-1** summarize the extent of wildlife habitats in the Project site/study area.

TABLE 3.4-1
HABITAT TYPES WITHIN THE PROJECT STUDY AREA

Habitat Type	Area (acres)	Percent Composition
Annual Grassland	26.82	57.5
Montane Hardwood-Conifer Forest	15.68	33.6
Montane Riparian Scrub (upland)	0.90	1.9
Freshwater Emergent Wetland	0.15	0.3
Wetland Swale	1.76	3.8
Pond	0.54	1.2
Developed	0.82	1.7
Total for the Project Study Area	**46.67**	**100**

SOURCE: Data compiled by Environmental Science Associates and Salix Consulting in 2020



SOURCE: Esri, 2020; ESA, 2020; Salix, 2020.

Sierra Pines Regional Water Treatment Facility

Figure 3.4-1
Habitat Types in the Project Vicinity

ESA

Annual Grassland

The majority of the Project site consists of annual grassland. Annual grasslands on the Project site occur as dry meadows or open grasslands on drier sites adjacent to and in association with the seasonal wetland swales and montane riparian scrub habitats. These grasslands transition to montane hardwood-conifer forest at higher elevations in the Project site. Annual grassland soils are usually saturated for a short period after precipitation and snowmelt but drain fairly rapidly in most years, becoming completely dry by mid-summer. As a result, most plants in annual grasslands grow rapidly throughout the spring and early summer until soil aridity forces them into dormancy. In the Project site, this habitat type is dominated by nonnative annual grasses such as medusahead (*Elymus caput-medusae*), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), dogtail grass (*Cynosurus echinatus*), Kentucky blue grass (*Poa pratensis*), and wild oat (*Avena fatua*). Some native perennial grass species were noted including Nevada blue grass (*Poa secunda*), tufted hairgrass (*Deschampsia cespitosa*), beardless wild rye (*Elymus triticoides*), and squirreltail (*Elymus elymoides*). Dry tolerant sedges (*Carex* spp.) and rushes (*Juncus* spp.) are less common associates of these grasses, although these species do occur as homogeneous patches sporadically throughout the grasslands. A variety of herbaceous forbs occur throughout this habitat type including natives such as yarrow (*Achillea millefolium*), bicolor lupine (*Lupinus bicolor*), common gumplant (*Grindelia camporum*), gumweed (*Madia gracilis*), and annual fireweed (*Epilobium brachycarpum*) as well as nonnative species including spring vetch (*Vicia sativa*), English plantain (*Plantago lanceolata*), and lotus (*Acmipson* sp.). Much of the annual grassland habitat was previously the site of the Sierra Pines Golf Course. As such, remnant turf grass species, including a type of fescue (*Festuca* sp.), are still found throughout this community as well as in adjacent communities. Portions of the Project site once also supported apple orchards and several remnant apple trees (*Malus* sp.) were noted throughout the Project site.

Vegetation Alliances

- *Avena spp.–Bromus spp.* (42.027.01) Wild oats and annual brome grassland

Montane Hardwood-Conifer Forest

Montane hardwood-conifer forest occurs around the perimeter of the Project site, and this community is the most abundant habitat type in the Twain Harte area. Dominant overstory vegetation includes ponderosa pine (*Pinus ponderosa*), with incense cedar (*Calocedrus decurrens*) and black oak (*Quercus kelloggii*) occurring as common associates. Occasional sugar pine (*P. lambertiana*) and Douglas-fir (*Pseudotsuga menziesii* var. *menziesii*) trees were also noted in this community. Scattered big leaf maples (*Acer macrophyllum*) were observed along the Tuolumne Main Canal. Commonly occurring shrubs include deer brush (*Ceanothus integerrimus*), whiteleaf manzanita (*Arctostaphylos viscida*), mountain misery (*Chamaebatia foliolosa*), Himalayan blackberry (*Rubus armeniacus*), and Scotch broom (*Cytisus scoparius*).

Vegetation Alliances

- *Pinus ponderosa–Calocedrus decurrens–Quercus kelloggii* (87.015.02) Mixed conifer forest

Montane Riparian Scrub

The vegetation of montane riparian zones is quite variable and often structurally diverse. This habitat is typically associated with mountain lakes, ponds, rivers, and streams, as well as seeps,

bogs, and meadows. Water may be perennial or ephemeral. In the Project site, montane riparian scrub occurs along the main wetland swale that drains the site from north to south. This community supports several willow species, but no single willow species is dominant. In the Project site, the montane riparian scrub community is characterized by red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), and Goodding's black willow (*Salix gooddingii*). The understory is composed of grasses, sedges, and rush species similar to the species composition found in the neighboring grasslands.

Vegetation Alliances

- *Salix lasiolepis* (61.201.01) Arroyo willow thicket*

Seasonal Wetland Swale

The Project site is bisected by a seasonal wetland swale system, of which the principal component is a relatively straight excavated channel that originates at a man-made pond in the upper, northern portion of the site. The pond drains into the swale, which also collects local runoff, and flows south through the site. The swale expands at the southern end as it approaches Middle Camp Road and the slope flattens. The entire site drains through a 30-inch culvert under Middle Camp Road and then flows into a long pipe across the adjacent property. The swale is densely vegetated with sedges including Nebraska sedge (*Carex nebrascensis*) and clustered field-sedge (*C. praegracilis*), rushes including Baltic rush (*Juncus balticus*), toad rush (*J. bufonius*), and soft rush (*J. effuses*), velvet grass (*Holcus lanatus*), and in wetter reaches, small-fruit bulrush (*Scirpus microcarpus*). A narrow band of willows lines portions of this swale, in particular at its northernmost and southernmost reaches. A second swale system originates at another man-made pond in the west central area of the site. This pond spills into a wetland swale, which carries water south and into the main swale in the southern portion of the property (see Figure 3.4-1).

These wetland swales are best classified as seasonal wetlands. Seasonal wetlands are freshwater wetlands that support inundated or saturated soil conditions during winter and spring and are mostly dry through the summer and fall. Vegetation is characterized by both annual and perennial species including native and non-native grasses and forbs. Plant species found within seasonal wetlands are adapted to withstand short periods of inundation. Seasonal wetland plants typically initiate growth as aquatic or semi-aquatic plants and transition to a dry-land environment as the wetland dries. Seasonal wetlands are colonized by low-growing, hardy perennials that tolerate disturbance and annuals that tolerate seasonal soil saturation. Upland grasses and forbs often establish after wetland species desiccate and features become dry.

Vegetation Alliances

- *Carex nebrascensis* (45.130.01) Nebraska sedge meadow
- *Juncus balticus* (45.562.07) Baltic rush marsh
- *Juncus effusus* (45.561.01) Soft rush marsh
- *Scirpus micorcarpus* (52.113.01) Small-fruited bulrush marsh*

Freshwater Emergent Wetland

Five freshwater emergent wetlands are mapped on the Project site. All appear to be remnant golf course water features and all support cattails (*Typha latifolia*) and other wetland hydrophytes such as hardstem bulrush (*Schoenoplectus acutus*), creeping spikerush (*Eleocharis macrostachya*), and iris-leaved rush (*Juncus xiphioides*). Freshwater emergent wetland typically occurs in low-lying sites with soils that are semi-permanently flooded or saturated with fresh water. This aquatic community characteristically forms a dense vegetative cover dominated by perennial, emergent monocots that spread locally by underground rhizomes.

Vegetation Alliances

- *Typha latifolia* (52.050.04) Cattail marsh

Pond

Two man-made ponds occur on the Project site. Pond 1 is located in the northeastern portion of the site and is relatively shallow. This pond supports some willows along its southern edge and two species of spikerush (*Eleocharis macrostachya* and *E. acicularis*) along the upper, seasonally dry portion of the pond. Pond 2 is located in the central west area of the site and appears to be inundated at near spillway elevation for most of the year. This pond has very steep sides and supports a narrow band of hydrophytic vegetation, mostly common rush (*Juncus effusus*) and cattail. A species of pondweed (*Potamogeton* sp.) was noted within the ponds.

Vegetation Alliances

- None

Developed

Developed areas include the Tuolumne Main Canal, paved and unpaved roadways, and residences, along with associated infrastructure. These areas are devoid of vegetation or, where present, vegetation consists of ornamental shrubs and trees.

Vegetation Alliances

- None

Aquatic Resources

Federal and State Protected Wetlands and Waters

Wetlands are ecologically complex habitats that support a variety of both plant and animal life. In a jurisdictional sense, the federal government defines wetlands in Section 404 of the Clean Water Act (CWA) as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support (and do support, under normal circumstances) a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3[b] and 40 CFR 230.3). Under normal circumstances, the federal definition of wetlands requires three wetland identification parameters be present: wetland hydrology, hydric soils, and hydrophytic vegetation. Examples of wetlands include freshwater marsh, seasonal wetlands, and vernal pool complexes that have a hydrologic link to other waters of the United States (see definition below for "other waters of the United States"). The U.S. Army Corps of Engineers (USACE) is the responsible agency for regulating wetlands under Section 404 of the CWA, while the U.S. Environmental Protection Agency (EPA) has overall responsibility for the CWA.

Other waters of the United States refers to those hydric features that are regulated by the CWA but are not wetlands (33 CFR 328.4). To be considered jurisdictional, these features must exhibit a defined bed and bank (for channels) and an ordinary high-water mark. Examples of other waters of the United States can include rivers, creeks, ponds, and lakes.

The definition of waters of the United States subject to federal jurisdiction and concomitant CWA permitting requirements is currently in flux due to EPA and USACE (collectively "Agencies") interpretations of that term over the last several years. In 2015, under the Obama administration, the Agencies adopted a revised waters of the United States definition (the 2015 Clean Water Rule); then on December 23, 2019, the Trump administration's "Repeal Rule" became effective, repealing the 2015 Clean Water Rule. With the repeal of the 2015 Clean Water Rule, the prior definition of waters of the United States from 1986 (and accompanying guidance) became the operative definition. On April 21, 2020, the Agencies published a new definition of waters of the United States in the Federal Register. This new definition, called the 2020 Navigable Waters Protection Rule (NWPR), became effective on June 22, 2020.

A wetland delineation was conducted for the Project site by Salix Consulting, Inc. in October 2019 and March 2020 (Salix Consulting, 2020). The wetland delineation identified 2.447 acres of potentially jurisdictional waters of the United States within the Project site that may be subject to regulation under Section 404 of the CWA (see Figure 3.4-1). The wetland delineation has not yet been verified by USACE and should be considered preliminary until verification is received from USACE. At the time this wetland delineation was conducted, the 2020 NWPR was not in effect and the operative definition of waters of the United States was the 1986 definition. As explained above, the 2020 NWPR became effective on June 22, 2020. Under the 2020 NWPR, some of the aquatic resources delineated on the Project site may no longer be jurisdictional under the CWA. In addition, these features may also be protected under state regulations, including the Porter-Cologne Act, California Fish and Game Code, and the state Wetland Dredge and Fill Policy.

Potentially jurisdictional aquatic resources within the Project site consist of seasonal wetland swales, freshwater emergent wetlands, and ponds. Potentially jurisdictional features within the Project site are summarized in **Table 3.4-2**.

TABLE 3.4-2
AQUATIC RESOURCES

Aquatic Resource Type	Total Acres
Wetlands	
Seasonal Wetland Swale	1.76
Freshwater Emergent Wetland	0.15
Other Waters of the U.S	
Pond	0.54
Total Area of Potentially Jurisdictional Features:	**2.45**

SOURCE: Salix Consulting, 2020

Sensitive Natural Communities

A sensitive natural community is a biological community that is regionally rare, provides important habitat opportunities for wildlife, is structurally complex, or is in other ways of special concern to local, state, or federal agencies. Most sensitive natural communities are given special consideration because they perform important ecological functions, such as maintaining water quality and providing essential habitat for plants and wildlife. Some plant communities support a unique or diverse assemblage of plant species and therefore are considered sensitive from a botanical standpoint. CEQA may identify the elimination of such communities as a significant impact.

Sensitive natural communities include: a) areas of special concern to federal, state, or local resource agencies; b) areas regulated under Section 404 of the CWA; c) areas protected under Section 402 of the CWA, and; d) areas protected under state and local regulations and policies. Habitat types on the Project site that would be considered sensitive by regulatory agencies include wetlands and other waters of the United States, which are regulated under Section 404 of the CWA.

CDFW's *California Natural Community List* (CDFW, 2020d) ranks vegetation alliances in California according to their degree of rarity imperilment (as measured by rarity, trends, and threats). All alliances are listed with a G (global) and S (state) rank. Alliances with state ranks of S1–S3 are considered of special concern by CDFW, and all associations within them are also considered to be highly imperiled. CDFW guidance recommends all alliances with state ranks of S1-S3 be considered and analyzed under CEQA.

The following vegetation alliances on the Project site are considered of special concern by CDFW and should therefore be considered a sensitive natural community under CEQA regulations:

Vegetation Alliances

- *Salix lasiolepis* (61.201.01) Arroyo willow thicket (state rank of S3)
- *Scirpus micorcarpus* (52.113.01) Small-fruited bulrush marsh (state rank of S2)

Terrestrial Wildlife

The habitats described above provide food, water, migration and dispersal corridors, nesting, and thermal cover for many invertebrates, reptiles, amphibians, birds, and mammals. Large mammals known or expected to occur in the Project vicinity include coyote (*Canis latrans*), black bear (*Ursus americanus*), mule deer (*Odocoileus hemionus*), mountain lion (*Puma concolor*), and bobcat (*Lynx rufus*). Smaller mammals include the golden-mantled ground squirrel (*Callospermophilus lateralis*), California ground squirrel (*Otospermophilus beecheyi*), western gray squirrel (*Sciurus griseus*), several species of chipmunks (*Tamias* spp.), deer mouse (*Peromyscus maniculatus*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), and porcupine (*Erethizon dorsatum*). Reptiles known or expected to occur in the Project site include western fence lizard (*Sceloporus occidentalis*) and northern alligator lizard (*Elgaria coerulea*), while amphibians include Sierran treefrog (*Pseudacris sierra*). A wide variety of bird species utilize habitat types in the Project site for nesting and foraging. These include Steller's jay (*Cyanocitta stelleri*), mountain quail (*Oreortyx pictus*), Lewis's woodpecker (*Melanerpes lewis*), northern flicker (*Colaptes auratus*), olive-sided flycatcher (*Contopus cooperi*), western wood-pewee

(*C. sordidulus*), and raptors such as red-tailed hawk (*Buteo jamaicensis*) and sharp-shinned hawk (*Accipiter striatus*).

Wildlife Movement Corridors

Wildlife movement corridors are considered an important ecological resource by various agencies (CDFW and USFWS) and under CEQA. Movement corridors may provide favorable locations for wildlife to travel between different habitat areas such as foraging sites, breeding sites, cover areas, and preferred summer and winter range locations. They may also function as dispersal corridors allowing animals to move between various locations within their range. Topography and other natural factors, in combination with urbanization, can fragment or separate large open-space areas. Areas of human disturbance or urban development can fragment wildlife habitats and impede wildlife movement between areas of suitable habitat. This fragmentation creates isolated "islands" of vegetation that may not provide sufficient area to accommodate sustainable populations, and can adversely affect genetic and species diversity. Movement corridors mitigate the effects of this fragmentation by allowing animals to move between remaining habitats, which in turn allows depleted populations to be replenished and promotes genetic exchange between separate populations.

The Project site and surrounding area could potentially be used by a variety of wildlife species for dispersal and seasonal migration. However, there are no documented wildlife movement corridors on the Project site. The northern portion of the Project site is located in an area of "connections with implementation flexibility" according to CDFW's Essential Habitat Connectivity natural landscape blocks (CDFW, 2020e). This category includes areas that have been identified as having connectivity importance, but have not been identified as channelized areas, species corridors, or habitat linkages at this time. The southern portion of the Project site is located in an area of "limited connectivity opportunity" according to CDFW's Essential Habitat Connectivity natural landscape blocks (CDFW, 2020e). This category includes areas where land use may limit options for providing connectivity or no connectivity importance has been identified.

Similarly, the site and the surrounding area were not identified as an area of Essential Habitat Connectivity in the County's 2018 EIR for the General Plan Update (Tuolumne County, 2018a). Further, the Tuolumne County Deer Herds and Migration Map prepared in support of the General Plan Update's EIR shows the nearest deer migration route for the Stanislaus Migrant Deer Herd as occurring about two miles north of the Project site (Tuolumne County, 2018b).

The Project site currently provides a relatively undisturbed area of natural habitat where connectivity to surrounding habitat types is generally intact. Apart from the Tuolumne Main Canal that bisects the property, there is currently little to no restrictions to wildlife movement though the Project site. However, adjacent residential development limits the suitability of the site as a wildlife movement corridor. Wildlife expected to use the Project site, including areas proposed for development, while moving throughout the Project region include black bear (*Ursus americanus*), bobcat (*Lynx rufus*), coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), gray fox (*Urocyon cinereoargenteus*), ringtail cat (*Bassariscus astutus*), mountain lion (*Puma concolor*) and other medium to large mammals.

Special-Status Species

Special-status species are legally protected under the federal and California Endangered Species Acts or other regulations or are species that are considered sufficiently rare by the scientific community to qualify for such listing. These species are classified under the following categories:

1. Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (50 Code of Federal Regulations [CFR] 17.12 [listed plants], 17.11 [listed animals] and various notices in the Federal Register [FR] [proposed species]);
2. Species that are candidates for possible future listing as threatened or endangered under the federal Endangered Species Act (61 FR 40, February 28, 1996);
3. Species listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (14 California Code of Regulations [CCR] 670.5);
4. Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.);
5. Animal species of special concern to CDFW;
6. Animals fully protected under Fish and Game Code (California Fish and Game Code, Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]);
7. Species that meet the definitions of rare and endangered under CEQA. CEQA Section 15380 provides that a plant or animal species may be treated as "rare or endangered" even if not on one of the official lists (CEQA Guidelines, Section 15380); and
8. Plants considered by CDFW and CNPS to be "rare, threatened or endangered in California" (California Rare Plant Rank [CRPR] 1A, 1B, and 2) as well as CRPR Rank 3 and 4[7] plant species.

A list of special-status species that have the potential to occur within the vicinity of the Project site was compiled based on data contained in the CNDDB (CDFW, 2020a), the USFWS list of Federal Endangered and Threatened Species that Occur in or may be Affected by the proposed Project (USFWS, 2020a), and the CNPS Inventory of Rare and Endangered Plants (CNPS, 2020). A list of special-status species, their general habitat requirements, and an assessment of their potential to occur within and adjacent to the Project site is provided below in **Table 3.4-3**.

The "Potential to Occur" categories are defined as follows:

Unlikely: The Project site and surrounding area does not support suitable habitat for a particular species and/or the Project site is outside of the species known range; or, species-specific protocol-level surveys were conducted on the Project site for the species and the results were negative;

[7] CRPR 3 and 4 plants may be analyzed under CEQA Section 15380 if sufficient information is available to assess potential impacts to such plants. Factors such as regional rarity vs. statewide rarity should be considered in determining whether cumulative impacts to a CRPR 3 or 4 plant are significant even if individual project impacts are not. CRPR 3 and 4 plants may be considered regionally significant if, for example, the occurrence is located at the periphery of the species' range, or exhibits unusual morphology, or occurs in an unusual habitat/substrate. For these reasons, CRPR 3 and 4 plants should be included in the special-status species analysis. CRPR 3 and 4 plants are also included in the California Natural Diversity Database Special Plants, Bryophytes, and Lichens List. [Refer to the current online published list available at: http://www.dfg.ca.gov/biogeodata.].

Low Potential: The Project site and/or adjacent area provides only limited amounts and low quality habitat for a particular species. In addition, the known range for a particular species may be outside of the immediate Project vicinity;

Medium Potential: The Project site and/or adjacent area provides suitable habitat for a particular species; and

High Potential: The Project site and/or adjacent area provide ideal habitat conditions for a particular species and/or known populations occur in the within the Project site and adjacent area.

TABLE 3.4-3
REGIONALLY OCCURRING SPECIAL-STATUS SPECIES

Scientific Name **Common Name**	**Listing Status USFWS/ CDFW/CNPS**	**General Habitat**	**Potential to Occur in the Project Site or Adjacent Area**
Fish			
Lavinia symmetricus ssp. *1* San Joaquin roach	–/CSC/–	Tributaries to the San Joaquin River from the Cosumnes River south.	Unlikely. No suitable habitat within the Project site.
Hypomesus transpacificus Delta smelt	FT/SE/–	Found in the Sacramento–San Joaquin Delta, Suisun Bay, Carquinez Strait, and San Pablo Bay.	Unlikely. No suitable habitat within the Project site. Project site is outside of the geographic range of this species.
Amphibians			
Rana boylii foothill yellow-legged frog	–/SCT,CSC/–	Partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying. FYLF are infrequent or absent in habitats occupied by introduced bullfrogs (*Rana catesbeiana*).	Unlikely. The ponds on the Project site provide limited and low quality habitat for this species. Protocol-level surveys for amphibians were conducted on the Project site in 2007. This species was not recorded; however, numerous bullfrogs were noted. Bullfrogs were also noted during the surveys conducted in 2020. The presence of bullfrogs precludes the occurrence of this species.
Rana draytonii California red-legged frog	FT/CSC/–	Breeds in slow moving streams, ponds, and marshes with emergent vegetation and an absence or low occurrence of predators.	Unlikely. The ponds on the Project site provide limited and low quality habitat for this species. Protocol-level surveys for amphibians were conducted on the Project site in 2007. This species was not recorded; however, numerous bullfrogs were noted. Bullfrogs were also noted during the surveys conducted in 2020. The presence of bullfrogs precludes the occurrence of this species.
Reptiles			
Emys marmorata western pond turtle	–/CSC/–	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires basking sites and suitable upland habitat for egg-laying. Nest sites most often characterized as having gentle slopes (<15%) with little vegetation or sandy banks.	**High.** The ponds on the Project site provide suitable habitat for this species. Several individuals were observed using the ponds on the Project site during surveys conducted in 2007.

TABLE 3.4-3 (CONTINUED)
REGIONALLY OCCURRING SPECIAL-STATUS SPECIES

Scientific Name **Common Name**	**Listing Status USFWS/ CDFW/CNPS**	**General Habitat**	**Potential to Occur in the Project Site or Adjacent Area**
Birds			
Accipiter gentilis northern goshawk	–/CSC/–	Within, and in vicinity of, coniferous forest. Uses old nests, and maintains alternate sites. Usually nests on north slopes, near water. Red fir, lodgepole pine, Jeffrey pine, and aspens are typical nest trees.	Low. The Project site provides suitable albeit low-quality habitat for this species. This species is typically reclusive in nature and prefers nest sites well removed from human activity. The neighboring residences and presence of well-traveled roads adjacent to the site reduce the likelihood that this species would nest within or adjacent to the Project site.
Accipiter striatus sharp-shinned hawk	–/WL/–	Ponderosa pine, black oak, riparian deciduous woodland, mixed conifer forest, and Jeffrey pine habitats. Prefers riparian areas. North-facing slopes with plucking perches are critical requirements. Nests usually within 275 feet of water.	**Medium.** The Project site provides suitable nesting habitat for this species in the montane hardwood-conifer forests.
Agelaius tricolor tricolored blackbird	–/ST,CSC/–	Highly colonial species, most numerous in the Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging areas with large insect prey within a few kilometers of the colony.	Low. The ponds on the Project site provide limited and low-quality habitat for this species. No tricolored blackbirds were detected in or around the ponds during the surveys conducted in 2007 and 2020.
Athene cunicularia burrowing owl	–/CSC/–	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Unlikely. No suitable habitat within the Project site. Project site is outside of the geographic range of this species.
Haliaeetus leucocephalus bald eagle	BEPA/SE, CFP/–	Found at lakes, reservoirs, river systems, and coastal wetlands. The breeding range is generally in mountainous areas near lake or river margins, where they find large trees (usually conifers) with open branches for nesting.	Unlikely. No suitable habitat within the Project site.
Pandion haliaetus osprey	–/WL/–	Ocean shore, bays, freshwater lakes, and larger streams. Large nests built in treetops within 15 miles of a good fish-producing body of water.	Unlikely. No suitable habitat within the Project site.
Strix nebulosa great gray owl	–/SE/–	Occurs within old growth red-fir, mixed conifer, and lodgepole pine habitats above 4,500 feet. Most occurrences along the Tuolumne River and the Merced River in Yosemite Valley. Requires large diameter snags in a forest with high canopy closure, which provide a cool sub-canopy micro-climate.	Low. The Project site is outside the elevation range for this species. Protocol-level surveys for this species were conducted on the Project site in 2006 and 2007. No great gray owls were detected during these surveys.

TABLE 3.4-3 (CONTINUED)
REGIONALLY OCCURRING SPECIAL-STATUS SPECIES

Scientific Name **Common Name**	**Listing Status USFWS/ CDFW/CNPS**	**General Habitat**	**Potential to Occur in the Project Site or Adjacent Area**
Birds (cont.)			
Strix occidentalis occidentalis California spotted owl	–/CSC/–	Prefers dense mixed conifer forest, often with an understory of black oaks and other deciduous hardwoods. Canopy closure greater than 40% but prefers >80%. Most often found in deep-shaded canyons, on north-facing slopes, and within 300 meters of water.	Unlikely. No suitable habitat within the Project site. The forests on the Project site do not provide the dense canopy closure this species prefers. The neighboring residences and presence of well-traveled roads adjacent to the site reduce the likelihood that this species would nest within or adjacent to the Project site.
Mammals			
Antrozous pallidus pallid bat	–/CSC/–	A wide variety of habitats is occupied, including grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests. The species is most common in open, dry habitats with rocky areas for roosting. Roosts in buildings, caves, tree hollows, crevices, mines, and bridges.	**Medium**. Mature trees in the Project site may provide suitable roosting habitat, and open areas within and adjacent to the Project site provide suitable foraging habitat.
Corynorhinus townsendii Townsend's big-eared bat	–/CSC/–	Found throughout California in a wide variety of habitats. Roost in caves, mines, tunnels with minimal disturbance but can also be found in abandoned open buildings or other human made structures. Extremely sensitive to human disturbance.	Unlikely. No suitable habitat within the Project site.
Euderma maculatum spotted bat	–/CSC/–	Forages over water and along washes within a wide variety of habitats including grasslands, deserts, and mixed conifer forests. Roosts on rock crevices in caves or on cliffs.	**Medium**. Suitable foraging habitat present within the Project site. Suitable roost sites are absent.
Eumops perotis californicus western mastiff bat	–/CSC/–	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Isolated occurrences in Northern California. Roosts primarily in crevices within cliffs and canyons, occasionally in buildings. Primarily feeds on moths. Maternity colonies active May through July.	**Medium**. Suitable foraging habitat present within the Project site. Suitable roost sites are absent.
Gulo gulo California wolverine	FP/ST/–	Found in the North Coast Mountains and the Sierra Nevada. Found in a wide variety of high elevation habitats. Needs water source. Uses caves, logs, and burrows for cover and den area. Hunts in more open areas. Can travel long distances. Prefers remote wilderness areas.	Unlikely. No suitable habitat within the Project site. Development in the Twain Harte region likely precludes this species from the area.

TABLE 3.4-3 (CONTINUED)
REGIONALLY OCCURRING SPECIAL-STATUS SPECIES

Scientific Name **Common Name**	**Listing Status USFWS/ CDFW/CNPS**	**General Habitat**	**Potential to Occur in the Project Site or Adjacent Area**
Mammals (cont.)			
Lepus americanus tahoensis Sierra Nevada snowshoe hare	–/CSC/–	Boreal riparian areas in the Sierra Nevada. Thickets of deciduous trees in riparian areas and thickets of young conifers.	Unlikely. No suitable habitat within the Project site. Project site is outside of the geographic range of this species.
Pekania pennanti fisher–West Coast DPS	FT/ST,CSC/–	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure. Uses cavities, snags, logs, and rocky areas for cover and denning. Needs large areas of mature dense forest.	Unlikely. No suitable habitat within the Project site. The Project site lacks late seral/old growth forest habitat.
Invertebrates			
Bombus crotchii crotch bumble bee	–/SCE/–	Crotch bumble bee is nearly endemic to California, historically ranging across southern California, from the coast and coastal ranges, through the Central Valley, and to the adjacent foothills. This species inhabits open grassland and scrub habitats. Like all bumble bees, this species requires floral resources, and undisturbed nest sites and overwintering sites.	Unlikely. No suitable habitat within the Project site. Project site outside of elevation range of the species.
Desmocerus californicus dimorphus valley elderberry longhorn beetle	FT/–/–	Occurs only in the Central Valley of California, in association with blue elderberry shrubs (*Sambucus mexicana*). Prefers to lay eggs in elderberry stems 2–8 inches in diameter, with some preference shown for stressed elderberry shrubs.	Unlikely. No suitable habitat within the Project site. Project site outside of elevation range of the species.
Plants			
Allium jepsonii Jepson's onion	–/–/1B.2	Perennial bulbiferous herb found on serpentine or volcanic soils in chaparral, cismontane woodland, and lower montane coniferous forests. 985–3,950 feet. Blooms April to August.	Unlikely. No suitable habitat within the Project site.
Allium tribracteatum three-bracted onion	–/–/1B.2	Perennial bulbiferous herb found on volcanic slopes in coniferous forest and chaparral. 3,600–9,850 feet. Blooms April to August.	Unlikely. Suitable habitat is present within the Project site. However, species not observed during focused botanical surveys conducted in 2020.
Balsamorhiza macrolepis big-scale balsamroot	–/–/1B.2	Perennial herb found on open grassy or rocky slopes in chaparral, cismontane woodland, and grasslands. Often on serpentine soils. 295–5,085 feet. Blooms March to June.	Unlikely. No suitable habitat within the Project site.

TABLE 3.4-3 (CONTINUED)
REGIONALLY OCCURRING SPECIAL-STATUS SPECIES

Scientific Name **Common Name**	**Listing Status USFWS/ CDFW/CNPS**	**General Habitat**	**Potential to Occur in the Project Site or Adjacent Area**
Plants (cont.)			
Botrychium crenulatum scalloped moonwort	–/–/2B.2	Perennial rhizomatous herb found in habitats with wet or moist soils such as marshes, meadows, and along the edges of lakes and streams. 4,150–10,750 feet. Blooms June–September.	Unlikely. Suitable habitat is present within the Project site. However, species not observed during focused botanical surveys conducted in 2020.
Botrychium minganense Mingan moonwort	–/–/2B.2	Perennial rhizomatous herb found in habitats with wet or moist soils such as marshes, meadows, and along the edges of lakes and streams. 4,775–7,150 feet. Blooms July–September.	Unlikely. Suitable habitat is present within the Project site. However, species not observed during focused botanical surveys conducted in 2020. Project site outside of elevation range of the species.
Clarkia australis Small's southern clarkia	–/–/1B.2	Annual herb found on open, rocky sites in Sierra Nevada yellow pine forest. 2,625–6,800 feet. Blooms May to August.	Unlikely. Suitable habitat is present within the Project site. However, species not observed during focused botanical surveys conducted in 2020.
Clarkia biloba subsp. *australis* Mariposa clarkia	–/–/1B.2	Annual herb found in chaparral and woodlands of the Sierra Nevada Foothills. Sometimes on serpentine. 985–4,790 feet. Blooms May to July.	Unlikely. Suitable habitat is present within the Project site. However, species not observed during focused botanical surveys conducted in 2020.
Claytonia umbellata Great Basin claytonia	–/–/2B.3	Perennial herb found on talus in subalpine coniferous forests. 5,600–11,480 feet. Blooms May to August.	Unlikely. No suitable habitat within the Project site. Project site outside of elevation range of the species.
Diplacus pulchellus yellow-lip pansyflower	–/–/1B.2	Annual herb found on vernally mesic, often disturbed sites on clay soils. Meadows and seeps within lower montane coniferous forest. 2,000–6,500 feet. Blooms April to June.	Unlikely. Suitable habitat is present within the Project site. However, species not observed during focused botanical surveys conducted in 2020.
Eryngium jepsonii Jepson's coyote thistle	–/–/1B.2	Perennial herb found on clay soils in vernal pools. 10–1,000 feet. Blooms April to August.	Unlikely. No suitable habitat within the Project site. Project site outside of elevation range of the species.
Eryngium pinnatisectum Tuolumne button-celery	–/–/1B.2	Perennial herb found in vernal pools. 30–3,000 feet. Blooms May to August.	Unlikely. No suitable habitat within the Project site. Project site outside of elevation range of the species.
Erythranthe marmorata Stanislaus monkeyflower	–/–/1B.1	Annual herb found in cismontane woodlands and lower montane coniferous forests. 325–3,000 feet. Blooms March to May.	Unlikely. Suitable habitat is present within the Project site. However, species not observed during focused botanical surveys conducted in 2020. Project site outside of elevation range of the species.
Erythronium tuolumnense Tuolumne fawn lily	–/–/1B.2	Perennial bulbiferous herb found in broadleaf upland forests, chaparral, cismontane woodland, coniferous forests 1,675–4,475 feet. Flowering period: March to June.	Unlikely. Suitable habitat is present within the Project site. However, species not observed during focused botanical surveys conducted in 2020.

TABLE 3.4-3 (CONTINUED)
REGIONALLY OCCURRING SPECIAL-STATUS SPECIES

Scientific Name **Common Name**	**Listing Status USFWS/ CDFW/CNPS**	**General Habitat**	**Potential to Occur in the Project Site or Adjacent Area**
Plants (cont.)			
Horkelia parryi Parry's horkelia	–/–/1B.2	Perennial herb found in open chaparral on Ione formation and limestone soils. 260–3,510 feet. Blooms April to September.	Unlikely. No suitable habitat within the Project site.
Iris hartwegii subsp. *columbiana* Tuolumne iris	–/–/1B.2	Perennial rhizomatous herb found in cismontane woodlands and lower montane coniferous forests. 1,400–4,600 feet. Blooms May to June.	Unlikely. Suitable habitat is present within the Project site. However, species not observed during focused botanical surveys conducted in 2020.
Lomatium stebbinsii Stebbins' lomatium	–/–/1B.1	Perennial herb found on gravelly, volcanic clay soils in chaparral and lower montane coniferous forests. 4,000–7,800 feet. Blooms March to May.	Unlikely. Suitable habitat is present within the Project site. However, species not observed during focused botanical surveys conducted in 2020.
Navarretia miwukensis Mi-wuk navarretia	–/–/1B.2	Annual herb found on open, sparsely vegetated pyroclastic flows, often on gently sloping terrain, in lower montane coniferous forests. 2,300–4,925 feet. Blooms April to June.	Unlikely. No suitable habitat within the Project site.
Pseudobahia bahiifolia Hartweg's golden sunburst	–/–/2B.2	Annual herb found on clay, often acidic soils in cismontane woodland and grasslands. 50–500 feet. Blooms March to April.	Unlikely. No suitable habitat within the Project site. Project site outside of elevation range of the species.
Rhynchospora capitellata brownish beaked rush	–/–/2B.2	Mesic sites such as meadows, seeps, marshes, and swamps in coniferous forest. 150–6,500 feet. Blooms July to August.	Unlikely. Suitable habitat is present within the Project site. However, species not observed during focused botanical surveys conducted in 2020.

STATUS CODES:

FEDERAL (U.S. Fish and Wildlife Service):

BEPA = Bald Eagle Protection Act
FE = Listed as Endangered by the Federal Government
FT = Listed as Threatened by the Federal Government
FP = Proposed for Federal Listing
FC = Candidate for Federal Listing

STATE (California Department of Fish and Wildlife):

SE = Listed as Endangered by the State of California
ST = Listed as Threatened by the State of California
SCE = Candidate for State Listing (Endangered)
SCT = Candidate for State Listing (Threatened)
CSC = California species of special concern
CFP = California fully protected species
WL = CDFW Watch List

California Native Plant Society (CNPS):

Rank 1A = Plants presumed extirpated in California and either rare or extinct elsewhere
Rank 1B = Plants rare, threatened, or endangered in California and elsewhere
Rank 2A = Plants presumed extirpated in California but common elsewhere
Rank 2B = Plants rare, threatened, or endangered in California but more common elsewhere
Rank 3 = Plants about which more information is needed
Rank 4 = Plants of limited distribution

CNPS Code Extensions
.1 = Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
.2 = Fairly threatened in California (20-80% occurrences threatened)
.3 = Not very threatened in California (less than 20% of occurrences threatened or no current threats known)

SOURCE: CDFW, 2020a; USFWS, 2020a; CNPS, 2020

Conclusions regarding habitat suitability and species occurrence are based on the analysis of existing literature and databases described previously and known habitats occurring within the Project site and regionally, as well as field surveys for plant species.

Database queries identify 41 special-status plant and wildlife species records. Of these, 36 species were eliminated from further consideration based upon a lack of suitable habitat on the Project site, the Project site being outside the known range of the species, or protocol-level surveys were conducted on the Project site for the species and the results were negative. Four special-status species (pallid bat, spotted bat, western mastiff bat, and sharp-shinned hawk) have medium potential to occur in the Project site or adjacent area, and one special-status species (western pond turtle) has a high potential to occur in the Project site or adjacent area. Only species classified as having a medium or high potential for occurrence were considered in the impact analysis.

Critical Habitat

Critical habitat is defined in Section 3(5)A of the Federal Endangered Species Act (FESA) as the specific portions of the geographic area occupied by the species in which physical or biological features essential to the conservation of the species are found and that may require special management considerations or protection. Specific areas outside of the geographic area occupied by the species may also be included in critical habitat designations upon a determination that such areas are essential for the conservation of the species. There is no critical habitat designated within or adjacent to the Project site.

Regulatory Setting

This subsection briefly describes federal, state, and local regulations, permits, and policies pertaining to biological resources as they apply to the proposed Project. The Project proponent would be required to abide by all applicable regulations and permit requirements in effect at the time of construction.

Federal

Federal Endangered Species Act

The FESA protects candidate, threatened, and endangered plants and animals and their critical habitat. Candidate species are those proposed for listing; these species are usually treated by resource agencies as if they were actually listed during the environmental review process. Procedures for addressing impacts to federally listed species follow two principal pathways, both of which require consultation with the USFWS, which administers the FESA for all terrestrial species. The first pathway, Section 10(a) incidental take permit, applies to situations where a non-federal government entity must resolve potential adverse impacts to species protected under the FESA. The second pathway, Section 7 consultation, applies to projects directly undertaken by a federal agency or private Projects requiring a federal permit or approval.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag

limits for hunted species and protects migratory birds, their occupied nests, and their eggs. Most actions that result in a taking or in permanent or temporary possession of a protected species constitute violations of the MBTA. Examples of permitted actions that do not violate the MBTA are the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological gardens, bird banding, and other similar activities. USFWS is responsible for overseeing compliance with the MBTA.

Clean Water Act

The federal Clean Water Act (CWA) was enacted as an amendment to the federal Water Pollution Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to waters of the United States. The CWA serves as the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands.

Section 404

CWA Section 404 regulates the discharge of dredged and fill materials into waters of the United States. *Waters of the United States* refers to oceans, bays, rivers, streams, lakes, ponds, and wetlands. Applicants must obtain a permit from the U.S. Army Corps of Engineers (USACE) for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity. Waters of the United States are under the jurisdiction of USACE and EPA.

Compliance with CWA Section 404 requires compliance with several other environmental protection laws and regulations. USACE cannot issue an individual permit or verify the use of a general nationwide permit until the requirements of FESA and the National Historic Preservation Act have been met. In addition, USACE cannot issue or verify any permit until a water quality certification or a waiver of certification has been issued pursuant to CWA Section 401.

Section 401

Under CWA Section 401, applicants for a federal license or permit to conduct activities which may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that require a federal license or federal permit, such as a CWA Section 404 permit, must also comply with CWA Section 401.

State

Porter-Cologne Water Quality Control Act

The State Water Resources Control Board and the Regional Water Quality Control Boards (RWQCBs) (together "Boards") are the principal state agencies with primary responsibility for the coordination and control of water quality. In the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), the Legislature declared that the "state must be prepared to exercise its full power and jurisdiction to protect the quality of the waters in the state from degradation..." (California Water Code section 13000).

The Porter-Cologne Act grants the Boards the authority to implement and enforce the water quality laws, regulations, policies and plans to protect the groundwater and surface waters of the state. Waters of the state determined to be jurisdictional would require, if impacted, waste discharge permitting and/or a CWA Section 401 certification (in the case of a required USACE permit under Section 404). The enforcement of the state's water quality requirements is not solely the purview of the Boards and their staff. Other agencies (e.g., CDFW under Section 5650 of the California Fish and Game Code) have the authority to enforce certain water quality provisions in state law.

California Endangered Species Act

Under the California Endangered Species Act (CESA), CDFW has the responsibility for maintaining a list of endangered and threatened species.[8] Sections 2050 through 2098 of the California Fish and Game Code outline the protection provided to California's rare, endangered, and threatened species. Section 2080 of the California Fish and Game Code prohibits the taking of plants and animals listed under the CESA. Section 2081 established an incidental take permit program for state-listed species. CDFW maintains a list of "candidate species" which are species that CDFW formally notices as being under review for addition to the list of endangered or threatened species.

Pursuant to the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project site and determine whether the proposed project would have a potentially significant impact on such species. In addition, CDFW encourages informal consultation on any proposed project that may impact a candidate species.

Project-related impacts to species on the CESA endangered or threatened list would be considered significant. Under Section 86 of the California Fish and Game Code "take" is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." "Take" of protected species incidental to otherwise lawful management activities may be authorized under California Fish and Game Code Section 206.591. Authorization from CDFW would be in the form of an Incidental Take Permit.

State Wetland Dredge and Fill Policy

The State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (procedures), as prepared by the State Water Resources Control Board, was implemented on May 28, 2020. The procedures include a definition for wetland waters of the state that include (1) all wetland waters of the United States; and (2) aquatic resources that meet both the soils and hydrology criteria for wetland waters of the United States but lack vegetation.[9]

California Fish and Game Code

Fully Protected Species

Certain species are considered *fully protected*, meaning that the code explicitly prohibits all take of individuals of these species except for take permitted for scientific research. Section 5050 lists

8 Section 2070 of the California Fish and Game Code.

9 Less than 5 percent areal coverage at the peak of the growing season.

fully protected amphibians and reptiles, Section 5515 lists fully protected fish, Section 3511 lists fully protected birds, and Section 4700 lists fully protected mammals.

It is possible for a species to be protected under California Fish and Game Code, but not fully protected. For instance, mountain lion (*Puma concolor*) is protected under Section 4800 et seq., but is not a fully protected species.

Protection of Birds and Their Nests

Under Section 3503 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the code or any regulation made pursuant thereto. Section 3503.5 of the California Fish and Game Code prohibits take, possession, or destruction of any birds in the orders Falconiformes (hawks) or Strigiformes (owls), or of their nests and eggs. Migratory non-game birds are protected under Section 3800, while other specified birds are protected under California Fish and Game Code Section 3505.

Stream and Lake Protection

CDFW has regulatory authority over streams and lakes and the wetland resources associated with these aquatic systems under California Fish and Game Code Section 1600 et seq. through administration of lake or streambed alteration agreements. Such an agreement is not a permit, but rather a mutual accord between CDFW and a project proponent. Under Section 1600 et seq. of the California Fish and Game Code, CDFW has the authority to regulate work that will "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river lake or stream." CDFW enters into a lake or streambed alteration agreement with the project proponent and can impose conditions in the agreement to minimize and mitigate impacts to fish and wildlife resources. Because CDFW includes under its regulatory authority streamside habitats that may not qualify as wetlands under the federal CWA definition, CDFW regulatory authority may be broader than USACE jurisdiction.

Pursuant to the California Fish and Game Code, a project proponent must submit a notification of lake or streambed alteration to CDFW before construction. The notification requires an application fee for a lake or streambed alteration agreement, with a specific fee schedule to be determined by CDFW. CDFW can enter into programmatic agreements that cover recurring operation and maintenance activities and regional plans. These agreements are sometimes referred to as Master Streambed Alteration Agreements.

Under Fish and Game Code Section 1602 (Streambed Alteration Agreements), CDFW takes regulatory authority over the stream zone which is defined top of bank or outside extent of riparian vegetation, whichever is the greatest. Within the stream zone, waters of the state of California are typically delineated to include the streambed to the top of the bank and adjacent areas that would meet any one of the three wetland parameters in the USACE definition (vegetation, hydrology, and/or soils). CDFW regulatory authority is not limited to navigable waters or tributaries to navigable waters; however, isolated wetlands and wetlands not associated with a streambed are not subject to CDFW regulatory authority.

Native Plant Protection Act

State listing of plant species began in 1977 with the passage of the California Native Plant Protection Act (NPPA), which directed CDFW to carry out the legislature's intent to "preserve, protect, and enhance endangered plants in this state." The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare and to require permits for collecting, transporting, or selling such plants. CESA expanded on the original NPPA and enhanced legal protection for plants. CESA established threatened and endangered species categories, and grandfathered all rare animals—but not rare plants—into the act as threatened species. Thus, three listing categories for plants are employed in California: rare, threatened, and endangered.

California Rare Plant Ranking System

CDFW works in collaboration with the CNPS to maintain a list of plant species native to California that have low numbers, limited distribution, or are otherwise threatened with extinction. These species are categorized by rarity in the California Rare Plant Ranking (CRPR) system. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CRPR species may receive consideration under CEQA review. The following identifies the definitions of the CRPR:

Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere.

Rank 1B: Plants Rare, Threatened, or Endangered in California and elsewhere.

Rank 2A: Plants presumed extirpated in California, but more common elsewhere.

Rank 2B: Plants Rare, Threatened, or Endangered in California, but more common elsewhere.

Rank 3: Plants about which more information is needed—A Review List.

Rank 4: Plants of limited distribution—A Watch List.

Local

Tuolumne County Wildlife Handbook

The Tuolumne County Wildlife Handbook is used by the County to guide decision-making that may affect biological resources (Tuolumne County, 1987). The guide specifies priorities and objectives for wildlife conservation, as well as approaches for developing mitigation measures. The County offers the option to use the handbook when evaluating impacts and potential mitigation measures for biological resources although other options may be used.

Tuolumne County General Plan

Biological resources are addressed in the Tuolumne County General Plan Natural Resources Element. Applicable policies from the Tuolumne County General Plan are listed below.

Natural Resources Element

Policy 16.A.6: Encourage the protection of clusters of native trees and vegetation and outstanding individual native and non-native trees which help define the character of Tuolumne County.

Policy 16.B.4: Recognize that wildlife, fish and their habitats provide opportunities for recreational uses and educational pursuits and are a source of revenue to the County.

Policy 16.B.5: Evaluate and mitigate impacts to biological resources in accordance with the requirements of State and Federal law.

Policy 16.B.8: Balance the conservation of biological resources with the need to reduce wildland fire hazards.

Policy 16.B.9: Encourage the eradication of invasive plant species to protect native habitats, conserve agricultural land, support ecological diversity, and reduce the wildland fire hazard.

Impact Analysis

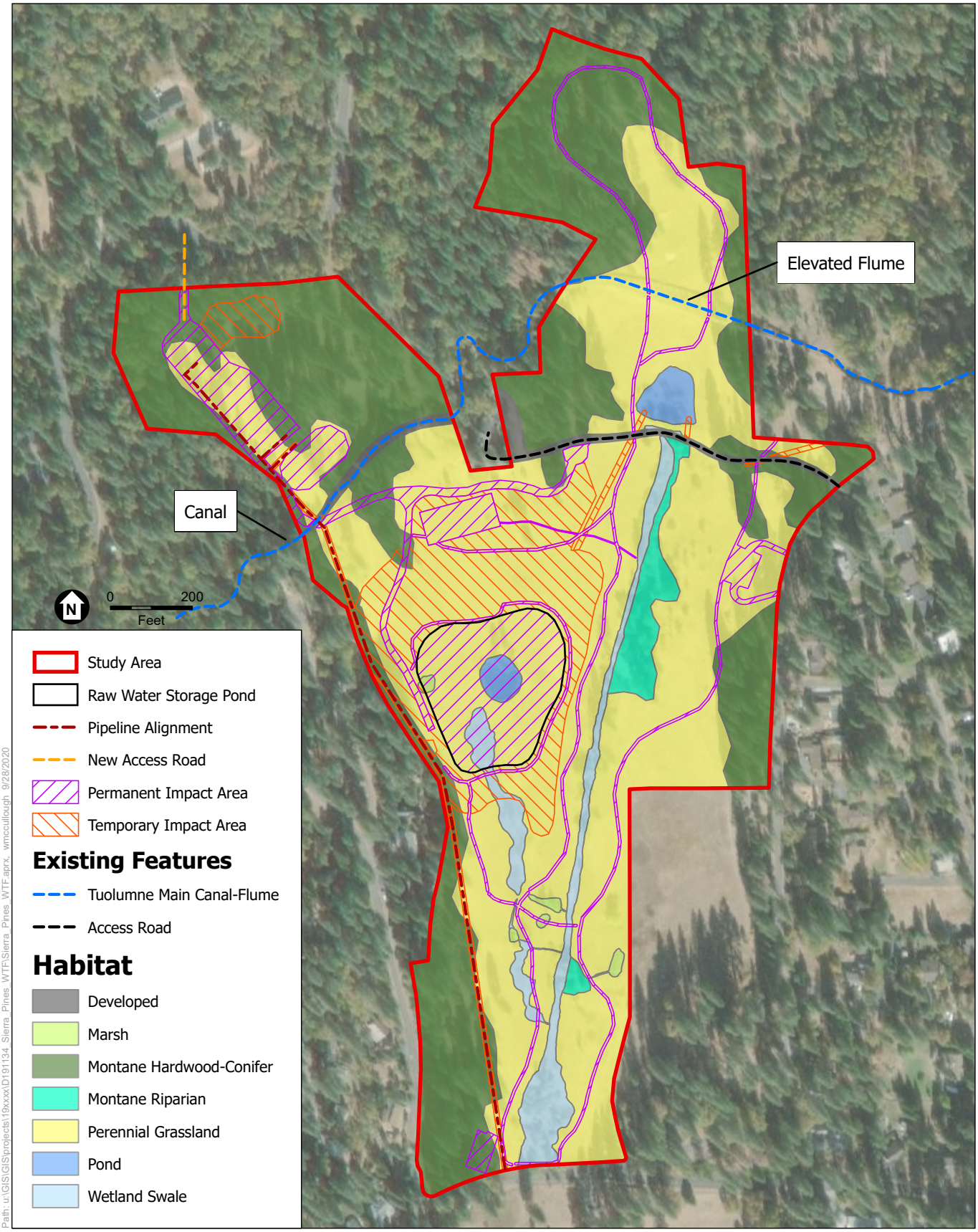
Approximately 12.11acres of the 46.65 acres in the Project site study area[10] would be impacted by the proposed Project. **Table 3.4-4** and **Figure 3.4-2** summarizes the temporary and permanent impacts to habitats within the Project site. As currently designed, the pipelines will be placed within existing paved or unpaved roadways, or within existing previously disturbed overland rights-of way and will not impact natural habitats or sensitive biological resources.

TABLE 3.4-4
HABITAT IMPACTS

Habitat Type	Temporary Impact Area (acres)	Permanent Impacts (acres)
Annual Grassland	4.70	5.18
Developed	0	0.01
Montane Hardwood-Conifer Forest	0.89	0.84
Montane Riparian Scrub (upland)	0	0.
Freshwater Emergent Wetland	0.01	0.03
Wetland Swale	0.05	0.20
Pond	0.007	0.20
Total temporary and permanent Project impacts	**5.66**	**6.46**
Combined total impacts	**12.11 acres**	

SOURCE: Data compiled by Environmental Science Associates in 2020

[10] The Project site study area has been defined as 46.65 acres, consistent with the study area defined in the wetland delineation prepared for the proposed Project (Salix, 2020).



SOURCE: Esri, 2020; ESA, 2020; Salix, 2020.

Sierra Pines Regional Water Treatment Facility

Figure 3.4-2
Impacts to Habitat

ESA

Impact Discussion

a) **Less than Significant with Mitigation Incorporated.** Special-status species and their habitats that may be affected either directly or indirectly through implementation of the proposed Project include western pond turtle, sharp-shinned hawk, pallid bat, spotted bat, and western mastiff bat. In addition, more common nesting raptors and migratory birds may also be affected by Project implementation. Each of these potentially affected species is described below.

Western Pond Turtle

The ponds on the Project site provide ideal habitat for this species, and several individuals were observed using the ponds during biological surveys conducted on the site in 2007. In addition, the annual grassland habitat adjacent to the ponds could be used by turtles for basking and egg-laying. Western pond turtle could be impacted by the Project during vegetation clearing and initial grading, if they are present in the ponds or in the annual grassland. This would be a potentially significant impact. Implementation of **Mitigation Measure BIO-1** would mitigate the impact to **less than significant**.

Special-Status Birds and Common Nesting Migratory Birds and Raptors

The Project site and the immediate vicinity provide suitable habitats for special-status bird species including sharp-shinned hawk. In addition, more common raptors and migratory birds may utilize the Project site for nesting sites as well as foraging and perching habitat. Construction of the Project would result in the removal of trees and other vegetation which may serve as perching or nesting sites for special-status species and migratory birds, including raptors. Direct impacts on special-status birds, nesting raptors, or migratory birds or their habitat could result in substantial lowered reproductive success or habitat loss, thereby potentially adversely affecting local population levels. Additionally, human disturbances and noise from construction activities have the potential to cause nest abandonment and death of young or loss of reproductive success at active nests located near Project activities. Birds could be adversely affected if active nesting, roosting, or foraging sites are either removed or exposed to a substantial increase in noise or human presence during Project activities. Nesting birds and raptors are protected under California Fish and Game Code Section 2080 (i.e., killing of a listed species), Sections 3503, 3503.5, and 3800 (i.e., take, possession, or destruction of birds, their nests or eggs), and Section 3513 of the MBTA (16 USC, Section 703 Supp. I 1989).

The impact would be less than significant if construction activities occur during the non-breeding season (i.e., from September 16 through January 31). However, construction activities conducted during the breeding season between February 1 and September 15 could affect these species adversely and result in a potentially significant impact. Implementation of **Mitigation Measure BIO-2** would mitigate the impact to **less than significant**.

Special-Status Bats

Forest habitats within the Project site provide suitable roosting and foraging habitat for special-status bat species, including pallid bat (*Antrozous pallidus*), spotted bat (*Euderma maculatum*), and western mastiff bat (*Eumops perotis californicus*). These and other bat species could use trees with suitable cavities, crevices, exfoliating bark and/or bark fissures on and near the Project site for roosting. The proposed Project could result in the removal of trees potentially used for roosting by special-status bats or other modifications to bat habitat. In addition, construction-related activities would temporarily elevate noise levels in areas on and surrounding the construction zone. Special-status bat species may be adversely affected if roosting sites are physically disturbed or are exposed to a substantial increase in noise or human presence during Project activities. If construction activities occur during the bat breeding season (April 1 to August 31), disturbance to roosting sites could be a significant effect on special-status bat species if active maternity roosts are present. Because Project implementation could adversely affect these species, this impact would be considered potentially significant. Implementation of pre-construction surveys consistent with **Mitigation Measure BIO-3** would reduce potential impacts to special-status bats to **less than significant**.

Special-Status Plants

Suitable habitat for a number of special-status plants occurs on the Project site. Based on reconnaissance-level surveys conducted on the Project site, a review of available databases and literature, and an on-site habitat suitability assessment, 11 special-status plant species were determined to have the potential to occur on the Project site (see Table 3.4-2). Based on this, protocol-level plant surveys were conducted on the Project site in May and July 2020. These surveys constitute a full botanical inventory of the site and meet the requirements outlined in the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW, 2018). No special-status plant species were observed during the 2020 surveys. Therefore, implementation of the proposed Project would not result in direct or indirect impacts to special-status plant populations. There is **no impact**.

b, c) **Less than Significant with Mitigation Incorporated.** The Project site supports sensitive habitats, including protected waters of the United States as defined in Section 404 of the Clean Water Act, riparian vegetation, and state jurisdictional waters.

CDFW's *California Natural Communities List* (CDFW, 2020d) ranks vegetation alliances in California according to their degree of rarity imperilment (as measured by rarity, trends, and threats). All alliances are listed with a G (global) and S (state) rank. Alliances with state ranks of S1-S3 are considered of special concern by CDFW, and all associations within them are also considered to be highly imperiled. The following vegetation alliances found within the Project site are considered of special concern by CDFW and should therefore be considered a sensitive natural community under CEQA regulations:

- *Salix lasiolepis* (61.201.01) Arroyo willow thicket (state rank of S3)
- *Scirpus micorcarpus* (52.113.01) Small-fruited bulrush marsh (state rank of S2)

The Project site supports wetlands and other waters of the United States or waters of the state that may be subject to USACE jurisdiction under Section 404 of the CWA or protection under the Porter-Cologne Act, California Fish and Game Code Section 1600 et seq. and the state Wetland Dredge and Fill Policy. Under the 2020 NWPR, which is currently in effect, the aquatic resources delineated on the Project site may no longer be jurisdictional under the CWA. Section 404 of the CWA requires that a permit be obtained from USACE prior to the discharge of dredged or fill materials into any "waters of the United States," which includes wetlands. Section 404 permits generally require mitigation to offset losses of these habitat types, in accordance with Executive Order 11990, which is intended to result in no net loss of wetland values or acres. These features may also be protected under state regulations, including the Porter-Cologne Act, California Fish and Game Code, and the state Wetland Dredge and Fill Policy.

Sensitive habitats, including protected wetland habitat and riparian vegetation, could be affected by Project construction through direct removal, filling, hydrological interruption, alteration of bed and bank, and other construction-related activities. Based on the most recent design for the Project, construction of the of the Sierra Pines Water Treatment Facility would result in permanent impacts to approximately 0.48 acre of federally protected waters of the United States and an additional 0.004 acre of habitat protected under Section 1602 of the California Fish and Game Code (see Table 3.4-4). There would also be an additional 0.007 acre of pond temporarily impacted. This would be a potentially significant impact. Implementation of **Mitigation Measure BIO-4** would mitigate the impact to **less than significant**.

d) **Less-than-Significant Impact.** The Project site and surrounding area could potentially be used by a variety of wildlife species for dispersal and seasonal migration. However, there are no known wildlife movement corridors on or in the vicinity of the Project site. The northern portion of the Project site is located in an area of "connections with implementation flexibility" according to CDFW's Essential Habitat Connectivity natural landscape blocks (CDFW, 2020e). This category includes areas that have been identified as having connectivity importance, but have not been identified as channelized areas, species corridors, or habitat linkages at this time. The southern portion of the Project site is located in an area of "limited connectivity opportunity" according to CDFW's Essential Habitat Connectivity natural landscape blocks (CDFW, 2020e). This category includes areas where land use may limit options for providing connectivity or no connectivity importance has been identified.

Similarly, the site and the surrounding area were not identified as an area of Essential Habitat Connectivity in the County's 2018 EIR for the General Plan Update (Tuolumne County, 2018a). Further, the Tuolumne County Deer Herds and Migration Map prepared in support of the General Plan Update's EIR shows the nearest deer migration route for the Stanislaus Migrant Deer Herd as occurring about two miles north of the Project site (Tuolumne County, 2018b).

A substantial portion of the site would remain wholly undeveloped and undisturbed. Accordingly, substantial portions of the site would remain undeveloped and would essentially continue to function as open space that could facilitate wildlife movement if it were to occur. In addition, similar habitat types are abundant in the local area, particularly on National Forest lands that adjoin the site to the north.

Night lighting can disrupt the circadian rhythms of many wildlife species. The introduction of nighttime lighting at the Project site could deter some wildlife species from using habitat directly surrounding the Project site if lighting is overly bright or if spill-over is excessive. However, light spill-over from the Project site would be minimal, as is discussed in Section 3.1, *Aesthetics*. Lighting for the Project would be designed and operated to minimize glare, light trespass, sky glow, and over-lighting. All Project lighting fixtures would be light-emitting diode (LED), dark sky type, shielded, or directed downward to limit effects to the surrounding community. The fixtures would be controlled by motion sensors, lighting controllers, and photocells to comply with Title 24, Part 6, of the California Energy Code. As stated in Chapter 2, *Project Description*, all lighting would meet dark sky standards. Based on these design features, the overall lighting on the site would be minimal, and potential impacts to wildlife resulting from nighttime lighting would not be substantial.

Based upon each of these considerations, together with the fact that there are no known wildlife corridors or migration routes through or in the vicinity of the Project site, the Project's impacts to wildlife corridors and migration routes would be **less than significant**.

e) **Less than Significant with Mitigation Incorporated.** The protection of clusters of native trees and vegetation and outstanding individual native and non-native trees is encouraged in Tuolumne County General Plan *Policy 16.A.6*. In addition, the Tuolumne County Wildlife Handbook states that a Project would have a significant impact on biological resources if it resulted in a net loss of the habitat value of a Second Priority Habitat. The montane hardwood-conifer forests on the Project site are not considered a Second Priority Habitat by the Tuolumne County Wildlife Handbook, and there is no defined oak woodland habitat on the Project site, although black oak trees occur sporadically throughout the Project site. Therefore, there would be **no impact** to protected trees. However, the freshwater emergent wetlands, ponds, and montane riparian scrub habitats on the Project site are considered Second Priority Habitats by the Tuolumne County Wildlife Handbook. As previously discussed under Impact Discussion b and c above, these Second Priority Habitats, including protected wetland habitat and riparian vegetation, could be affected by Project construction through direct removal, filling, hydrological interruption, alteration of bed and bank, and other construction-related activities. This is a potentially significant impact. Implementation of **Mitigation Measure BIO-4** would mitigate the impact to **less than significant**.

f) **No impact.** The proposed Project is not located within an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, there would be **no impact**.

Mitigation Measures

Mitigation Measure BIO-1: Perform Pre-Construction Surveys for Western Pond Turtle.

a) A qualified biologist shall conduct a preconstruction survey within suitable habitat (within 500 feet of each pond) for western pond turtle within 5 days prior to commencement of materials staging or ground disturbing activities. If the preconstruction survey shows that there is no evidence of western pond turtle, then a letter report shall be submitted to the Project applicant for their records within 14 days of the survey and no additional measures are required. If construction does not commence within 5 days of the preconstruction survey, or halts for more than 5 days, an additional preconstruction survey is required.

b) If western pond turtles are observed, a qualified biologist shall relocate the species off-site to similar habitat on public lands within ten miles of the Project site. Relocation of pond turtles shall be conducted in coordination with CDFW. If turtles can be avoided, the qualified biologist shall monitor all staging and initial grading activities to ensure the species can be avoided. The relocation work and monitoring shall be documented in a letter report to the Project applicant for their records within 14 days of the final monitoring work.

Mitigation Measure BIO-2: Perform Pre-Construction Surveys for Nesting Special-Status and Common Migratory Birds. If construction activities begin during the nesting season (February 1 to September 15), a qualified biologist shall conduct a preconstruction survey for active nests in suitable nesting habitat within 500 feet of the construction area for nesting raptors and migratory birds (¼ mile for sharp-shinned hawk). Areas adjacent to the Project site that are inaccessible due to private property restrictions shall be surveyed using binoculars from the nearest vantage point. The survey shall be conducted by a qualified biologist no more than seven days prior to the onset of construction. If no active nests are identified during the pre-construction survey, no further mitigation is necessary. If construction activities begin prior to February 1, it is assumed that no birds would nest in the Project site during active construction activities and no pre-construction surveys are required. If at any time during the nesting season construction stops for a period of two weeks or longer, pre-construction surveys shall be conducted prior to construction resuming.

If active nests are found during the survey, the Project proponent shall implement mitigation measures to ensure that the species would not be adversely affected, which would include establishing a no-work buffer zone, as approved by CDFW, around the active nest.

Measures shall include, but not be limited to:

a) If active nests are found on or within 500 feet of the Project site (¼ mile for sharp-shinned hawk), then the Project proponent shall establish no disturbance buffers for active nests of 250 feet for migratory bird species, 500 feet for non-listed raptor species, and ¼ mile for sharp-shinned hawk, until the breeding season has ended, or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. Depending on the conditions specific to each nest, and the relative location and rate of construction activities, it may be feasible for construction to occur as planned within the buffer without

impacting the breeding effort. Nests that are inaccessible due to private property restrictions shall be monitored using binoculars from the nearest vantage point. Construction activities may be halted at any time if, in the professional opinion of the biologist, construction activities are affecting the breeding effort. If construction activities are halted due to adverse effects on breeding efforts, construction shall not resume until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.

b) Depending on conditions specific to each nest, and the relative location and rate of construction activities, it may be feasible for construction to occur as planned within the buffer without impacting the breeding effort. In this case (to be determined on a case-by-case basis), the nest(s) shall be monitored by a qualified biologist during any construction activities within the buffer. If, in the professional opinion of the monitor, the Project would impact the nesting birds or young, the biologist shall immediately inform the construction manager and the Project proponent shall notify CDFW. The construction manager shall stop construction activities within the buffer until the nest is no longer active or a new buffer distance is agreed upon with CDFW. Completion of nesting and fledging activities shall be determined by a qualified biologist.

c) If construction begins outside of the migratory bird breeding season (February 1 through September 15), then the Project proponent is permitted to continue construction activities throughout the breeding season.

Mitigation Measure BIO-3: Perform Pre-Construction Surveys for Special-Status Bats. For construction activities expected to occur during the breeding season for special-status bat species (April 1 to August 31), a field survey shall be conducted by a qualified biologist to determine whether active roosts are present on site or within 100 feet of the Project boundaries. Areas adjacent to the Project site that are inaccessible due to private property restrictions shall be surveyed using binoculars from the nearest vantage point. Field surveys shall be conducted early in the breeding season before any construction activities begin, when bats are establishing maternity roosts but before pregnant females give birth (April through early May). If no roosting bats are found, then no further mitigation is required. If roosting bats are found, then disturbance of the maternity roosts shall be avoided by halting construction until the end of the breeding season or a qualified bat biologist excludes the roosting bats in consultation with CDFW. If construction activities begin prior to April 1, it is assumed that no bats would roost in the Project site during active construction activities and no pre-construction surveys are required. If at any time during the roosting season construction stops for a period of two weeks or longer, pre-construction surveys shall be conducted prior to construction resuming.

Mitigation Measure BIO-4: No Net Loss of Wetland and Riparian Habitats. The Project proponent shall demonstrate that there is no net loss of wetlands and other waters of the United States and state protected waters/wetlands. To ensure this, wetland mitigation shall be developed as a part of the permitting process. Mitigation shall be provided prior to construction-related impacts on the existing waters/wetlands. The exact mitigation ratio would be determined in consultation with the applicable permitting agencies, which may include USACE, CDFW, and/or RWQCB. The amount of mitigation will be based on the type and value of the waters/wetlands affected by the Project, but the Project shall compensate for impacted waters/wetlands at a ratio no less than 1:1 per state policy. Compensation shall take the form of preservation or creation in accordance with USACE, RWQCB and/or CDFW mitigation requirements, as required

under Project permits. Preservation and creation may occur off-site through purchasing credits at a USACE, CDFW, and/or RWQCB-approved mitigation bank.

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3.5 Cultural Resources

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant 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 Section 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Environmental Setting

This section provides a setting for prehistoric, ethnographic, and historic periods in the vicinity of the proposed Project site and pipeline alignments. The setting is followed by the results of background research, a cultural resources survey effort, and the recordation and evaluation of cultural resources in and adjacent to the Project site and pipeline alignments.

Prehistoric Setting

Archaeologists have developed a chronology for California prehistory comprised of synthesized data from more than 100 excavated sites in the watersheds of the Mokelumne, Calaveras, Stanislaus, and Tuolumne rivers (Rosenthal, 2006). Based on spatial and stratigraphic analyses of more than 200 radiocarbon dates, more than 4,000 source-specific obsidian hydration readings, over 875 projectile points, and close to 600 shell beads, five major time periods have been defined: Early Archaic, Middle Archaic, Late Archaic, Recent Prehistoric I, and Recent Prehistoric II.

Early Archaic (9500–5000 B.C.): Early Archaic deposits are quite rare in the Sierra Nevada foothills, identified locally at two sites, both discovered in buried stratigraphic contexts. They include abundant Wide-Stem and Large Stemmed Dart points, hundreds of handstones and millingstones, as well as a variety of cobble-core tools, large percussion-flaked “greenstone” bifaces, and comparatively high frequencies of obsidian from the Bodie Hills source.

Middle Archaic (5000–1000 B.C.): Middle Archaic sites, also often buried, are primarily distinguished by Corner-notched Dart points, an occasional mortar and pestle, and the earliest house structures in association with large subterranean storage pits. Soapstone “frying pans” and other vessels first appear in the local record during the Middle Archaic, along with various stone pendants, incised slate, and stone beads. The presence of atlatl weights and spurs in these deposits confirms that the dart and atlatl were the primary hunting implements.

Late Archaic (1000 B.C.–A.D. 900): Late Archaic sites are among the most common on the western slope, again with many occurring in buried stratigraphic contexts. Late Archaic lifeways, technologies, and subsistence patterns were quite similar to those of the previous time period, with the primary difference being an increase in the use of obsidian between about 1000 B.C. and

A.D. 900. Chert, only available in the foothills of the western Sierra below about 3,000 feet, is common at Archaic sites in the lower Montane Forest up to about 6,000 feet. However, flaked stone assemblages on the western slope found above 6,000 feet are composed almost entirely of obsidian (more than 80 percent), suggesting that groups who utilized upper elevations of the western Sierra arrived from the east side where obsidian was the primary toolstone.

Recent Prehistoric I (A.D. 900–1400): The beginning of the Prehistoric Period coincides with a region-wide interval of reduced precipitation known as the Medieval Climatic Anomaly. Among the most important changes in the archaeological record of the western slope at this time was the introduction of the bow and arrow (about A.D. 900), an innovation apparently borrowed from neighboring groups to the north or east. This shift in technology is clearly reflected by the dominance of small stemmed and corner-notched arrow points in Recent Prehistoric I sites.

Recent Prehistoric II (A.D. 1400–1850): The common occurrence of bedrock mortars at Recent Prehistoric II sites suggests that they became an important milling technology by A.D. 1400. Bedrock milling fixtures are established across the landscape, near well-developed residential middens and as isolated features. There also appears to have been greater settlement differentiation during the Recent Prehistoric II Period, with clear residential sites, often including house-depressions and other structural remains, but also special-use localities consisting simply of bedrock milling features. Many more specialized technologies are associated with the Recent Prehistoric II Period than were evident during the Archaic, including stone drills and the common occurrence of bone awls, suggesting that basketry and other composite implements may have taken on a new importance. The Desert Side-notched arrow point is first introduced on the western slope at about A.D. 1400, clearly adopted from Great Basin people to the east. Circular stone shaft-straighteners are also common in these sites, consistent with the use of the bow and arrow. Imported shell beads from coastal California first appear in appreciable amounts in Recent Prehistoric II village sites, as do other rare items such as shell ornaments and bone whistles.

Ethnohistoric Background

The Miwok are one of the largest nations in California, comprising three geographical groups extending from the Pacific Ocean to the Sierra Nevada: the Coast Miwok, Lake Miwok, and Interior Miwok. Within the interior valley, there were four regional and linguistic sub-divisions of the Interior Miwok, known to ethnographers as Valley or Plains Miwok, Northern Sierra Miwok, Central Sierra Miwok, and Southern Sierra Miwok. The Project site is within what was recorded ethnographically as territory of the Central Sierra Miwok (or Me-wuk) who appear to have entered the area beginning about 500–800 years ago. The Miwokan family of languages, a member of the Utian sub-stock, was made up of seven distinct languages variously situated in central California from Clear Lake south to the Bay Area and east to encompass the foothills and mountains of the central Sierra Nevada. Sierra Me-Wuk was initially a single language, which developed into the Northern, Central, and Southern Me-Wuk languages over time. The central group, which was differentiated again based on dialect differences, extended from the Calaveras/Stanislaus divide in the north to approximately the Tuolumne/Merced drainage divide in the south. The name "Me-Wuk," from Central Sierra Me-Wuk *miwü* (person), was an appellation of ethnographers and had little meaning to Me-Wuk speakers, in that they did not

consider themselves a single group. They were, instead, separate, independent village communities who together shared common language and culture (Francis, 2003).

Me-Wuk life was instilled with common values towards their physical environment, which manifest themselves in beliefs and ceremonies. Many economically important plants, if not formally "domesticated," were physically managed to help maintain desired characteristics. The people were careful to nurture their natural environment. Prior to 1848, the Central Sierra Me-Wuk had little contact with Euroamericans, even though their presence had been felt by way of indirect impacts (e.g., introduced diseases, disruption of trade networks) (Davis-King, 1998).

Historical Setting

This historical setting has been adapted from *A Contextual History of Tuolumne County* (Davis-King and Marvin, 1994). The first Euroamerican group to enter the region was the Spanish exploratory party led by Lieutenant Gabriel Moraga that passed through the area in 1806. Except for sporadic explorations of the California interior by the Spanish there was little involvement in the area until the mid-nineteenth century. In 1841, the Bartleson-Bidwell party, the first over-land group of American settlers, crossed over the Sierra Nevada 10 miles south of the Sonora Pass.

Following the discovery of gold in California, the population of the state, as well as Tuolumne County, increased rapidly and resulted in further disruption of native culture. Following the annexation of California, some groups of Sierra Me-Wuk were removed to valley towns, but most of the population remained in Rancherias scattered throughout the foothills, including the Tuolumne Rancheria.

The first discovery of gold within Tuolumne County occurred in 1848 at Wood's Crossing, near Jamestown, while gold discovered within the vicinity led to the founding of Tuolumne (originally Summersville), Cherokee, and Soulsbyville. By the mid-1860s, the placer gold deposits were exhausted, the technology for extracting gold from the deep veins was not yet well-developed, and mining went into a major depression in Tuolumne County. Many miners and their families rushed to other strikes, notably the Comstock Lode in Nevada, hoping to find work, while local support industries collapsed or suffered. Farms were abandoned, businesses auctioned off and closed, and the mines shut down. Tuolumne County's population decreased by nearly 50 percent between 1860 and 1870. From 1865 to the early 1890s, Tuolumne County suffered great hardship and depression, only to have mining again bring county industry back to life. The second, or Hard-Rock, Gold Rush began in the late 1880s and lasted through World War I. A combination of advanced technologies, primarily the invention of dynamite in the 1860s, the development of square-set timbering in the Comstock Lode, and a heavy infusion of foreign capital, provided for the resurgence of the mining industry in Tuolumne County and foothill regions. During this period the county experienced another major period of growth and a population boom. Mines were reopened, adits driven, and shafts sunk deep into the Mother Lode and its associated veins. Hoisting equipment was developed, particularly the six-strand cables capable of lifting heavy loads of ore and debris from great depths. Air pumps forced fresh air into the shafts, expelling foul air and powder fumes. At this time, electricity was used to provide power for the hoists and mills, with the added benefit of providing some electric light for domiciles.

By World War I, most of the mines in Tuolumne County were again idle and many people moved away to work in the war-related industries in the San Francisco Bay Area. With the advent of the automobile and truck transportation, many agricultural products and manufactured items were imported, rather than being produced locally. The Great Depression in 1929 sounded the death knell for most major industries, including agriculture and timber, and the county slumbered along with the rest of the United States during the following decade. Due to the increase of the price of gold and low operating costs during the Depression, a small mining boom occurred again during the mid to late 1930s.

The Tuolumne County water system was essential to the development of mineral resources, the attendant industries such as the steam or water powered sawmills, and the commercial establishments and towns that grew up in the county. However, this era of development and prosperity was ending by the late 1860s, when the focus of the water companies was on maintenance and operation at a time when mining was in a decline. Vast streams of water were needed for all types of mining operations, especially early placer and hydraulic mining. Unable to work during the dry seasons, the industrious miners soon discovered ways to bring rivers and tributaries to their diggings.

Originally constructed for use by the mining companies, these expanded water networks were eventually taken over by agricultural and domestic consumers as the importance and needs of the mining economy declined and towns and farms developed. The preeminence of mining ensured that all other local industries would be its auxiliaries. Transportation, water, power generation, and ranching have all been directed and influenced by the mining industry, and have benefitted from the mining industry's manipulation of area hydrography.

Background Research

Staff at the Central California Information Center (CCIC) of the California Historical Resources Information System at California State University, Stanislaus, completed a records search of the proposed Project site and pipeline alignments on March 10, 2020 (File No. 11329 O). Records were accessed by reviewing the U.S. Geological Survey (USGS) Columbia SE, Standard and Twain Harte 7.5-minute quadrangle base maps. Additional research was conducted using the files and literature at ESA and TUD. The records search included a one-half-mile radius around the proposed Project site and pipeline alignments to:

- Determine whether known cultural resources had been recorded within or adjacent to the Project site and pipeline alignments;
- Assess the likelihood of unrecorded cultural resources based on historical references and the distribution of environmental settings of nearby sites; and
- Develop a context for identification and preliminary evaluation of cultural resources.

Included in the review was the Built Environment Resources Directory for Tuolumne County. The directory includes listings of the California Register of Historical Resources (California Register) and the National Register of Historic Places (National Register), as well as the most recent listing of the California Historical Landmarks and California Points of Historical Interest. ESA also reviewed historic topographic maps and aerial imagery.

The records search results provided 12 previously completed cultural resources reports on file at the CCIC that included portions of the proposed Project site and/or pipeline alignments. **Table 3.5-1** summarizes these reports.

TABLE 3.5-1
CULTURAL RESOURCES STUDIES IN THE VICINITY OF THE PROJECT SITE AND PIPELINE ALIGNMENTS

Study No.	Report Name	Author	Year	Results
Project site				
TO-01068	Cultural Resources Investigations for the Phoenix Hydroelectric Project License Application (FERC 1061), Volumes I and II	Davis-King, S. and S. K. Goldberg	1988	CA-TUO-002142H (Tuolumne Main Canal/Ditch) and CA-TUO-2143H (area of historic Middle Camp) recorded in proposed Project site
TO-01329	Archaeological Investigations for the Phoenix Project, Tuolumne County, California	Varner, D. M. and K. L. Cursi	1980	CA-TUO-002142H (Tuolumne Main Canal/Ditch) recorded in proposed Project site
TO-01330	Management Summary of Archaeological Investigations for the Phoenix Project Tuolumne County, California	Varner, D.	1979	CA-TUO-002142H (Tuolumne Main Canal/Ditch) recorded in proposed Project site
TO-01576	Phoenix Hydroelectric Project FERC License No. 1061 Cultural Resources Management Plan	Infotec Research, Inc.	1990	CA-TUO-002142H (Tuolumne Main Canal/Ditch) evaluated as eligible as a contributing element of a historic district with SHPO concurrence
TO-02268	Contextual History of Tuolumne County	Davis-King, S. and J. Marvin	1994	Extensive overview of history in Tuolumne County
TO-04870	Stanislaus National Forest, Heritage Resources 1996 Sierra Nevada Programmatic Agreement Project Certification, Sampson Fuel Reduction Project, CRMR 05-16-1204	Potter, Erin	2002	No resources recorded in proposed Project site
TO-09130	Re: Pacific Gas & Electric Company, Phoenix Hydroelectric Project, FERC Project No. 1061, Historic Resources Inventory and Evaluation Report	Walker, Matt	2019	CA-TUO-002142H (Tuolumne Main Canal/Ditch) recorded in proposed Project site
Offsite Pipelines				
TO-03731	Final Environmental Impact Report for Sierra Idyllwild a Recreational Development	Gretzinger and Weatherby	1974	No resources recorded in pipeline alignment
TO-01285	Cultural Resource Assessment of the Paul Fry Property, Tuolumne County, California	Ann S. Peak & Associates	1978	No resources recorded in pipeline alignment
TO-06129	Cultural Resource Survey of a 7.058-Acre Parcel Near Phoenix Lake, Tuolumne County (APN 038-150-01)	Brejla, T., J. Costello, and L. Thorpe	2006	No resources recorded in pipeline alignment; historic architectural resources recorded adjacent as not eligible
TO-03632	Confidential Archaeological Addendum for Timber Operations on Non-Federal Lands in California; Project #4-98-124/TUO-24; Amendment #1 Brown (Abbott Amendment) THP	Manich, Leon J.	1999	No resources recorded in pipeline alignment
TO-05674	Confidential Archaeological Addendum for Timber Operations on Non-Federal Lands in California: Brown THP, 4-98-124/TUO-22	Manich, L., RPF	1998	No resources recorded in pipeline alignment

SOURCE: CCIC, 2020

Records indicate that 16 previously recorded cultural resources have been documented at the CCIC within the records search radius; five of which are within the proposed Project site or pipeline alignments. In addition to the cultural resources recorded at the CCIC, TUD had record of a cultural resource inventory completed at the proposed Project site (Davis-King, 2007). The brief memorandum provides a table and map of cultural resources identified during a survey of the Sierra Pines Golf Course in the summer of 2007, and includes 10 additional cultural resources not on file at the CCIC. **Table 3.5-2** provides a summary of the cultural resources; additional descriptions of resources within or immediately adjacent to the proposed Project site or pipeline alignments is provided in the Survey Results section below.

TABLE 3.5-2
CULTURAL RESOURCES WITHIN THE RECORDS SEARCH RADIUS

Designation	Trinomial	Age	Name/Description	Evaluation	In/Adjacent
Project site					
P-55-000106	–	Historic	A. E. Elsbree apple orchard and collapsed structure (SP-8/SP-13)	Not evaluated	In Project site
P-55-002404	TUO-1408	Prehistoric	Bedrock milling feature	Not evaluated	No (1,500 ft)
P-55-003115	TUO-2142H	Historic	Tuolumne Main Canal and Flume (SP-11) component of Phoenix Hydroelectric Project District (P-55-009840)	Individually eligible	In Project site
P-55-003116	TUO-2143H	Historic	Middle Camp (SP-12)	Potential contributor	In Project site
P-55-003160	TUO-4954/H	Historic	1930s mining camp	Not evaluated	No (1,800 ft)
P-55-004119	TUO-3141H	Historic	Mining features (prospects, adit)	Not evaluated	No (2,000 ft)
P-55-004120	TUO-3142	Prehistoric	Bedrock milling feature	Not evaluated	No (2,400 ft)
P-55-007608		Prehistoric Historic	Indigenous Trail/Hall's Crossing Trail	Not evaluated	No (1,800 ft)
P-55-008270	–	Historic	Tuolumne Water Company Ditch and Flume	Recommended eligible	In Project site
P-55-008315	–	Historic	Mining shaft	Not evaluated	No (1,900 ft)
P-55-008318	–	Historic	Mining shaft and tailings	Not evaluated	No (1,900 ft)
SP-1	–	Historic	Sierra Pines Golf Course	Not evaluated	In Project site
SP-2	–	Historic	Hepfler Road	Not evaluated	No (250 ft)
SP-3	–	Prehistoric	Possible midden soil; no artifacts	Not evaluated	No (475 ft)
SP-4	–	Historic	Refuse (1940s-1980s)	Not evaluated	No (600 ft)
SP-5	–	Historic	Refuse (late 19th century)	Not evaluated	No (350 ft)
SP-6	–	Prehistoric	Midden and flakes	Not evaluated	In Project site
SP-7	–	Historic	Cabin and artifacts	Not evaluated	Adjacent (100 ft)
SP-9	–	Prehistoric	Midden and flakes	Not evaluated	In Project site
SP-10	–	Historic	Rock-lined cellar and features (1900s-1960s?)	Not evaluated	In Project site

TABLE 3.5-2 (CONTINUED)
CULTURAL RESOURCES WITHIN THE RECORDS SEARCH RADIUS

Designation	Trinomial	Age	Name/Description	Evaluation	In/Adjacent
Offsite Pipelines					
P-55-000611	TUO-3756/H	Prehistoric Historic	Occupation site with midden, lithics, bedrock milling features and historic artifacts	Not evaluated	No (1,200 ft)
P-55-004190	TUO-3216	Prehistoric	Bedrock milling feature	Not evaluated	Adjacent
P-55-001403	TUO-380	Prehistoric	Bedrock milling feature	Not evaluated	Adjacent
P-55-001406	TUO-383	Prehistoric	Occupation site with midden, shell, lithics	Not evaluated	No (250 ft)

SOURCES: Data provided by Central California Information Center in 2020; Davis-King, 2007

Survey Methods and Results

An ESA Registered Professional Archaeologist completed a surface survey of the proposed Project site and pipeline alignments on June 12 and 23, 2020. All accessible areas were surveyed in transects spaced 10–20 meters apart. All bedrock outcrops were inspected for mortars or other cultural modification. Visibility was generally moderate due to some dense vegetation. Paved areas were subject to a windshield survey and areas of pullouts or other exposes surfaces were closely inspected. Locations with more limited visibility due to vegetation were periodically scraped with a trowel and rodent holes were inspected. Geologic maps indicate the proposed Project site is primarily underlain by Mesozoic-age granite rocks. Soils varied depending upon slope, but were consistent with soil survey mapping provided by the U.S. Department of Agriculture National Resources Conservation Service. Nedsgulch-Sites complex, 3 to 15 percent slopes and 15 to 30 percent slopes are found throughout the proposed Project site; these soils consist of fine loamy, well-drained, shallow soils formed on mountain slopes. Evidence of indigenous use or occupation in this geologic framework would be on the surface and would be identifiable through surface survey methods.

Results

The survey effort identified nine cultural resources or locations of recorded cultural resources in the proposed Project site. In addition, the two prehistoric sites adjacent to pipeline alignments are described below. The resources are described below as well as a recommended evaluation for each resource according to the criteria of the California Register and the National Register. See Regulatory section below for a complete description of the criteria for evaluation.

Project Site

P-55-000106—A. E. Elsbree apple orchard and collapsed structure

This resource is the location of the A. E. Elsbree apple orchard (recorded as P-55-000106/SP-13) and a collapsed structure (recorded as SP-8) that may have once been associated with the orchard. The structure was reportedly also used as a storage shed for the Sierra Pines Golf Club. A 1946 aerial photograph shows an intact structure at the location of SP-8, as well as a larger adjacent structure and the apple orchard. The 1993 record on file at the CCIC describes a board and batten

building with a metal shed roof and a board door with metal strap hinges (Marvin, 1993). The record notes that the apple and pear orchard was planted around 1900 and was one of many orchards in Tuolumne County at that time, when produce was shipped from Tuolumne County across the United States.

During the 2020 survey effort, the collapsed structure and several apple trees associated with the former orchard were identified. There are no defining features that could be attributed to the structure; it has completely collapsed and does not retain any consistency of its original form or function and is overgrown with vegetation. There are approximately 12 fruit trees standing south of the collapsed structure.

The A. E. Elsbree apple orchard and collapsed structure are associated with the theme of agriculture in Tuolumne County (Davis-King and Marvin, 1994). Agriculture reaped the benefits of the extensive ditch, flume, reservoir, and power systems that had been created for mining in the early years of the Gold Rush. Tens of thousands of trees were imported into the county at the end of the 19th century including peaches, pears, figs, cherries, apricots, and especially apples. Tuolumne County exported produce as far away as New York. The apple orchard and collapsed structure appear potentially eligible for listing in the National Register and California Register under criterion A/1 as an example of the extensive and important agricultural industry in Tuolumne County. However, the orchard and shed do not retain integrity of setting, design, materials, workmanship, feeling, and association. No information could be obtained through records of A. E. Elsbree, and the orchard and collapsed structure do not qualify for listing in the National Register and California Register under criterion B/2. The orchard and collapsed structure are not the works of master architect and do not embody the distinctive characteristics of a type, period, or method of construction; they are not eligible for listing in the National Register and California Register under criterion C/3. In addition, the orchard and collapsed structure would not yield information important in history and are not eligible for listing in the National Register and California Register under criterion D/4.

Due to a lack of association and impaired integrity, the A. E. Elsbree apple orchard and collapsed structure is recommended not eligible for listing in the National Register and California Register and is not considered a historic property for the purposes of the National Historic Preservation Act (NHPA) or a historical resource for the purposes of California Environmental Quality Act (CEQA).

P-55-003115—Tuolumne Main Canal and Flume

In its entirety, the Tuolumne Main Canal (documented as P-55-003115/CA-TUO-2142H/SP-11) consists of approximately 13.3 miles of earthen and concrete- and gunite-lined ditch, 1.98 miles of elevated flume, 600 feet of steel pipe, and 10 spillways. Just north of the proposed Project site is a 600-foot-long section of elevated flume; within the proposed Project site is approximately 350 feet of gunite-lined ditch. The canal is a component of the Phoenix Hydroelectric Project District (P-55-009840), which has been evaluated as not eligible for listing in the National Register or California Resister (Walker and Allen, 2019a). However, the Tuolumne Main Canal and Flume itself has been recommended eligible for listing in the National Register under criterion A for its association with the transformative period of mining that was foundational in

the physical, economic, and community development of both the region and the state as well as the adaptation of the canal for hydroelectric use (Walker and Allen, 2019b).

Resources eligible for listing in the National Register are also eligible for listing in the California Resister. The Tuolumne Main Canal is, therefore, considered a historic property for the purposes of the NHPA and a historical resource for the purposes of CEQA.

P-55-003116—Middle Camp

This resource is the site of the former Middle Camp (designated as P-55-003116/CA-TUO-2143/H/SP-12) and consists of the location of the ditch tender's cottage and associated buildings. The 1987 site record on file at the CCIC describes the area has having been thoroughly graded and altered by roads and the golf course (Davis-King and Crownover, 1987). Five features were recorded at that time including an apple orchard and a small shed (documented separately as P-55-000106, see above), a raised wooden platform, two concrete pads, and a large depression (potentially an area of hydraulic mining exploration). Clay pipe, glass fragments, sanitary cans, and ceramic fragments were noted throughout the area. The resource was recommended potentially eligible as a contributor to a larger district of camps built to maintain the Tuolumne Main Ditch and Flume; it was, however, recommended ineligible for listing as an individual resource, although subsurface components were noted as a possibility.

During the current survey effort, the orchard and shed were identified (see P-55-000106 above). The wooden platform and concrete pads were not located. Since the 1987 recording, the general area has undergone additional modifications including grading and recent construction of a PG&E shed, and general maintenance. No artifacts, such as glass or ceramic fragments, were identified.

While Middle Camp may be potentially eligible as a contributor to a larger district of work camps established to maintain the network of water conveyance features in Tuolumne County, the establishment and evaluation of a district is outside of the scope of this analysis. Individually, Middle Camp does not maintain an association with a specific event or person (criteria A/1 and B/2), nor does it represent the work of a master architect or style of construction (criterion C/3). In addition, there are no remnants of the camp that would provide data important to history and the area has been highly disturbed from grading and other construction (criterion D/4). The camp does not retain integrity of design, materials, workmanship, feeling, or association.

Due to a lack of association and impaired integrity, Middle Camp is recommended not eligible for listing in the National Register and California Register and is not considered a historic property for the purposes of the NHPA or a historical resource for the purposes of CEQA.

P-55-008270—Tuolumne Water Company Ditch and Flume

This resource is the Tuolumne Water Company ditch and flume system (recorded as P-55-008270), which consists of 13 ditches and flumes, segments of earthen, gunite-lined, and piped canals, siphons, flumes, culverts, drops and associated reservoirs and water control features (Marvin and Francis, 2011). The Section IV ditch of the system is within the proposed Project site.

The Tuolumne Water Company ditch and flume system has been recommended eligible for listing in the National Register under criteria A and C as a major contributor to the theme of water

development in Tuolumne County, including technological information, reservoirs, diversion dams, headworks, canals, ditches, flumes, siphons, and water control and diversion features.

Resources eligible for listing in the National Register are also eligible for listing in the California Resister. The Tuolumne Water Company ditch and flume system, including the Section IV ditch is, therefore, considered a historic property for the purposes of the NHPA and a historical resource for the purposes of CEQA.

SP-1—Sierra Pines Golf Course

The Sierra Pines Golf Course was documented in 2007; no information other than the name and location was provided, as well as a note that the significance would depend on the age of the resource (Davis-King, 2007). The golf course is first shown as the Twain Harte Valley Golf Course on the 1979 Twain Harte USGS 7.5-minute topographic quadrangle. Aerial imagery from 1946 and 1977 does not show the golf course, although the 1977 image shows circular areas of irrigation that may be related golf course development. The first identified reference to the golf course is from *Golf Business* magazine on December 12, 1978, which states "Sierra Pines Golf Club, a new 9-hole daily fee course in Twain Harte, Calif., recently became the 273rd member club of the Northern California Golf Association." The 2012 USGS topographic map shows the golf course as the "Sierra Pines Golf Course" (although the course had already closed).

The golf course appears to date from 1978 to 2007, although there is anecdotal reference that the golf course is older (Dean, pers. comm., 2020). Regardless, there are limited features associated with the former golf course: a few benches, a pond, a pump shack, and utility poles and wires. The pump shack and utility poles have hardware consistent with dating to the 1970s.

The golf course does not have associations with important events (criterion A/1) or people (criterion B/2), nor is it the work of a master architect (criterion C/3), and would not provide information important to history (criterion D/4). The golf course does not retain integrity of design, materials, workmanship, feeling, or association.

Due to a lack of association and impaired integrity, the Sierra Pines Golf Course is recommended not eligible for listing in the National Register and California Register and is not considered a historic property for the purposes of the NHPA or a historical resource for the purposes of CEQA.

SP-3—Possible midden soil; no artifacts

SP-3 was originally recorded in 2007; no information other than the name and location was provided (Davis-King, 2007). During the current 2020 survey effort, the area of SP-3 was thoroughly inspected in very narrow (less than 1 meter) transects. The location had been previously disturbed by construction of the adjacent Tuolumne Main Canal and the former golf course. No midden soil, indicated by dark organic-rich soil or other evidence of indigenous use, such as lithic flakes, heat-affected rock, or faunal fragments, were identified. The surrounding soil is a fine, loamy, reddish brown soil associated with the Nedsgulch soil complex.

Because no cultural materials were identified, SP-3 is not considered a cultural resource and is therefore not considered a historic property for the purposes of the NHPA or a historical resource for the purposes of CEQA.

SP-4—Refuse (1940s-1980s)

SP-4 was originally recorded in 2007; no information other than the name and location was provided (Davis-King, 2007). During the current 2020 survey effort, the area of SP-4 was thoroughly inspected in very narrow (less than 1 meter) transects. The location had been previously disturbed by construction of the adjacent Tuolumne Main Canal and the former golf course. No historic-era or modern refuse was identified, including glass, ceramic, or ferrous metal materials.

Because no cultural materials were identified, SP-4 is not considered a cultural resource and is therefore not considered a historic property for the purposes of the NHPA or a historical resource for the purposes of CEQA.

SP-5—Refuse (late 19th century)

SP-5 was originally recorded in 2007; no information other than the name and location was provided (Davis-King, 2007). During the current 2020 survey effort, the area of SP-5 was thoroughly inspected in very narrow (less than 1 meter) transects. The location had been previously disturbed by construction of the adjacent Tuolumne Main Canal and the former golf course. No historic-era or modern refuse was identified, including glass, ceramic, or ferrous metal materials.

Because no cultural materials were identified, SP-5 is not considered a cultural resource and is therefore not considered a historic property for the purposes of the NHPA or a historical resource for the purposes of CEQA.

SP-6—Midden and flakes

SP-6 was originally recorded in 2007; no information other than the name and location was provided (Davis-King, 2007). During the current 2020 survey effort, the area of SP-6 was thoroughly inspected in very narrow (less than 1 meter) transects. The location had been previously disturbed by construction of the adjacent Tuolumne Main Canal and the former golf course. No midden soil, indicated by dark organic-rich soil or other evidence of indigenous use, such as lithic flakes, heat-affected rock, or faunal fragments, were identified. The surrounding soil is a fine, loamy, reddish brown soil associated with the Nedsgulch soil complex.

Because no cultural materials were identified, SP-6 is not considered a cultural resource and is therefore not considered a historic property for the purposes of the NHPA or a historical resource for the purposes of CEQA.

SP-7—Cabin and artifacts

SP-7 is a wooden building located approximately 100 feet from the proposed Project site (Davis-King, 2007). The raised building is constructed of board and batten with wire nails and a corrugated metal pitched roof. In general, the building is in disrepair with the exterior entrance exposed and some wood and metal refuse.

The building does not appear on any maps or aerial imagery, although it is in a densely wooded area. No associations with important events or individuals were uncovered during research for the proposed Project. However, with additional research and evaluation, the age and construction of the building may provide associations and architectural merit.

For the purposes of the proposed Project, SP-7 is recommended as potentially eligible for listing in the National Register and California Register and is, therefore, considered a historic property for the purposes of the NHPA and a historical resource for the purposes of CEQA.

SP-9—Midden and flakes

SP-9 was originally recorded in 2007; no information other than the name and location was provided (Davis-King, 2007). During the current 2020 survey effort, the area of SP-9 was thorough inspected in very narrow (less than 1 meter) transects. The location had been previously disturbed by construction of the former golf course, including a straight excavated channel that originates at a man-made pond to the north. No midden soil, indicated by dark organic-rich soil or other evidence of indigenous use, such as lithic flakes, heat-affected rock, or faunal fragments, were identified. The surrounding soil is a fine, loamy, reddish brown soil associated with the Nedsgulch soil complex.

Because no cultural materials were identified, SP-9 is not considered a cultural resource and is therefore not considered a historic property for the purposes of the NHPA or a historical resource for the purposes of CEQA.

SP-10—Rock-lined cellar and features

This resource is an excavated cellar with stone steps originally recorded in 2007 as SP-10 (Davis-King, 2007). No additional information about the resource was provided. The 1959, 1962, and 1967 USGS Twain Harte 7.5-minute topographic quadrangles show a building at the location of cellar.

During the current 2020 survey effort, the cellar was re-located. The cellar is 20 by 20 feet and approximately 4-5 feet deep. A set of four stone stairs, overgrown and dilapidated, are on the south side leading down into the cellar. A small, shallow well with a corrugated metal cover is to the north of the cellar. Any other remnants of a former building do not exist and no artifacts including glass, ceramic, cans, or other refuse were identified in the vicinity.

Except for the location on the USGS maps, no other information was found to associate the cellar with important events (criterion A/1) or people (criterion B/2). The cellar is not the work of a master architect or an example of a type of architecture (criterion C/3), and would not provide information important to history (criterion D/4). The cellar does not retain integrity of design, materials, workmanship, feeling, or association.

Due to a lack of association and impaired integrity, the cellar designated as SP-10 is recommended not eligible for listing in the National Register and California Register and is therefore not considered a historic property for the purposes of the NHPA or a historical resource for the purposes of CEQA.

Offsite Pipelines

P-55-004190

This resource is a small bedrock outcrop with two milling features on a shallow outcrop that was recorded in 1993 (Napton and Greathouse, 1993). No other archaeological materials were observed in the area at the time of recording. The resource was identified during emergency logging operations in the area.

P-55-004190 was not re-located during the current 2020 survey effort because it is outside of the area of direct impact for the pipeline alignment and is on private property. Based on the description provided in the 1993 record, the resource may be eligible for listing in the National Register and California Register under criterion A/1 for its association with important events and criterion D/4 for its ability to yield information important to prehistory. For the proposed Project, P-55-004190 is considered a historic property for the purposes of the NHPA and a historical resource for the purposes of CEQA.

P-55-001403

This resource is a large bedrock outcrop with at least 39 milling features. No artifacts or other evidence of indigenous use was found in the immediate vicinity at the time of recording (Stone, 1971). Another resource (P-55-001406), consisting of dark midden soil, shell, lithic fragments, and charcoal, was identified approximately 300 feet from P-55-001403.

P-55-001403 was not re-located during the current 2020 survey effort because it is outside of the area of direct impact for the pipeline alignment and is on private property. Based on the description provided in the 1971 record, the resource may be eligible for listing in the National Register and California Register under criterion A/1 for its association with important events and criterion D/4 for its ability to yield information important to prehistory. For the proposed Project, P-55-001403 is considered a historic property for the purposes of the NHPA and a historical resource for the purposes of CEQA.

Summary

Eleven cultural resources or locations of cultural resources have been recorded within or immediately adjacent to the proposed Project site and pipeline alignments. Two possible resources (Midden and flakes [SP-6] and Midden and flakes [SP-9]) were not relocated during the current survey effort and are not considered cultural resources. No further consideration is necessary of SP-6 and SP-9 for the purposes of the proposed Project.

Four historic-era cultural resources (A. E. Elsbree apple orchard and collapsed structure [P-55-000106], Middle Camp [P-55-003116], Sierra Pines Golf Course [SP-1], and Rock-lined cellar and features [SP-10]) were relocated during the current survey effort. These resources have been recommended not eligible for listing in the National Register or California Register and are therefore not considered historical resources for the purposes of CEQA; no further consideration is necessary of these resources for the purposes of the proposed Project.

Three historic-era cultural resources (Tuolumne Main Canal and Flume [P-55-003115], Tuolumne Water Company ditch and flume system [P-55-008270], and Cabin and artifacts [SP-7]) were relocated during the current survey effort and have been recommended eligible for listing in the National Register and California Register. These resources are considered historical resources for the purposes of the proposed Project.

Two prehistoric cultural resources (P-55-004190 and P-55-001403) are adjacent to the pipeline alignment and are recommended eligible for listing in the National Register and California Register. These resources are considered historical resources for the purposes of the proposed Project.

Regulatory Setting

Federal

Effects of federal undertakings on historic and archaeological resources are considered through the National Historic Preservation Act (NHPA) of 1966, as amended (54 United States Code [USC] 306108), and its implementing regulations. Before an undertaking (e.g., federal funding or issuance of a federal permit) is implemented, Section 106 of the NHPA requires federal agencies to consider the effects of the undertaking on historic properties (i.e., properties listed in or eligible for listing in the National Register) and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the National Register. Under the NHPA, a property is considered significant if it meets the National Register listing criteria a through d, at 36 Code of Federal Regulations 60.4, as follows:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and that:
>
> a. Are associated with events that have made a significant contribution to the broad patterns of our history, or
>
> b. Are associated with the lives of persons significant in our past, or
>
> c. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction, or
>
> d. Have yielded, or may be likely to yield, information important in prehistory or history

For a resource to be eligible for the National Register, it must also retain enough integrity to be recognizable as a historical resource and to convey its significance. Resources that are less than 50 years old are generally not considered eligible for the National Register.

Federal review of the effects of undertakings on significant cultural resources is carried out under Section 106 of the NHPA and is often referred to as the Section 106 review. This process is the responsibility of the federal lead agency. The Section 106 review typically involves a four-step procedure, which is described in detail in the implementing regulations of the NHPA:

- Define the Area of Potential Effects in which an undertaking could directly or indirectly affect historic properties.
- Identify historic properties in consultation with the State Historic Preservation Officer (SHPO) and interested parties.
- Assess the significance of effects of the undertaking on historic properties.

Consult with the SHPO, other agencies, and interested parties to develop an agreement that addresses the treatment of historic properties and notify the Advisory Council on Historic Preservation and proceed with the Project according to the conditions of the agreement.

State

California Register of Historical Resources

The California Register is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register of Historic Places (National Register).

To be eligible for the California Register, a historical resource must be significant at the federal, state, or local level under one or more of the following criteria (PRC Section 5024.1[c]):

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.

"Integrity" is the authenticity of a historic resource's physical identity as shown by the survival of characteristics that existed during the period of significance. For a resource to be eligible for the California Register, it also must retain enough integrity to be recognizable as a historic resource and to convey the reasons for its significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. A resource that does not retain sufficient integrity to meet the National Register criteria may still be eligible for listing in the California Register.

California Public Resources Code Sections 5097.98 and 5097.99

PRC Section 5097.98 (reiterated in CEQA Guidelines Section 15064.5[e]) identifies steps to follow in the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, including notification of the most likely descendent. Section 5097.99 prohibits obtaining or possessing any Native American artifacts or human remains that are taken from a Native American grave or cairn (stone burial mound).

California Health and Safety Code Section 7050.5

Health and Safety Code Section 7050.5 protects human remains by prohibiting the disinterment, disturbance, or removal of human remains from any location other than a dedicated cemetery.

Local

Tuolumne County General Plan

Chapter 13 of the Tuolumne County General Plan provides policies and implementation programs for cultural resources, including the following goals related to cultural resources:

> **Goal 13A:** Identify incentives to strengthen the local economic base by providing and promoting a positive atmosphere for visitor, resident, business and industry activity compatible with an historic environment.
>
> **Goal 13B:** Encourage historic preservation by adopting a consistent and predictable environmental review process for evaluating impacts to cultural resources.
>
> **Goal 13C:** Maintain Tuolumne County's cultural heritage, through the identification, management, preservation, use, enhancement, restoration and study of its cultural resources.
>
> **Goal 13D:** Recognize and use cultural resources management as a tool for implementing other goals and policies of the General Plan.
>
> **Goal 13E:** Promote community appreciation for Tuolumne County's cultural resources through community education and involvement to ensure the continued proper private and public stewardship of cultural resources in Tuolumne County.
>
> **Goal 13F:** Set an example for good cultural resource management through proper private and public stewardship of the County's cultural resources.

Actions for determining the need for cultural resources investigations for discretionary entitlements and ministerial projects, as well as the procedures for conducting cultural resource investigations are also provided.

Impact Discussion

a) **Less-than-Significant Impact.** A significant impact would occur if the proposed Project would cause a substantial adverse change to a historical resource, herein referring to historic-era architectural resources or the built environment, including buildings, structures, and objects. A significant impact could occur if the proposed Project would cause a substantial adverse change to a historical resource through physical demolition, destruction, relocation, or alteration of the resource.

Three historic-era cultural resources (Tuolumne Main Canal and Flume [P-55-003115], Tuolumne Water Company ditch and flume system [P-55-008270], and Cabin and artifacts [SP-7]) in the vicinity of the proposed Project site have been recommended eligible for listing in the National Register and California Register. These resources are considered historical resources for the purposes of the proposed Project.

The Tuolumne Main Canal would provide the source of water for the Sierra Pines Water Treatment Facility (SPRWTF), with the proposed tie-in point located immediately downstream of where the Section IV ditch of the Tuolumne Water Company ditch and flume system connects to the Tuolumne Main Canal. Raw water would be diverted from the Tuolumne Main Canal via a new intake structure which would include a fish screen,

sediment trap, and control weir. The proposed SPRWTF will be constructed to the north and south of a 350-foot-long gunite-lined section of the Tuolumne Main Canal.

Use of the Tuolumne Main Canal would be consistent with the historic and current use of the system. The proposed Project would not cause a substantial adverse change to these historical resources and there would be a less-than-significant impact to the Tuolumne Main Canal and Section IV ditch of the Tuolumne Water Company ditch and flume system. No mitigation is required.

The Cabin and artifacts (SP-7) is not in the area of direct impact for the proposed Project. The resource is approximately 100 feet from the nearest Project components for the SPRWTF. The proposed Project would not cause a substantial adverse change to this historical resource and there would be a **less-than-significant impact** to the Cabin and artifacts (SP-7).

b) **Less than Significant with Mitigation Incorporated.** Archaeological resources can be considered historical resources, according to Section 15064.5, as well as unique archaeological resources, as defined in Section 21083.2(g). A significant impact could occur if the proposed project would cause a substantial adverse change to an archaeological resource through physical demolition, destruction, relocation, or alteration of the resource.

Two prehistoric cultural resources (P-55-004190 and P-55-001403) are adjacent to an offsite pipeline alignment and are considered historical resources for the purposes of the proposed Project.

No artifacts or other evidence of human use or occupation has been identified within the proposed pipeline alignments; however, the immediate vicinity of resources P-55-004190 and P-55-001403 is considered highly sensitive. Impacts to any subsurface components associated with these resources would be potentially significant. This impact would be reduced to a less-than-significant level by implementation of **Mitigation Measure CUL-1**, which would require an archaeological monitor and a Native American monitor within 200 feet of the recorded boundaries of resources P-55-004190 and P-55-001403. In addition, if cultural materials are discovered during monitoring or during construction elsewhere in the Project site or pipeline alignments, impacts to the resources could be potentially significant if the materials are determined to be a historical resource. This impact would be reduced to a less-than-significant level by implementation of **Mitigation Measure CUL-2**, which would ensure that proper procedures are followed so that potentially significant cultural resources are avoided, if feasible, or treated appropriately according to the provisions of PRC Section 21083.2 and PRC Section 21084.3.

Mitigation Measures

Mitigation Measure CUL-1: Prior to authorization to proceed, or issuance of permits, TUD shall retain a Secretary of the Interior-qualified archaeologist to prepare a cultural resources monitoring plan. Monitoring shall be required for all subsurface excavation work within 200 feet of the recorded boundaries of resources P-55-004190 and P-55-001403. The plan shall include the following:

- Training program for all construction personnel involved in ground disturbance;
- Person responsible for conducting monitoring activities, including Native American monitors;
- Person responsible for overseeing and directing the monitors;
- How the monitoring shall be conducted and the required format and content of monitoring reports;
- Physical monitoring boundaries (e.g., 200-foot radius of a known site) and maps;
- Schedule for submittal of monitoring reports and person responsible for review and approval of monitoring reports;
- Protocol for notifications in case of encountering of cultural resources, as well as methods of evaluating the encountered resources (e.g., collection, identification, curation);
- Methods to ensure security of cultural resources sites;
- Protocol for notifying local authorities (i.e., Sheriff, Police) should site looting and other illegal activities occur during construction.

If cultural materials are encountered, all soil disturbing activities within 100 feet shall cease until the materials are evaluated. The archaeological monitor shall immediately notify TUD of the encountered cultural materials. The monitor shall, after making a reasonable effort to assess the identity, integrity, and significance of the encountered cultural materials, present the findings of this assessment to TUD. During the course of the monitoring, the archaeologist may adjust the frequency—from continuous to intermittent—of the monitoring based on the conditions and professional judgment regarding the potential to impact resources.

Mitigation Measure CUL-2: If prehistoric or historic-period cultural materials are encountered during Project implementation, all construction activities within 100 feet shall halt, and a qualified archaeologist, defined as an archaeologist meeting the U.S. Secretary of the Interior's Professional Qualification Standards for Archeology, shall inspect the find within 24 hours of discovery and notify TUD of their initial assessment. Prehistoric cultural materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period cultural materials might include building or structure footings and walls, and deposits of metal, glass, and/or ceramic refuse.

If TUD determines, based on recommendations from a qualified archaeologist or a Native American representative, that the resource may qualify as a historic property (meeting the National Register listing criteria at 36 CFR 60.4), a historical resource or unique archaeological resource (as defined in CEQA Guidelines Section 15064.5), or a tribal cultural resource (as defined in PRC Section 21080.3), the resource shall be avoided if feasible. If avoidance is not feasible, TUD shall consult with appropriate Native American representative and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource. This shall include documentation of the resource and may include data recovery (according to PRC Section 21083.2), if deemed appropriate, or other actions such as treating the resource with culturally appropriate dignity and protecting the cultural character and integrity of the resource (according to PRC Section 21084.3).

c) **Less than Significant with Mitigation Incorporated.** There is no indication from the archival research that any part of the proposed Project site or pipeline alignments has been used for human burial purposes in the recent or distant past. Therefore, it is not likely that human remains would be encountered during construction of the proposed project. Despite the low potential, the possibility of inadvertent discovery of human remains cannot be entirely discounted and would result in a potentially significant impact. This impact would be reduced to a less than significant level with implementation of **Mitigation Measure CUL-3**, which requires avoidance measures or the appropriate treatment of human remains if accidentally discovered during project construction.

Mitigation Measure CUL-3: In the event of discovery of any human remains during project activities, such activities within 100 feet of the find shall cease until the Tuolumne County Coroner has been contacted to determine that no investigation of the cause of death is required. The Native American Heritage Commission will be contacted within 24 hours if it is determined that the remains are Native American. The Commission will then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn would make recommendations to TUD for the appropriate means of treating the human remains and any grave goods.

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3.6 Energy

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. ENERGY — Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Environmental Setting

This section identifies and evaluates issues related to energy in the context of the proposed Project. It includes information about the physical and regulatory setting and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

State Energy Setting

Total energy usage in California was 7,881 trillion British thermal units in 2017 (the most recent year for which specific data are available), which equates to an average of 200 million British thermal units per capita. These figures place California second among the nation's 50 states in total energy use and 48th in per capita consumption (EIA, 2020).

Electricity

In 2018, total system electric generation for California was 285,488 gigawatt-hours (GWh), down two percent from 2017's total generation of 292,037 GWh. Approximately 71 percent of the electrical power needed to meet California's demand is produced in the state; the balance, approximately 29 percent, is imported from the Pacific Northwest and the Southwest. In 2018, California's in-state electricity use was derived from natural gas (35 percent); coal (3 percent); large hydroelectric resources (11 percent); nuclear sources (9 percent); renewable resources that include geothermal, biomass, small hydroelectric resources, wind, and solar (31 percent); and unspecified sources (11 percent). Of the approximately 63,028 GWh generated from renewable sources in the state, solar-generated electricity made up the highest proportion (43 percent), followed by wind (22 percent), geothermal (18 percent), biomass (9 percent), and small hydroelectric (7 percent) (CEC, 2020a).

Transportation Fuels

Gasoline and diesel, both derived from petroleum (also known as crude oil), are the two most common fuels used for vehicular travel. According to the CEC, the state relies on petroleum-based fuels for 95 percent of its transportation needs (EIA, 2018). In 2019, approximately 30 percent of California's crude oil was produced within the state, about 12 percent was produced in Alaska, and the remaining 58 percent was produced in foreign lands (CEC, 2020b).

In 2019, taxable gasoline sales in California accounted for approximately 15.4 billion gallons of gasoline (CDTFA, 2020a), and taxable diesel fuel sales accounted for approximately 3.1 billion

gallons of diesel fuel (CDTFA, 2020b). Statewide, there was an overall decrease in gasoline and diesel consumption from 2007 to 2011 due to the economic recession, but consumption has increased since then. The corona virus outbreak also is expected to decrease gasoline and diesel consumption throughout 2020.

California is nearly self-sufficient with regard to the gasoline and diesel supply, obtaining almost all of the supply to meet local demand from the California refineries (CEC, 2014). Refineries in California often operate at or near maximum capacity because of the high demand for petroleum products. When unplanned refinery outages occur, replacement supplies must be brought in by marine tanker from refineries in the state of Washington or on the U.S. Gulf Coast. California requires that all motorists use, at a minimum, a specific blend of motor gasoline called CaRFG (California Reformulated Gasoline) as part of an overall program to reduce emissions from motor vehicles. Refineries in several other countries can also supply CaRFG, although it can take several weeks to locate and transport replacement motor gasoline that conforms to California's strict fuel specifications (EIA, 2020). As a result, unplanned outages often result in a reduction in supply that causes prices to increase, sometimes dramatically. The severity and duration of these price spikes depend on how quickly the refinery issue can be resolved and how soon supply from alternative sources can reach the affected market (EIA, 2015).

Regional and Local Setting

Pacific Gas and Electric Company (PG&E) is an investor-owned utility company that provides electricity supplies and services throughout a 70,000 square-mile service area that extends from Eureka in the north, to Bakersfield in the south, and from the Pacific Ocean in the west, to the Sierra Nevada mountains in the east. Most of Tuolumne County, including the proposed Project site, is within PG&E's service area for electricity. Operating characteristics of PG&E's electricity supply and distribution systems are provided below. Also discussed is the regional consumption of transportation fuels.

PG&E Electric Utility Operations

PG&E provides "bundled" services (i.e., electricity, transmission, and distribution services) to most of the six million customers in its service territory, including residential, commercial, industrial, and agricultural consumers. In recent years, PG&E has improved its electric transmission and distribution systems to accommodate the integration of new renewable energy resources, distributed generation resources, and energy storage facilities, and to help create a platform for the development of new Smart Grid technologies (PG&E, 2019).

In 2018, PG&E generated and/or procured a total of 48,832 gigawatt hours (GWh) of electricity.[11] Of this total, PG&E owns approximately 7,686 megawatt (MW) of generating capacity, itemized below (see **Table 3.7-1**). The remaining electrical power is purchased from other sources in and outside of California.

[11] This amount excludes electricity provided to direct access customers and Community Choice Aggregation (CCA) entities who procure their own supplies of electricity.

TABLE 3.7-1
PG&E-OWNED ELECTRICITY GENERATING SOURCES (2018)

Source	Generating Capacity (MW)
Nuclear (Diablo Canyon-2 reactors)	2,240
Hydroelectric	3,891
Fossil Fuel-Fired	1,400
Fuel Cell	3
Solar Photovoltaic (13 units;12 in Fresno County, 1 in Kings County)	152
Total	7,686

SOURCE: PG&E, 2019 (2018 Annual Report)

Electricity Consumption

Table 3.7-2 shows electricity consumption by sector in the PG&E service area based on the latest available data from the CEC. As shown in the table, PG&E delivered approximately 80 billion kilowatt-hours (kWh) in 2018, of which approximately 58 billion kWh were consumed by commercial building and residential uses.

TABLE 3.7-2
ELECTRICITY CONSUMPTION IN PG&E SERVICE AREA (2018)

Agricultural and Water Pump	Commercial Building	Commercial Other	Industry	Mining and Construction	Residential	Streetlight	Total Usage
All Usage Expressed in Millions of kWh (GWh)							
5,832	30,148	4,266	10,519	1,594	27,700	311	80,369

SOURCE: CEC, 2020c

In Tuolumne County, approximately 450 million kWh of electricity was consumed in 2018, with approximately 245 million kWh consumed by non-residential uses (CEC, 2020c).

Gasoline and Diesel

The CEC estimates that 25 million gallons of gasoline and approximately 6 million gallons of diesel were sold in 2018 in Tuolumne County and that there are 31 gasoline stations in the County (CEC, 2019).

Regulatory

Federal

National Energy Conservation Policy Act

The National Energy Conservation Policy Act (NECPA) (42 USC 8201 et seq.) serves as the underlying authority for federal energy management goals and requirements and is the foundation

of most federal energy requirements. NECPA established energy-efficiency standards for consumer projects and includes, among other things, energy-efficiency standards for new construction.

National Energy Policy Act of 2005

The National Energy Policy Act of 2005 (42 USC 13201 et seq.) sets equipment energy efficiency standards and seeks to reduce reliance on nonrenewable energy resources and provide incentives to reduce current demand on these resources. For example, under the act, consumers and businesses can attain federal tax credits for purchasing fuel-efficient appliances and products, including hybrid vehicles; and constructing energy-efficient buildings. Additionally, the act includes incentives for renewable energy production, including wind power.

Energy and Independence Security Act of 2007

The Energy and Independence Security Act of 2007 (42 USC 17001) sets federal energy management requirements in several areas, including energy reduction goals for federal buildings, facility management and benchmarking, performance and standards for new buildings and major renovations, high-performance buildings, energy savings performance contracts, metering, energy-efficient product procurement, and reduction in petroleum use, including by setting automobile efficiency standards, and increase in alternative fuel use. This act also amends portions of the National Energy Policy Conservation Act, described above.

Corporate Average Fuel Economy Standards

Section 3.10, *Greenhouse Gas Emissions*, details federally established fuel economy standards by the U.S. Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA). NHTSA's Corporate Average Fuel Economy (CAFE) standards regulate how far vehicles must travel on a gallon of fuel. NHTSA sets CAFE standards for passenger cars and for light trucks (collectively, “light-duty vehicles”), and separately sets fuel consumption standards for medium- and heavy-duty trucks and engines. In the course of more than 30 years, this regulatory program has resulted in improved fuel economy throughout the United States’ vehicle fleet (NHTSA, 2014; 2019).

State

Warren-Alquist Act

The 1975 Warren-Alquist Act (Public Resources Code Section 25000 et seq.) established the California Energy Resources Conservation and Development Commission, now known as the CEC. The Act established a state policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The Act also was the driving force behind the creation of Appendix F to the CEQA Guidelines.

State of California Integrated Energy Policy

PRC Section 25301(a) requires the CEC to develop an integrated energy plan at least every 2 years for electricity, natural gas, and transportation fuels. The plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. An overarching goal of the resulting Integrated Energy Policy Report is to achieve the statewide greenhouse gas (GHG) emission reduction targets, while improving overall energy efficiency.

See, for example, the CEC's 2019 Integrated Energy Policy Report Update, which includes integrating renewable energy, including wind, as a key component (CEC, 2020d).

Renewables Portfolio Standard

The State of California adopted standards to increase the percentage that retail sellers of electricity, including investor-owned utilities and community choice aggregators, must provide from renewable resources. The standards are referred to as the RPS. Qualifying renewables under the RPS include bioenergy such as biogas and biomass, small hydroelectric facilities (30 MW or less), wind, solar, and geothermal energy. The California Public Utilities Commission (CPUC) and the CEC jointly implement the RPS program. The CPUC's responsibilities include: (1) determining annual procurement targets and enforcing compliance; (2) reviewing and approving each investor-owned utility's renewable energy procurement plan; (3) reviewing contracts for RPS-eligible energy; and (4) establishing the standard terms and conditions used in contracts for eligible renewable energy (CPUC, 2020).

Executive Orders S-14-08 and S-21-09

In November 2008, Governor Schwarzenegger signed Executive Order S-14-08, which expanded the state's RPS to 33 percent renewable power by 2020. In September 2009, Governor Schwarzenegger continued California's commitment to the RPS by signing Executive Order S-21-09, which directed the California Air Resources Board under its Assembly Bill (AB) 32 authority to enact regulations to help the state meet its RPS goal of 33 percent renewable energy by 2020.

Senate Bill 350—Clean Energy and Pollution Reduction Act of 2015

Senate Bill (SB) 350, known as the Clean Energy and Pollution Reduction Act of 2015, was enacted on October 7, 2015. It provides a new set of objectives in clean energy, clean air, and pollution reduction by 2030. The objectives include the following:

1. To increase from 33 percent to 50 percent by December 31, 2030, the procurement of electricity from renewable sources.
2. To double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.

Senate Bill 100 and Executive Order B-55-18

On September 10, 2018, Governor Brown signed SB 100, establishing that 100 percent of all electricity in California must be obtained from renewable and zero-carbon energy resources by December 31, 2045. SB 100 also created new standards for the RPS goals that were established by SB 350 in 2015. Specifically, the bill increases required energy from renewable sources for both investor-owned and publicly-owned utilities from 50 percent to 60 percent by 2030. Incrementally, these energy providers are also required to have a renewable energy supply of 33 percent by 2020, 44 percent by 2024, and 52 percent by 2027. The updated RPS goals are considered achievable, since many California energy providers are already meeting or exceeding the RPS goals established by SB 350.

On the same day that SB 100 was signed, Governor Brown signed Executive Order B-55-18 with a new statewide goal to achieve carbon neutrality (zero-net GHG emissions) by 2045 and to maintain net negative emissions thereafter.

Energy-efficient Building Standards

The Energy Efficiency Standards for Residential and Nonresidential Buildings specified in Title 24, Part 6 of the California Code of Regulations include requirements for non-residential building lighting, insulation, ventilation, and mechanical systems (CEC, 2018). Its provisions would be relevant to the Project's proposed filter operations building.

The California Green Building Standards Code (CALGreen) (Title 24, Part 11) is a statewide regulatory code for all buildings. CALGreen is intended to encourage more sustainable and environmentally friendly building practices, require use of low-pollution emitting substances that cause less harm to the environment, conserve natural resources, and promote the use of energy-efficient materials and equipment (CBSC, 2019).

Local

2018 Tuolumne County General Plan

The following goals and policies from Chapter 3, Utilities, of the *2018 Tuolumne County General Plan* (Tuolumne County, 2018) are applicable to the proposed Project:

> **Goal 3C**: Encourage consolidation of existing small water systems and discourage the creation of new ones.
>
> > ***Policy 3.C.1****:* Support the consolidation of water purveyors in the County to facilitate improvements to the infrastructure and consistency of water quality of the systems.
> >
> > ***Policy 3.C.2:*** Consider the undesirability of proliferation of small water systems, as defined in the California Health and Safety Code, during the development review process.
>
> **Goal 6E:** Encourage the retention and expansion of existing businesses, attraction of new business and industry and assist in entrepreneurial programs to generate local employment opportunities, reduce retail leakage out of the county
>
> > *Implementation Program 6.E.6:* Encourage land uses which maximize the efficient use of energy and facilitate the use of renewable energy resources in order to reduce dependence on imported and non-renewable energy supplies.
>
> **Goal 18A:** Reduce Greenhouse Gas (GHG) emissions from community activities and County government facilities and operations within the County to support the State's efforts under Assembly Bill 32 and other state and federal mandates to mitigate the County's GHG emissions impacts.
>
> > **Policy 18A.1**: Prepare a Climate Action Plan (CAP), or similar GHG emission reduction plan, that establishes a GHG reduction target consistent with the Senate Bill (SB) 32 goal to reduce statewide GHG emissions to 40 percent below 1990 levels by 2030. The CAP shall identify specific measures to reduce countywide emissions consistent with the established target and will also include adaptation strategies for the county to appropriately adjust to the environmental effects of climate change. Many of the

measures in the CAP will overlap with and help implement goals, policies, and implementation programs identified in this General Plan.

Implementation Program 18.A.a

- Improve the local jobs/housing balance to reduce vehicle miles travelled.
- Require Tier 4 equipment for all construction activity and forestry/mining operations by 2030.

Implementation Program 18.A.5

18.A.m—Reduce the energy demand of public facilities and conserve electricity through the following: a) retrofitting County owned or operated street, traffic signal, and other outdoor lights with energy efficient light emitting diode (LED) lamps; b) retrofitting heating and cooling systems to optimize efficiency, such as replacing HVAC systems; and c) replacing old appliances and technologies with ENERGY STAR products. Obtain funding for and install renewable energy technologies on public property (Tuolumne County, 2018).

Impact Discussion

a) **Less-than-Significant Impact.** Energy use during construction would mainly consist of fuels (diesel and gasoline) consumed by vehicles and equipment required to construct the Project. Refer to Table 2-3 in Chapter 2, *Project Description*, for a list of the anticipated construction equipment. As described in Chapter 2, the duration of Project construction would be up to 370 days, over a period of 18 months. Construction equipment, haul trucks, and worker vehicles would consume fuel during Project construction. Due to the small size of the proposed Project and the small construction crew that would be required, the consumption of fuel energy during construction would be temporary, localized, and would not represent a substantial amount of fuel in comparison to the 25 million gallons of gasoline and approximately 6 million gallons of diesel sold in Tuolumne County (in the year 2018). Vehicles used for Project construction and operation would be required to comply with all federal and state efficiency standards. Additionally, there are no Project characteristics or features that would be inefficient or that would result in the use of equipment and/or vehicles that would be less energy efficient compared to similar projects. The proposed Project would not be constructed in a wasteful or inefficient manner, and would not result in unnecessary consumption of energy resources.

As described in Section 2.6, the Project would result in the consolidation and abandonment of six existing water treatment facilities. The Project is proposed as a means to provide a consolidated water treatment facility that addresses reliability and reduces vehicle miles traveled (VMT) to increase efficiency for maintenance of facilities and would not involve substantial consumption of electricity. While operation of the proposed Project would result in energy consumption, estimated to be up to 700,000 kWh annually to operate the facility's equipment, the amount of energy used by the proposed Project would not be substantially more than the amount of energy used under existing conditions by the operation of the existing TUD distributed water treatment facilities proposed for removal from service (TUD, 2020).

Additionally, as described under question a) in Section 3.17, *Transportation*, travel between existing distributed water treatment sites would be greatly reduced by the Project, resulting in reduced VMT compared to the VMT required to maintain the existing distributed water treatment facilities. Additionally, while operation of the Project would result in the consumption of gasoline due to the travel of staff to and from the Project site, the amount of vehicle miles traveled by staff would be greatly reduced when compared to the number of miles traveled to operate and maintain the existing distributed water treatment facilities. Impacts would be less than significant.

b) **No Impact.** The proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. The proposed Project's construction would employ efficient vehicles that would be in compliance with CARB standards and consistent with County implementation goals. The Project would not require a large fleet of equipment or staff for construction, decommissioning, or operation. The Project would involve consolidating existing water treatment facilities and would not include generation or alter the existing source portfolio at the state or local level, which includes a variety of renewable energy sources. Thus, the proposed Project would have no impact because it would not conflict with state or local plans for renewable energy or energy efficiency.

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3.7 Geology and Soils

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS — Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive or corrosive soil creating substantial direct or indirect risks to life or property?[12]	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☒	☐
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

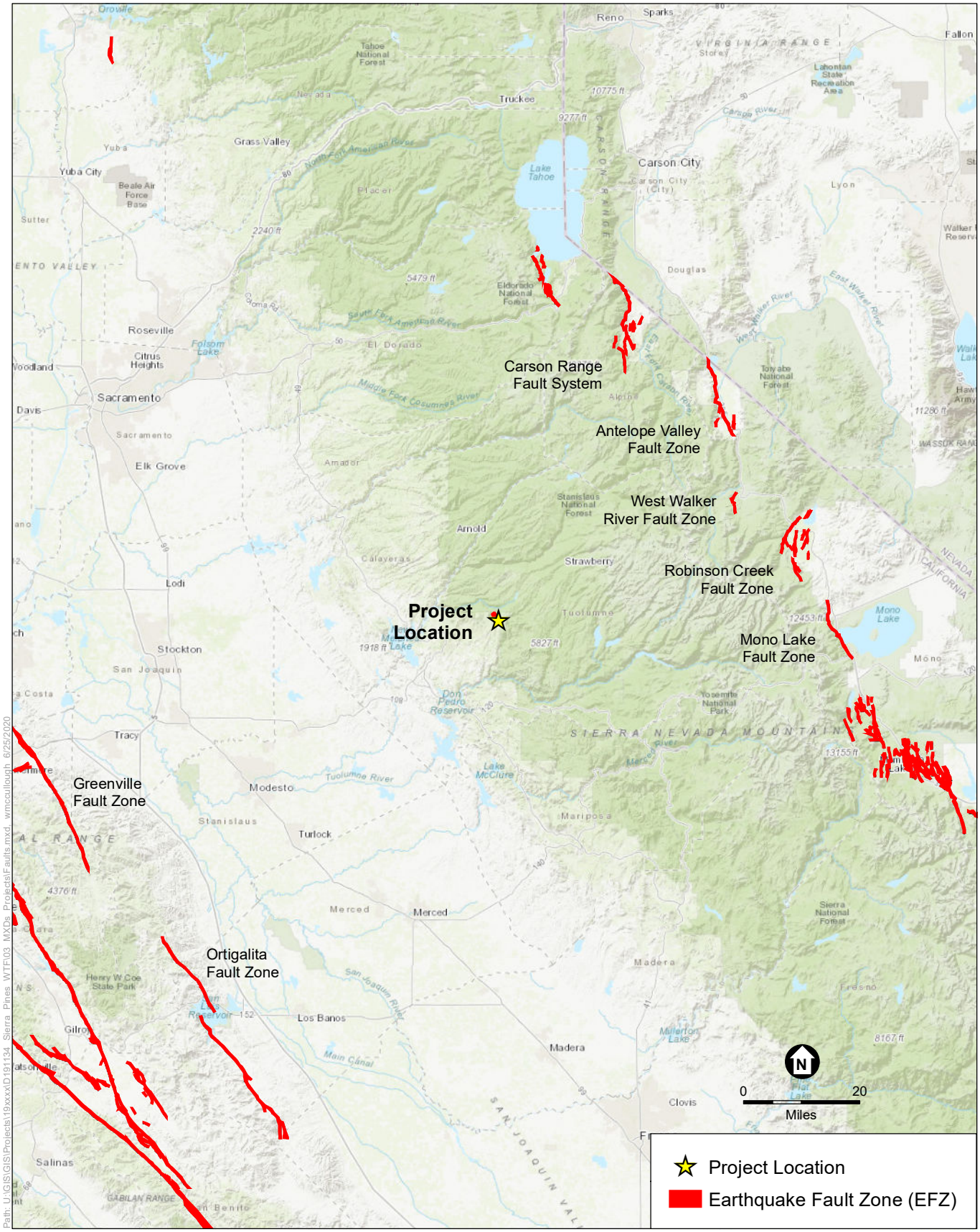
Environmental Setting

The proposed Project site is a 46-acre property, that was formerly used as the Sierra Pines Golf Course. The site is located in the foothills of the Sierra Nevada mountain range, approximately 1.5 miles north of the community of Twain Harte in Tuolumne County. Tuolumne County is within the Sierra Nevada Geomorphic Province, approximately 20 miles west of Yosemite National Park.

Earthquake Potential

The Project site is not within a historically, seismically active portion of California (Tuolumne County, 2019), given the lack of any Holocene-active or potentially active faults near the Project site (CGS, 2010), as shown in **Figure 3.7-1**. The predicted peak acceleration for the entire developed portion of Tuolumne County does not exceed 20 percent of gravity, meaning that

[12] The California Building Code (CBC), which is based on the International Building Code (IBC) replaced the now defunct Uniform Building Code (UBC) in 2000; it no longer includes a Table 18-1-B. Instead, Section 1803.5.3 of the CBC describes the criteria for analyzing expansive soils. This is discussed further in the *Regulatory Setting*.



SOURCE: CGS, 2020

Sierra Pines Regional Water Treatment Facility Project

Figure 3.7-1
Earthquake Fault Zones

ESA

Tuolumne County is among the areas of California with the lowest earthquake potential (Tuolumne County, 2019). A total of four historical earthquake events with recorded magnitudes of 3.5 or greater occurred in or near Tuolumne County this past century (Tuolumne County, 2019). The Project site is not within a designated Earthquake Fault Zone (EFZ) as delineated on an Earthquake Fault Zone map, which is to say there are no Holocene-active faults within the Project site.

Soil Characteristics

Expansive Soils

Expansive soils are soils that possess a "shrink-swell" characteristic. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying; the volume change is reported as a percent change for the whole soil. The Natural Resources Conservation Service (NRCS) relies on linear extensibility measurements to determine the shrink-swell potential of soils. This property is measured using the coefficient of linear extensibility (COLE) (NRCS, 2017). If the linear extensibility percent is more than 3 percent (COLE=0.03), shrinking and swelling may cause damage to building, roads, and other structures (NRCS, 2017). NRCS Web Soil Survey data indicate the soils underlying the proposed Project site have a linear extensibility rating that is, on average, 1.5 percent, which is considered a low linear extensibility rating (NRCS, 2019a).

Corrosive Soils

The potential for certain soils to cause an electrochemical or chemical reaction that can corrode or weaken uncoated steel or concrete is referred to as the corrosivity of soils. The rate at which these materials corrode is dependent on a number of variables. The rate of corrosion of steel is based on soil moisture, particle-size distribution, acidity, and electrical conductivity. Corrosion of concrete is based on the sulfate and sodium content, texture, moisture and acidity of the soil. The risk of corrosion typically is expressed as low, moderate, or high. The NRCS Web Soil Survey provides data assessing the corrosivity of soils, specifically the corrosion of steel and concrete. According to NRCS Web Soil Survey data, the Project site is underlain by soils that have a low potential to corrode steel and moderate potential to corrode concrete (NRCS, 2019b).

Liquefaction Potential

Liquefaction is a phenomenon in which unconsolidated, water saturated sediments become unstable due to the effects of strong seismic shaking. During an earthquake, these sediments can behave like a liquid, potentially causing severe damage to overlying structures. The occurrence of this phenomenon is dependent on many complex factors, including the intensity and duration of ground shaking, particle-size distribution, and density of the soil.

The potential damaging effects of liquefaction include differential settlement, loss of ground support for foundations, ground cracking, heaving and cracking of structure slabs due to sand boiling, and buckling of deep foundations due to ground settlement. Dynamic settlement (i.e., pronounced consolidation and settlement from seismic shaking) may also occur in loose, dry sands above the water table, resulting in settlement of and possible damage to overlying structures. In general, a relatively high potential for liquefaction exists in loose, sandy soils that are within 50 feet of the ground surface and are saturated (below the groundwater table). Liquefaction

potential has been documented within one-quarter mile of the Project site (Carollo, 2019); however, soils at the Project site could be substantially different and not susceptible to liquefaction. The low potential of ground shaking at the Project site suggests a low potential for liquefaction.

Landslide Potential

Landslides are one of the various types of downslope movements in which rock, soil, and other debris are displaced due to the effects of gravity. The potential for material to detach and move down slope depends on a variety of factors including the type of material, water content, steepness of terrain, and more. Due to the relatively level terrain of the Project site (USGS, 2020) and the lack of documented historic landslides in the area (Higgins, 1997), the landslide potential is considered low.

Paleontological Setting

Paleontological resources are the fossilized remains of plants and animals, including vertebrates (animals with backbones, e.g., mammals, birds, fish), invertebrates (animals without backbones, e.g., starfish, clams, coral), and microscopic plants and animals (microfossils), and can include mineralized body parts, body impressions, or footprints and burrows. They are valuable, non-renewable, scientific resources used to document the existence of extinct life forms and to reconstruct the environments in which they lived. Fossils can be used to determine the relative ages of the depositional layers in which they occur and of the geologic events that created those deposits. The age, abundance, and distribution of fossils depend on the geologic formation in which they occur and the topography of the area in which they are exposed. The geologic environments within which plants or animals became fossilized were generally quite different from the present environments in which the geologic formations currently exist.

Paleontological sensitivity is defined as the potential for a geologic formation to produce scientifically significant fossils. This is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. In its "Standard Guidelines for the Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontologic Resources," the Society of Vertebrate Paleontology (SVP) defines four categories of paleontological sensitivity (potential) for rock units: high, low, undetermined, and no potential: **High Potential**, rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources; **Low Potential**, rock units that are poorly represented by fossil specimens in institutional collections, or based on general scientific consensus only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule; **Undetermined Potential**, rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment; and **No Potential**, rock units like high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites) that will not preserve fossil resources (SVP, 2010).

The University of California Museum of Paleontology (UCMP) fossil locality online database, geological mapping (Higgins, 1997), and the SVP guidelines were reviewed to determine the potential for paleontological resources to be present at the Project site. According to geologic

mapping by Higgins, the majority of the Project site is underlain by Mesozoic-age granite rocks. Granitic rocks are considered to have a low paleontological sensitivity due the igneous origins of granitic rock (SVP, 2010); the temperatures and pressures associated with igneous rock formation are too extreme to preserve fossils.

Regulatory Setting

Federal

Occupational Safety and Health Administration

The Occupational Safety and Health Act requires employers to comply with safety and health standards promulgated by the Occupational Safety and Health Administration (OSHA). OSHA Excavation standards, which are set forth in Title 29 Code of Federal Regulations (CFR) Part 1926, Subpart P, contain requirements for excavation and trenching operations.

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy (California Geological Survey, 2013). In accordance with the Alquist-Priolo Act, the state geologist established regulatory zones, called "Earthquake Fault Zones," around the surface traces of active faults and published maps showing the earthquake fault zones. Within the fault zones, buildings for human occupancy cannot be constructed across the surface trace of active faults. Each earthquake fault zone extends approximately 200- to 500-feet on either side of the mapped fault trace because many active faults are complex and consist of more than one branch that may experience ground surface rupture. California Code of Regulations (CCR) Title 14, Section 3601(e) defines buildings intended for human occupancy as those that would be inhabited for more than 2,000 hours per year.

California Building Code

The California Building Code (CBC), codified in Title 24 of the California Code of Regulations Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards for structural strength, means of ingress/egress to facilities (entering and exiting), and general stability of buildings. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction.

The CBC is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable. The provisions of the CBC apply to the construction, alteration, movement, replacement, location, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The 2019 edition of the CBC is based on the 2018 International Building Code published by the International Code Council, which replaced the Uniform Building Code. The code is updated

triennially; the 2019 edition of the CBC was published by the California Building Standards Commission on July 1, 2019, and went into effect on January 1, 2020. The 2019 CBC contains California amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standard ASCE/SEI 7-16, Minimum Design Loads for Buildings and Other Structures. The CBC provides requirements for general structural design and includes means for determining earthquake loads, as well as other loads (such as wind loads), for inclusion in building codes.

CBC Chapter 18 covers the requirements of geotechnical investigations (Section 1803), excavation, grading, and fills (Section 1804), load bearing of soils (Section 1806) and foundations (Section 1808), shallow foundations (Section 1809), and deep foundations (Section 1810).

Requirements for geotechnical investigations are included in Appendix J, CBC Section J104, Engineered Grading Requirements. As outlined in Section J104, applications for a grading permit must be accompanied by plans, specifications, and supporting data consisting of a soils engineering report and engineering geology report. Additional requirements for subdivisions requiring tentative and final maps and for other specified types of structures are in Health and Safety Code Sections 17953–17955 and in 2019 CBC Section 1802. Samples from subsurface investigations, such as from borings or test pits, must undergo testing. Studies must be done as needed to evaluate slope stability, soil strength, position and adequacy of load-bearing soils, the effect of moisture variation on load-bearing capacity, compressibility, liquefaction, differential settlement, and expansiveness. The design of the proposed buildings, structures and infrastructure would be required to comply with CBC requirements, which would make the Project consistent with the CBC.

California Occupational Safety and Health Administration

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. In California, the California Division of Occupational Safety and Health (Cal/OSHA) and the federal Occupational Safety and Health Administration (OSHA) are the agencies responsible for ensuring worker safety in the workplace.

The OSHA Excavation and Trenching standard (29 CFR 1926.650) covers requirements for excavation and trenching operations. OSHA requires protecting all excavations in which employees could potentially be exposed to cave-ins, by sloping or benching the sides of the excavation, supporting the sides of the excavation, or placing a shield between the side of the excavation and the work area. Cal/OSHA also regulates dust protection during construction and the issues around fugitive dust is discussed more fully in Section 3.3, *Air Quality*. Cal/OSHA is the implementing agency for both federal and state OSHA standards. All contractors must comply with OSHA regulations, which would make the Project consistent with OSHA.

National Pollutant Discharge Elimination System Construction General Permit

The National Pollutant Discharge Elimination System (NPDES) *General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Order 2009-0009-DWQ, NPDES No. CAS000002, Construction General Permit (CGP); as amended by Orders 2010-0014-DWQ and 2012-006-DWQ) regulates discharges of pollutants in stormwater associated with construction activity to waters of the United States from construction sites that

disturb one or more acres of land surface, or that are part of a common plan of development or sale that disturbs more than one acre of land surface. The CGP regulates stormwater discharges from construction or demolition activities, such as clearing and excavation; construction of buildings; and linear underground projects, including installation of water pipelines and other utility lines.

Construction of the proposed Project would disturb more than 1 acre of land surface, potentially affecting the quality of stormwater discharges into waters of the United States, and as a result would need to comply with the requirements of the CGP. The CGP requires that construction sites be assigned a risk level of 1 (low), 2 (medium), or 3 (high), based both on the sediment transport risk at the site and the risk to receiving waters during periods of soil exposure (e.g., grading and site stabilization). The sediment risk level reflects the relative amount of sediment that could be discharged to receiving water bodies, and is based on the nature of the construction activities and the location of the site relative to receiving water bodies. The receiving-waters risk level reflects the risk to receiving waters from the sediment discharge. Depending on the risk level, construction projects governed by the CGP could be subject to the following requirements:

- Effluent standards
- Good site management "housekeeping"
- Non-stormwater management
- Erosion and sediment controls
- Run-on and runoff controls
- Inspection, maintenance, and repair
- Monitoring and reporting requirements

The CGP requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) that includes specific best management practices (BMPs) designed to prevent sediment and pollutants from coming into contact with stormwater and moving off-site into receiving waters. BMPs are divided into several categories, including erosion control, sediment control, waste management, and good housekeeping. They are intended to protect surface water quality by preventing eroded soil and construction-related pollutants from migrating off-site from the construction area. Routine inspection of all BMPs is required under the CGP. In addition, the SWPPP must contain a visual monitoring program, a chemical monitoring program for non-visible pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

The SWPPP must be prepared before construction begins. The SWPPP must contain a site map(s) that delineates the construction work area, existing and proposed buildings, parcel boundaries, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project area. The SWPPP must list BMPs and the placement of those BMPs that the applicant would use to protect stormwater runoff.

Examples of typical construction BMPs include scheduling or limiting certain activities to dry periods, installing sediment barriers such as silt fence and fiber rolls, and maintaining equipment and vehicles used for construction. Non-stormwater management measures include installing specific discharge controls during certain activities, such as paving operations, and washing and fueling of vehicles and equipment. The CGP also sets post-construction standards

(i.e., implementation of BMPs to reduce pollutants in stormwater discharges from the site after construction).

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (SHMA) was passed in 1990 following the Loma Prieta earthquake to reduce threats to public health and safety and to minimize property damage caused by earthquakes. The SHMA requires the State Geologist to delineate various seismic hazard zones, and cities, counties, and other local permitting agencies to regulate certain development projects within these zones. For projects that would locate structures for human occupancy within designated Zones of Required Investigation, the SHMA requires project applicants to perform a site-specific geotechnical investigation to identify the potential site-specific seismic hazards and corrective measures, as appropriate, prior to receiving building permits. The *CGS Guidelines for Evaluating and Mitigating Seismic Hazards* (Special Publication 117A) provides guidance for evaluating and mitigating seismic hazards (CGS, 2008). The CGS is in the process of producing official maps based on USGS topographic quadrangles, as required by the Act. However, no mapping of the region that includes the Project Site has been compiled by the CGS.

Local

Tuolumne County General Plan

Goal 17A: Avoid the exposure of people and structures to potential substantial adverse effects, including the risk of loss, injury or death involving natural hazards.

Policy 17.A.1: Increase Tuolumne County's capabilities to mitigate the effects of natural hazards.

Implementation Program 17.A.a: Implement the Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan to protect life, safety, and property by reducing the potential for future damages and economic losses that result from geologic hazards.

Policy 17.A.2: Enhance existing policies that will reduce the potential damaging effects of hazards without hindering other County goals.

Implementation Program 17.A.b: Update the County's General Plan and Ordinance Code as new Federal and State laws regarding geologic hazards and requirements are enacted.

Policy 17.A.3: Protect Tuolumne County's most vulnerable populations, buildings and critical facilities through the implementation of cost-effective and technically feasible mitigation projects.

Implementation Program 17.A.c: Maximize the use of hazard mitigation grant programs to protect the most vulnerable populations and structures.

Policy 17.A.4: Protect public health, safety and welfare by increasing the awareness of existing hazards and by fostering both individual and public responsibility in mitigating risks due to those hazards.

Implementation Program 17.A.d: Increase the level of knowledge and awareness for Tuolumne County residents on the hazards that routinely threaten the area. Educate

property owners on the affordable, individual mitigation and preparedness measures that can be taken before the next hazard event.

Policy 17.A.5: Enhance the County's capability to conduct hazard risk assessments, demonstrate funding needs, and track mitigation activities.

Policy 17.A.6: Ensure that all new construction is completed in a way most resistant to loss or damage from natural hazards.

Tuolumne County Grading Ordinance

The purpose of the Tuolumne County Grading Ordinance is to establish minimum standards and provide regulations for the construction and maintenance of excavations, site reclamation, drainage control, stockpiling, as well as for protection of exposed soil surfaces, and cut and clearing of vegetation related to any or all of these practices to promote the safety, public health, convenience, and general welfare of the community. Furthermore, the Grading Ordinance is intended to fulfill the requirements for grading/stockpiling and erosion control, establishes the administrative procedure for issuance of permits, and provided for approval of plans and inspection of grading construction.

Impact Discussion

a.i) **No Impact**. The Project site does not lie within any mapped EFZs according to the available data (CGS, 2020). The proposed Project would not expose people or structures to potential substantial adverse effects relating to rupture of a known earthquake fault. There would be **no impact** related to surface fault rupture.

a.ii) **Less-than-Significant Impact**. The Project site is not within a historically, seismically active portion of California (Tuolumne County, 2019), due to a lack of any Holocene-active or potentially active faults in proximity to the Project site (CGS, 2010). The predicted peak acceleration for the entire developed portion of Tuolumne County does not exceed 20 percent of gravity, meaning that Tuolumne County is among the areas of California with the lowest earthquake potential (Tuolumne County, 2019). A total of four historical earthquake events with recorded magnitudes of 3.5 or greater occurred in or near Tuolumne County this past century (Tuolumne County, 2019).

Regardless of the low probability of significant impacts to the Project as a result of strong seismic groundshaking, as discussed in the CBC subsection identified in *Regulatory Setting*, a preliminary and final, Project-specific, site-specific, design-level geotechnical investigation and accompanying report would be required prior to construction. The geotechnical investigation that would result from compliance with this independently enforceable legal requirement would provide seismic design requirements consistent with the most updated version of the CBC. These seismic design requirements would be based on site–specific, Project-specific data, would be implemented during construction, and would significantly reduce the potential for damage to structures caused in the event of strong seismic ground shaking.

Compliance with CBC requirements, including recommendations provided by a final design level geotechnical report, would ensure impacts related to strong seismic groundshaking, would be **less than significant**.

a.iii) **Less-than-Significant Impact**. As discussed above in *Environmental Setting*, liquefaction can occur when unconsolidated, water-saturated sediments become unstable to the effects of strong seismic groundshaking. Because the risk of strong seismic ground shaking is low at the Project site, and a majority of the Project site is underlain by granitic rocks and other bedrock formations, the likelihood of liquefaction is low. However, as described in the Project Description, a deep foundation with drilled concrete piers could be necessary. As discussed above, the geotechnical investigation would analyze conditions within the Project Site where improvements are proposed, and would identify any potential for liquefaction or other seismic-related ground failure as required by the CBC. Based on the results of the geotechnical investigation, if liquefaction potential is low or non-existent the geotechnical engineer may recommend a shallow foundation system such as a mat slab and the deep foundation with drilled concrete piers would not be required. Furthermore, should any potential liquefaction hazards be identified, the final design-level geotechnical report would provide seismic design requirements consistent with the most updated version of the CBC, which would be implemented during construction to significantly reduce the potential for any damage to structures caused by seismic-related ground failures, including liquefaction. Compliance with CBC requirements, including recommendations provided by a geotechnical report, would ensure impacts related to ground failure, including liquefaction, would be **less than significant**.

a.iv) **Less-than-Significant Impact**. According to geologic mapping by Higgins, there have been no documented historic landslides within or in proximity to the Project site (Higgins, 1997). Due to the relatively level terrain at the Project site (USGS, 2020), the risk of Project activities resulting in landslides in unlikely.

However, required site-specific, design-level geotechnical investigation identified above would analyze site-specific conditions, including any potential for landslide potential or other slope instability in accordance with CBC requirements. Should any potential impact be identified, the resulting report would provide seismic design requirements consistent with the most updated version of the CBC, which would be implemented during construction to significantly reduce the potential for any damage to structures that may be caused by landslides. Compliance with CBC requirements, including recommendations provided by the requisite Project-specific, site-specific design-level geotechnical report, would ensure impacts related landslides would be **less than significant**.

b) **Less-than-Significant Impact**. The 46-acre proposed Project site would include ground-disturbing activities, including the introduction of 230,000 square feet of impervious surfaces and a 20,000-square-foot stormwater detention pond that could increase the risk of erosion or sediment transport, if not managed appropriately. Ground-disturbing activities could result in soil erosion during excavation, grading, trenching, and soil stockpiling. Because such activities would exceed 1 acre of soil disturbance during

construction, the proposed Project would be required to comply with the Construction General Permit (CGP) described in *Regulatory Setting*, and discussed further in Section 3.10, *Hydrology and Water Quality*. This state requirement was developed to ensure that stormwater is managed to protect water quality and includes erosion control measures for construction sites as well as post construction requirements. The CGP requires preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which requires applying BMPs to control run-on and runoff from construction work sites. The BMPs would include but not be limited to physical barriers to prevent erosion and sedimentation; construction of sedimentation basins; limitations on work periods during storm events; use of infiltration swales; protection of stockpiled materials; and a variety of other measures that would substantially reduce or prevent erosion from occurring during construction. Through compliance with these independently enforceable existing requirements, the potential impacts of the Project associated with soil erosion and loss of topsoil during construction would be **less than significant**.

c) **Less-than-Significant Impact**. As discussed previously, there would be a less-than-significant impact related to liquefaction, landslide, or other ground failure. While the potential for landslides, or other ground failures is low, there remains some uncertainty of liquefaction potential, the required geotechnical investigation would analyze the site-specific conditions within the Project site where foundations, footings and other infrastructure would be located as identified in final designs, and would identify any potential for geologic hazards to adversely affect any Project components. Should any potential hazards be identified, the geotechnical report would provide specific measures to address relevant site preparation, design or other requirements consistent with the most updated version of the CBC. These would be implemented during construction to significantly reduce the potential for any damage to structures. Compliance with CBC requirements, including recommendations provided by a geotechnical report, would ensure impacts related to liquefaction, landslides, or other ground failures would be **less than significant**.

d) **Less-than-Significant Impact.** *Expansive Soil:* the soil underlying the Project site has a low expansion potential. Although Web Soil Survey data indicate a low expansion potential, the Project design and construction activities would still be required to comply with CBC regulations and requirements and would employ standard engineering and building practices common to construction projects throughout California (e.g., soil removal and replacement with engineered soil) that are also consistent with building code requirements.

The required design-level geotechnical investigation described above would identify any expansive soils within the Project site and specific responsive requirements to ensure that all foundations and other below-ground infrastructure would not be adversely affected by expansive soils. Adherence to design requirements consistent with the most updated version of the CBC and site-specific geotechnical report would ensure a **less than significant** impact related to expansive soils.

Corrosive Soil: NRCS Web Soil Survey data indicate the Project site as underlain by soils that have a low potential to corrode steel and moderate potential to corrode concrete. Because proposed Project components include concrete foundations, these structures could be in contact with potentially corrosive soils. The impacts to life or property associated with corrosive soils, if not addressed appropriately, could be significant due to the soils corroding and/or weakening the concrete and/or steel followed by subsequent failure of the affected infrastructure.

The required design-level geotechnical investigation described above would identify any corrosive soils that could be affected by proposed Project infrastructure pursuant to the final design, and would impose site-specific design and soil amendment requirements, if necessary, to ensure that all foundations and other below-ground improvements would not be impacted by corrosive soils. Adherence to design requirements consistent with the most updated version of the CBC and the site-specific final design level geotechnical report would ensure a **less than significant** impact related to corrosive soils.

e) **Less-than-Significant Impact**. As discussed in Chapter 2, *Project Description*, there is no sewer service on or near the site, and it is expected that any sanitary waste generated by the SPRWTF would utilize an on-site septic system. The primary septic system would be located to the northeast of the treatment process building. If the system is not designed appropriately, on-site soils could be incapable of disposing the anticipated volumes of wastewater.

NRCS Web Soil Survey data suggests that the soils within the Project site would be "very limited" in relation to septic tank absorption fields, indicating that the underlying soil displays one or more features that are unfavorable for septic tank usage (NRCS, 2019d).

However, Web Soil Survey data can be general in nature and serves as a tool to indicate where problematic soils may exist. To ensure the compatibility of the proposed on-site septic system, prior to installation, a septic system permit would be required by Tuolumne County Environmental Health Department. Adherence to requirements of the septic system permit would include site specific soil testing and percolation tests to ensure the on-site septic system would be installed properly and discharge to soils capable of providing acceptable leaching qualities. If the results of the site specific soil testing and percolation tests prove otherwise, TUD would have to connect the proposed Project's sanitary system to a local sewer system or provide an on-site sewage collection, pumping and disposal at a local wastewater treatment facility. As a result, the proposed Project would not introduce an environmental or public health hazard by building septic tanks or other wastewater disposal system in soils that are incapable of adequately supporting such systems. There would be a **less-than-significant** impact related to septic tanks or alternative waste water disposal systems.

f) **Less-than-Significant Impact**. Geologic mapping by Higgins indicates Mesozoic granite rocks are mapped at the surface within a majority of the Project site (Higgins, 1997). Granitic rocks are considered to have a low paleontological sensitivity due the

igneous origins of granitic rock (SVP, 2010); the temperatures and pressures associated with igneous rock formation are too extreme to preserve fossils. Consequently, excavation and other soil disturbing construction activities associated with the proposed Project would be unlikely to encounter paleontological resources. Impacts are considered **less than significant.**

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———, 2019b. *Corrosion of Concrete—Central Sierra Foothills Area, California, Parts of Calaveras and Tuolumne Counties, California*. Map. Scale 1:4,710.

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———, 2019d. *Septic Tank Absorption Fields—Central Sierra Foothills Area, California, Parts of Calaveras and Tuolumne Counties, California*. Map. Scale 1:4,710.

3.8 Greenhouse Gas Emissions

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

Environmental Setting

The proposed Project site is located north of Middle Camp Road and west of South Fork Road, approximately 1.5 miles north of the community of Twain Harte in Tuolumne County. The site was formerly used as the Sierra Pines Golf Course, but is currently undeveloped and does not generate direct or indirect greenhouse gas (GHG) emissions.

GHGs trap heat in the atmosphere by preventing some of the solar radiation that hits the Earth from being reflected back into space. Some GHGs occur naturally and are needed to keep the Earth's surface habitable. However, over the past 100 years, human activities have substantially increased the concentration of GHGs in our atmosphere. This has intensified the natural greenhouse effect, increasing average global temperatures.

Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) are the principal GHGs. When concentrations of these gases exceed historical concentrations in the atmosphere, the greenhouse effect is intensified. CO_2, CH_4, and N_2O occur naturally but are also generated through human activity. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 primarily results from off-gassing, natural gas leaks from pipelines and industrial processes, and incomplete combustion; it is associated with agricultural practices, landfills, energy providers, and other industrial facilities.[13]

CO_2 is the reference gas for climate change because it is the predominant GHG emitted. The effect that each of the aforementioned gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-for-pound basis, how much a gas contributes to global warming relative to how much warming would be predicted to be caused by the same mass of CO_2. CH_4 and N_2O are substantially more potent GHGs than CO_2, with 100-year GWPs of 28-36 and 265-298 times that of CO_2, respectively (EPA, 2017).

In emissions inventories, GHG emissions are typically reported in metric tons of CO_2 equivalence ($MTCO_2e$). CO_2e is calculated as the product of the mass emitted by a given GHG and its specific

[13] Off-gassing is defined as the release of chemicals under normal conditions of temperature and pressure.

GWP. While CH_4 and N_2O have much higher GWPs than CO_2, CO_2 is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO_2e.

Regulatory Setting

Federal

U.S. Environmental Protection Agency "Endangerment' and "Cause or Contribute" Findings

The U.S. Supreme Court has held that EPA must consider regulation of motor vehicle GHG emissions. In *Massachusetts v. Environmental Protection Agency* et al., twelve states and cities, including California, together with several environmental organizations sued to require EPA to regulate GHGs as pollutants under the Clean Air Act (CAA) (127 S. Ct. 1438 [2007]). The Supreme Court ruled that GHGs fit within the CAA's definition of a pollutant and EPA had the authority to regulate GHGs.

On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA (EPA, 2016).

- ***Endangerment Finding:*** The current and projected concentrations of the six key GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations.

- ***Cause or Contribute Finding:*** The combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

State

Senate Bill 97 and the California Environmental Quality Act

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is a prominent environmental issue requiring analysis under CEQA. This bill directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, no later than July 1, 2009. The California Natural Resources Agency was required to certify or adopt those guidelines by January 1, 2010. On December 30, 2009, the Natural Resources Agency adopted amendments to the CEQA Guidelines, as required by SB 97. These CEQA Guidelines amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in draft CEQA documents. The amendments became effective March 18, 2010.

The CEQA Guidelines are embodied in the California Code of Regulations (CCR), PRC Division 13, starting with Section 21000. CEQA Guidelines Section 15064.4 specifically addresses the significance of GHG emissions, requiring a lead agency to make a "good-faith effort" to "describe, calculate or estimate" GHG emissions in CEQA environmental documents. CEQA Guidelines Section 15064.4 further states that the analysis of GHG impacts should include consideration of (1) the extent to which the project may increase or reduce GHG emissions, (2) whether the project emissions would exceed a locally applicable threshold of significance, and

(3) the extent to which the project would comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions." The CEQA Guidelines also state that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program (including plans or regulations for the reduction of GHG emissions) that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (CEQA Guidelines Section 15064[h][3]). The CEQA Guidelines do not, however, set a numerical threshold of significance for GHG emissions.

CEQA Guidelines Section 15126.4(c) also includes the following direction on measures to mitigate GHG emissions, when such emissions are found to be significant:

> Consistent with Section 15126.4(a), lead agencies shall consider feasible means, supported by substantial evidence and subject to monitoring or reporting, of mitigating the significant effects of greenhouse gas emissions. Measures to mitigate the significant effects of greenhouse gas emissions may include, among others:
>
> (1) Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision;
>
> (2) Reductions in emissions resulting from a project through implementation of project features, project design, or other measures;
>
> (3) Off-site measures, including offsets that are not otherwise required, to mitigate a project's emissions;
>
> (4) Measures that sequester greenhouse gases; and
>
> (5) In the case of the adoption of a plan, such as a general plan, long range development plan, or plans for the reduction of greenhouse gas emissions, mitigation may include the identification of specific measures that may be implemented on a project-by-project basis. Mitigation may also include the incorporation of specific measures or policies found in an adopted ordinance or regulation that reduces the cumulative effect of emissions.

Executive Order S-3-05

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Arnold Schwarzenegger established Executive Order (EO) S-3-05, which set forth the following target dates by which statewide GHG emissions would be progressively reduced: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels. As discussed below, the 2020 reduction target was codified in 2006 as Assembly Bill (AB) 32. However, the 2050 reduction target has not been codified and the California Supreme Court has ruled that CEQA lead agencies are not required to use it as a significance threshold. *Cleveland National Forest Foundation v. San Diego Association of Governments* (2017) 3 Cal.5th 497.

Assembly Bill 32

In 2006, the California Legislature enacted AB 32 (California Health and Safety Code Division 25.5, Section 38500 et seq.), also known as the Global Warming Solutions Act. AB 32 required CARB to design and implement feasible and cost-effective emissions limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25-percent reduction in emissions). AB 32 anticipated that the GHG reduction goals will be met, in part, through local government actions. CARB identified a GHG reduction target of 15 percent from current levels for local governments (municipal and community-wide) and noted that successful implementation of the plan relies on local governments' land use planning and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions. The AB 32 emissions reduction limit was achieved in 2017, 3 years prior to the 2020 goal.

Senate Bill 32

Signed into law on September 8, 2016, SB 32 (Amendments to California Global Warming Solutions Act of 2006: Emission Limit) amended Health and Safety Code Division 25.5 and codifies the 2030 target in EO B-30-15 (40 percent below 1990 levels by 2030). The 2030 target is intended to ensure that California remains on track to achieve the goal set forth by EO B-30-15 to reduce statewide GHG emissions by 2050 to 80 percent below 1990 levels. SB 32 states the intent of the legislature to continue to reduce GHGs for the protection of all areas of the state and especially the state's most disadvantaged communities, which are disproportionately impacted by the deleterious effects of climate change on public health.

Climate Change Scoping Plan

Pursuant to AB 32, CARB adopted the *Climate Change Scoping Plan* in December 2008 (re-approved by CARB on August 24, 2011) outlining measures to meet the 2020 GHG reduction goals (CARB, 2008). The Scoping Plan is required by AB 32 to be updated at least every 5 years. On December 14, 2017, CARB approved the current Climate Change Scoping Plan, *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan Update). The 2017 Scoping Plan Update outlines the proposed framework of action for achieving the 2030 GHG target of 40 percent reduction in GHG emissions relative to 1990 levels. The 2017 Scoping Plan Update identifies key sectors of the implementation strategy, which includes improvements in low carbon energy, industry, transportation sustainability, natural and working lands, waste management, and water. The CARB determined that the target statewide 2030 emissions limit is 260 million metric tons of CO_2e (MMT CO_2e), and that further commitments will be needed to achieve an additional reduction of 50 MMT CO_2e beyond current policies and programs (CARB, 2017).

Local

Tuolumne County 2018 General Plan Climate Change Element

The 2018 Tuolumne County General Plan (General Plan) was adopted in December 2018, and provides an overall framework for future county development. The Climate Change element to the General Plan includes various goals, policies, and implementation programs to reduce GHG emissions consistent with state targets and ensure community resiliency to the effects of climate change. Implementation of many of the programs, including Policy 18.A.2 and Policy 18.A.5

identified in the General Plan to reduce GHG emissions fall under the responsibility of the County. Policy 18.A.2 states that prior to the adoption of a Climate Action Plan, GHG emissions from individual projects should be analyzed consistent with CEQA and should be considered in relation to the GHG reduction goals set by SB 32. Policy 18.A.5, discussed below, states that the County should promote energy efficiency and alternative energy while reducing energy demand (Tuolumne County, 2018).

Impact Discussion

a) **Less-than-Significant Impact.** The proposed Project has the potential to generate GHG emissions during both the construction phase and the operational phase. Construction of the Project would generate GHG emissions from use of heavy-duty construction equipment and from vehicle trips associated with construction workers, vendors, and haul trucks traveling to and from the Project site. Operational GHG emissions would result from area, energy, mobile, stationary, and waste sources.

As discussed in the *Regulatory Setting* section, above, the CEQA Guidelines do not set a numerical threshold of significance with which to evaluate GHG emissions; however, Section 15064.7 (c) of the CEQA Guidelines states that "[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence." The TCAPCD has not formally established thresholds of significance for Project-related GHG emissions; therefore, this analysis compares Project-related GHG emissions to the screening threshold of 900 MTCO2e per year, established by the California Air Pollution Control Officers Association (CAPCOA) Report, *CEQA and Climate Change—Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act* (CAPCOA, 2008). The 900 $MTCO_2e$-per-year threshold is more conservative than thresholds of significance developed by nearby air districts, including the Sacramento Metropolitan Air Quality Management District, which recommends a 1,100 $MTCO_2e$-per-year threshold for construction and a 10,000 $MTCO_2e$-per-year threshold for operations, and the Bay Area Air Quality Management District, which recommends a 1,100 $MTCO_2e$-per-year threshold for operations. Therefore, use of the CAPCOA screening threshold is a conservative metric for determining significance of impacts associated with GHG emissions that would result from the proposed Project.

Project-related GHG emissions were estimated using CalEEMod, version 2016.3.2, with the exception of energy-related GHG emissions, which were calculated outside of CalEEMod using anticipated annual electricity usage and current emission factors for the utility anticipated to serve the proposed Project, Pacific Gas and Electric Company (PG&E). Assumptions associated with anticipated construction activity and Project operation were provided by TUD and can be found in Appendix A. CalEEMod default values were used when Project-specific data were not available. Estimates of construction-related GHG emissions for the proposed Project are presented in **Table 3.8-1**, below.

TABLE 3.8-1
ANNUAL CONSTRUCTION-RELATED GREENHOUSE GAS EMISSIONS

Year	GHG ($MTCO_2e$)
2021	833
2022	189
Total	**1,022**

NOTES:
$MTCO_2e$ = metric tons of carbon dioxide equivalent

SOURCE: Data compiled by Environmental Science Associates in 2020 (Appendix A)

Although GHGs generated during construction are considered temporary, in that they would only occur for a few years during construction, it is important to include them when assessing the long-term GHG emissions associated with a project, as GHG emissions persist in the atmosphere for extended periods of time and the associated impacts are cumulative. For this reason, it is standard practice to amortize construction-related GHG emissions over the life of a project and analyze them in aggregate with operational emissions. This approach ensures that construction-related GHG emissions are addressed and would be mitigated through any operational GHG reduction strategies, if necessary. Due to the cumulative nature of GHGs in the environment, construction-period impacts are not assessed independently of operational-period impacts, which are discussed under criterion b.

Maximum annual net GHG emissions resulting from area sources (equipment associated with landscaping activities), energy use (i.e., indirect emissions associated with purchased electricity), mobile emissions, an on-site emergency generator, and solid waste generation were calculated for Project operations commencing in 2023. Total annual operational emissions, including amortized construction emissions, would be approximately 114 $MTCO_2e$ per year. Annual GHG emissions that would result from operation of the Project are summarized and compared to the CAPCOA significance threshold in **Table 3.8-2**, below.

As shown in Table 3.8-2, operation of the Project would not exceed the applicable CAPCOA threshold of significance for Project-related GHG emissions. Furthermore, construction and operation of the Project would eliminate the need for up to six existing operational TUD facilities, which are anticipated to go off-line following construction of the Project. Due to the size of the TUD service area, coupled with the amount of TUD facilities, existing TUD operations generate an estimated 400 vehicle miles traveled (VMT) per day. The reduction and consolidation of treatment plants, tanks, and pump stations that would result from implementation of the Project would decrease the overall VMT associated with TUD operations, ultimately reducing mobile source GHG emissions compared to the business-as-usual scenario. Therefore, the Project would have a **less-than-significant impact** with respect to the generation of GHG emissions.

TABLE 3.8-2
UNMITIGATED ANNUAL OPERATIONAL GREENHOUSE GAS EMISSIONS

Source	GHG ($MTCO_2e$)
Area	<1
Energy	67
Mobile	4
Stationary	13
Waste	4
Amortized Construction Emissions	26
Total Annual Emissions	**114**
CAPCOA Threshold of Significance	900
Exceeds Threshold?	No

NOTES:
A 40-year lifetime was assumed for the Project, which was used to amortize construction emissions.
$MTCO_2e$ = metric tons of carbon dioxide equivalent
SOURCE: Data compiled by Environmental Science Associates in 2020. See Appendix A

b) **Less-than-Significant Impact.** CEQA Guidelines Section 15183.5 allows for public agencies to analyze and mitigate GHG emissions as part of a larger plan for the reduction of GHGs and describes the required contents of such a plan. As described below, the Project would be consistent with CARB's 2017 Scoping Plan Update and the policies and programs presented in the Tuolumne County 2018 General Plan (Climate Change Element).

2017 Scoping Plan Update

The 2017 Scoping Plan Update establishes the framework for achieving the 2030 statewide GHG reduction target of 40 percent below 1990 levels, established by SB 32. The plan update details local actions that land-use development projects and municipalities can implement to support the statewide goal. For project-level CEQA analyses, the 2017 Scoping Plan Update states that projects should implement feasible mitigation, preferably measures that can be implemented on-site.

The Scoping Plan Update incorporates a broad array of regulations, policies, and state plans designed to reduce GHG emissions. Those that are applicable to the construction and operation of the proposed Project are listed in **Table 3.8-3**. As shown below, the proposed Project would be consistent with goals described in the Scoping Plan Update to reduce energy use, conserve water, reduce waste generation, and reduce vehicle travel consistent with statewide strategies and regulations. As a result, the proposed Project would not conflict with applicable Climate Change Scoping Plan strategies and regulations to reduce GHG emissions.

TABLE 3.8-3
CONSISTENCY WITH APPLICABLE GREENHOUSE GAS REDUCTION ACTIONS IN 2017 SCOPING PLAN UPDATE

Strategy	Description	Consistency Analysis
California Renewables Portfolio Standard (RPS)	SB 100 requires that the proportion of electricity from renewable sources be 60 percent renewable power by 2030 and 100 percent renewable power by 2045.	**Consistent.** The proposed project's electricity will be provided by PG&E. PG&E is required to comply with SB 100 and the RPS.
California Renewables Portfolio Standard and SB 350	SB 350 requires that the proportion of electricity from renewable sources be 50 percent renewable power by 2030 (superseded by SB 100). It also requires the state to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.	**Consistent.** The proposed project's electricity will be provided by PG&E. PG&E is required to comply with both the RPS and SB 350 and will meet these standards.
California Building Efficiency Standards (CCR, Title 24, Part 6)	Title 24, Part 6 sets energy efficiency standards for both residential and nonresidential buildings.	**Consistent.** Buildings constructed within the project site would be designed to comply with all applicable Title 24 Building Energy Efficiency Standards.
California Green Building Standards Code (CCR, Title 24, Part 11—CALGreen)	California's Green Building Standards (CALGreen) Code includes energy, water, and resource efficiency requirements for non-residential buildings; as well as requirements to preserve environmental quality.	**Consistent.** Buildings constructed within the project site would comply with mandatory CalGreen measures.

SOURCE: CARB, 2017; ESA 2020.

General Plan Climate Change Element

As discussed under the Regulatory Setting, above, the County General Plan includes a Climate Change Element, which includes policies and programs aimed at reducing GHG emissions consistent with the goals of SB 32. The Project would be consistent with the 2017 Scoping Plan Update, discussed above, which was developed to meet the goals of SB 32. Furthermore, the Project would be consistent with Climate Change Element Policy 18.A.5 to promote energy efficiency, as the Project would be required to demonstrate compliance with Title 24, Part 6 of the California Building Efficiency Standards as well as the CalGreen Code. Therefore, the Project would not conflict with the policies and programs described in the County General Plan's Climate Change Element.

Conclusion

As discussed above, the Project would be consistent with the 2017 Scoping Plan Update and the Tuolumne County General Plan's Climate Change Element; therefore, it would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases, and the associated impact would be **less than significant**.

References

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3.9 Hazards and Hazardous Materials

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
IX. HAZARDS AND HAZARDOUS MATERIALS — Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☒	☐	☐

Environmental Setting

A hazardous material is defined as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment (Health and Safety Code Section 25501[o]). The term “hazardous materials” refers to both hazardous substances and hazardous wastes. Under federal and state laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such or if it is toxic (causes adverse human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases).

Hazardous wastes are hazardous substances that no longer have practical use, such as materials that have been spent, discarded, discharged, spilled, contaminated, or are being stored until they can be disposed of properly (22 CCR Section 66261.10). Soil that is excavated from a site containing hazardous materials is a hazardous waste if it exceeds specific regulatory criteria (22 CCR Section 66261.20-66261.24). While hazardous substances are regulated by multiple agencies, as described in *Regulatory Setting*, cleanup requirements of hazardous wastes are determined on a case-by-case basis according to the agency with lead jurisdiction over the release.

This discussion of the potential presence of hazardous materials at the Project site is based on the results of review of regulatory agency databases, including the following:

- *State Water Resources Control Board (SWRCB) GeoTracker database.* The GeoTracker database includes the following hazardous materials site lists: leaking underground storage tank (LUST) cleanup sites; spills, leaks, investigation and cleanup (SLIC) sites; permitted underground storage tank (UST) facilities; land disposal sites; military cleanup sites; and other cleanup sites. An independent review of the SWRCB GeoTracker database confirms there are no active or closed hazardous materials sites within the Project site boundary (SWRCB, 2020).

- *California Department of Toxic Substances Control (DTSC) EnviroStor database.* The EnviroStor database includes federal Superfund, state response, voluntary cleanup, school cleanup, and hazardous waste corrective action. Nearby landfill facilities were identified by the database searches. An independent review of the DTSC EnviroStor database confirms there are no active or closed hazardous materials sites within the Project site boundary (DTCS, 2020).

- *Hazardous Waste and Substances Site List (Cortese List).* The list is a planning document used by state and local agencies and developers to comply with CEQA requirements by providing location information for hazardous material release sites. The DTSC and SWRCB are the agencies responsible for updating the Cortese List. No schools exist within one-quarter mile of the proposed Project site and the Project site is not included on any list of hazardous materials sites. Additionally, there are no public or private use airports within 2 miles of the proposed Project site.

Regulatory Setting

Federal

The primary federal agencies with responsibility for hazardous materials management include the U.S. Environmental Protection Agency (EPA), the federal Occupational Safety and Health Administration (OSHA), and the U.S. Department of Transportation. Federal laws, regulations, and responsible agencies are summarized in **Table 3.9-1** below.

State and local agencies often have either parallel or more stringent rules than federal agencies. In most cases, state law mirrors or overlaps federal law and enforcement of these laws is the responsibility of the state or of a local agency to which enforcement powers are delegated. For these reasons, the requirements of the law and its enforcement are discussed under either the state or local regulatory section.

State

The primary state agencies with responsibility for hazardous materials management in the region include the DTSC and the Central Valley Regional Water Quality Control Board (RWQCB) within the California Environmental Protection Agency, California Occupational Safety and Health Administration (Cal/OSHA), California Department of Public Health, California Highway Patrol (CHP), and the California Department of Transportation (Caltrans). State laws, regulations, and responsible agencies are summarized in **Table 3.9-2** below.

TABLE 3.9-1
FEDERAL LAWS AND REGULATIONS RELATED TO HAZARDOUS MATERIALS MANAGEMENT

Classification	Law or Responsible Federal Agency	Description
Hazardous Materials Management	Community Right-to-Know Act of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act [SARA])	Imposes requirements to ensure that hazardous materials are properly handled, used, stored, and disposed of, and to prevent or mitigate injury to human health or the environment in the event that such materials are accidentally released.
Hazardous Waste Handling	Resource Conservation and Recovery Act of 1976 (RCRA)	Under RCRA, EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste from "cradle to grave[a]."
	Hazardous and Solid Waste Act	Amended RCRA in 1984, affirming and extending the "cradle to grave" system of regulating hazardous wastes. The amendments specifically prohibit the use of certain techniques for the disposal of some hazardous wastes.
Hazardous Materials Transportation	U.S. Department of Transportation (DOT)	DOT has the regulatory responsibility for the safe transportation of hazardous materials. DOT regulations govern all means of transportation except packages shipped by mail (49 CFR).
	U.S. Postal Service (USPS)	USPS regulations govern the transportation of hazardous materials shipped by mail.
Occupational Safety	Occupational Safety and Health Act of 1970	The Occupational Safety and Health Administration sets standards for safe workplaces and work practices, including the reporting of accidents and occupational injuries (29 CFR 1910).

NOTES:

[a] "cradle-to-grave" is used by EPA in this context to mean that it (EPA) regulates hazardous waste from its generation to its disposal (EPA, 2020).

TABLE 3.9-2
STATE LAWS AND REGULATIONS RELATED TO HAZARDOUS MATERIALS MANAGEMENT

Classification	Law or Responsible State Agency	Description
Hazardous Materials Management	Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program); CUPA (Health and Safety Code Section 25404 et seq.)	In January 1996, the California Environmental Protection Agency adopted regulations, which implemented a Unified Program at the local level. The agency responsible for implementation of the Unified Program is called the Certified Unified Program Agency (CUPA), which for Tuolumne County, is Tuolumne County Environmental Health. The following programs are consolidated under the Unified Program: • Hazardous Materials Release Response Plans, and Inventory (also referred to as Hazardous Materials Business Plans) • California Accidental Release Program • Underground Storage Tanks • Aboveground Petroleum Storage Spill Prevention Control and Countermeasures • Hazardous Waste Generation and On-site Treatment • Uniform Fire Code Plan and Inventory Requirements
	State Hazardous Waste and Substances List ("Cortese List"); DTSC, RWQCB, SC EHD.	The oversight of hazardous materials sites often involves several different agencies that may have overlapping authority and jurisdiction. For the on-site hazardous materials cases and issues, the RWQCB is the lead agency. Other cases may be overseen by the DTSC, the RWQCB, Tuolumne County, or other agencies.

TABLE 3.9-2 (CONTINUED)
STATE LAWS AND REGULATIONS RELATED TO HAZARDOUS MATERIALS MANAGEMENT

Classification	Law or Responsible State Agency	Description
Hazardous Waste Handling	California Hazardous Materials Release Response Plan and Inventory Law of 1985; CUPA	The California Hazardous Materials Release Response Plan and Inventory Law of 1985 (Business Plan Act) requires that businesses that store hazardous materials on-site prepare a Hazardous Materials Business Plan (HMBP) and submit it to the local CUPA, which in this case is Tuolumne County Environmental Health.
	California Hazardous Waste Control Act; DTSC	Under the California Hazardous Waste Control Act, California Health and Safety Code, Division 20, Chapter 6.5, Article 2, Section 25100 et seq., DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste in California. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; dictate the management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills. DTSC is also the administering agency for the California Hazardous Substance Account Act. California Health and Safety Code, Division 20, Chapter 6.8, Section 25300 et seq., also known as the state Superfund law, providing for the investigation and remediation of hazardous substances pursuant to state law.
	California Fire Code	The California Fire Code regulates the storage and handling of hazardous materials, including the requirement for secondary containment, separation of incompatible materials, and preparation of spill response procedures.
Hazardous Materials Transportation	Titles 13, 22, and 26 of the California Code of Regulations	Regulates the transportation of hazardous waste originating in and passing through the state, including requirements for shipping, containers, and labeling.
	CHP and Caltrans	These two state agencies are primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies.
Workplace Safety	Cal/OSHA	Cal/OSHA has primary responsibility for developing and enforcing workplace safety regulations in California. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in Title 29 of the Code of Federal Regulations (CFR). Cal/OSHA standards are generally more stringent than federal regulations.
	Cal/OSHA regulations (Title 8 CCR)	Concerning the use of hazardous materials in the workplace require employee safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation.
Construction Storm Water General Permit (Construction General Permit; Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ)	RWQCB	Dischargers whose project disturbs one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one of more acres, are required to obtain coverage under the *NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit; Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). Construction activity subject to this permit includes clearing, grading, grubbing, and other disturbances to the ground such as excavation and stockpiling, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of a facility. The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes specific Best Management Practices (BMPs) designed to prevent sediment and pollutants from contacting stormwater from moving off-site into receiving waters. The BMPs fall into several categories, including erosion control, sediment control, waste management and good housekeeping, and are intended to protect surface water

TABLE 3.9-2 (CONTINUED)
STATE LAWS AND REGULATIONS RELATED TO HAZARDOUS MATERIALS MANAGEMENT

Classification	Law or Responsible State Agency	Description
		quality by preventing the off-site migration of eroded soil and construction-related pollutants from the construction area.
Underground Infrastructure	California Code of Regulations Section 4216-4216.9	Section 4216-4216.9 "Protection of Underground Infrastructure" requires an excavator to contact a regional notification center (e.g., Underground Services Alert or Dig Alert) at least two days prior to excavation of any subsurface installations. Any utility provider seeking to begin a project that could damage underground infrastructure can call Underground Service Alert, the regional notification center for southern California. Underground Service Alert will notify the utilities that may have buried lines within 1,000 feet of the project. Representatives of the utilities are then notified and are required to mark the specific location of their facilities within the work area prior to the start of project activities in the area.

Local

Certified Unified Program Agency

Pursuant to Senate Bill 1082 (1993), the State of California adopted regulations to consolidate six hazardous materials management programs under a single, local agency, known as the Certified Unified Program Agency. In addition to conducting annual facility inspections, the Hazardous Materials Program is involved with hazardous materials emergency response, investigation of the illegal disposal of hazardous waste, public complaints, and storm water illicit discharge inspections. In January 1997, the Tuolumne County Environmental Health Division was designated as the Certified Unified Program Agency by the Secretary of the California Environmental Protection Agency for Tuolumne County. Accordingly, it is the Environmental Health Division's responsibility to prevent public health hazards in the community and to ensure the safety of water and food. The Environmental Health Division coordinates activities with federal, state, and regional agencies when planning programs that deal with the control of toxic materials, housing conditions, nuisance complaints, protection of food and water supply, public bathing areas, and sewage and solid waste.

Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan

Implementation of the Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan (HMP) (2018) is a coordinated effort between Tuolumne County, the City of Sonora, the Tuolumne Utilities District, the Sonora Union High School District, the Groveland Community Services District, Twain Harte Community Services District, Mi-Wuk Sugar Pine Fire Protection District, Belleview Elementary School District, Big Oak Flat, Groveland Unified School District, Jamestown Sanitary District, Columbia Fire Protection District, Columbia Union School District, Curtis Creek School District, Jamestown Elementary School District, Sonora Elementary School District, Summerville Elementary School District, Summerville Union High School District, Twain Harte Long Barn School District, and the Tuolumne Band of Me-Wuk Indians to effectively deal with natural catastrophes that affect the county. The HMP addresses risks associated with numerous hazards, including wildfire, earthquake, flooding, sinkholes, and extreme weather.

Tuolumne County Emergency Operations Plan

The Tuolumne County Emergency Operations Plan delineates the County's procedures and policies in response to a significant disaster, including extreme weather, flood or dam failure, earthquakes, hazardous materials, terrorism or civil disturbance, transportation accidents, and wildland fires. The Emergency Services Plan assists with emergency response through:

- establishing emergency response policy;
- identifying authorities and assigns responsibilities for planning and response activities;
- identifying the scope of potential hazards;
- identifying other jurisdictions and organizations to coordinate planning with;
- determining emergency organization structure;
- establishing policies for providing emergency information to the public;
- outlining preplanned response actions, describes the resources available to support response activities;
- outlining actions to return county operations to normal;
- guiding area governments through recovery;
- establishing responsibilities within the county for the maintenance of the overall emergency preparedness program;
- outlining the process for ordering and rendering mutual aid; and
- facilitating the continuity of governments.

Impact Discussion

a) **Less-than-Significant Impact**. Proposed Project implementation would require the use of common hazardous substances, such as gasoline and diesel fuel, oils and lubricants, hydraulic fluid, and solvents to maintain vehicles and motorized equipment. Routine uses or unintentional upset of any of these substances could pose a hazard to people or the environment and would be considered potentially significant.

Fuel tanks would be maintained and operated according to all local, state, and federal regulations during construction and operation, and hazardous material storage would be detailed in the Spill Prevention, Countermeasure, and Control (SPCC) Plan. Refueling and general maintenance for construction equipment, such as changing fluids and lubricating parts, would also be subject to sufficient containment capabilities and according to measures outlined in the SPCC Plan.

In accordance with requirements contained in the Health and Safety Code and the California Code of Regulations, TUD would prepare a Hazardous Materials Business Plan/Spill Prevention Control and Countermeasures Plan (HMBP/SPCC) prior to construction. The HMBP would include best management practices (BMPs) for the

transport, storage, use, and disposal of hazardous materials and waste. The HMBP also would include information regarding construction activities, worker training procedures, and hazardous materials inventory procedures. Prior to operation, TUD would update the HMBP (including the BMPs) with information about the types of hazardous materials that would be used during operation.

During construction, waste disposal and collection receptacles would be located on-site to ensure proper disposal of hazardous materials in accordance with regulatory requirements. Proposed Project construction activity would be subject to the Construction General Permit and its required SWPPP, which include BMPs to control hazardous materials used during construction activities.

Operation and maintenance of the proposed Project would result in the transportation, storage, use or disposal of fewer hazardous materials compared to construction. During operation, relatively limited quantities of hazardous materials would be stored on-site in accordance with regulatory requirements and the HMBP. Compliance with applicable federal, state, and local regulations and the applicable BMPs and HMBP would ensure that any potential impact would be less-than-significant during operation and maintenance.

Compliance with applicable federal, state, and local requirements summarized in *Regulatory Setting*, and related BMPs and plans would ensure that the proposed Project does not create a significant hazard to the public through the routine transport, use, or disposal of hazardous materials. Therefore, this impact would be less than significant.

b) **Less-than-Significant Impact**. During construction and operation of the proposed Project, activities may involve the transportation, storage, use, or disposal of a variety of hazardous materials, including batteries, hydraulic fluid, diesel fuel, gasoline, propane, antifreeze, dielectric fluids, explosives, herbicides, grease, lubricants, paints, solvents, and adhesives.

The HMBP/SPCC would include BMPs for these activities as well as spill control and spill response measures. In the unlikely event that a spill did occur, the SPCC would include appropriate measures to ensure that workers cease work activities to contain any release and enact the protocols for cleanup including the notification of appropriate agencies and the use of materials stored on-site such as absorbent pads to minimize the spread or exposure.

Accidents or mechanical failure involving heavy equipment could result in the accidental release of fuel, lubricants, hydraulic fluid, or other hazardous substances. These types of spills on construction sites are typically in small quantities, localized, and cleaned up in a timely manner. Construction contractors are contractually responsible for their hazardous materials and are required under their contract to properly store and dispose of these materials in compliance with federal and state laws, including implementing a HMBP/SPCC. As discussed, the proposed Project would require coverage under the CGP, and so would be subject to the protections included in a SWPPP, which would outline BMPs to contain a potential release and to prevent any such release from reaching

an adjacent waterway or stormwater collection system (e.g., erosion control, sediment control, and waste management). Therefore, implementation of the SWPPP would minimize potential adverse effects to the environment. Because, compliance with applicable federal, state, and local regulations and the applicable BMPs and HMBP/ SPCC plan would ensure that the proposed Project would not result in significant hazards to the public or environment related to accidental release of hazardous materials the impact would be less than significant.

c) **No Impact**. The proposed Project site is not located within 0.25-miles of any existing or proposed schools. The nearest school to the proposed Project site is Twain Harte Elementary School, approximately 0.8-mile south of the Project area. The Project site is more than 0.25 miles from the an existing or proposed school; therefore, no impact would occur.

d) **No Impact**. The proposed Project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (referred to as the "Cortese List"). Therefore, the proposed Project would not create a significant hazard to the public or the environment; there would be no impact under this criterion.

e) **No Impact**. The proposed Project site would not be located within 2 miles of a public airport. The nearest airport is Columbia Airport, located approximately 10 miles west of the Project site. According to the Tuolumne County Airport Land Use Compatibility Plan (ALUCP, the proposed Project site would be beyond all depicted safety zones and noise contours (Tuolumne County ALUC, 2003). The proposed Project would not result in a safety hazard or excessive noise for people residing or working in the Project area, and there would be no impact under this criterion.

f) **Less-than-Significant Impact**. The Tuolumne County Multi-Jurisdictional Hazards Mitigation Plan does not specify any designated evacuation routes in the event of an emergency (Tuolumne County, 2018). Although temporary lane closures may be required to facilitate the installation of the proposed Project's new and replacement pipelines in Middle Camp Road, Phoenix Lake Road and Sommett Drive, such activities during construction would not require road closures, or obstruct nearby roadways. As described in Section 3.17, *Transportation*, although temporary lane closures may be required for installation of the proposed Project's pipelines, traffic management and controls would be in-place to maintain traffic flows and transportation services during construction. Thus, these construction activities would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts, associated with minor delays during construction, would be temporary and less than significant.

g) **Less than Significant with Mitigation Incorporated**. Based on mapping by the California Department of Forestry and Fire Protection (CAL FIRE) Forest Resource Assessment Program (FRAP) The Project site is mapped within a Very High Fire Hazard Severity Zone (CAL FIRE, 2007).

As discussed in Section 3.20, *Wildfire*, the primary fire hazards from proposed Project construction would involve the use of vehicles and equipment. Heat or sparks from construction vehicles and equipment could ignite dry vegetation and cause a fire, particularly during dry, hot conditions. Additionally, construction activities that could result in sparks have a greater likelihood of creating a source of ignition. Therefore, depending on the time of year (as seasonality may affect climate conditions, prevailing winds, and vegetation/fuels) and the location of construction activities, the increase in sources of potential ignition associated with Project construction could exacerbate the risk of wildfire in the area. Project construction could increase the risk of exposure to people or structures to significant loss, injury, or death involving wildland fires, which would result in a potentially significant impact. See Section 3.20, *Wildfire*, for a detailed discussion of the proposed Project's potential to expose people or structures to a significant risk of loss, injury, or death involving wildland fires. As explained in that section, this impact would be less than significant with incorporation of **Mitigation Measure WIL-1**.

Mitigation Measures

Mitigation Measure WIL-1: Fire Safety. See the full text of this mitigation measure in Section 3.20, *Wildfire*.

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3.10 Hydrology and Water Quality

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

Environmental Setting

Regional and Local Hydrology

The Project site is located in the Sonora Hydrologic Sub-Area of the Tuolumne Hydrologic Unit in Twain Harte Valley. The Upper Tuolumne River watershed drains an area of approximately 1,533 square miles. Precipitation in Tuolumne County averages approximately 32 inches annually, falling as snowfall and rain predominantly in the winter months (WRCC, 2016).

Site Drainage and Topography

The Project site is located in Twain Harte Valley in the sub-watershed of Sullivan Creek, which drains into Phoenix Reservoir. The site was formerly used as a golf course and consists predominantly of gently sloping grassland. Surface water generally sheet flows across the site from north to south into a drainage swale that bisects the site down from the center of the TUD-owned parcel. The Tuolumne Main Canal runs east to west through a flume along the northern portion of the Project site, then meanders south in the Tuolumne Ditch in an alignment south of the location for the proposed Project's SPRWTF, as shown on Figure 2-3, Site Plan. Other site drainages include a wetland that seeps into an existing pond at the center of the site. The wetland

swale drains through a culvert under Middle Camp Road (south of the Project site) and continues south for approximately 500 feet before draining into Sullivan Creek. Sullivan Creek flows southwesterly for a reach of 0.5 miles, then drains into Shady Brook Pond, a surface water pond owned by Twain Harte Community Services District. Sullivan Creek flows in a southwesterly direction and contributes surface water to Phoenix Lake and ultimately to Don Pedro Reservoir. Water features, wetlands, and other aquatic resources are described in additional detail in Section 3.4, *Biological Resources*. Relative to the surrounding terrain, the majority of the proposed Project site has a mild slope of 3 to 15 percent, which exhibits a generally north to south-facing slope, with an approximate 200-foot difference in elevation from the northern to the southern limit of the site (Salix, 2020).

Groundwater

The Project site is not located in a defined groundwater basin, nor one recognized by the Department of Water Resources as one with issues of critical overdraft. Groundwater in Tuolumne County is generally of good quality, with naturally occurring minerals such as iron and manganese. Contamination in the county has been attributed to improperly placed or maintained septic systems, as well as leaking underground storage tanks (Tuolumne County, 2018).

Flood Hazards

The Project site is located in the foothills of the Sierra Nevada mountains and is not downstream from a major river or waterway subject to flooding. The Project site is in “Zone X” which is an area identified by the Federal Emergency Management Agency (FEMA) as one of minimal flood hazard (FEMA, 2009).

Regulatory Setting

Federal

Clean Water Act

The Federal Water Pollution Control Act, commonly referred to as the Clean Water Act (CWA) was enacted in 1948, and expanded in 1972 as a basic structure for regulating discharges of pollutants into the waters of the United States and regulating water quality standards for surface waters (EPA, 2019). The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for water quality management pursuant to the CWA. The purpose of the CWA is to protect and maintain the quality and integrity of the Nation’s waters by requiring states to develop and implement state water plans and policies. The relevant sections of the CWA are summarized below.

CWA Section 401: Water Quality Certification

Section 401 of the CWA (33 USC 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into navigable waters, including the crossing of rivers or streams during road, pipeline, or transmission line construction, to obtain a certification from the state in which the discharge originates. The certification ensures that the discharge will comply with the applicable effluent limitations and water quality standards. The state agency responsible for implementing Section 401 of the CWA in California is the California State Water Resources Control Board (SWRCB).

CWA Section 402: National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program under Section 402 of the CWA is one of the primary mechanisms for controlling water pollution through the regulation of sources that discharge pollutants into waters of the United States. EPA has delegated authority of issuing NPDES permits in California to the SWRQB, which has nine Regional Water Quality Control Boards (RWQCBs). The Central Valley RWQCB regulates water quality in the Project area. The NPDES permit program is discussed in detail under *State Regulations*.

CWA Section 404: Discharge of Dredged and Fill Materials

Section 404 of the CWA authorizes the U.S. Army Corps of Engineers (USACE) to regulate the discharge of dredged or fill material to waters of the United States, including wetlands (33 USC 1344). USACE issues site-specific individual or general (i.e., Nationwide) permits for such discharges.

National Flood Insurance Program

FEMA determines flood elevations and floodplain boundaries based on U.S. Army Corps of Engineers studies. FEMA also distributes the Flood Insurance Rate Maps (FIRM) used in the National Flood Insurance Program. FIRMs identify the locations of special flood hazard areas, including 100-year floodplains.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) provides the basis for water quality regulation within California. The Act establishes the authority of the SWRCB and the nine RWQCBs. The SWRCB administers water rights, sets state policy for water pollution control, and implements various water quality functions throughout the state, while the RWQCBs conduct planning, permitting, and most enforcement activities. The proposed Project is within jurisdiction of Region 5, the Central Valley RWQCB. The Porter-Cologne Act requires the SWRCB and/or the RWQCBs to adopt statewide and/or regional water quality control plans, the purpose of which is to establish water quality objectives for specific water bodies. In Tuolumne County, the *Water Quality Control Plan for the Central Valley Region* (Basin Plan) serves as the legal, technical, and programmatic basis of water quality regulation in the region. The Act also authorizes the SWRCB and RWQCBs to implement the NPDES program, which establishes discharge limitations and receiving water quality requirements for discharges to waters of the United States. The Act also authorizes the NPDES program under the CWA, which establishes effluent limitations and water quality requirements for discharges to waters of the state. The Basin Plan and the NPDES permits relevant to the proposed Project are discussed further below.

Water Quality Control Plan for the Central Valley Region (Basin Plan)

Waters of the mountain counties including Tuolumne County are under the jurisdiction of the Central Valley RWQCB, which establishes regulatory standards and objectives for water quality in the Central Valley Region (Region 5).

Because beneficial uses, together with their corresponding water quality objectives, can be defined pursuant to federal regulations as water quality standards, the Basin Plan is a regulatory reference for meeting federal and state requirements for water quality control, and is the basis for standards outlined in discharge permits. Adoption or revision of surface water standards is subject to approval by EPA. The Basin Plan for the Central Valley Region covers the Sacramento River Basin and San Joaquin River Basin. A total of 7.5 miles of Sullivan Creek (above Phoenix Reservoir, in Tuolumne County), which is just south of the Project site, is listed as a Category 1 waterway.[14] Sullivan Creek supports one or more beneficial uses including: recreation (non-contact and water contact), and warm and cold freshwater habitat. Assessed pollutants for this waterway include: trash, indicator bacteria, pH, dissolved oxygen, and water temperature (SWRCB, 2017).

Construction General Permit

The *NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ; Construction General Permit) regulates discharges of pollutants in stormwater associated with construction activity to waters of the United States from construction sites that disturb 1 or more acres of land surface, or that are part of a common plan of development or sale that disturbs more than 1 acre of land surface. The Construction General Permit regulates stormwater discharges associated with construction or demolition activities, such as clearing and excavation; construction of buildings; and linear underground projects, including the installation of water pipelines and other utility lines.

The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes specific best management practices (BMPs) designed to prevent pollutants from contacting stormwater and keep all products of erosion from moving off site into receiving waters. The SWPPP BMPs are intended to protect surface water quality by preventing the off-site migration of eroded soil and construction-related pollutants from the construction area. Routine inspection of all BMPs is required under the provisions of the Construction General Permit.

Industrial Stormwater Permit

The *NPDES General Permit for Stormwater Discharges Associated with Industrial Activities (Order NPDES No. CAS000001) regulates the discharge of stormwater associated with industrial activities and authorized non stormwater discharges such as those related to operation, maintenance, or testing of potable water systems (SWRCB, 2015).*

Local

The Tuolumne County General Plan contains the following goals relevant to water resources (Tuolumne County, 2018a).

[14] Category 1 criteria include1) a water that fully supports at least one of its California beneficial uses; 2) has other uses that are not assessed or lack sufficient information to be assessed; and 3) no assessed uses are not supported.

Goal 14C: Protect and improve the quality and quantity of the County's water resources, while protecting the rights of land owners.

Policy 14.C.1*:* Protect the quality of the County's water resources by supporting the efforts of local districts to maintain infrastructure and cross connect sewer systems and ensuring Tuolumne County's development standards are adequate to protect surface and groundwater resources from contamination.

Implementation Program 14.C.a: Maintain local source water protection and wellhead protection programs in the Tuolumne County General Plan, such as setbacks, to protect the sources of drinking water supplies.

Implementation Program 14.C.b: Implement grading and surface runoff standards, such as retention and detention, permeable surfaces and recharge, necessary to protect water resources in compliance with State and Federal water quality regulations and with the County's water quality plan referenced in implementation program 14.C.e.

Policy 14.C.4*:* Encourage the conservation of water resources in a systematic manner that is sensitive to the maintenance of water quality, natural capacities, ecological values, and consideration of the many water related needs of the County.

Policy 14.C.7*:* Recognize that clean water is essential to public health, safety and welfare, fosters economic development and job creation, protects the environment, maintains fish and wildlife and supports recreation.

Policy 14.C.8: Encourage water resources to be protected from pollution, conserved, and recycled whenever possible to provide for continued economic, community and social growth.

Policy 14.C.9*:* Promote improved watershed health, improved water quality and water quantity yields of the watersheds in Tuolumne County.

Tuolumne County Water Quality Plan

Through its water quality plan, Tuolumne County has established a long-term dynamic planning framework for implementation of stormwater management practices, which supports source control, and other regional water conservation and drinking water quality objectives. The Tuolumne County Water Quality Plan, developed in 2007, is a comprehensive program to address water quality concerns in Tuolumne County over a 20-year planning timeframe. The plan focuses on surface water quality and includes baseline water quality assessments and recommendations for County prioritization of non-point source water quality. The main pollutants include soil delivery and sedimentation of waterways, fecal bacteria and associated pathogens, nutrients, and urban contaminants. The plan responds to existing federal and state water quality regulations and addresses existing and future water quality issues to improve conditions for Tuolumne County waterways. The plan provides best management practices, conditions or mitigating measures, and monitoring as an initial step toward improving water quality throughout the county (Tuolumne County, 2018b). TUD and Twain Harte CSD, as key local stakeholders, participated in the planning process for development of the water quality plan (Tuolumne County, 2007).

Tuolumne County On-site Wastewater Treatment Systems

Under Chapter 13.04 of the Tuolumne County Code, the County has established standards, setback requirements, and procedures for the installation and maintenance of on-site wastewater treatment systems (OWTS). The Code includes formalized minimum horizontal distances required for the installation of septic systems (septic tanks, sewer lines, and leaching fields) from wells and surface drainages, as deemed necessary for the protection of water quality and public health (Tuolumne County, 2020).

Tuolumne County Grading Permit

Under Chapter 12.20 of the Tuolumne County Code, a permit is required for grading or stockpiling of soils for projects involving excavation of 50 cubic yards (or greater) of materials. The code includes requirements for grading, stockpiling, erosion, and dust control; establishes the administrative procedure for issuance of permits; and provides for approval of plans and inspection of grading along with notification procedures. Note that under Ordinance Code Chapter 15.04, Section 05, Tuolumne County specifies that local agencies such as TUD are exempt from grading permit requirements when carrying out and implementing projects on their own lands (Tuolumne County, 2020).

Impact Discussion

a) **Less-than-Significant Impact. *Construction*:** The proposed Project would include excavation of the raw water reservoir and stormwater detention basin, trenching for water pipelines, and grading to construct access roads and trails, as well as clearing of vegetation, and other soil disturbing activities, all of which have the potential to deliver sediment, silt, and other pollutants though runoff into receiving waters.

Because overall construction of the proposed Project would involve more than one acre of soil disturbance, the Project would be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) as part of the NPDES Construction General Permit. The proposed Project would also have the potential to contaminate surface or groundwater resulting from improper handling of oils and fuels during construction and operation. As described in Section 3.9, *Hazards and Hazardous Materials*, the proposed Project would be required to implement a Hazardous Materials Business Plan (HMBP) and with measures stipulated in a Spill Containment, Countermeasures, and Control Plan (SPCC). With implementation of these plans, BMPs contained in the SWPPP and conditions of the NPDES Construction General Permit, the Project would be constructed in a manner that would not violate water quality or waste discharge requirements. Impacts associated with construction would be less than significant.

Operation: The proposed Project includes design measures for stormwater handling and would incorporate runoff minimization measures for the collection, storage, treatment, and ultimate discharge of accumulated runoff. As depicted on Figure 2-3, Site Plan, a stormwater detention basin would be constructed in the central portion of the Project site, sized based on full buildout of the proposed Project. The 20,000 square-foot detention basin is designed to accommodate a volume of site runoff generated by a 100-year, 24-hour storm event, which is approximately 0.85 acre-feet, not accounting for

infiltration or outflow from the detention basin. The basin depth of 9.05 inches is adequate to handle the intensity of 0.38 inches per hour (Carollo, 2019). The stormwater detention basin would allow for settlement of suspended solids and other pollutants, that in the absence of this Project component could be transported off-site and violate water quality through runoff. Runoff from the SPRWTF would be collected using gutters, catch basins, and collection pipes before being discharged to the stormwater detention basin. A stormwater pipe would convey collected runoff from the facility, south across the ditch, and to the stormwater detention basin. The detention basin would provide volume equalization during storm events to reduce the volume and intensity of runoff discharged to the watershed, while also providing source control of pollutants.

As discussed in the Project Description, two on-site septic systems would be installed at a sufficient distance (a minimum of 300-feet upslope) from aquatic resources including the Tuolumne Main Canal. Site design and appropriate placement of the Project's sanitary system would be consistent with Tuolumne County OWTS requirements, safeguard surface and groundwater quality, and prevent contamination of the raw water reservoir and aquatic resources.

The proposed Project would be maintained by TUD operations staff in a manner consistent with all applicable water quality regulations. TUD would be required to update its regional water quality permits to allow for the operation of this consolidated water treatment facility to include coverage under the NPDES General Permit for Stormwater Discharges Associated with Industrial Activities, and potentially a solids handling permits for operation and maintenance activities such as the periodic off-hauling of sludge, which is a byproduct of the water treatment process.

The proposed Project's constructed stormwater retention pond would be a permanent facility and would function to limit runoff, intercept sediment and silt and to prevent degradation of surface water quality. Therefore, operation and maintenance of the proposed Project would result in a **less–than-significant impact**.

b) **Less-than-Significant Impact.** The proposed Project would be located in the Sierra Nevada foothills, and not in a defined groundwater basin. The proposed Project would not be located in an urban area or one with scarce groundwater resources. The Project's construction would require the use of water for dust control and other purposes, which is likely to be drawn from surface water sources on-site and not from groundwater. Construction of the proposed Project would add approximately 230,000 square feet of impervious surfaces to the site for the SPRWTF foundations, raw water reservoir, stormwater basin and access roads, which would reduce groundwater recharge for this area within the Project site. However, the majority of the 43-acre Sierra Pines site would remain as undeveloped grassland, pervious, and capable of groundwater recharge. Thus, the Project would not significantly impede sustainable management of groundwater resources and impacts would be **less than significant**.

c.i) **Less-than-Significant Impact.** The Project would substantially alter the drainage of the site to accommodate the constructed features including access roads, raw water reservoir, stormwater retention basin, and the SPRWTF. The proposed Project's addition of impervious surface area for development of the access roads and foundations for facility structures upon the 46-acre site has the potential to contribute to conditions of erosion and runoff. The Project site would be contoured to allow for managed drainage to occur throughout the site in a manner that provides for management of stormwater and erosion control where grading would occur along sloping terrain. As discussed in Question a), a SWPPP would be prepared for the Project and the stormwater detention basin would function to limit runoff and potential contamination of surface waters. For site construction and where overland pipeline routes and associated soil disturbance would occur, BMPs such as straw wattles, placed at appropriate intervals on contour would function to minimize impacts associated with erosion and runoff. Following construction, the stormwater detention basin would be maintained to allow for management of silt and sediment to limit runoff.

The Project's trails proposed to cross wetland features would be designed as boardwalks to limit impacts to aquatic resources. As described in Section 3.4, *Biological Resources*, avoidance and impact minimization measures would be implemented to include (but not be limited to) placement of silt fences around wetlands to protect sensitive aquatic resources. With implementation of the aforementioned BMPs, stormwater management (see Discussion Question a), and other impact avoidance and minimization measures, impacts associated with erosion and siltation would be **less than significant**.

c. ii-iii) **Less-than-Significant Impact.** The Project is not located in an urban area with extensive existing hardscapes or impervious surfaces. There is no municipal stormwater infrastructure within or surrounding the Project site that could be impacted by runoff generated by the Project. Stormwater within the site would be treated through the Project's stormwater detention basin or allowed to percolate into the grasslands (surrounding the constructed facility) via an overland outflow from the detention basin through a vegetative swale to be constructed on-site. The 46-acre site has adequate capacity to accommodate such inputs without generating substantial sources of runoff that could result in flooding. Following construction, the site would be maintained by TUD staff in a manner which would not generate conditions of substantial runoff or contribute to flooding or stormwater exceedances. Maintenance of the stormwater collection system would function to capture runoff from the Project's impervious surfaces and convey stormwater to the Project's detention basin. Thus the site would limit runoff from leaving the site and prevent off-site flooding. Impacts would be **less than significant**.

c.iv) **Less-than-Significant Impact.** Although the proposed Project would alter site drainage, the SPRWTF and associated facilities would be designed to maintain runoff from the Project site with a stormwater collection system. Furthermore, the Project is not located in a floodway or flood hazard zone; therefore, even with the introduction of approximately 230,000 square feet of impervious surfaces, the proposed Project would not impede or redirect flood flows. Alterations required to facilitate crossing the

Tuolumne Ditch would be minor and would not alter flood flows. Impacts associated with the proposed Project would be **less than significant**.

d) **Less-than-Significant Impact.** The proposed Project is not in a flood hazard zone, and would be located approximately 135 miles from the Pacific coast. Thus, there is no risk for Project inundation resulting from tsunamis or flooding.

A seiche is a standing wave oscillating in a body of water (such as a lake or reservoir) generated by wind or rapid changes in atmospheric pressure. Although it is possible for a seiche to occur within a reservoir, the Project's raw water reservoir is designed as a shallow body of water with 17 feet of water depth and 3 feet of freeboard for the 30-acre-foot reservoir, which would provide for sufficient freeboard allowances in the event of wind or atmospheric pressure changes precipitating conditions for a seiche. Therefore, if such a phenomenon were to occur within the Project's raw water reservoir, it is unlikely that any significant impacts would occur. Impacts would be **less than significant**.

e) **Less-than-Significant Impact.** As discussed under question a), the proposed Project would be required to develop and implement a SWPPP, and would be constructed in a manner consistent with conditions of the NPDES Construction General Permit, and all other permits required for operation of the water treatment facility. Consistent with objectives in the Tuolumne County Water Quality Plan, the proposed Project would implement best management practices and adhere to all conditions in TUD's operational permits to limit non-point source pollution and for maintenance of water quality. Therefore, the proposed Project would not conflict or obstruct the effective water quality control plan.

The Project site is not located in a groundwater basin with a groundwater management plan in place. Nevertheless, the Project would not impede sustainable management of groundwater resources. The proposed Project would adhere to County site development and maintenance requirements for on-site septic systems consistent with ongoing protection of groundwater quality. Impacts under this criterion would be **less than significant**.

References

Carollo Engineers, Inc. 2019. *Tuolumne Utilities District Sierra Pines Water Treatment Facility Preliminary Design Report*. August 2019.

Federal Emergency Management Agency (FEMA), 2009. National Flood Map Service Center. Available: https://msc.fema.gov/portal/home. Accessed June 3, 2020.

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State Water Resources Control Board, 2017. *Final 2014 and 2016 Integrated Report (CWA Section 303(d) List/ 305(b) Report.* Available: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2014_16state_ir_reports/category1_report.shtml. Accessed June 19, 2020.

Tuolumne County Community Resources Agency, 2018. *2018 Tuolumne County General Plan, Volume I: General Plan Policy Document*. December 2018. Available: https://www.tuolumnecounty.ca.gov/DocumentCenter/View/11752/Vol-I-Goals-Policies-Policies-Final. Accessed May 27, 2020.

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3.11 Land Use and Planning

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XI. LAND USE AND PLANNING — Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Environmental Setting

The proposed Project site is located in Tuolumne County, along the western foothills of the Sierra Nevada mountain range. The proposed Project site is a 46-acre site generally surrounded by rural residential development and undeveloped forest within the former Sierra Pines Golf Course. The proposed Project would include construction and operation of a Sierra Pines Water Treatment Facility, and is on the border of the community of Twain Harte in unincorporated Tuolumne County.

The Tuolumne County General Plan, adopted in January 2019, guides land use planning in the Project area. As described in the Tuolumne County General Plan, the General Plan is a broad framework for planning the future of the county. The General Plan acts as the official vision and policy document of the County's Board of Supervisors, and assists in guiding the private and public development of the county in the most effective manner, and to gain the maximum societal and economic benefits for the citizens of the county. All other city codes and standards, including specific plans and development codes, must be consistent with the General Plan (Tuolumne County, 2018).

The proposed Project would be located on land owned by TUD. Tuolumne County General Plan goals, policies, objectives, and zoning regulations have been considered by TUD during the proposed Project's planning stages. The proposed Project site is currently undeveloped and is designated in the General Plan as Parks and Recreation (R/P), Public (P), and Low Density Residential (LDR); surrounding properties are designated as Rural Residential (RR), LDR and Estate Residential (ER). The P land use designation is intended for public agencies, such as TUD. The R/P land use designation is intended for areas providing recreational uses for tourism or leisure activities for Tuolumne County's residents. The LDR designation provides for family-oriented neighborhoods that feature single-family, detached homes on individual parcels. This designation is provided for the existing residence adjacent to the proposed Project site.

The zoning designation for the proposed Project area is general recreational district (K) with a mobilehome exclusion combining district (MX), and single-family residential district (R-1) also with a MX designation. According to the Tuolumne County Zoning Ordinance, the purpose of the general recreational (K) district is to provide for the development of indoor and outdoor sports, recreation facilities and commercial places of amusement, and in the past, this zoning designation was used for the prior use of the site for recreation as a golf course. According to the County's

Zoning Ordinance, public utility distribution facilities such as water treatment facilities would be considered an acceptable use, with a conditional use permit (Tuolumne County, 2020).

Regulatory Setting

Federal

There are no federal regulations related to land use and planning that would be applicable to the proposed Project.

State

There are no state regulations related to land use and planning that would be applicable to the proposed Project.

Local

Tuolumne County General Plan

The following goal and policies from the Community Development and Design Element related to land use and planning are relevant to the proposed Project (Tuolumne County, 2018):

> **Goal 1A:** Protect and enhance the quality of life for all residents of Tuolumne County while facilitating growth and development to meet the present and future needs of the County's residents, visitors and businesses.
>
> > ***Policy 1.A.1:*** Promote the efficient use of land to conserve natural resources.
> >
> > ***Policy 1.A.5:*** Promote infill and clustered patterns of development that facilitate the efficient and timely provision of infrastructure and services.
>
> **Goal 1B:** Minimize conflicts between incompatible land uses.
>
> > ***Policy 1.B.1:*** Protect existing land uses from the infringement of and impacts associated with incompatible land uses.
> >
> > ***Policy 1.B.2:*** Protect public facilities from the infringement of incompatible land uses.

Tuolumne County Zoning Ordinance

The proposed Project area is zoned partially as a general recreational district (K), and partially as a single-family residential district (R-1) with a mobilehome exclusion combining district for each (MX).

The purpose of the general recreational (K) district is to provide for the development of indoor and outdoor sports, recreation facilities and commercial places of amusement. Development within this zone must comply with Title 15 of the code pertaining to fire safety standards (Tuolumne County, 2020). Permitted uses within any general recreational (K) district, include one primary single-family dwelling per parcel, and public utility distribution facilities. Conditional uses within any general recreational (K) district, subject to first securing a use permit, include public utilities and water treatment facilities, subject to County approval of a (conditional) use permit.

The purpose of the single-family residential (R-1) district is to stabilize, promote, and encourage a suitable environment for family life. The single-family residential (R-1) district is intended for suburban family homes. Development in this zone must comply with Title 15 of this code pertaining to fire safety standards. Permitted uses within any single-family residential (R-1) district, include one primary single-family dwelling per parcel, general recreational use incidental to the primary use of the parcel, and public utility distribution facilities. Conditional uses within any single-family residential (R-1) district include public utility uses and water treatment facilities, subject to County approval of a use (or conditional use) permit.

The purpose of the mobilehome exclusion combining (MX) district is intended to be combined with any principal zoning district in which the use of older mobilehomes as residences on individual parcels would conflict with the aesthetic, social or economic development of any such principal zoning district (Tuolumne County, 2020). Temporary use of a mobile home or construction trailer would be allowed under the MX district for a period of up to one year, provided a building permit is first secured for both the temporary mobilehome and the permanent residence (or structure).

Impact Discussion

a) **No Impact.** The proposed Project would be constructed within the property owned by TUD, on land designated for Public use, within a general recreational district, and on property that is currently undeveloped. The proposed Project would involve construction and operation of the SPRWTF, including a raw water reservoir and associated infrastructure as well as trails and other recreational amenities that would not physically divide an established community. While there is one residence located immediately adjacent to the proposed SPRWTF, development of the Project site would not include development upon the residential property, nor would the proposed Project preclude ingress and egress to the residential property.

Because the area is currently designated as P, R/P, and LDR lands under the Tuolumne County General Plan, there would be no incompatible development existing or planned for the proposed Project site. In addition, as discussed above, the existing recreational K zoning that applied to the recreational use of the Project site as a golf course, remains applicable to the proposed SPRWTF. Because the land is no longer used as a golf course, TUD would apply for a conditional use permit for development of a water treatment facility on the Project site, which is considered a conditionally acceptable use within the K zoning district, subject to Tuolumne County review and approval of a use permit for the public utility. In addition, the proposed Project would maintain limited recreational use of the lands. Therefore, there would be no incompatible development existing or planned for the area. The proposed Project includes no barrier or other component that would act to physically divide an established community, and the construction of the proposed Project would not act to divide a community. Therefore, the proposed Project would have **no impact** associated with dividing an established community.

b) **No Impact.** The proposed Project would not conflict with any land use plans, policies, or regulations because the proposed use at the site would be consistent with the allowed and

conditional uses designated under the Tuolumne County General Plan and Zoning Ordinance. No change in land use designation or zoning is proposed or required, and none would result from the implementation of the proposed Project. The proposed Project site would continue to be designated as and would not conflict with the existing P, R/P, and LDR designations under the Tuolumne County General Plan, and the K, and R-1 zoning designations under the Tuolumne County Zoning Ordinance. In fact, the recreational (K) and residential (R-1) zoning districts allows for the conditional use by public utilities and water treatment plants, subject to County consideration and approval. Therefore, there would be **no impact**.

References

Tuolumne County, 2018. *2018 Tuolumne County General Plan*. Available: https://www.tuolumnecounty.ca.gov/889/General-Plan-Update. Accessed June 12, 2020.

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3.12 Mineral Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XII. MINERAL RESOURCES — Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Environmental Setting

Tuolumne County has an extensive mining history and mineral resources. Current operating mines in Tuolumne County gather limestone and dolomite, and various forms of crushed rock, gravel, and sand products (Tuolumne County, 2018).

To determine the potential presence of mineral resources within Project site boundaries (the study area), the following sources of information were consulted:

- Mineral Resources Data System (MRDS), administered by the U.S. Geological Survey (USGS), which provides data describing mineral resources, including deposit name, location, commodity, deposit description, production status and references and which can be used to confirm the presence/absence of existing surface mines, closed mines, occurrences/prospects, and unknown/undefined mineral resources. Locations of past and current mining activity as well as the presence of geologic materials that can be mined can also be used to assess the potential for the presence of mineral resources or the existence of mineral resource recovery sites. According to the MRDS available on the USGS website, there are no significant mineral resources in the study area (USGS, 2020).

- The California Geologic Energy Management Division (CalGEM) provides oversight of the oil, natural gas, and geothermal industries, and regulates the drilling, operation, and permanent closure of energy resource wells. CalGEM's online mapping application, Well Finder, was reviewed. There are no significant oil, gas, or geothermal resources identified by the CalGEM Well Finder tool within the study area (CalGEM, 2020).

- The California Geological Survey (CGS) published Mineral Land Classification studies, which identify Mineral Resource Zones (MRZs) overlain on geologic or topographic maps. These maps are designed to protect mineral resources in California by classifying the regional significance of mineral resources.

The CGS maps and regulates the locations of potential mineral resources in California consistent with the Surface Mining and Reclamation Act (SMARA). To protect these potential mineral resources, the CGS classifies the regional significance of mineral resources into mineral resource zones (MRZs). Descriptions of the MRZ categories are provided in **Table 3.12-1**, below. Additionally, there are no locally important mineral resource recovery sites delineated in local general plans, specific plans, or zoning (Tuolumne County, 2018). The Project site is mapped in

an area that is classified as MRZ-3, which indicates the area contains mineral occurrences of undetermined significance (CGS, 1997).

TABLE 3.12-1
CALIFORNIA MINERAL LAND CLASSIFICATION SYSTEM

Mineral Resource Zone Category	Category Description
MRZ-1	Areas where available geologic information indicates there is little or no likelihood for the presence of significant mineral resources.
MRZ-2a	Areas underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present. Areas classified MRZ-2a contain discovered mineral deposits that are either measured or indicated reserves as determined by such evidence as drilling records, sample analysis, surface exposure, and mine information. Land included in the MRZ-2a category is of prime importance because it contains known economic mineral deposits.
MRZ-2b	Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present. Areas classified MRZ-2b contain discovered mineral deposits that are either inferred reserves as determined by limited sample analysis, exposure, and past mining history or are deposits that presently are sub-economic. Further exploration and/or changes in technology or economics could result in upgrading areas classified MRZ-2b to MRZ-2.
MRZ-3a	Areas containing known mineral occurrences of undetermined mineral resource significance. Further exploration within these areas could result in the reclassification of specific localities as MRZ-2a or MRZ-2b.
MRZ-3b	Areas containing inferred mineral occurrences of undetermined mineral resource significance. Land classified MRZ-3b represents areas in geologic settings that appear to be favorable environments for the occurrence of specific mineral deposits. Further exploration could result in the reclassification of all or part of these areas as MRZ-3a or specific localities as MRZ-2a or MRZ-2b.
MRZ-4	Areas of no known mineral occurrences where geologic information does not rule out the presence or absence of significant mineral resources.

SOURCE: CGS, 1997.

Regulatory

Federal

No federal regulations apply to mineral resources, as it pertains to the proposed Project.

State

Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act (SMARA) (Public Resources Code Sections 2710–2796) and its implementing regulations (14 CCR Section 3500 et seq.) establish a comprehensive state policy for the conduct of surface mining operations and for the reclamation of mined lands to a usable condition that is readily adaptable for alternative land uses. SMARA encourages the production, conservation, and protection of the state's mineral resources and recognizes that "the state's mineral resources are vital, finite, and important natural resources and the responsible protection and development of these mineral resources is vital to a sustainable California" (Public Resources Code Section 2711). Under SMARA, the term "minerals" includes "any naturally occurring chemical element or compound, or groups of elements and compounds, formed from inorganic processes and organic substances, including, but not limited to, coal, peat, and

bituminous rock, but excluding geothermal resources, natural gas, and petroleum" (14 CCR Section 3501).

Local

Tuolumne County General Plan

While there are goals and policies included in the Tuolumne County General Plan, they are not included here because they do not apply to mineral resource analysis for the proposed Project.

Impact Discussion

a,b) **No Impact**. The Project site is not located within an area classified as a mineral resource by the State Geologist (Tuolumne County, 2018; CGS, 1997). None of the mining operations mentioned in the Tuolumne County General Plan are currently in progress in or around the Project site, and Project activities would not result in a loss of availability of these resources. Given that the Project is neither located in or near a mineral resource recovery site, nor is it located in an area of regional significance, there would be no loss of availability of a known mineral resource (Tuolumne County, 2018). There would be **no impact** to mineral resources.

References

California Geologic Energy Management Division (CalGEM), 2020. Well Finder application. Available: https://maps.conservation.ca.gov/doggr/wellfinder/#openModal/. Accessed June 18, 2020.

California Geological Survey (CGS), 1997. *Mineral Land Classification of a Portion of Tuolumne County, California, For Precious Metals (Lode Gold and Silver)*. Map. Scale 1:110,000.

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U.S. Geological Survey (USGS), 2020. Mineral Resources Data System. Available: https://mrdata.usgs.gov/mrds. Accessed June 18, 2020.

3.13 Noise and Vibration

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

Environmental Setting

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise can be defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. Sound pressure level is measured in decibels (dB), with 0 dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead focusing on the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). All sound pressure levels and sound power levels reported below are A-weighted.

Noise Exposure and Ambient Noise

An individual's noise exposure is a measure of the noise experienced by the individual over a period of time. A noise level is a measure of noise at a given instant in time. However, noise levels rarely persist consistently over a long period of time. In fact, noise varies continuously with time with respect to the contributing sources in the noise environment. Noise is primarily the

product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. Background noise levels change throughout a typical day, but do so gradually, corresponding with the addition and subtraction of distant noise sources and atmospheric conditions. The addition of short duration single event noise sources (e.g., aircraft flyovers, motor vehicles, sirens) makes noise constantly variable throughout a day.

These successive additions of sound to the noise environment vary the noise level from instant to instant, requiring the measurement of noise exposure over a period of time to legitimately characterize a noise environment and evaluate noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. Different noise descriptors used to characterize environmental noise are summarized below:

L_{eq}: The equivalent sound level is used to describe noise over a specified period of time, in terms of a single numerical value. The L_{eq} is the constant sound level which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

L_{dn}: The energy average of the A-weighted sound levels occurring during a 24-hour period, and which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10 p.m. and seven a.m. is weighted (penalized) by adding 10 dBA to take into account the greater annoyance of nighttime noises. L_{dn} is also referred to as DNL.

L_{max}: The instantaneous maximum noise level measured during the measurement period of interest.

Effects of Noise on People

The effects of noise on people can be placed into three categories:

- subjective effects of annoyance, nuisance, dissatisfaction;
- interference with activities such as speech, sleep, learning; and
- physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers at industrial plants often experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in the individual thresholds of annoyance, and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way the new noise compares to the existing noise levels that one has adapted to, which is referred to as the "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;

- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference when the change in noise is perceived but does not cause a human response;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. A ruler is a *linear* scale; it has marks on it corresponding to equal quantities of distance. One way of expressing this is to say that the ratio of successive intervals is equal to one. A *logarithmic* scale is different in that the ratio of successive intervals is not equal to one. Each interval on a logarithmic scale is some common factor larger than the previous interval. A typical ratio is 10, so that the marks on the scale read: 1; 10; 100; 1,000; 10,000; etc., doubling the variable plotted on the x-axis. The human ear perceives sound in a non-linear fashion; hence, the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, rather they combine logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA. However, where ambient noise levels are high in comparison to a new noise source, there will be a small change in noise levels. For example, when 70 dBA ambient noise levels are combined with a 60 dBA noise sources, the resulting noise level equals 70.4 dBA.

Nighttime noise has a higher potential to affect sleep. Noise can make it difficult to fall asleep, can create momentary disturbances of natural sleep patterns by causing shifts from deep to lighter stages, and can cause awakening (Los Angeles World Airports [LAWA], 2012).

Noise Attenuation

Sound level naturally decreases with more distance from the source. This basic attenuation rate is referred to as the *geometric spreading loss*. The basic rate of geometric spreading loss depends on whether a given noise source can be characterized as a point source or a line source. Point sources of noise, including stationary mobile sources such as idling vehicles or on-site construction equipment, attenuate (lessen) at a rate of 6.0 dBA per doubling of distance from the source. In many cases, noise attenuation from a point source increases to 7.5 dBA for each doubling of distance due to ground absorption and reflective wave canceling. These factors are collectively referred to as *excess ground attenuation*. The basic geometric spreading loss rate is used where the ground surface between a noise source and a receiver is reflective, such as parking lots or a smooth body of water. The excess ground attenuation rate (7.5 dBA per doubling of distance) is used where the ground surface is absorptive, such as soft dirt, grass, or scattered bushes and trees.

Widely distributed noises such as a street with moving vehicles (a “line” source) would typically attenuate at a lower rate of approximately 3.0 dBA for each doubling of distance between the source and the receiver. If the ground surface between source and receiver is absorptive rather than reflective, the nominal rate increases to 4.5 dBA for each doubling of distance. Atmospheric effects, such as wind and temperature gradients, can also influence noise attenuation rates from

both line and point sources of noise. However, unlike ground attenuation, atmospheric effects are constantly changing and difficult to predict.

Trees and vegetation, buildings, and barriers reduce the noise level that would otherwise occur at a given receptor distance. However, for a vegetative strip to have a noticeable effect on noise levels, it must be dense and wide. For example, a stand of trees must be at least 100 feet wide and dense enough to completely obstruct a visual path to the roadway to attenuate traffic noise by 5 dBA (Caltrans, 2009). A row of structures can shield more distant receivers depending upon the size and spacing of the intervening structures and site geometry. Similar to vegetative strips discussed above, noise barriers, which include natural topography and soundwalls, reduce noise by blocking the line of sight between the source and receiver. Generally, a simple noise barrier that breaks the line of sight between source and receiver will provide at least a 5-dBA reduction in noise.

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. There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal and is typically expressed in units of inches per second (in/sec). The PPV is most frequently used to describe vibration impacts on buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration (Federal Transit Administration [FTA], 2018). Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration.

Some common sources of ground-borne vibration are trains, heavy trucks traveling on rough roads, and construction activities such as blasting, pile driving, and operation of heavy earth-moving equipment. The effects of ground-borne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction. In residential areas, the background vibration velocity level is usually around 50 VdB (approximately 0.0013 in/sec PPV).

Sensitive Receptors

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication, and can cause stress and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools, hotels, hospitals, and nursing homes are considered to be the most sensitive to noise. Places such as churches, libraries, and cemeteries, where people tend to pray, study, and/or contemplate are also sensitive to noise. Commercial and industrial uses are considered the least noise-sensitive.

The proposed Project area is located north of Middle Camp Road and west of South Fork Road, approximately 1.5 miles north of the community of Twain Harte in Tuolumne County. The site is currently undeveloped and consists of wet meadow and open grassland, surrounded by conifer forest. The closest sensitive receptor to the Project is a private single family residence located at the center of the site (not included as part of the Project's development) with access from South Fork Road to the east, which would be maintained. In addition, the Project site is surrounded by residences along Marshall Way and Carson Drive and to the west and Middle Camp Road and South Fork Road to the south and east. Other receptors include one residence located approximately 80 feet to the north of the Project site on South Fork Road and another approximately 300 feet south of the Project site along South Fork Road.

Regulatory Setting

Federal, state, and local agencies regulate different aspects of environmental noise. Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while regulation of stationary sources is left to local agencies. Local regulation of noise involves implementation of general plan policies and noise ordinance standards. Local general plans tend to identify general principles intended to guide and influence development plans; local ordinances establish standards and procedures for addressing specific noise sources and activities.

Federal

Truck Operations

Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 Code of Federal Regulations, Part 205, Subpart B. The federal truck pass-by noise standard is 80 dBA at 15 meters (approximately 50 feet) from the vehicle pathway centerline. These regulatory controls are implemented on truck manufacturers.

Vibration

The FTA has adopted vibration standards that are used to evaluate potential building damage impacts related to construction activities. The vibration damage criteria adopted by the FTA are shown in **Table 3.13-1**.

In addition, the FTA has adopted standards associated with human annoyance for ground-borne vibration impacts for the following three land-use categories: Vibration Category 1—High Sensitivity, Vibration Category 2—Residential, and Vibration Category 3—Institutional. The FTA defines Category 1 as buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university research operations. Vibration-sensitive equipment includes, but is not limited to, electron microscopes, high-resolution lithographic equipment, and normal optical microscopes. Category 2 refers to all residential land uses and any buildings where people sleep, such as hotels and hospitals. Category 3 refers to institutional land uses such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment but still have the potential for activity interference. The vibration thresholds associated with disturbance for these three land-use categories are shown in **Table 3.13-2**. No thresholds have been adopted or recommended for commercial and office uses.

TABLE 3.13-1
CONSTRUCTION VIBRATION DAMAGE CRITERIA

Building Category	PPV (in/sec)
I. Reinforced-concrete, steel, or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

SOURCE: FTA, 2018

TABLE 3.13-2
GROUND-BORNE VIBRATION IMPACT CRITERIA FOR GENERAL ASSESSMENT

Land Use Category	Frequent Events[a]	Occasional Events[b]	Infrequent Events[c]
Category 1: Buildings where vibration would interfere with interior operations	65 VdB[d]	65 VdB[d]	65 VdB[d]
Category 2: Residences and buildings where people normally sleep	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use	75 VdB	78 VdB	83 VdB

NOTES:
[a] "Frequent Events" is defined as more than 70 vibration events of the same source per day.
[b] "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.
[c] "Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day.
[d] This criterion is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes.

SOURCE: FTA, 2018.

State

Vehicle Operations

The State of California establishes noise limits for vehicles licensed to operate on public roads. The pass-by standard for heavy trucks is consistent with the federal limit of 80 dBA. The pass-by standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dBA at 15 meters from the centerline. These standards are implemented through controls on vehicle manufacturers and by legal sanctions on vehicle operators by state and local law enforcement officials.

Vibration

The California Department of Transportation has developed guidance on addressing vibration issues associated with construction, operation, and maintenance of transportation projects (Caltrans, 2013). **Table 3.13-3** shows the Caltrans criteria for human response to transient vibration.

TABLE 3.13-3
HUMAN RESPONSE TO TRANSIENT VIBRATION

Human Response	PPV (inches/second)
Severe	2.0
Strongly Perceptible	0.9
Distinctly Perceptible	0.24
Barely Perceptible	0.035

SOURCE: Caltrans, 2013.

Local

Tuolumne County does not have a noise ordinance in its County Code. However, the County does have a Noise Element in its General Plan, as described below (Tuolumne County, 2018).

Tuolumne County General Plan

Noise is addressed in the Tuolumne County General Plan within the Noise Element. Policies and implementation programs applicable to the proposed Project are listed below.

> ***Policy 5.A.3:*** Require proponents of proposed development of new stationary noise sources or modifications of existing stationary noise sources to evaluate noise effects on existing nearby noise-sensitive land uses. This policy does not apply to noise levels associated with agricultural operations.
>
> > *Implementation Program 5.A.a:* Review new public and private development proposals to determine conformance with the policies and programs of this Noise Element. Determine that noise levels from new development will not exceed the noise level standards for specified land uses included in Tables 5.A (Transportation Noise), 5.B (Aircraft Noise), 5.C (Stationary Source Noise, shown here as **Table 3.13-4**), or 5.D (Cumulative Noise Increase).

TABLE 3.13-4
MAXIMUM ALLOWABLE NOISE EXPOSURE—STATIONARY NOISE SOURCES

	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly L_{eq}, dB[1]	50	45
Maximum Level[2]	70	65

NOTES:
1. The 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.
2. Similar to the hourly L_{eq}, except this level should not be exceeded for any length of time.

SOURCE: Tuolumne County, 2018.

> > *Implementation Program 5.A.b:* Require an acoustical analysis where activities associated with proposed development are likely to produce noise levels exceeding

those specified in Tables 5.A, 5.B, 5.C, or 5.D of the Noise Element. The acoustical analysis shall be conducted early in the review process so that the possible effects of noise and noise mitigation can be considered in the project design.

Policy 5.A.5: This policy 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…" Should nighttime construction activities be required (between the hours of 7 p.m. and 7 a.m.), exterior noise levels shall not exceed 65 dBA L_{max}, based on FICAN's 65 dBA SEL level for sleep disturbance (but conservatively using L_{max}, which is more appropriate for construction activities).

Implementation Program 5.A.e: The County shall ensure that, where residences or other noise sensitive uses are located within 1,900 feet of construction sites, appropriate measures shall be implemented to limit noise exposure from construction. Specific techniques may include, but are not limited to, restrictions on construction timing, use of sound blankets on construction equipment, and the use of temporary walls and noise barriers to block and deflect noise.

Implementation Program 5.A.f: Require the use of alternative pile driving techniques, where feasible, if a particular project requires pile driving within 800 feet of sensitive receptors requires pile driving.

Implementation Program 5.A.g: Require equipment and trucks used for project construction utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds).

Implementation Program 5.A.h: Require impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction be hydraulically or electrical powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatically powered tools is unavoidable, the use of an exhaust muffler on the compressed air exhaust is recommended to lower noise levels from the exhaust by up to about 10 dBA. When feasible, external jackets on the impact equipment should also be incorporated to achieve a further reduction of 5 dBA. Whenever feasible, require the use of quieter procedures, such as drilling rather than impact equipment operation.

Implementation Program 5.A.i: Locate stationary noise sources as far from sensitive receptors as possible. Stationary noise sources that must be located near existing receptors shall be adequately designed to minimize noise exposure at sensitive receptors such that County noise standards are met.

Impact Discussion

a) **Less than Significant with Mitigation Incorporated.** The proposed Project would generate noise during both construction and operational phases as discussed below.

Construction

Project construction would take place for up to 370 workdays, over a period of 18-months anticipated to begin in the spring of 2022. Construction would include activities as detailed in Table 2-2 of the Project Description, and is expected to occur

predominantly in the months between May and October. Internal work such as wiring and instrumentation within constructed buildings may occur in the winter months.

Construction would involve use of equipment that would generate noise at and adjacent to construction areas. Noise impacts from construction would depend on the type of activity being undertaken and the distance to the receptor location. Construction noise impacts are most severe if construction activities take place during noise-sensitive hours (early morning, evening, or nighttime hours), in areas immediately adjoining noise-sensitive land uses, and/or when construction duration lasts over extended periods of time.

Table 3.13-5 shows typical noise levels produced by the types of construction equipment that are expected to be used for Project construction.

TABLE 3.13-5
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Type of Equipment	L_{max} at 50 feet, dBA	Acoustical Usage factor (%)
Auger Drill Rig	84	20
Backhoe	78	40
Compactor	83	20
Concrete Mixer Truck	79	40
Concrete Pump Truck	81	20
Crane	81	16
Dozer	82	40
Dump Truck	76	40
Excavator	81	40
Front End Loader	79	40
Grader	85	40
Paver	77	50
Pickup Truck	75	40
Pumps	81	50
Roller	80	20

SOURCE: FHWA, 2017.

The operation of each piece of off-road equipment at the Project site would not be constant throughout the day, as equipment would be turned off when not in use. This is accounted for in the acoustical usage factor for each type of equipment, also shown in Table 3.13-5. Over a typical work day, equipment would operate at different locations on the site and would not always be operating concurrently. In addition, Project construction activities would be restricted to the less noise-sensitive daytime hours between 7 a.m. and 7 p.m., Monday through Saturday, thereby reducing impacts during the more noise-sensitive nighttime hours.

To estimate daytime construction noise levels that the closest sensitive receptors would be exposed to, consistent with the methodology recommended by the FTA in its *Transit Noise and Vibration Assessment Manual*, the two noisiest pieces of equipment used for Project construction are assumed to be operating at the same time at the location closest to the nearest sensitive receptor, located approximately 50 feet from construction activities. Taking into account the acoustical usage factors, simultaneous operation of a dozer and a grader at the same location would generate a combined noise level of 82.8 dBA L_{eq}, at the nearest sensitive receptors, which would be considered significant.

Policy 5.A.5 of the General Plan requires that all new construction activities implement all feasible noise-reducing measures as necessary to limit construction noise exposure at receiving occupied land uses. Implementation of **Mitigation Measure NOI-a** would ensure that County-identified noise reduction measures would be employed per Policy 5.A.H and **Mitigation Measure NOI-1b** would require the District to notify nearby residences of construction activities and designate a "disturbance coordinator" who would be responsible for responding to any complaints regarding construction noise. Implementation of these mitigation measures would reduce this impact to a less-than-significant level.

Mitigation Measures

Mitigation Measure NOI-1a: Construction Noise Management Plan. The following noise reduction measures shall be implemented to reduce the impact of temporary construction-related noise on nearby receptors:

1. Require construction equipment and trucks used for project construction to utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds).
2. Turn off construction equipment when not in use, where applicable.
3. Locate stationary equipment, construction staging areas, and construction material areas as far from sensitive receptors as possible. Stationary noise sources that must be located near existing receptors shall be adequately designed to minimize noise exposure at sensitive receptors such that County noise standards are met.
4. Require any impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction be hydraulically or electrical powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatically powered tools is unavoidable, the use of an exhaust muffler on the compressed air exhaust is recommended to lower noise levels from the exhaust by up to about 10 dBA. When feasible, external jackets on the impact equipment should also be incorporated to achieve a further reduction of 5 dBA. In the event that external jackets on impact equipment are not feasible, other BMP techniques shall be employed to reduce noise by 5 dBA. Whenever feasible, require the use of quieter procedures, such as drilling rather than impact equipment operation (such as pile driving).
5. When construction takes place within 100 feet of sensitive receptors, use specific techniques such as, but not limited to, restrictions on construction timing, use of

sound blankets on stationary construction equipment, and the use of temporary walls and noise barriers to block and deflect noise.

Mitigation Measure NOI-1b: Notification and Noise Disturbance Coordinator.

1. Notify neighbors within 300 feet of the project site of the construction schedule in writing, at least 10-days prior to construction.

2. Designate a "disturbance coordinator" who will be responsible for responding within 24-hours to any complaints regarding construction noise. The coordinator will determine the cause of the complaint and will require that reasonable measures, if warranted to correct the problem, be implemented. A daytime and nighttime telephone number for the noise disturbance coordinator shall be conspicuously posted at the construction site fence and on the notification sent to neighbors adjacent to the site.

Operation

Once operational, the Project would include stationary noise sources associated with the operation of a water treatment plant such as various pumps, flocculation basin paddle mixers, blowers, and a standby generator for emergency power. The raw water pumps, flash mix pumps, and flocculation basin paddle mixers would operate continuously but would be housed within buildings, which would reduce the noise carried over to the nearest receptors. The sludge decant pumps and sludge return pumps would also operate continuously and would be located underwater within a concrete sump. The air scour blowers would be located within a building and would operate for only 1 to 2 hours a day. The backwash pumps would be unenclosed but are expected to be operational for approximately an hour a day during the daytime. The standby generator would be operated periodically for testing and maintenance purposes.

Details on the sizing, exact location, and noise levels associated with these pieces of equipment are not known at this point. Given the proximity of nearby sensitive receptors and 24-hour operation of most of the equipment, the potential exists for noise from these sources to exceed the 50 dBA L_{eq} daytime and 45 dBA L_{eq} nighttime noise standards for stationary sources in the County General Plan Noise Element (see Table 3.13-4). Though most of the equipment would be located within buildings, they would operate 24-hours a day, and noise impacts from the Project's operational sources would therefore, be considered significant. Implementation of **Mitigation Measure NOI-2** would reduce this impact to a less-than-significant level by requiring that stationary equipment associated with the Project meet property line standards in the Tuolumne County General Plan Noise Element for stationary sources.

Because many Project components would be operated via the SCADA system, operation of the SPRWTF would require only up to two on-site staff to operate and maintain components of the facility. In addition, the Project would generate haul trips once or twice per year to transport the dewatered residual materials collected from the sedimentation and filtration processes to a landfill for disposal. Noise generated by these trips would be minimal and are not likely to be perceivable above the ambient noise levels along travel routes.

Mitigation Measure NOI-2: Noise from Operational Equipment. Mechanical equipment used in project facilities shall not cause ambient noise levels to exceed 45 dBA L_{eq} at the property line of nearby sensitive receptors. For project equipment to meet this criterion, the following measures shall be incorporated into the design of proposed facilities, if necessary:

- Project equipment shall be fully enclosed, and vents or louvers on the enclosure shall be located on the façades of the enclosure facing away from the nearest residential receptors to achieve maximum noise reduction.
- Based on the equipment chosen, the enclosure shall be designed to provide the required attenuation to reduce noise levels at the property line to less than or equal to 45 dBA L_{eq}.
- Once construction is complete, if nighttime noise is perceptible at the Project site boundaries, TUD shall retain an acoustical engineer to perform noise measurements in the vicinity of the nearby residences to verify that the operational noise levels comply with the County's nighttime stationary source noise level standard of 45 dBA L_{eq}.

b) **Less-than-Significant Impact.** Construction activity can result in varying degrees of groundborne vibration, depending on the type of soil, equipment, and methods employed. Operation of construction equipment can cause ground vibrations that spread through the ground and diminish in strength with distance. Buildings on the soil near the construction site respond to these vibrations with varying results, ranging from no perceptible effects at the lowest levels, low rumbling sounds and perceptible vibrations at moderate levels, and slight damage at the highest levels. While ground vibrations from construction activities do not often reach the levels that can damage structures, fragile buildings must receive special consideration.

A historic wooden flume is located on the Project site, adjacent to and above where trails are proposed for construction. In addition to the flume, there is also a cabin and artifacts approximately 100 feet from the proposed SPRWTF that are likely of historical significance (see Section 3.5, *Cultural Resources*, for additional details about historic resources). Therefore, the analysis below uses the construction vibration criteria for buildings extremely susceptible to vibration damage and vibration levels that could generate human annoyance to assess impacts.

Construction vibration may generate perceptible vibration when impact equipment or heavy earth moving equipment are used. Construction equipment expected to be used for Project construction are shown in Table 3.13-5 and do not include any high vibration generating equipment such as pile drivers.

As shown in Tables 3.13-1, 3.13-2, and 3.13-3, the FTA and Caltrans have adopted vibration standards that are used to evaluate potential impacts related to sensitive receiving land uses from vibration. The FTA identifies 0.12 in/sec PPV as the level at which potential damage could result to buildings extremely susceptible to vibration damage. Caltrans identifies 0.24 in/sec PPV as the level at which vibration is distinctly perceivable to humans.

Based on groundborne vibration levels for standard types of construction equipment provided by the FTA, of the equipment proposed to be used for Project construction, the use of a vibratory roller/compactor would be expected to generate the highest vibration levels. Vibratory rollers typically generate vibration levels of 0.210 in/sec PPV at a distance of 25 feet (FTA, 2018). Construction activities would take place as close as 50 feet from residential receptors. Vibration levels associated with a vibratory roller at 50 feet would be approximately 0.10 in/sec PPV, which would be lower than the building damage and human annoyance vibration thresholds of 0.12 in/sec and 0.24 in/sec, respectively. Therefore, operation of the highest vibration generating construction equipment would result in less-than-significant impacts at nearby residences. Vibration impacts from other equipment are expected to be lower. Further, the operation and location of each piece of construction equipment at the Project site would not be constant throughout the day, equipment would be operating at different locations within the Project site and would not always be operating concurrently. Consequently, vibration levels during the majority of the construction period at the nearest off-site residences would be much lower.

Sheepsfoot compactors are proposed to be used for trail construction, which would occur in close proximity to the Tuolumne Main Canal and the historic wooden flume. Sheepsfoot compactors are not vibratory compactors. They are roller compactors and consist of steel drums on which projecting lugs are fixed to penetrate and exert pressure on the soil to achieve compaction. Therefore, these compactors do not produce vibration levels as high as vibratory compactors, even when used in close proximity to receptors or other sensitive resources. BY contrast, the use of vibratory rollers within 50 feet of historic structures would generate vibration levels in excess of building damage criteria for historic structures (of 0.12 in/sec PPV), which would result in a significant impact. Implementation of **Mitigation Measure NOI-3** would reduce this impact to a less than significant level.

Once operational, the Project would not include any new sources of vibration. The Project would involve operation of equipment such as pumps and motors, which do not generate significant vibration. Therefore, the Project would have no impacts with regard to ground-borne vibration.

Mitigation Measure NOI-3: Prohibit Vibratory Construction Activities Near Historic Wooden Structures. To avoid impacts to historic resources on the Project site, vibratory construction equipment such as vibratory rollers and compactors shall not be used for trail construction within 50 feet of the Tuolumne Main Canal Flume or other wooden historic resources in the Project site.

c) **No Impact.** There are no airports within two miles of the Project site. The nearest airport is the Columbia Airport, located approximately 10 miles west of the Project site. Therefore, the Project would not expose people residing or working in the Project area to excessive noise levels from aircraft operations. There would be **no impact**.

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3.14 Population and Housing

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

Environmental Setting

The Project site is located in unincorporated Tuolumne County in the western foothills of the Sierra Nevada mountain range, near the community of Twain Harte. The proposed Project site is a 46-acre parcel formerly used as a golf course, generally surrounded by rural residential development, and forest and grasslands. Land use and development in TUD's service area are guided by the Tuolumne County General Plan.

As of 2020, Tuolumne County has an estimated population of 54,917, which represents an increase of 0.7 percent over the prior year of 2019 (DOF, 2020). The Tuolumne County General Plan (updated in 2018 and adopted in 2019) projected that the county's population would be anticipated to increase to 63,243 people by the year 2040 (Tuolumne County, 2018a). Thus, the General Plan anticipates a projected population increase of 8,325 people residing in Tuolumne County by the year 2040, representing a projected population increase of 0.6 percent annually over the next 20 years.

The proposed Project is located closest to the community of Twain Harte, which is a Census Designated Place (CDP) in Tuolumne County that had a population of approximately 2,226, and 2,148 housing units as of the 2010 census (U.S. Census, 2010a). Based on the definitions used by the U.S. Census Bureau, urbanized areas and urban clusters are delineated primarily on the basis of residential population density measured at the census tract and census block levels of geography (U.S. Census, 2010b). As part of the 2010 Census, the Twain Harte CDP was not considered an urbanized area or urban cluster, and is therefore considered "rural." As such, the proposed Project area and the surrounding region is considered to be a rural setting with land uses consisting of residential, agricultural, and open spaces.

Regulatory Setting

Federal

There are no federal regulations applicable to the proposed Project that pertain to Population and Housing.

State

There are no state regulations applicable to the proposed Project.

Local

Tuolumne County General Plan

The following goals and policies from the Community Development and Design Element of the Tuolumne County General Plan pertain to the proposed Project's analysis of population and housing, as discussed in the impact analysis (Tuolumne County, 2018b):

> **Goal 1A:** Protect and enhance the quality of life for all residents of Tuolumne County while facilitating growth and development to meet the present and future needs of the County's residents, visitors and businesses.
>
> > ***Policy 1.A.1:*** Promote the efficient use of land to conserve natural resources.
> >
> > ***Policy 1.A.5:*** Promote infill and clustered patterns of development that facilitate the efficient and timely provision of infrastructure and services.
>
> **Goal 1B:** Minimize conflicts between incompatible land uses.
>
> > ***Policy 1.B.1:*** Protect existing land uses from the infringement of and impacts associated with incompatible land uses.
> >
> > ***Policy 1.B.2:*** Protect public facilities from the infringement of incompatible land uses.

Additionally, as discussed in Section 3.11, *Land Use and Planning*, the General Plan Land Use designation for the proposed Project area consists of P, R/P, and LDR lands.

Tuolumne County Zoning Ordinance

The proposed Project area is zoned partially as a general recreational district (K), and partially as a single-family residential district (R-1) with a mobilehome exclusion combining district for each (MX) according to the County's Zoning Ordinance for this designation, as discussed in Section 3.11, *Land Use and Planning*.

Impact Discussion

a) **No Impact.** The proposed Project would construct and operate a three mgd regional water treatment facility. As proposed, the Project would consolidate up to six existing TUD-owned water treatment plants that are currently at or near the end of their useful life. The operation of the proposed Project would allow TUD to meet current and future drinking water quality standards and provide long-term water reliability to a portion of its upcountry service area. Because this proposed Project would replace six water treatment plants that were previously providing treated water supply to populations through General Plan buildout, the proposed SPRWTF would not create more growth or eliminate a barrier to growth, but would allow for the growth as projected in the General Plan. In other words, the proposed Project would support anticipated growth within Tuolumne County that was already analyzed in the General Plan. While the construction of the proposed Project could provide temporary employment for construction activities, it is anticipated that the workers would likely be drawn from the local workforce and not result in the permanent creation of new jobs that would induce population growth. The proposed Project would not include the construction of new residences or businesses and

would not result in the operation of new homes or businesses, nor would the proposed Project require additional staffing for its operation and maintenance. The proposed Project would not increase capacity of the existing roadways and would support the level of population growth in the county as previously evaluated in the Tuolumne County General Plan. For these reasons, there would be **no impact**.

b) **No Impact.** Implementation of the proposed Project would not generate the need for new residences and residential housing, and does not displace any existing residential housing. In addition, the proposed Project would not result in the construction of replacement housing at an alternate location(s). While there is one residence located adjacent to the proposed Project site (not included as part of the proposed Project) access to this residence would not be impeded with implementation of the proposed Project. Therefore, no displacement would occur, and **no impact** to population and housing would result from construction and operation of the proposed Project.

References

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3.15 Public Services

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant 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 following public services:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Environmental Setting

Public services are those that are intended to serve and provide benefits to a community's welfare and livability. Public services include fire and police protection, schools, parks, and other public facilities (e.g., recreational facilities, hospitals). Additional discussion and analysis of public services may be found in Section 3.16, *Recreation*; Section 3.19, *Utilities*; and Section 3.20, *Wildfire*.

Fire Protection Services

The Tuolumne County Fire Department (TCFD), California Department of Forestry and Fire Protection (CAL FIRE), the U.S. Forest Service, and the National Park Service are responsible for fire protection and provide life and property emergency response services to Tuolumne County (Tuolumne County, 2018). Additional fire protection services are provided by seven fire districts including Twain Harte Community Services District (CSD); Mi-Wuk Sugar Pine Fire Protection District (FPD); Tuolumne City FPD; Columbia FPD; Sonora Fire Department; Strawberry FPD; and Tuolumne Rancheria Fire Department.

A majority of unincorporated Tuolumne County falls outside of a fire district boundary and is protected by TCFD, which is managed by CAL FIRE under a contractual agreement with the County since 1975 (Tuolumne County, 2018a). The TCFD has 13 fire stations located in the unincorporated area of Tuolumne County and is staffed by approximately 196 firefighters (professionals, volunteers, and students). Fire stations located in the unincorporated area of Tuolumne County, excluding the Mono Village, Jamestown, and Groveland stations, are staffed by volunteer firefighters.

The proposed Project site is located in the unincorporated area of Tuolumne County and fire protection would be provided by the TCFD. The closest fire stations to the project site include the TCFD Station 58, located approximately 1.74 miles west; the Twain Harte CSD Fire-Rescue

station located approximately 0.89 miles south; and the Mi-Wuk Sugar Pine FPD located approximately 1.75 miles east.

Emergency and non-emergency medical transport services for Tuolumne County are provided by Tuolumne County Ambulance Service and is staffed by approximately 60 full-time and part-time paramedics and emergency medical technicians.

Police Protection Services

Law enforcement services for the proposed Project would be provided by the Tuolumne County Sheriff's Office (TCSO), which provides law enforcement services to all unincorporated areas of the county. The TCSO is staffed by approximately 135 authorized positions, including 63 patrol deputies, 38 adult detention deputies, and 13 dispatchers. The County has one sheriff's station, located at 28 N. Lower Sunset Drive in the City of Sonora, approximately 10 miles southwest from the Project site. There are also four community service units/substations in the county: in Twain Harte (approximately one-mile south), Sonora (8 miles southwest), Jamestown (approximately 12.4 miles southwest), and Groveland (approximately 13.60 miles south) of the proposed Project. Tuolumne County is within the California Highway Patrol's (CHP) Central Division and the CHP provides additional traffic enforcement in the county.

Public Schools and Libraries

Tuolumne County has 11 school districts that consist of two high school districts, eight elementary school districts, and one unified school district. Four public charter schools are also located in Tuolumne County. The closest school to the project site is Twain Harte School located approximately 0.85 miles south of the proposed Project.

Tuolumne County's main library is located in Sonora, with branches in Groveland, Tuolumne City, and Twain Harte. The Twain Harte Library is located 0.94 miles southeast of the proposed Project site.

Other Public Services

Tuolumne County provides administrative services to business and residents mainly from the County Administration Office located in Sonora. Other public services within Tuolumne County include: Agricultural Commissioner, Animal Control, District Attorney, Child Support, Victim/ Witness, Elections, Farm Advisor, Child Welfare Services, Community Resources Agency, Public Health, Behavioral Health, Welfare, Probation, Public Defender, Recreation, and Weights and Measurements.

Regulatory

Federal

There are no mandatory federal regulations that govern the provision of local public services.

State

Uniform Fire Code

The Uniform Fire Code (UFC) includes regulations pertaining to construction, maintenance, and use of buildings. Topics addressed in the UFC include fire department access; fire hydrants, automatic storage and use; provisions intended to protect and assist fire responders; industrial processes; and many other general and specialized fire-safety requirements for new and existing buildings and their surrounding premises. The code contains specialized technical regulations related to fire, property, and life safety.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, which include regulations for building standards (as set forth in the California Building Code [CBC]); fire protection and notification systems; fire protection devises such as extinguishers and smoke alarms; high-rise building and childcare facility standards; and fire suppression training standards.

Division of Occupational Safety and Health

In accordance with California Code of Regulations, Title 8, Sections 1270, Fire Prevention, and 6773, Fire Protection and Fire Equipment, the Division of Occupational Safety and Health (DOSH) has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials; fire hose sizing requirements; restrictions on the use of compressed air; access roads; and the testing, maintenance, and use of all firefighting and emergency medical equipment.

Essential Services Building Seismic Safety Act

The Essential Services Building Seismic Safety Act of 1986 (California Health and Safety Code, Sections 16000–16022) applies to fire stations, police stations, and other public facilities that respond to emergencies. This law is intended to ensure that essential-services buildings can continue to serve the public after a disaster, and are designed and constructed to minimize fire hazards. In addition, these buildings and the nonstructural components vital to their operation must be able to resist, insofar as practical, the forces created by earthquakes, gravity, fire, and wind.

Emergency Response/Evacuation Plans

In 2008, Governor Schwarzenegger signed AB 38, the California Emergency Services Act, which merged the duties, powers, purposes, and responsibilities of the Governor's Office of Emergency Services and the Governor's Office of Homeland Security into a new cabinet-level agency called the California Emergency Management Agency (Cal EMA). The legislation authorizes Cal EMA to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the state withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster. Cal EMA serves as the lead state agency for emergency management and coordinates the state response to major emergencies in support of local government. The primary responsibility for emergency management resides with local government. SEMS provides the mechanism by which local government requests assistance from

Cal EMA, and as such, Cal EMA maintains oversight of the state's mutual aid system. Cal EMA may task state agencies to perform work outside their day-to-day and statutory responsibilities and serves as the lead agency for obtaining federal resources.

Local

Tuolumne County Emergency Response Plan

The 2018 Multi-Hazard Emergency Response Plan for Tuolumne County establishes the emergency organization, assigns tasks, specifies policies, and general procedures, and provides for coordination of planning efforts of the various emergency staff and service elements utilizing the National Incident Management System and the SEMS (Tuolumne County, 2018b).

TCFD Service Level Stabilization Plan

The TCFD Service Level Stabilization Plan was adopted in 1993 to address fire protection needs of the area served by the TCFD. The Plan focuses on three goals:

1. Clearly define the baseline service level for TCFD;
2. Identify stable funding sources for TCFD through a realistic annual operations budget; and
3. Establish an apparatus replacement fund.

A functionally integrated fire protection system, involving federal, state, and local government resources, is a cost-effective method of delivering high quality fire protection to at risk areas. This allows coordination of fire prevention, protection, and suppression strategies.

Tuolumne County General Plan

The Tuolumne County General Plan contains the following policies and implementation programs applicable to public services (Tuolumne County, 2018c).

Public Safety Element

Fire and Emergency Services Policies

Policy 9.A.4: Actively supports efforts to maintain and improve Federal and State fire service capabilities.

Implementation Program 9.A.d: Support efforts of CAL FIRE, the U.S. Forest Service, the National Park Service, other government land management agencies, the Southwest Interface Team (SWIFT), the Highway 108 Fire Safe Council, the Yosemite Foothills Fire Safe Council and other regional fire safe entities, to secure adequate funding for their fire protection and fuel reduction programs, and support their efforts to reduce the wildland fire potential on lands under their jurisdiction within Tuolumne County.

Policy 9.C.3: Periodically review emergency medical services to maintain an acceptable level of service as the County population changes.

Policy 9.E.2: Maintain adopted levels of fire protection service.

Implementation Program 9.E.e: Strive to improve the County's Insurance Service Office (ISO) ratings through improved infrastructure of hydrants and water availability, and by reducing response time with a greater number of strategically

placed and fully staffed fire stations. ISO ratings should not exceed nine (9) for areas without hydrants and should not exceed six (6) for areas with hydrants within the jurisdiction of the Tuolumne County Fire Department as outlined in fire protection service reports. Provide assistance to fire protection agencies in their efforts to improve ISO ratings wherever possible.

Policy 9.F.1: Support and implement the Tuolumne County Fire Department Service Level Stabilization Plan.

Implementation Program 9.F.a: Consult with the Tuolumne County Fire Department to establish funding mechanisms, including impact fees, to offset fire protection costs for new development in areas of high wildfire risk.

Policy 9.F.2: Construct new fire protection facilities as needed within the jurisdiction of the Tuolumne County Fire Department/CAL FIRE in order to maintain the desired Insurance Services Office (ISO) ratings.

Implementation Program 9.F.b: Identify appropriate areas for construction of new fire protection facilities within the service area of the Tuolumne County Fire Department/CAL FIRE necessary to provide structural fire protection to the residents of Tuolumne County. Consult with all fire agencies in the County on fire protection facilities planning.

Implementation Program 9.F.c: Construct new fire protection facilities and equip and staff new and existing facilities in areas of the County under the jurisdiction of the Tuolumne County Fire Department where deemed necessary.

Law Enforcement Policies

Policy 9.D.2: Provide law enforcement, such as patrol, investigation, supervision, administration, clerical support, dispatch, coroner, crime laboratory, prosecution, probation, and jail services within the unincorporated area of Tuolumne County and assure that the established level of service is maintained and maintain this level.

Implementation Program 9.D.b: Establish a definitive measure of what constitutes an adequate level of service for the criminal justice system in Tuolumne County. This comprehensive definition should identify all necessary services provided by the County's criminal justice system law enforcement, such as patrol, investigation, supervision, administration, clerical, support, dispatch, coroner, crime laboratory, prosecution, probation and jail services. In the absence of this determination, the County should continue to maintain the existing level of service and upgrade it to meet the needs of the County's increasing population.

Policy 9.D.3: Assure that the established level of service in the criminal justice system is maintained.

Policy 9.D.4: Require new development to be designed so as to discourage criminal activity.

Implementation Program 9.D.g: Encourage the use of private patrols and security personnel in large residential and commercial developments to assist the Sheriff's Office in crime prevention.

Implementation Program 9.D.h: Actively involve the Tuolumne County Sheriff's Office in the review of land development applications and incorporate law enforcement recommendations as conditions of land use entitlements.

Education and Libraries Element

Public School Policies

Policy 12.A.1: Encourage school facilities planning and site acquisition to be coordinated between school districts and Tuolumne County in order to provide public schools that are physically and functionally integrated with their communities.

Implementation Program 12.A.f: Integrate schools into the system of alternative transportation corridors, such as bike lanes, and riding and hiking trails, so that as many students as possible can walk or bike to school.

Policy 12.C.1: Maintain a goal through the Capital Improvements Program (CIP) for levels of library services throughout Tuolumne County equivalent to 325 square feet of gross floor area of adequately equipped and staffed library facilities per 1,000 population, exclusive of the Sierra Conservation Center.

Impact Discussion

a.i-v) **No Impact**. As discussed in the Environmental Setting, there are numerous public services facilities surrounding the proposed Project site and no additional housing or increase of population would occur as a result of the Project's implementation.

As discussed in Section 3.16, *Recreation*, under existing conditions, the Project site is utilized by local residents for dog walking, and hiking. The proposed Project would include development of recreational trails with minimal alteration of the terrain. The recreational trails and amenities proposed as part of the Project (i.e., picnic tables, benches, and interpretive signage) represents a minimal change of use and are not anticipated to draw visitors from beyond the local area, given the vast array of other attractive recreational areas available in Tuolumne County.

The proposed Project would include the construction and operation of the SPRWTF and associated infrastructure in the unincorporated area of Tuolumne County. The proposed Project would enable TUD to efficiently treat water in a consolidated facility central to its service area, which would improve water service reliability and wildfire resiliency, relative to existing conditions, because this water could be utilized for regional fire protection or other public benefit purposes. The proposed Project would not include any housing or otherwise result in the need for new government facilities or altered government facilities. Furthermore, the proposed Project would not result in any significant increased demand for additional public services that would require new or altered facilities, including fire and police protection.

As discussed in Section 3.17, *Transportation*, although temporary lane closures may be needed to construct the Project, the proposed Project is not anticipated to permanently alter conditions for emergency response. There would be no adverse impact to public service response times or performance objectives attributable to the construction or

operation of the proposed Project. Therefore, because the proposed Project would not include changes that would result in the need for any new public service facilities such as construction of new schools, parks, or fire stations, nor effect response times or otherwise impact public services, there would be **no impact**.

References

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3.16 Recreation

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. RECREATION —				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Environmental Setting

Tuolumne County contains a wide variety of recreational opportunities for the public including Yosemite National Park, Stanislaus National Forest, state parks, Don Pedro Lake and Blue Oaks Recreation Area, and community-based recreation and parks districts such as the Twain Harte Community Service District, among others (Tuolumne County, 2018). Recreational activities in Tuolumne County include swimming, hunting, fishing, birdwatching, camping, hiking, picnicking, sports, boating, and other outdoor activities. Other recreational attractions include golf courses, gourmet restaurants, two state historic parks, bed-and-breakfasts, train rides, wineries, a casino, five museums, historic hotels, and live theater.

The proposed Project site is located on land owned by TUD in close proximity to lands of the Stanislaus National Forest, and approximately 1.5 miles north of the community of Twain Harte in unincorporated Tuolumne County. Recreational facilities within the local community include the Twain Harte Pool and Eproson Park located approximately 1 mile south; and PG&E public access for the Ditch & Flume located approximately 0.05 miles east; and Twain Harte Tennis Courts located approximately 1.3 miles southwest of the Project site. The proposed Project site is located adjacent to the informal Columbia Tuolumne and Main Tuolumne Ditch Trails (All Trails, 2020). Under existing conditions, the Project site, a former golf course, is commonly used for recreational purposes such as hiking and dog walking.

Regulatory

Federal

There are no federal regulations pertaining to recreation that are applicable to the proposed Project.

State

There are no state regulations pertaining to recreation that are applicable to the proposed Project.

Local

Tuolumne County General Plan

The Tuolumne County General Plan contains the following policies and implementation programs applicable to recreation (Tuolumne County, 2018).

Parks and Recreation Element

Policy 11.B.3: Create convenient and safe opportunities for physical activity for residents of all ages and income levels.

Policy 11.B.4: Give preference to locating new recreational facilities in areas where high levels of community support and interest are expressed.

Implementation Program 11.B.e: Solicit input from the people to be served by a new recreational facility to gauge interest prior to allocating funding to acquire and/or construct new facilities. Identify local organizations interested in adopting parks for maintenance and identify volunteers to assist permanent staff with construction and maintenance of facilities

Policy 11.B.6: Construct trails for bicycle, pedestrian and, where feasible, equestrian use linking the County's major population centers with other local, state and federal recreational facilities, significant open space areas, libraries, schools, neighborhoods, public facilities and other destination points. Acquisition and construction shall be in accordance with the priorities established, the needs identified and within the general locations shown in the Tuolumne County Recreation Master Plan in coordination with the Tuolumne County Regional Transportation Plan Non-motorized Element (RTP) and General Plan Transportation Element.

Implementation Program 11.B.f: Promote the development of non-motorized trails along streams, rivers and ditches to encourage walking and bicycling.

Implementation Program 11.B.g: Encourage the dedication and installation of multi-use non-motorized trails in new development proposals. Allow subdivisions to construct portion(s) of adopted bicycle/ pedestrian routes to fulfill the recreation requirements. The construction of any such routes shall count toward the required on-site recreational facilities pursuant to Government Code Section 66477.

Policy 11.B.7: Permit recreational uses in flood zones if it can be demonstrated that the recreational use will not cause additional flooding, increase the potential for flood damage, or increase health and safety risks.

Implementation Program 11.B.h: To provide recreational use in water resource areas, continue to conditionally permit, in the O (Open Space) and O-1 (Open Space -1) zoning districts, recreational uses where such uses do not adversely impact water resources, such as beaches, picnic areas, non-motorized pedestrian and equestrian trails and other recreational uses.

Policy 11.B.8: Provide reasonable public access to public waterways, lakes and reservoirs in compliance with State statutes while protecting private property rights and maintaining the biological, scenic and historical integrity of these features and lands adjacent to these features.

Implementation Program 11.B.i: Develop a program to identify public waterways, lakes and reservoirs that do not already provide reasonable public access, but which are required to provide such access pursuant to State statutes. The program should include provisions for identifying which bodies of water require public access, identification of reasonable access points to these water bodies and procedures for providing such access.

Policy 11.C.2: Locate new park facilities and trail routes on or adjacent to publicly owned property, where feasible, to minimize the cost of acquiring and maintaining new facilities and to minimize potential conflicts associated with acquiring privately-owned property for public facilities.

Implementation Program 11.C.c: Target the acquisition of available public lands for the location of new parks and target public rights-of-way for locating new trails within the regional trail system using the Recreation Master Plan as a guide.

Policy 11.D.1: Identify existing public parks and recreational facilities on the land use diagrams of the General Plan to facilitate planning compatible land uses near these facilities, planning trails to link such facilities and identifying locations for new parks and recreational facilities. This information will be utilized in updating the Recreation Master Plan for regional recreational facilities to meet the needs of the County's population as it continues to grow.

Policy 11.D.3: Encourage parks and recreational opportunities in proximity to neighborhoods to promote physical activity and increase access to facilities.

Policy 11.D.4: Develop plans for recreational trails which target routes that link the County's major population centers with other local, State and Federal recreational facilities, significant open areas, libraries, schools, neighborhoods, public facilities and other destination points for greatest consistency with trail routes identified in the Regional Transportation Plan (RTP), the Recreation Master Plan, and Transportation Element. Grant applications for facilities under the RTP should be coordinated with grant applications for recreational trails. Updates of both the RTP's non-motorized element and the Recreation Master Plan should be coordinated for consistency.

Implementation Program 11.D.a: Design bicycle and pedestrian transportation routes that can be integrated into the recreational routes designated in the Tuolumne County Recreation Master Plan.

Implementation Program 11.D.c: Maintain, periodically update and implement the Tuolumne County Bikeways and Trails Plan, which addresses a complete bicycle and pedestrian network to serve the needs of the County. This active transportation network should include roadways parallel to regional facilities so that the regional roadway system can function effectively and efficiently. Seek funding for this network from a combination of sources, such as new development and Federal and State funding programs.

Impact Discussion

a) **Less-than-Significant Impact.** As discussed above, the proposed Project is located in an unincorporated area of Tuolumne County in close proximity to Stanislaus National Forest lands and under existing conditions is commonly used for hiking and dog walking. The proposed Project would include improvements for potential recreation uses (e.g., on-site

walking paths, interpretive signage, picnic areas, a public restroom, and parking) in portions of the proposed Project site. However, these improvements would be implemented as funding permits and would not be expected to draw visitors from outside of the local area or greatly increase local use of the site or other parks in the vicinity of the Project site. Therefore, implementation of the proposed Project would not result in a substantial increase in use of existing recreational facilities, compared to existing conditions and impacts would be **less than significant**.

b) **Less-than-Significant Impact.** Under existing conditions, although not officially designated as a recreational resource, the proposed Project site is commonly used for recreational purposes. As such, enhancement of recreational facilities as part of the proposed Project (e.g., on-site walking paths, interpretive signage, and picnic areas) would not constitute a major change or increase demand compared to existing conditions. Furthermore, with an array of other attractive opportunities for recreation within the region, the Project's proposed modest recreational amenities would not likely result in an increase in use that would lead to detrimental effects on existing facilities or the environment. Therefore, impacts would be considered **less than significant**.

References

All Trails, 2020. Best Trails in Twain Harte. Columbia Ditch Trail. Available: https://www.alltrails.com/us/california/twain-harte/.

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3.17 Transportation

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

Environmental Setting

Roadway Network

State Route 108

State Route (SR) 108 provides an east/west connection across the Sierra Nevada mountain range, from Modesto, California to the Sonora Junction along U.S. Highway 395, on the east side of the Sierra Nevada. SR 108 is eligible for Scenic Highway designation but has not been officially designated as a State Scenic Highway. Tuolumne County has designated SR 108 as an "Other Principal Arterial," which is a designation intended to serve major centers of metropolitan areas, provide a high degree of mobility, and also provide mobility through rural areas (Tuolumne County, 2018). SR 108 runs through Twain Harte, the census-designated place in Tuolumne County, where the proposed Project site is located. Access to the Project site from SR 108 would be provided via Middle Camp/Sugarpine/South Fork Road, from the east, and via Twain Harte Drive/Joaquin Gully Road, from the west.

Middle Camp/Sugarpine/South Fork Road

Middle Camp Road/Sugarpine Road/South Fork Road (Middle Camp Road) is designated in the Tuolumne County Technical Background Report as a "Major Collector" roadway, which functions as a corridor for through traffic within local areas, providing service to town and other major traffic generators in the county (Tuolumne County, 2018). Middle Camp Road provides access to local roads along the west side of the Twain Harte community. Vehicle trips to the Project site along SR 108, from areas east of Twain Harte, would access Middle Camp Road from the SR 108/Middle Camp Road intersection.

Joaquin Gully Road/Twain Harte Drive

Joaquin Gully Road/Twain Harte Drive (Joaquin Gully Road) is designated by Tuolumne County as a "Major Collector" roadway and provides access to Middle Camp Road, just west of the Project site (Tuolumne County, 2018). Joaquin Gully Road runs in a generally north/south direction, through the Twain Harte community, from the SR 108/Twain Harte Drive intersection, to the southwest of the Project site. Vehicle trips to the Project site from areas west of the Twain

Harte community would be anticipated to travel from eastbound SR 108 to Joaquin Gully Road, to access Middle Camp Road.

South Fork Road/Forest Route 4N01

South Fork Road/Forest Route 4N01 is a local County road that provides access to the Project site from Middle Camp Road. South Fork Road provides access to local roads and residences north of Middle Camp Road.

Regulatory Setting

Federal

There are no federal regulations that apply directly to the proposed Project.

State

Senate Bill 743

Senate Bill (SB) 743, passed in 2013, requires the California Governor's Office of Planning and Research (OPR) to develop new CEQA guidelines that address traffic metrics under CEQA. As stated in the legislation, upon adoption of the new guidelines, "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any." OPR submitted updated CEQA Guidelines to the California Natural Resources Agency for formal rulemaking to implement SB 743, and the proposed changes were certified by the California Natural Resources Agency in December 2018. The new CEQA Guidelines indicate that vehicle miles traveled (VMT) is the primary metric used to identify transportation impacts. Local agencies were given an adoption grace period through July 1, 2020.

Caltrans

Caltrans issued interim guidance on incorporating SB 743 into its policies and procedures in *Local Development—Intergovernmental Review Program* (Caltrans, 2016). The high-level interim guidance document for District staff refocuses Caltrans' attention on local development projects' VMT, appropriate transportation demand measures (TDM), and determining how to address multimodal operational issues.

Local

Tuolumne County General Plan

On January 3, 2019, the Tuolumne County Board of Supervisors adopted the 2018 General Plan Update and Environmental Impact Report. The General Plan provides policies regarding circulation and development within the county (Tuolumne County, 2018). The following goals and policies related to transportation would be applicable to the proposed Project.

> **Goal 4a:** Preserve the County's substantial investment in the existing road system and provide for the long-range planning and development of the County's transportation system for the safe and efficient movement of people and goods.

Policy 4.A.1: Support and work with the Tuolumne County Transportation Council (TCTC) to regularly conduct assessments of the current status of the highway system to determine the current level of needs in the system, and report those needs to the Board of Supervisors. (formerly 2.A.2)

Implementation Program 4.A.a: Plan, design and regulate roadways in accordance with the following functional classification system and designations which are reflected in the County's Regional Transportation Plan, and are shown on the Master Plan of Streets and Highways in Chapter 4 of the General Plan Technical Background Report:

- Other Freeways and Expressways (Functional Class Code 2)
- Other Principal Arterial (Functional Class Code 3)
- Minor Arterial (Functional Class Code 4)
- Major Collector (Functional Class Code 5)
- Minor Collector (Functional Class Code 6)
- Local Road (Functional Class Code 7)
- Scenic Routes
- Urban Streets

Implementation Program 4.A.b: Develop and manage the County's roadway system to maintain the following minimum levels of service (LOS) using methodology adopted by the Tuolumne County Transportation Council:

Arterials, Minor Collectors, Major Collectors, Urban Streets	LOS D, unless an exception is made
Local Roads	LOS C
Minimum Peak Hour for all Intersections	LOS D

Impact Discussion

a) **Less-than-Significant Impact.**

Construction. During construction, the proposed Project would include vehicle trips associated with the transportation of construction equipment, materials, and personnel, to and from the Project site. During construction and operation, access to the Project site would be available via the shared driveway extending to the Project site from South Fork Road to the east. Construction traffic would be temporary (limited to the 18-month duration of construction) and would take place between the hours of 7 a.m. and 7 p.m. (six days per week). Project construction including installation of pipelines in Middle Camp and Phoenix Lake roads would require temporary lane closures. which would be anticipated to temporarily impact traffic flows on Middle Camp and Phoenix Lake roads as well as nearby roadways, resulting in a potentially-significant impact. Implementation of Mitigation Measure TRAF-1 would implement traffic management and controls which would maintain traffic flows and transportation services. Road closures would not be necessary. For these reasons, proposed Project construction would not be anticipated to

conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. Project impacts related to such plans would be **less than significant with mitigation incorporated**.

Operations. The consolidated operations for the proposed Project would utilize existing TUD staff. However, travel between the existing facilities, which are dispersed throughout the District's service area, would be substantially reduced. Under existing conditions, it is estimated that District staff travel an accumulated total of 400 miles per day to maintain numerous District facilities. Vehicle trips to and from the proposed Project facility would be generally limited to regular operations staff, periodic haul trips, and occasional site deliveries. The proposed Project would also include recreational amenities such as trails and two parking areas, which would accommodate day visitors to the site. However, as discussed in Section 3.16, *Recreation*, these improvements would not be expected to draw visitors from outside of the local area or greatly increase local use of the site. The proposed Project facility would improve and utilize an existing driveway location along South Fork Road and would not be anticipated to impact area bicycle, pedestrian, or transit facilities or the implementation of plans for the maintenance and improvement of such facilities, as no such facilities are located in the vicinity of the Project site. For these reasons, the proposed Project operations would not conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. Project impacts related to such plans would be **less than significant**.

b) **Less-than-Significant Impact.** ***Construction.*** The proposed Project would generate vehicle miles traveled (VMT) related to the transportation of equipment, workers, and supplies during project construction activities. The primary source of VMT for the proposed Project would be worker trips to and from the Project site throughout the 370-day construction period. As further described in the project description, during peak periods, up to 30 workers, with an estimated round trip commute of 20 miles, would travel to and from the Project site. This would result in an estimated 600 daily VMT. As proposed, Project is anticipated to have an average of 15-20 workers on site for most days throughout project construction. Under similar estimated commute assumptions, the average daily construction worker trips would result in approximately 300 to 400 VMT.

Operations and Maintenance. With the consolidation of existing water treatment facilities VMT to and from the seven existing facilities would be replaced with VMT to and from the proposed Project site. Relative to existing conditions and VMT to and from these existing facilities compared to VMT to the Project site, the proposed Project would substantially reduce VMT by District operations staff. With implementation of the proposed Project, existing TUD operations staff, responsible of operation and maintenance of existing TUD facilities throughout the District would consolidate a significant portion of existing operations and maintenance trips to the proposed SPRWTF. Trip generation associated with Project operations would include staff commutes, maintenance activities, hauling and/or delivery of supplies, and negligible (annual) off-hauling of process residual waste and spent materials waste.

Total staff commutes and transportation to all of TUD's water treatment facilities would initially be similar to existing commute VMT. However, staff transportation VMT would be reduced over time as the proposed Project progresses through the expansion of operational capacity and completes consolidation of other TUD water treatment facilities (which would be removed from operation).

Delivery of supplies and off-hauling activity would take place on a periodic basis. Similar transportation activity is necessary for the existing water treatment facilities, of which operations would be consolidated into the proposed SPRWTF Project. The consolidation of operations into the SPRWTF facility would also reduce hauling requirements to and from the existing TUD facilities, reducing the overall VMT associated with such activities.

Although there would be a temporary generation of VMT associated with construction of the proposed Project, overall, the VMT resulting from the proposed Project would be reduced relative to VMT generated by existing TUD operations. Therefore, the proposed Project would not exceed regional modeling thresholds. For these reasons this impact would be considered **less than significant**.

c) **No Impact.** The proposed Project does not include any improvements to County roadways or transportation facilities. Therefore, implementation of the proposed Project would have no impact related to an increase in hazards due to a geometric design feature or incompatible uses.

d) **Less than Significant with Mitigation Incorporated.** ***Construction:*** As described in Question a), temporary lane closures for the roadways proposed for the off-site pipelines could involve temporary delays during construction. Implementation of Mitigation Measure TRAF-1 would provide for traffic management controls during the temporary lane closures for the roadways proposed for the pipelines. In the event of an emergency, public services personnel would be flagged through without delays. If an emergency requiring an evacuation were to occur during this timeframe, construction would halt to allow for egress from the local area to occur. With implementation of MM TRAF-1, impacts would be reduced to less than significant levels.

Operations: The proposed Project would maintain existing emergency access to the proposed Project site, for which gated access is provided from the Project driveway via Knox key access gates, and would provide driveways for emergency access to proposed structures. Therefore, the proposed Project is anticipated to have no impact related to the inadequacy of emergency access at the Project site during operation of the Project.

Mitigation Measures

Mitigation Measure TRAF-1: Prepare and Implement Construction Traffic Management Plan.

TUD shall prepare and implement a construction traffic management plan, to be implemented where roadway lane closures would be required as part of construction. The construction traffic management plan shall include provisions for lane closures, which may include the temporary placement of cones, barriers, signs, flagging personnel, and

other such methods intended to direct traffic, allow passage for emergency vehicles, and maintain the safety of all modes of travel through areas affected by proposed lane closures associated with the Project.

References

California Department of Transportation (Caltrans), 2016. *Local Development—Intergovernmental Review Program.*

Tuolumne County, 2018. *2018 Tuolumne County General Plan, Volume II: Technical Background Report*. August 2018. Pages 109 and 110.

3.18 Tribal Cultural Resources

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

Environmental Setting

The following analysis focuses on potential impacts related to tribal cultural resources during construction and ground-disturbing activities.

CEQA Section 21074.2 requires the lead agency to consider the effects of a project on tribal cultural resources. As defined in Section 21074, tribal cultural resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing, on the national, state, or local register of historical resources.

Pursuant to PRC Section 21080.3.1(d), on September 3, 2020, TUD contacted two Native American tribes with cultural affiliation to the Project site, pipeline alignments, and vicinity, providing a description of the proposed Project and requesting comments on the identification, presence, and significance of tribal cultural resources in the Project vicinity. Tribes that have requested consultation according to the provisions of PRC Section 21080.3.1(b) include the Tuolumne Band of Me-wuk and the Chicken Ranch Rancheria of Me-wuk. TUD sent the letters through certified mail and contacted both tribes by telephone and email on September 17, 2020 to confirm receipt of the letters. TUD has not received any comments or questions as of the close of the 30-day notification period required by PRC Section 21080.3.1(d).

Regulatory Setting

Federal

Although federal laws address cultural and tribal cultural considerations (including, but not limited to, the National Historic Preservation Act, the Archaeological Resources Protect Act, and

the Native American Graves Protection and Repatriation Act), there are no federal regulations that specifically apply to tribal cultural resources. Section 3.5, *Cultural Resources*, provides a summary of federal regulations applicable to cultural resources.

State

California Public Resources Code and Tribal Cultural Resources

In 2014, the California Legislature enacted Assembly Bill (AB) 52, which added provisions to the Public Resources Code regarding the evaluation of impacts on tribal cultural resources under CEQA, and requirements to consult with California Native American tribes as defined in Government Code Section 65352.4. In particular, AB 52 requires lead agencies to analyze project impacts on "tribal cultural resources" separately from archaeological resources (PRC Sections 21074 and 21083.09). AB 52 defines "tribal cultural resources" in PRC Section 21074 and requires lead agencies to engage in additional consultation procedures with respect to California Native American tribes (PRC Sections 21080.3.1, 21080.3.2, and 21082.3).

A tribal cultural resource is defined in PRC Section 21074 as either a site, feature, place, or 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:

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

Mitigation for impacts to tribal cultural resources is considered in consultation with the culturally affiliated tribe (or tribes) determined and agreed upon during consultation according to PRC PRC Section 21083.2(b), and can consist of, but is not limited to:

1) Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
2) Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
   (A) Protecting the cultural character and integrity of the resource.
   (B) Protecting the traditional use of the resource.
   (C) Protecting the confidentiality of the resource.
3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
4) Protecting the resource.

Local

Although County policies address cultural and tribal cultural considerations in the Tuolumne County General Plan, there are no local regulations that specifically apply to tribal cultural resources. Section 3.5, *Cultural Resources*, provides a summary of local regulations applicable to cultural resources.

Impact Discussion

a.i/ii) **Less than Significant with Mitigation Incorporated.** Based on background research, survey effort, inventory, and evaluation of cultural resources discussed in Section 3.5, there are no cultural resources listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k), nor has TUD determined a resource in the proposed Project site or pipeline alignments to be significant, pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1.

There is, however, the potential for proposed excavation to impact previously unrecorded cultural materials associated with two adjacent prehistoric cultural resources (P-55-004190 and P-55-001403). Impacts on any subsurface components associated with these resources would be potentially significant. This impact would be reduced to a less-than-significant level by implementation of **Mitigation Measure CUL-1**, which would require a Native American monitor or an approved archaeological monitor to be present for any work that is performed within 200 feet of the recorded boundaries of resources P-55-004190 and P-55-001403. In addition, if cultural materials are discovered during monitoring or during construction elsewhere in the Project site or pipeline alignments, impacts on the resources could be potentially significant if the materials are determined to be a tribal cultural resource. This impact would be reduced to a less-than-significant level through implementation of **Mitigation Measure CUL-2**, which would ensure that proper procedures are followed so that potentially significant tribal cultural resources are avoided, if feasible, or treated appropriately according to the provisions of PRC Section 21084.3.

Mitigation Measures

Mitigation Measures CUL-1 and CUL-2: See Section 3.5, *Cultural Resources*, for the text of these mitigation measures.

3.19 Utilities and Service Systems

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

Environmental Setting

Water and Wastewater

As indicated in Chapter 2, *Project Description*, TUD provides water and wastewater services to approximately 44,000 customers in Tuolumne County, California. TUD is the largest single water provider in Tuolumne County, with approximately 14,000 water service connections and approximately 1.4 billion gallons of treated drinking water delivered each year (TUD, 2020b). Treated drinking water is provided to customers through a series of surface water treatment plants, wells, storage reservoirs, transmission and distribution canals and pipelines throughout TUD's service area.

TUD's sewer or wastewater system serves over 12,030 single family equivalent sewer connections and treats 1.2 million gallons of sewage daily at the wastewater treatment plant located in Sonora. TUD utilizes approximately 140 miles of pipeline to collect between 400-500 million gallons of sewage per year (TUD, 2020a). There is no sewer service on or near the site.

Solid Waste

Solid waste generated during construction of the SPRWTF would likely be disposed of at the Cal Sierra Transfer Station (SWIS Permit No. 55-AA-0010), located at 19309 Industrial Drive in Sonora. The Cal Sierra Transfer Station is 6.2 acres, accepts non-hazardous waste, and has a maximum permitted capacity of 376 tons per day (CalRecycle, 2019a).

Solid waste generated during operation of the proposed SPRWTF is estimated to consist of 32 dry tons annually, which would be hauled once per year to the Merced Landfill (SWIS Facility No. 24-AA-0001), located at 7040 Highway 59 in Merced. The Highway 59 Landfill has a permitted capacity of 1,500 tons per day (CalRecycle, 2019b).

Other Utilities

As described in Section 2.6.1 of the Project Description, Pacific Gas & Electric Company (PG&E) provides gas and electric service to the Project area. AT&T Wireless and Verizon Wireless provide cell phone coverage in Tuolumne County, while Xfinity provides cable and internet connections.

Regulatory

State

2016 California Green Building Standards Code

The provisions of the 2016 California Green Building Standards Code apply to the planning, design, operation, construction, use and occupancy of every newly constructed building or structure, unless otherwise indicated in the code, throughout the state of California. Section 5.408, Construction Waste Reduction, Disposal, and Recycling, of the 2016 California Green Building Standards Code requires nonresidential development to meet a local construction and demolition waste management ordinance or recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition waste in accordance with one of the following:

- **Construction waste management plan.** The construction waste management plan must identify the construction and demolition waste materials to be diverted and how they will be sorted, the amount of construction and demolition waste materials diverted (calculated by weight or volume), and diversion facilities where construction and demolition waste materials will be taken.
- **Waste management company.** A waste management company that can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with this section may be utilized.
- **Waste stream reduction alternative.** The combined weight of new construction disposal that does not exceed two pounds per square foot of building area may be deemed to meet the 65 percent minimum requirement as approved by the enforcing agency.

California Integrated Waste Management Act—Waste Diversion

The California Integrated Waste Management Act of 1989,[15] enacted through AB 939 and modified by subsequent legislation, requires all California cities and counties to implement programs to divert at least 50 percent of all solid waste generated by the year 2000 and establishes the goal of diverting at least 75 percent of generated waste (based on per capita disposal rates) by 2020. A jurisdiction's diversion rate is the percentage of its total waste that it diverts from disposal through reduction, reuse, recycling, and composting programs. The law requires all California counties in coordination with their respective cities to develop and implement integrated waste management plans. As part of their integrated waste management plans, counties must ensure that a minimum of 15 years of disposal capacity is available to serve the county and its cities. Since 2007,

[15] California Public Resources Code Division 30, Sections 40000-49620.

the achievement of waste diversion rates has been measured based on per capita disposal rates, expressed in pounds per person per day of wastes disposed of in landfills.

California Public Utilities Commission

The CPUC was established in 1911 as the Railroad Commission and was expanded in 1912 to regulate privately-owned electric, natural gas, telecommunications, water, railroad, and marine transportation companies. The CPUC's mission is to ensure that consumers receive safe and reliable utility services at reasonable rates, protect against fraud, and promote the health of California's economy (CPUC, 2020).

California Independent System Operator

The California Independent System Operator was established in 1998 and is a non-profit organization that independently manages the flow of electricity in California. It provides open access to the grid, ensuring equal access and a competitive energy market. In addition, it facilitates over 28,000 market transactions each day to ensure that enough power is available to meet demands.

Utility Notification Requirements

The regulations in Title 8 CCR Section 1541 require excavators to determine the approximate locations of subsurface installations, such as sewer, telephone, fuel, electric, and water lines (or any other subsurface installations that may reasonably be encountered during excavation work) prior to opening an excavation. The California Government Code (Sections 4216 *et seq*.) requires owners and operators of underground utilities to become members of and participate in a regional notification center. According to Section 4216.1, operators of subsurface installations who are members of, participate in, and share in the costs of a regional notification center, such as Underground Services Alert of Southern California, more commonly referred to as DigAlert, are in compliance with this section of the code. DigAlert receives planned excavation reports from public and private excavators and transmits those reports to all participating members that may have underground facilities at the location of excavation. Members will mark or stake their facilities, provide information, or give clearance to dig.

Local

Tuolumne-Stanislaus Integrated Regional Water Management Authority—Tuolumne-Stanislaus Integrated Regional Water Management Plan

The Tuolumne-Stanislaus Integrated Regional Water Management Authority's Tuolumne-Stanislaus Integrated Regional Water Management Plan (IRWMP) defines a clear vision for water resources management in the Tuolumne-Stanislaus Region (Region) and highlights important actions needed to help accomplish that vision through the year 2035. The IRWMP provides a framework to improve collective understanding and take high-priority actions to collaboratively address the many major water-related challenges/needs and conflicts, such as water quality, local water supply reliability, better integration of water and land use management, resource stewardship and ecosystem protection. The array of goals, objectives, selected resource management strategies, and prioritized projects in the IRWMP represent a collective view of how to improve integrated water management throughout the Region (Tuolumne-Stanislaus Integrated Regional Water Management Authority, 2017).

2018 Tuolumne County General Plan

The following goals and policies from Chapter 3, Utilities, of the 2018 Tuolumne County General Plan (Tuolumne County, 2018) are applicable to the proposed Project:

Goal 3C: Encourage consolidation of existing small water systems and discourage the creation of new ones.

Policy 3.C.1: Support the consolidation of water purveyors in the County to facilitate improvements to the infrastructure and consistency of water quality of the systems.

Policy 3.C.2: Consider the undesirability of proliferation of small water systems, as defined in the California Health and Safety Code, during the development review process.

Goal 3F: Maintain opportunities for residents and businesses to efficiently recycle or dispose of waste products.

Policy 3.F.1: Require proposed solid waste facilities and all other new development to comply with the Tuolumne County Integrated Waste Management Plan and all adopted elements thereof.

Local Enforcement Agency

The Local Enforcement Agency program operates under the authority of the CalRecycle and is responsible for ensuring the solid waste generated within Tuolumne County is transported, handled, processed, and disposed of using methods which will not create environmental, health, safety, or nuisance conditions (Tuolumne County, 2020).

The Local Enforcement Agency program activities include:

- Composting and transfer facilities;
- Inspecting landfills, transfer stations, composting facilities, and refuse collection vehicles and yards;
- Investigating complaints and mitigating problems associated with illegal dumping, disposal, or storage of solid wastes;
- Monitoring disposal facilities to exclude hazardous wastes, medical wastes or liquid wastes;
- Permitting solid waste disposal; and
- Providing information to the public and industry regarding the proper disposal of solid wastes (including asbestos) (Tuolumne County, 2020).

Impact Discussion

a) **Less-than-Significant Impact.** The proposed Project includes constructing and operating a new consolidated water treatment facility (including a stormwater detention pond and new electrical system), which is the subject of this IS/MND. No buildings or other structures would need to be demolished as a result of the Project. The potential environmental effects of the water treatment facility are discussed throughout this document.

The proposed Project would not result in an increase in population and thus would not create further demand for water, wastewater treatment, storm water drainage, electric power, natural gas, or telecommunications facilities; nor would the proposed construction activities require relocation of any of these services. Therefore, impacts would be **less than significant**.

b) **Less-than-Significant Impact.** During construction, the proposed Project would require the use of water intermittently during the 18-month construction period for activities such as dust control, compaction, and other construction-related purposes. The increase in water use would be temporary, ending when construction is complete. During operation, the proposed Project would require approximately 14 million gallons of water annually for backwashes and other filtering processes, as well as for domestic (health and safety) uses. All water utilized in filtering process will be recycled in accordance with the Filter Backwash Recycling Rule.[16] Water used for both construction and operations would be sourced from Lyons Reservoir via the Tuolumne Main Channel. Approximately 95 percent (1.33 billion gallons) of the 1.4 billion gallons of water that TUD treats and delivers throughout Tuolumne County yearly is supplied through the Tuolumne Main Channel into the ditch conveyance system (TUD, 2018).

The water used in the short term for construction and 14 million gallons of water used annually for the long term for operations would be small (0.1 percent) in comparison to the approximately 1.4 billion gallons of water that TUD treats and delivers throughout Tuolumne County. Additionally, as described in the Project Description, the proposed Project would develop a consolidated regional water treatment facility that would consolidate local systems and create centrally-located regional facilities to improve water treatment and conveyance reliability, thereby reducing vulnerability of the water supply. For these reasons, the proposed Project would have sufficient water supplies available to serve the needs of the proposed Project and reasonably foreseeable future development during normal, dry, and multiple dry years, and the impact would be **less than significant**.

c) **No Impact.** As indicated above under Environmental Setting, there is no sewer service on or near the site. Any sanitary waste generated by on-site staff at the SPRWTF would utilize two on-site wastewater treatment systems (septic), proposed for construction as part of the proposed Project. Additionally, residual solids from waste sedimentation and filtration processes at the SPRWTF would be disposed of off-site at a facility that can legally accept sediment and sludge waste. The liquid waste stream from the filter backwash processes will be processed and recycled back through the treatment plant in accordance with the Filter Backwash Recycling Rule. For these reasons, there would be **no impact** related to a wastewater treatment provider having inadequate capacity to serve the Project's projected demand in addition to the provider's existing commitments.

[16] The Filter Backwash Recycling Rule addresses a statutory requirement of the Safe Drinking Water Act (of 1996) and requires public water systems to recycle (or retreat) treatment process water to maintain microbial control practices.

d, e) **Less-than-Significant Impact**. Spoils material generated during Project construction would either be balanced as fill on-site, or off-hauled to be used as fill at TUD's wastewater treatment plant site in Sonora. Other construction waste is anticipated to be disposed of at Cal Sierra Transfer Station. As described in Section 2.6.2, once operational, sedimentation and filtration processes at the SPRWTF would produce non-hazardous residual materials that would be collected, dewatered, and disposed of at Merced Landfill once per year. The proposed Project would only generate approximately 960 cubic yards of waste during construction, and approximately 32 dry tons of waste, which would be off- hauled once per year during operation. The Merced Highway 59 Landfill's permitted capacity of 1,500 tons per day, and would be large enough to accept the SPRWTF waste.

Solid waste generated by the proposed Project would be disposed of in compliance with all federal, state, and local management and reduction statutes and regulations related to solid waste (described above), including the California Integrated Waste Management Act and Local Enforcement Agency standards. Waste generated by Project operation would also comply with relevant goals and policies for Tuolumne County and therefore, would have a **less-than-significant impact** related to compliance with solid waste management and reduction statutes.

References

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3.20 Wildfire

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

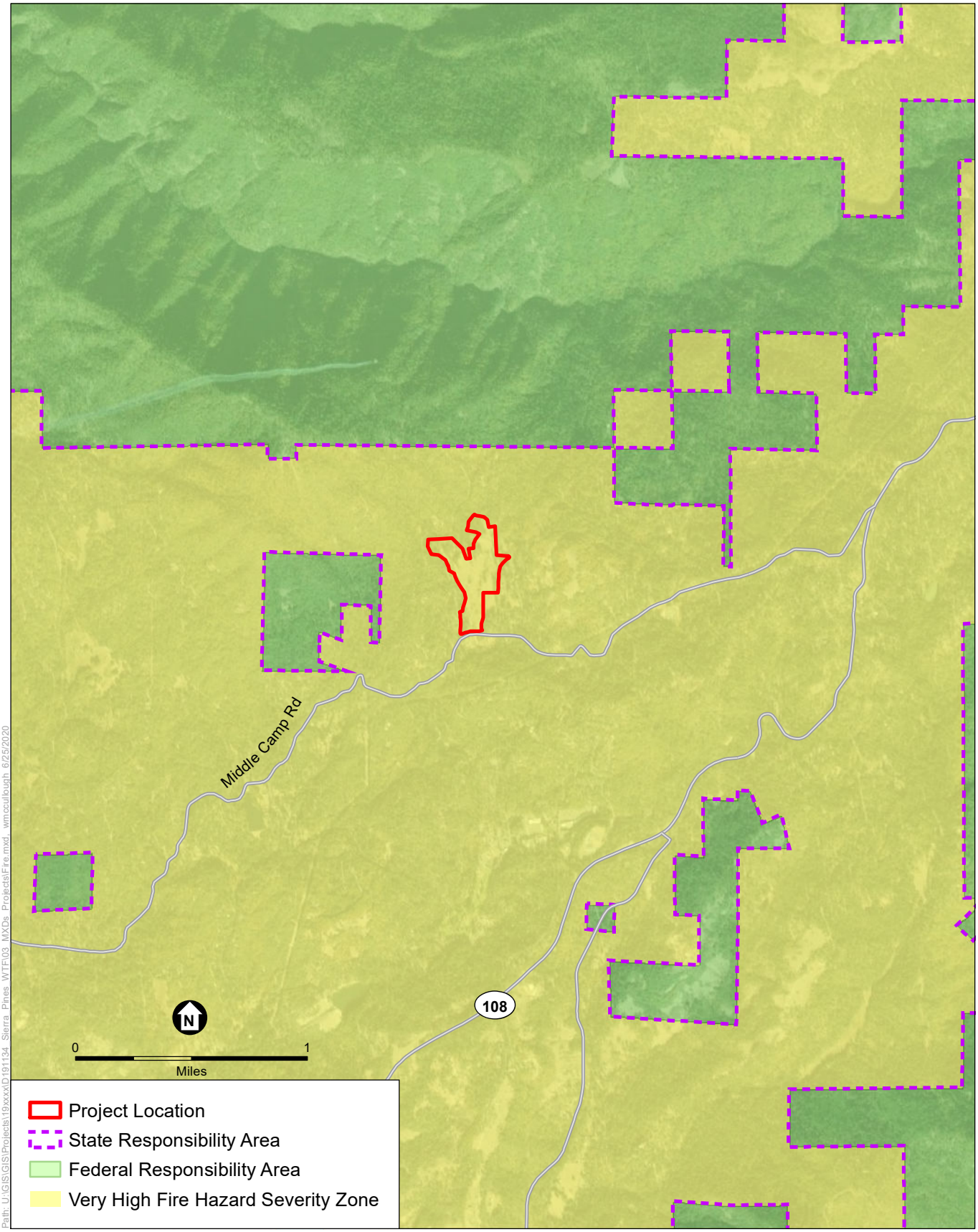
Environmental Setting

A large portion of western Tuolumne County is designated as a State Responsibility Area (SRA).[17] The proposed Project site is entirely located within the SRA and designated by the California Department of Forestry and Fire Protection (CAL FIRE) as a Very High Fire Hazard Severity Zone (VHFHSZ) (CAL FIRE, 2007). Twain Harte is located approximately 0.25 miles from the Stanislaus National Forest and is located partially within a Federal Responsibility Area (FRA). No part of the Project site would be located within a Local Responsibility Area (LRA). See **Figure 3.20-1**, **Fire Hazard Severity Zones**.

Fire Environment

The proposed Project site is located within Battalion 5 of the Tuolumne-Calaveras Unit (TCU) (CAL FIRE, 2019). Battalion 5 covers approximately 144,218 acres of northern Tuolumne County, from the Stanislaus River to the Tuolumne River. The TCU is located within the Sierra Nevada mountain range and contains a wide range of topography (varying slope and elevation), fuels (vegetation), and weather (seasonally high temperatures and wind). All of these naturally occurring variables influence wildfire risk within the TCU. The TCU commonly experiences high temperatures in the summer and high wind events in the spring and fall. The convergence of significant fire weather conditions, a wide variety of topography, and a broad spectrum of fuels has resulted in a long history of large, damaging fires within the TCU (CAL FIRE, 2019).

[17] State Responsibility Area is a legal term defining the area where the State has financial responsibility for wildland fire protection. Incorporated cities and federal ownership are not included. The prevention and suppression of fires in all areas that are not state responsibility areas are primarily the responsibility of local or federal agencies (CAL FIRE, 2007b).



SOURCE: CalFire, 2007

Sierra Pines Regional Water Treatment Facility Project

Figure 3.20-1
Fire Hazard Severity Zones

ESA

Weather and Climate

The typical hot and dry summer weather throughout the Sierra Nevada foothills is ideal for wildland fire. Temperatures typical of fire season within the Project area range from lows in the upper 50's to highs in the 90's. Extreme temperatures of over 100 degrees are not uncommon and can last from a couple of days to a couple of weeks. Relative humidity often runs in the mid-teens to mid-twenties during daylight hours and trails into the night. Prevailing winds generally come from the southwest to the west during the day. Overnight, strong down-canyon winds across the ridge tops adjacent to the Stanislaus and Tuolumne River drainages are common. Thunderstorms typically occur from August to September and can occur any time throughout the summer (CAL FIRE, 2019).

Topography and Vegetation

Topography within Tuolumne County transitions from rolling grasslands in the foothills, to steep bluffs and table top benches in mid-elevations to steep canyons and slopes and rugged terrain within higher elevations. While the slope of the Project site is relatively flat, the community of Twain Harte is surrounded by steep canyons and slopes.

The TCU Strategic Plan characterizes fuels within Battalion 5 as grassland and oak woodland with scattered brush fields within the western portion of the Battalion, which merges into brush and timber in the east. The Project site is located on mostly cleared land with scattered brush and trees surrounded by conifer forests. The Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan classifies fuels in the county into five fire-hazard categories: Moderate to High (grasses), High (brush and hardwood), High to Very High (Woodlands), and Very High (brush and heavy timber). These fuel types are found throughout Tuolumne County at different elevations. The County Multi-Jurisdictional Hazard Mitigation Plan describes that heavy timber fuels, designated as a "Very High" fire hazard category, are found in elevations above 3,500 ft. in communities such as Twain Harte, which resides at an elevation of approximately 3,665 ft. (Worldwide Elevation Map Finder, 2020). Approximately 70 percent of the 2,216 square miles of Tuolumne County lands are federally managed (including the Stanislaus National Forest or Yosemite National Park) and contain high hazard fuels, such as dry brush and timber (Tuolumne County, 2018c).

In recent years, forests across California, including those in Twain Harte, have experienced high levels of tree mortality due to record drought conditions exacerbated by bark beetle infestations. Tree mortality has led to a large fuel load and an increase in wildfire threat to areas surrounding the Project site and throughout California (CAL FIRE, 2019).

Impact of Wildfire on Air Quality

During fire season, prevailing southwest, west and northwest winds tend to blow smog and other particulates generated in the central valley and greater Bay Area into the Mountain Counties Air Basin. Wildland fire smoke from the high country located east of Tuolumne County is moved down the river drainages by the daily cycle of air movement into more populated areas of the TCU. Smoke from wildfires occurring within the surrounding SRA generates an immediate and

localized threat to air quality. See Section 3.3, *Air Quality*, for more details regarding air quality in the proposed Project area (CAL FIRE, 2019).

Fire History

Tuolumne County has a long history of large, damaging fires including the 2004 Rosasco Fire (245 acres), 2007 Italian Fire (102 acres), 2008 French Fire (116 acres), 2013 Murphy Fire (154 acres), 2015 Oak Fire (108 acres), and the 2017 Jacksonville Fire (684 acres) and Twist Fire (131 acres) (CAL FIRE, 2019). Of these, the closest fire to the Project site is the Oak Fire, which occurred off of Old Oak Ranch Road and Big Hill Road in the Cedar Ridge area, just northeast of Sonora and approximately 10 miles west of the Project site (CAL FIRE, 2020).

Fire Protection Services

Fire protection within Battalion 5 consist of two CAL FIRE Stations: Standard Forest Fire Station (FFS), and Twain Harte FFS, which also serves as the battalion's headquarters. The Standard FFS is a two-engine station serving the western half of the battalion and located southwest of the Project site. The Twain Harte FFS would be the closest fire protection service to the Project site and also contains a two-engines and serves the higher elevation eastern half of the battalion. A portion of the Tuolumne County Fire Department (TCFD) would also operate within the Battalion 5 boundary and under the direction of the CAL FIRE Assistant Chief/Assistant County Fire Warden. CAL FIRE and TCFD maintain strong working relationships with several of the surrounding fire agencies and protection services within the battalion operational area. The Project would most likely be directly served by the Twain Harte FFS. No emergency evacuation routes are designated in or within 5 miles of the Project site. See Section 3.15, *Public Services*, for more information regarding fire protection services.

California Public Utilities Commission-Designated Wildfire Hazard Zones

In response to Fire Safety Rulemaking of the California Public Utilities Commission (CPUC), the CPUC mapped high fire threat areas where more stringent inspection, maintenance, vegetation clearance, and wire clearance requirements (as required by CPUC General Orders 95, 165, and 166, described below) are required due to the elevated risk of wildfires caused by electrical lines. The CPUC Fire Threat District Map identifies three tiers of elevated risk for fires associated with utilities. The Project site is located entirely within a Tier 3 Fire Threat District. Tier 3 areas are defined as areas "where there is an extreme risk (including likelihood and potential impacts on people and property) from utility associated wildfires (CPUC, 2020, CPUC 2017a).

Regulatory

Federal

National Fire Plan

The National Fire Plan (NFP) was created to address fire protection strategies for rural communities. Together, the USDA Forest Service and the Department of the Interior are working to successfully implement key points outlined in the NFP, including firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability (USDA, 2020).

National Cohesive Wildland Fire Management Strategy

The Federal Wildland Fire Management Policy is intended to provide strategic consistency among federal agency fire management programs. The *Guidance and Implementation of Federal Wildland Fire Management Policy* (U.S. Forest Service et al., 2009) replaces the *Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy* (NASF, 2003) and clarifies changes that have occurred since 2003, while provided revised direction for consistent implementation of the *Review and Update of the 1995 Federal Wildland Fire Management Policy* (USDOI, 2001).

State

2019 Strategic Fire Plan for California

Developed by the Board of Forestry and Fire Protection (the Board), the Strategic Fire Plan outlines goals and objectives to implement CAL FIRE's overall policy direction and vision. The 2019 Plan concentrates and focuses on four Goals under their Mission, Vision, and Values, including: (1) Improving their core capabilities, (2) Enhancing internal operations, (3) Ensuring health and safety, and (4) Building and engaging a motivated and innovative workforce. The goals and objectives of the Plan would not directly apply to the proposed Project.

Unit Plans are developed and updated to implement the programs and goals of the 2019 Strategic Fire Plan. The 2019 Tuolumne-Calaveras Unit Strategic Fire Plan provides a comprehensive framework of how the Tuolumne-Calaveras Unit will assess their current and anticipated hazards/risk, develop objectives to mitigate those hazards/risks, establish benchmarks for success, develop strategies to meet their objectives, implement those strategies, and facilitate a monitoring system to insure the plan remains connected to the needs of the Unit and stakeholders. The goals and objectives would not be directly applicable to the Project.

California Public Utilities Commission General Orders

General Order 95

CPUC General Order 95 applies to construction and reconstruction of overhead electric lines. The replacement of poles, towers, or other structures is considered reconstruction and requires adherence to all strength and clearance requirements of this order. CPUC Decision 17-12-024 created enhanced requirements under Rule 18A, Rule 35, and Rule 38, which apply to overhead electric lines located in Tier 2 or Tier 3 High Fire Threat Districts (HFTDs). The Project is not proposed in a Tier 2 or Tier 3 HFTD; therefore, the enhanced requirements would not apply to the Project. The CPUC has promulgated various rules to implement the fire safety requirements of General Order 95, including:

- Rule 18A, which requires utility companies take appropriate corrective action to remedy Safety Hazards and General Order 95 nonconformances. Additionally, this rule requires that each utility company establish an auditable maintenance program.
- Rule 31.2, which requires that lines be inspected frequently and thoroughly.
- Rule 35, which requires that vegetation management activities be performed to establish necessary and reasonable clearances. These requirements apply to all overhead electrical

supply and communication facilities that are covered by this General Order, including facilities on lands owned and maintained by state and local agencies.

- Rule 38, which establishes minimum vertical, horizontal, and radial clearances of wires from other wires (CPUC, 2018).

General Order 165

General Order 165 establishes requirements for the inspection of electric distribution and transmission facilities that are not contained within a substation. Utilities must perform "Patrol" inspections, defined as a simple visual inspection of utility equipment and structures that is designed to identify obvious structural problems and hazards, at least once per year for each piece of equipment and structure. "Detailed" inspections, where individual pieces of equipment and structures are carefully examined, are required every 5 years for all overhead conductor and cables, transformers, switching/protective devices, and regulators/capacitors. By July 1st of each year, each utility subject to this General Order must submit an annual report of its inspections for the previous year under penalty of perjury (CPUC, 2017b).

General Order 166

General Order 166 Standard 1.E requires that Investor Owned Utilities (IOUs)[18] such as PG&E develop a Fire Prevention Plan, which describes measures that the electric utility will implement to mitigate the threat of power line fires generally. Additionally, this standard requires that IOUs outline a plan to mitigate power line fires when wind conditions exceed the structural design standards of the line during a Red Flag Warning[19] in a high fire threat area. Fire Prevention Plans created by IOUs are required to identify specific parts of the utility's service territory where the conditions described above may occur simultaneously. Standard 1 also requires that utilities prepare an emergency response plan. PG&E's Emergency Response Plan, prepared in compliance with Standard 1, is described below. Standard 11 requires that utilities report annually to the CPUC regarding compliance with General Order 166 (CPUC, 2017c). In compliance with Standard 1.E of this General Order, PG&E adopted a Fire Prevention Plan on September 30, 2017.

PG&E Company Emergency Response Plan

PG&E's Company Emergency Response Plan describes and formalizes PG&E's in-place plans and protocols for response to emergencies. That identifies potential hazards, available resources to respond to emergencies, internal communication protocols, and operational structure. Additionally, PG&E's Wildfire Safety Operations Center operates 24-hours a day during wildfire season (PG&E, 2018).

PG&E Fire Prevention Plan

PG&E prepared a Fire Prevention Plan in compliance with CPUC Decision 12-01-032 (Fire Safety Order), Standard 1.E of General Order 166, and Senate Bill 1028. The Fire Prevention Plan summarizes PG&E's fire prevention and safety procedures and programs which include, but are not limited to: fire threat and risk area mapping, fire prevention pre-planning, enhanced fire detection efforts, building resiliency (including a wood pole test and treat program), operational

[18] Investor-owned utilities (IOUs) are private electricity and natural gas providers. The CPUC oversees IOUs.

[19] A Red Flag Warning is issued by the National Weather Service to alert fire departments of the onset, or possible onset, of critical weather and dry conditions that could lead to rapid or dramatic increases in wildfire activity.

practices to reduce the risk of fires, overhead inspections and patrols, fire prevention outreach and training programs, as well as pro-active responses to fire incidents (PG&E, 2017).

PG&E's operational practices consider environmental conditions such as vegetation type, vegetation moisture content, relative humidity, temperature, and wind conditions. Considering these variables, PG&E created Utility Standard S1464, "Fire Danger Precautions in Hazardous Fire Areas," which includes operational requirements for working and operating in areas that are considered high fire risk during the fire season (these areas are designated in Attachment 3 to the Fire Prevention Plan as either "Extreme" or "Very High" fire danger). According to Attachment 3, the proposed Project is located in an area rated as "Very High." Utility Standard S1464 requires that crews working in these areas in the fire season carry firefighting equipment; prohibits personnel traveling in these areas from burning, welding, blasting, smoking, and driving off cleared road; and restricts testing any section of line that relays until the line has been patrolled and all trouble cleared.

California Emergency Response Plan

Pursuant to the Emergency Services Act (Government Code Section 8550 et seq.), California has developed an Emergency Plan to coordinate emergency services provided by federal, state, and local governmental agencies and private persons. The plan is administered by the State Office of Emergency Services (OES). OES coordinates the responses of other agencies, including the U.S. Environmental Protection Agency, California Highway Patrol, California Department of Fish and Wildlife, the Regional Water Quality Control Boards (RWQCBs) (for this Project, the Central Valley RWQCB), the local air districts (for this Project, the Mountain Counties Air Basin), and local agencies. The State Emergency Plan defines the "policies, concepts, and general protocols" for the proper implementation of the California Standardized Emergency Management System (SEMS). The SEMS is an emergency management protocol that agencies within California must follow during multi-agency response efforts.

Fire Protection in California Fire Code and Public Resources Code

The California Fire Code is contained within Title 24, Part 9 of the California Code of Regulations. Based on the International Fire Code, the California Fire Code is created by the California Buildings Standards Commission and regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. Similar to the International Fire Code, the California Fire Code and the California Building Code use a hazards classification system to determine the appropriate measures to incorporate to protect life and property.

The California Public Resources Code includes fire safety provisions that apply to SRAs during the time of year designated as having hazardous fire conditions. During the fire hazard season these regulations restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on equipment that has an internal combustion engine; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire-suppression equipment that must be provided on-site for various types of work in fire-prone areas. Additional codes require that any person who owns, controls, operates, or maintains any electrical transmission or distribution line must maintain a firebreak clearing around and adjacent to any pole, tower, and conductors that carry electric current as specified in PRC Sections 4292 and 4293. Section 4292

requires that a 10-foot zone around the base of poles be cleared of all flammable vegetation. The state's Fire Prevention Standards for Electric Utilities (14 CCR Sections 1250–1258) provide specific exemptions from electric pole and tower firebreak and electric conductor clearance standards and specifies when and where standards apply.

PRC Section 4119 authorizes CAL FIRE or its authorized agent to inspect properties to determine whether they comply with state forest and fire laws, regulations, or use permits. Section 4427 limits the use of any motor, engine, boiler, stationary equipment, welding equipment, cutting torches, tarpots, or grinding devices which may generate a spark or flame if the equipment is located on or near forested land or land covered in bush or grass. Section 4427 establishes requirements such as clearing flammable material within 10 feet of the area of operation, as well as carrying of fire response equipment such as a shovel, backpack pump water type fire extinguisher.

PRC Section 4428 limits industrial operations on or near land covered by forest bush or grass between April 1 and December 1 of any year, or other times when ground litter and vegetation could sustain combustion and facilitate the spread of fire. Section 4428 requires that such work provide and maintain the following tools:

a. A sealed box of tools containing a backpack pump-type fire extinguisher filled with water, two axes, two McLeod fire tools, and a shovel for each worker on-site must be in near the operating area in a manner that would be accessible in the event of a fire;

b. At least one serviceable chainsaw or timber felling tools; and

c. Each passenger vehicle must be equipped with a shovel and an ax, every other vehicle or tractor must have a shovel.

PRC Section 4431 requires users of gasoline-fueled internal combustion-powered equipment located within 25 feet of forest, brush, or grass to keep firefighting tools at the immediate location of use. The Director of Forestry and Fire Protection administers and specifies the type and size of fire extinguisher necessary to provide at least minimum assurance of controlling fire caused by use of portable power tools under various climatic and fuel conditions. In addition, Section 4442 restricts the use and operation of any internal combustion engine that uses hydrocarbon fuels on any forest, brush, or grass areas unless the engine is equipped with a spark arrestor, as defined in PRC Section 4442(c) and pursuant to Section 4443.

State Defensible Space and the Fire Safe Regulations

State law requires a minimum clearance (defensible space) of 100-feet around structures (PRC Section 4290, 4291). Implementing regulations (the "Fire Safe Regulations") provide related requirements to be implemented in a SRA including road standards for fire equipment access (14 CCR Section 1273 et seq.); standards for signs identifying streets, roads, and buildings (14 CCR Section 1274 et seq.); requirements for minimum private water supply reserves for emergency fire use (14 CCR Section 1275 et seq.); and requirements for fuel breaks such as defensible space and greenbelts (14 CCR Sections 1272 and 1276 et seq.).

Local

Tuolumne County General Plan

The 2018 General Plan includes the overarching vision, goals, and policies that avoid the exposure of people and structures to potential substantial adverse effects, including the risk of loss, injury, or death involving natural hazards, including wildland fires in the Natural Hazards Element (Tuolumne County, 2018a). Environmental documents supporting the General Plan Update provide discussion of wildfire risk (in the Hazards and Hazardous Materials Chapter) and further analysis of CAL FIRE designated fire hazard zones, and communities at risk, which includes Twain Harte (Tuolumne County, 2018b).

Tuolumne County Community Wildfire Protection Plan

The Tuolumne County Community Wildfire Protection Plan (CWPP) describes measures necessary to reduce the risk of catastrophic fire and restore healthy forest ecological conditions on Stanislaus National Forest lands, and the greater Tuolumne County area. The plan includes a high level recommendation to implement specific projects within the analysis area. It is the responsibility of individual cooperating property owners in collaboration with the Stanislaus National Forest, CAL FIRE, and the Bureau of Land Management to plan and implement federal, state, and joint or community-wide projects to accomplish the goals of this plan.

Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan

The Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan is based upon risk assessments that identified and evaluated natural and man-made hazards. The risk and vulnerability assessments were used to determine mitigation goals and objectives to minimize long-term vulnerabilities to the identified hazards and are the foundation behind the development of a comprehensive range of specific attainable mitigation actions created for each jurisdiction. The Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan provides a risk and vulnerability assessments for the Twain Harte Community Services District and the Tuolumne Utilities District in Annex C and Annex F, respectively, of the Hazard Mitigation Plan (Tuolumne County, 2018c). The following goals, objectives, and mitigation actions are listed in the TUD jurisdiction (Annex F) of the Multi-Jurisdictional Hazard Mitigation Plan:

Goal 2: Ensure that future development is protected from natural disasters.

Goal 3: Build and support local capacity and commitment to minimize the jurisdictions within Tuolumne County's vulnerability to potential hazards.

Objective 3.1: Improve existing capabilities to manage emergency situations.

Action 3.2C: Work with Fire Safe Councils and the County to identify opportunities for additional evacuation routes within single-access areas.

Action 3.2D: TUD will study and seek funding to increase the raw water storage or establish a secure conveyance from Lyons Reservoir to ensure service for both domestic consumption and urban fire protection.

Tuolumne County Emergency Operations Plan

The Tuolumne County Emergency Operations Plan delineates the County's procedures and policies in response to a significant disaster, including extreme weather, flood or dam failure, earthquakes, hazardous materials, terrorism or civil disturbance, transportation accidents, and wildland fires. Annex G: Wildland Fire Plan in the Emergency Operations Plan (ESP) establish and outlines the response organization, command authority, responsibilities, functions and interaction required to mitigate the damaging effects of a large-scale or major wildland fire affecting the county (Tuolumne County, 2012). The ESP is compatible with other city, County, and state emergency response plans.

Twain Harte Community Services District Strategic Plan

The Twain Harte Community Services District (CSD) provides fire protection and rescue services to the Twain Harte area through mutual aid contracts with nearby cooperating fire agencies. With full staffing, three engines and a centrally located fire station, the CSD is generally able to provide emergency response to the greater Twain Harte area in less than five minutes. The CSD Strategic Plan provides a mission, vision, values, goals, and objectives that focus on areas such as infrastructure optimization and emergency preparedness (Twain Harte CSD, 2019).

Impact Discussion

a) **Less-than-Significant Impact**. As described above, under existing conditions there are no designated emergency routes or fuel breaks surrounding or within the Project site. However, the proposed Project is designed to allow for evacuation in the event of an emergency, consistent with the objectives and actions applicable to areas under TUD's jurisdiction identified in the Multi-Jurisdiction Hazard Mitigation Plan. The main access roads and potential evacuation routes for employees and residents adjacent to the Project site would include two routes: South Fork Road to the east and Kit Carson Drive to the west of the Project site. A new emergency access route connecting to Mt. Elizabeth Road north of the SPRWTF would provide another evacuation route for residents that are currently constrained along that roadway northeast of the Project site (see Figure 2-3, Site Plan). Therefore, the proposed Project would not obstruct any designated emergency evacuation routes, plans, or fuel breaks described in the Tuolumne General Plan, Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan, Tuolumne County Emergency Operations Plan, CAL FIRE 2019 Tuolumne-Calaveras Strategic Fire Plan, or the Twain Harte Community Services District Strategic Plan.

Multiple truck trips would be required during construction of the proposed Project for import and export of materials, equipment and staff to the Project site for an estimated 370 days (over a period of 18 months). Although the use of heavy duty equipment (i.e., excavators, dump trucks, loaders, and cranes) has the potential to block evacuation routes, the proposed Project would maintain existing emergency access to the Project site during construction. Lane closures are anticipated to be required during the proposed Project's in-road pipeline installation. As discussed in Section 3.17, *Transportation*, traffic management and controls would be implemented to maintain traffic flows and transportation services to preserve existing emergency access to the Project site.

As described in Section 3.17, *Transportation*, Project operations would utilize existing TUD staff. Travel by operations staff would be reduced as a result of the proposed Project due to the consolidation of existing dispersed treatment facilities. The Project would be designed to allow for circulation along the facility's main access road. No road or lane closures are anticipated during operation and maintenance of the proposed Project. Although, temporary truck trips could slow evacuation of construction workers and surrounding residences if an emergency were to occur related to wildland fire, the proposed Project would not substantially impair an adopted emergency response plan or evacuation route during either construction or operation of the proposed Project. Under this criterion, impacts would be **less than significant**.

b) **Less than Significant with Mitigation Incorporated**. The proposed Project is a water treatment facility and as such, up to two full time staff may be present and working within the facilities structures and upon the Project site; no residential (inhabited) structures would be constructed as part of the Project. However, given the location of the site in close proximity to existing residential areas, and the proposed inclusion of recreational amenities at the Project site, the Project has the potential to increase wildfire risks to these communities. Therefore, the following analysis focuses on the potential for the proposed Project site preparation, construction, operation and maintenance to increase the exposure of these communities to wildfire risk.

As discussed in the Environmental Setting and shown on Figure 3.20-1, the proposed Project site is located within a Very High Fire Hazard Severity Zone. The proposed Project would also be located in a CPUC Tier 3 Fire Threat District. The primary fire hazards during construction of the proposed Project would involve the use of vehicles and equipment. Heat or sparks from vehicles and equipment could ignite dry vegetation and result in a fire, particularly during drier, warmer conditions. Therefore, an increase in potential ignition sources associated with proposed Project construction activities could exacerbate wildfire risk in the Project area during fire season. As discussed in the Environmental Setting, wildfires release large amounts of air pollutants, which can lead to harmful exposure for surrounding communities, residences, first responders, and have the potential to reach distant populations. Due to an increase in sources of ignition posed by proposed Project construction activities, the existing wildfire-prone nature of the proposed Project's location, and the potential for uncontrolled spread of wildfire and associated pollution, the proposed Project could result in a potentially significant impact.

To reduce the risk of the spread of wildland fire during construction to near baseline conditions, implementation of **Mitigation Measure WIL-1, Fire Prevention Plan** (FPP) would be required. The implementation of a Project-specific Fire Prevention Plan would reduce potential sources of ignition and would outline procedures for immediate and effective suppression measures. The FPP would require that when a Red Flag Warning is issued by the National Weather Service (an alert that high winds and dry conditions could lead to rapid or dramatic increases in wildfire activity) TUD and its contractor cease all non-emergency work in areas where vegetation would be susceptible to accidental ignition by Project activities, to respond to changes in fire risk. Additionally, the FPP

would require work crews to be prepared with emergency suppression equipment to respond quickly to any on-site incidents caused by construction activities. The incorporation of the FPP would reduce impacts from Project construction to a less-than-significant level.

Mitigation Measures

Mitigation Measure WIL-1: Fire Prevention Plan.

TUD and/or its contractors shall prepare and implement a FPP to ensure the health and safety of construction workers, Project staff, and the public from fire-related hazards during both the Project construction and operation and maintenance phases. Prior to construction, TUD or its designated contractor shall contact and consult with the Tuolumne-Calaveras Unit of CAL FIRE and the Twain Harte FFS to determine the appropriate amounts of fire equipment to be carried on the vehicles and appropriate prevention measures to be taken. TUD or its designated contractor shall make the FPP available to all construction crew members prior to construction of the proposed Project. The FPP shall list fire safety measures including fire prevention and extinguishment procedures, as well as specific emergency response and evacuation measures that would be followed during emergency situations for all construction workers and staff; examples are listed below. The FPP also shall provide perimeter sprinklers proximal to welding operations and fire-related rules for smoking, storage and parking areas, usage of spark arrestors on construction equipment, and fire-suppression tools and equipment. The FPP shall include or require, but not be limited to, the following:

- As construction may occur simultaneously at several locations, each construction site shall be equipped with fire extinguishers and fire-fighting equipment sufficient to extinguish small fires.
- TUD shall instruct construction personnel to park vehicles within roads, road shoulders, graveled areas, and/or cleared areas (i.e., away from dry vegetation) wherever such surfaces are present at the construction site.
- TUD and its contractor shall cease construction work during Red Flag Warning events in areas where vegetation would be susceptible to accidental ignition by Project activities (such as welding or use of equipment that could create a spark).
- TUD or its designated contractor shall coordinate the finalization of road access improvements (i.e. frequency of grading and vegetation clearance) with CAL FIRE and other emergency responders to ensure that sufficient ingress and egress exists on-site. TUD and/or its contractors shall have water tanks, water trucks, or portable water backpacks (where space or access for a water truck or water tank is limited) sited/available in the study area for fire protection.
- During construction of the proposed Project, TUD and/or its contractors shall implement ongoing fire patrols during construction hours and for 1 hour after the end of daily construction and hotwork, as applicable, during the dry season (May to November) unless conditions warrant more or less fire patrols.
- All construction crews and inspectors shall be provided with radio and cellular telephone access that is operational along the entire length of the approved route to allow communications with other vehicles and construction crews. All fires shall be reported immediately upon detection.

- All internal combustion engines, stationary and mobile, shall be equipped with spark arresters in good working order.
- Light trucks and cars with factory-installed mufflers shall be used only on roads where the roadway is cleared of vegetation.
- Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable material.
- A fire conditions monitoring program to monitor meteorological data during construction and operation.
- A monitoring and inspection protocol for electrical infrastructure.
- Prohibition of smoking in wildland areas, with smoking limited to paved areas or areas cleared of all vegetation.
- All construction vehicles shall have fire suppression equipment.
- TUD or its designated contractor shall ensure that all construction workers and operational staff receive training on the proper use of fire-fighting equipment and procedures to be followed in the event of a fire.

Successful implementation of **Mitigation Measure WIL-1 (Fire Prevention Plan)** would be demonstrated by the development of a FPP in consultation with local fire authorities which is shared with all construction workers and staff. Additionally, successful implementation of Mitigation Measure WIL-1 would require that TUD and its contractor comply with all components of the FPP, that ignition from Project construction activities is promptly reported to the fire department(s) with jurisdiction, and that when it is safe to do so, any Project-caused ignition is suppressed immediately.

Implementation of MM WIL-1 would provide construction workers with the equipment and procedures necessary to manage the risk of fire from the proposed Project through collaboration with area fire protection agencies. The mitigation measure would provide TUD and its contractors with fire safety measures to prevent fire and be prepared to respond immediately and effectively if a fire were to occur from Project construction or during operation. Implementation of MM WIL-1 would reduce the risk of fire from construction of the proposed Project to a level of risk comparable to existing conditions.

Operation of the proposed Project would require the use of electrical equipment and an electrical connection to PG&E infrastructure. As described in Chapter 2, *Project Description*, all on-site electrical lines would be underground and as such, would result in a negligible increase in wildfire risk. However, it is anticipated that the Project would connect to an existing overhead PG&E high voltage line. The capacity of this line would need to be confirmed by PG&E and modifications to the line may be required to accommodate the increased load created by the Project. The existing PG&E line would be subject to the CPUC vegetation management and clearance requirements (GO 95, GO 165, and GO 166) as well as the portions of the Public Resources Code that identify clearance requirements and requirements for work in SRAs. Any modifications to the PG&E line

required by the operation of the proposed Project would be required to comply with these vegetation management and clearance requirements. Compliance with these operational and vegetation clearance requirements would effectively manage the risk of exposing surrounding communities to exacerbated risk of the uncontrolled spread of a wildfire during construction and operation of the PG&E infrastructure and electrical connection.

Operation of the proposed Project would result in the operation of electrical equipment and the presence of operation staff and associated vehicles on-site. Therefore, operation of the Project would result in a minor increase in the risk of ignition on the proposed Project site. However, the proposed Project would result in the consolidation of existing (distributed) water treatment facilities. The consolidation of water treatment operations would reduce the number of facilities operating within Tuolumne County, thereby reducing potential ignition sources throughout the county. Additionally, the consolidation of water treatment facilities would provide for more streamlined fire response in the event of an ignition on the Project site, reducing the likelihood of the uncontrolled spread of wildfire. Mitigation Measure WIL-1 would also ensure that all facility staff would be trained in proper fire response protocol and would be equipped with all appropriate fire suppression equipment if a wildland fire were to occur in the operations phase. Therefore, with implementation of mitigation, construction and operation of the proposed Project would reduce the risk of exacerbating conditions for wildfire. The impact of the proposed Project would be reduced to **less-than-significant levels with mitigation incorporated**.

c) **Less than Significant with Mitigation Incorporated.** The proposed Project would include a new access road for the Raw Water Reservoir and SPRWTF, existing road improvements and extension of water treatment infrastructure, power lines, and related utilities. As described in Section 2.6.1, all on-site electrical lines would be installed underground. Vegetation clearances would be maintained around roads and other Project components would aid in reducing wildfire risk and facilitating emergency suppression of fires should they occur, consistent with defensible space guidelines. Other infrastructure associated with construction and ongoing maintenance is analyzed and mitigated, as appropriate, throughout this IS/MND (e.g., in Section 3.4, *Biological Resources*, as relevant to wildlife habitat that would be removed to maintain clearances). Additionally, the environmental impact of water sources required for the Project, and electrical connections required for the Project are analyzed throughout this document on a resource by resource basis. Although the Project would extend infrastructure including electrical and water utilities, these Project components would not exacerbate fire risk. Implementation of Mitigation Measure WIL-1 would be implemented during construction and carried out through operation and maintenance. Therefore, the Project would comply with CPUC vegetation maintenance clearance requirements and would be constructed, operated, and maintained in a manner that would comply with all California Building and Fire Code requirements. With implementation of MM WIL-1, impacts would be reduced to less than significant levels.

d) **Less than Significant with Mitigation Incorporated**. The Project does not include any housing; therefore, the Project would not expose Project occupants to increased risk

associated with flooding, landslides, or post-fire slope instability as a result of locating housing near such existing risks. However, the Project is located within an existing community. Therefore, the following analysis focuses on the potential for the Project to result in post-fire downstream flooding, runoff, or landslides on nearby, downstream and downslope communities. Described above in Question b), the Project would increase sources of ignition during construction which could exacerbate wildfire risks. However, implementation of MM WIL-1 would reduce potential sources of ignition and equip personnel with proper safety training and equipment to arrest the spread of wildfire in the event of an emergency during construction. Also described above in Question b), operation of the proposed Project would result in an overall reduction in wildfire risk compared to baseline conditions.

Post-fire conditions can increase the potential for erosion and flooding due to the loss of vegetation that holds soils in place, causing increased erosion, and the loss of the water-absorbing properties of soils, causing increased runoff. As identified in Section 3.10, *Hydrology and Water Quality*, the implementation of a stormwater pollution prevention plan (SWPPP) and best management practices (BMPs) related to erosion control would reduce potential impacts during construction. Following construction, the site would be maintained by TUD staff in a manner that would not generate conditions of substantial runoff or contribute to flooding or stormwater exceedances. Maintenance of the stormwater collection system would function to capture runoff from the project's impervious surfaces and convey stormwater to the Project's detention basin and prevent off-site flooding. Therefore, the proposed Project would not result in changes to runoff or drainage patterns which could exacerbate downslope or downstream flooding thereby exposing people or structures to associated risk. The incorporation of a SWPPP, BMPs, and with implementation of MM WIL-1, impacts associated with risks for post-fire flooding or landslide would be reduced to less-than-significant levels.

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3.21 Mandatory Findings of Significance

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

Environmental Setting

Discussion

a) **Less than Significant with Mitigation Incorporated.** TUD is proposing to develop a consolidated regional water treatment facility at the site of the former Sierra Pines Golf Course in Twain Harte in unincorporated Tuolumne County in the Sierra Nevada foothills. The proposed Project would include construction and operation of SPRWTF with an initial operating capacity of 3 mgd to be ultimately increased to 5 mgd through future phased buildout. The proposed Project would also include construction and operation of a new 30-acre-foot-capacity raw water reservoir, a raw water pump station, associated appurtenances and electrical structures, water conveyance and transmission pipelines, recreational amenities, and a stormwater detention basin.

As described in Section 3.4, *Biological Resources*, the proposed Project would involve both temporary and permanent impacts to habitats (as summarized in Table 3.4-4). However, potential effects associated with the Project's construction would be addressed through the implementation of **Mitigation Measures (BIO 1–BIO 4)**. The proposed Project would be located in a site that contains historic structures and potentially other cultural resources. To ensure that these cultural, historic, and tribal cultural resources are not degraded by proposed Project activities, **Mitigation Measures CUL-1, CUL-2, and CUL-3** would be implemented reduce or eliminate potential effects to these resources. **Mitigation Measure GEO-1** would reduce impacts to paleontological resources associated with construction activities that may disturb geologic units with high paleontological sensitivity. **Mitigation Measure NOI-3** contains restrictions on the use of vibratory equipment near historic structures to ensure that historic resources would not

be degraded by the proposed Project's construction. With implementation of these mitigation measures, potential impacts to existing habitats, or to individual species that have the potential to occur in the Project site environments, would be reduced to less than significant levels.

Impact analyses in the various resource sections (presented in Chapter 3) demonstrate that the proposed Project would not significantly degrade the quality of the environment. Potential impacts associated with air quality, biological and cultural resources, hazards and hazardous materials, noise and vibration, transportation, and wildfire during construction or operation of the proposed Project would be reduced to less than significant levels with mitigation implemented.

b) **Less-than-Significant Impact**. The proposed Project will not achieve short-term environmental goals to the disadvantage of long-term environmental goals. Rather, the proposed Project will advance long-term environmental goals; first through consolidation of six existing water treatment facilities and reduction of VMT for operation and maintenance of existing facilities, and secondly, by reduction of energy use by utilizing gravity flows for transmission of treated water. In terms of watershed management, improvements to upstream storage ultimately improve the region's water supply conditions, which allows TUD and other water providers in the watershed with opportunities to further improve supply reliability. Therefore, with this understanding the Project will have no impact on long-term goals for short-term benefits.

CEQA Guidelines Section 15130 requires a discussion of the cumulative impacts of a project when the project's incremental contribution to a significant cumulative effect is "cumulatively considerable," meaning that the project's incremental effects are considerable when viewed along with the effects of past, current, and reasonably foreseeable future projects. An incremental, project-specific contribution to a cumulative impact is less than cumulatively considerable, and thus is not significant, if, for example, the project is required to implement mitigation measures designed to alleviate the cumulative impact.

Consistent with CEQA Guidelines Section 15130(b), the environmental analysis presented in this document includes an evaluation of past, present, and reasonably anticipated future projects that could produce related or cumulative impacts, including those projects outside the control of the lead agency (TUD) and also considered regional planning documents to evaluate potential effects of the proposed Project's implementation within a regional context. Existing conditions within the cumulative impacts area of effect reflect a combination of the natural condition and the effects of past actions in the affected area. The following factors also were used to determine an appropriate list of projects to be considered in this cumulative analysis:

Similar Environmental Impacts—A relevant project is defined as a "reasonably foreseeable" project that would contribute to effects on resources also affected by the

proposed Project. For the purpose of this analysis, relevant projects with potential similar environmental impacts include, for example, other public utility-related projects.

Geographic Scope—The appropriate geographic area of cumulative consideration is identified on a resource-by-resource basis as dictated by relevant physical and/or environmental boundaries (such as the extent of the groundwater basin or the roadways traveled by Project vehicles).

Timing and Temporal Scope—Incremental impacts of the proposed Project could combine with the incremental impacts of other projects to cause or contribute to cumulative effects if the Project's construction, operation, and maintenance periods coincide in terms of timing with the effects of the other projects.

Currently no other projects of similar, size, scale or complexity are planned during the same period of construction as this project which would result in cumulative effects. The District's Capital Improvement Schedule currently includes construction of a new storage tank in the Sonora area (10 miles from the proposed Project site), recoating another storage tank (approximately 2 miles from the proposed Project site), and constructing several thousand feet of water main (approximately 4 miles from the project site).

c) **Less than Significant with Mitigation Incorporated.** Potentially significant impacts on human beings either directly or indirectly are identified in this IS/MND. These are primarily associated with construction of the proposed Project generating potentially significant impacts on Air Quality (Section 3.3), Hazards and Hazardous Materials (Section 3.9), Noise (Section 3.13), Transportation (Section 3.17), Tribal Cultural Resources (Section 3.18), and Wildfire (Section 3.20). Moreover, as described in Section 3.9, *Hazards and Hazardous Materials*, and Section 3.20, *Wildfire*, operation of the proposed Project could also involve potentially significant impacts on human beings (either directly or indirectly). However, resource avoidance and impact minimization measures, identified mitigation measures, and compliance with federal, state, and local agency statutes and regulations are necessary and would be implemented to reduce these potential impacts to **less than significant** levels.

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CHAPTER 4
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CHAPTER 5

Mitigation Monitoring and Reporting Program

TABLE 5-1
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE SPRWTF PROJECT

Resource Area	Mitigation Measures Proposed in this IS/MND	Implementing Actions/ Responsible Party	Timing
Air Quality			
	MM AQ-1 Dust Control Measures. The Project sponsor, Tuolumne Utility District, or its designated contractor shall ensure that the following dust control measures described in the Tuolumne County General Plan Air Quality Element are implemented during construction of the Project: • 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 off-road and portable equipment diesel particulate matter regulations.	TUD or its designated contractor shall implement measure as described.	During soil disturbing construction activities.
Biological Resources			
	MM BIO-1: Perform Pre-Construction Surveys for Western Pond Turtle. a) A qualified biologist shall conduct a preconstruction survey within suitable habitat (within 500 feet of each pond) for western pond turtle within 5 days prior to commencement of materials staging or ground disturbing activities. If the preconstruction survey shows that there is no evidence of western pond turtle, then a letter report shall be submitted to the Project applicant for their records within 14 days of the survey and no additional measures are required. If construction does not commence within 5 days of the preconstruction survey, or halts for more than 5 days, an additional preconstruction survey is required. b) If western pond turtles are observed, a qualified biologist shall relocate the species off-site to similar habitat on public lands within ten miles of the Project site. Relocation of pond turtles shall be conducted in coordination with CDFW. If turtles can be avoided, the qualified biologist shall monitor all staging and initial grading activities to ensure the species can be avoided. The relocation work and monitoring shall be documented in a letter report to the Project applicant for their records within 14 days of the final monitoring work.	TUD and its designated qualified biologist shall implement measure as described.	Within 5 days prior to the start of construction.

TABLE 5-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE SIERRA PINES RWTF PROJECT

Resource Area	Mitigation Measures Proposed in this IS/MND	Implementing Actions/ Responsible Party	Timing
Biological Resources (cont.)			
	MM BIO-2: Perform Pre-Construction Surveys for Nesting Special Status and Common Migratory Birds. If construction activities begin during the nesting season (February 1 to September 15), a qualified biologist shall conduct a preconstruction survey for active nests in suitable nesting habitat within 500 feet of the construction area for nesting raptors and migratory birds (¼ mile for sharp-shinned hawk). Areas adjacent to the Project site that are inaccessible due to private property restrictions shall be surveyed using binoculars from the nearest vantage point. The survey shall be conducted by a qualified biologist no more than seven days prior to the onset of construction. If no active nests are identified during the pre-construction survey, no further mitigation is necessary. If construction activities begin prior to February 1, it is assumed that no birds would nest in the Project site during active construction activities and no pre-construction surveys are required. If at any time during the nesting season construction stops for a period of two weeks or longer, pre-construction surveys shall be conducted prior to construction resuming. If active nests are found during the survey, the Project proponent shall implement mitigation measures to ensure that the species would not be adversely affected, which would include establishing a no-work buffer zone, as approved by CDFW, around the active nest. Measures shall include, but not be limited to: a) If active nests are found on or within 500 feet of the Project site (¼ mile for sharp-shinned hawk), then the Project proponent shall establish no disturbance buffers for active nests of 250 feet for migratory bird species, 500 feet for non-listed raptor species, and ¼ mile for sharp-shinned hawk, until the breeding season has ended, or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. Depending on the conditions specific to each nest, and the relative location and rate of construction activities, it may be feasible for construction to occur as planned within the buffer without impacting the breeding effort. Nests that are inaccessible due to private property restrictions shall be monitored using binoculars from the nearest vantage point. Construction activities may be halted at any time if, in the professional opinion of the biologist, construction activities are affecting the breeding effort. If construction activities are halted due to adverse effects on breeding efforts, construction shall not resume until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. b) Depending on conditions specific to each nest, and the relative location and rate of construction activities, it may be feasible for construction to occur as planned within the buffer without impacting the breeding effort. In this case (to be determined on a case-by-case basis), the nest(s) shall be monitored by a qualified biologist during any construction activities within the buffer. If, in the professional opinion of the monitor, the Project would impact the nesting birds or young, the biologist shall immediately inform the construction manager and the Project proponent shall notify CDFW. The construction manager shall stop construction activities within the buffer until the nest is no longer active or a new buffer distance is agreed upon with CDFW. Completion of nesting and fledging activities shall be determined by a qualified biologist. c) If construction begins outside of the migratory bird breeding season (February 1 through September 15), then the Project proponent is permitted to continue construction activities throughout the breeding season.	TUD and its designated qualified biologist shall implement measure as described.	Within 7 days of the start of construction during nesting season, as applicable.

TABLE 5-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE SIERRA PINES RWFT PROJECT

Resource Area	Mitigation Measures Proposed in this IS/MND	Implementing Actions/ Responsible Party	Timing
Biological Resources (cont.)			
	MM BIO-3: Perform Pre-Construction Surveys for Special Status Bats. For construction activities expected to occur during the breeding season for special-status bat species (April 1 to August 31), a field survey shall be conducted by a qualified biologist to determine whether active roosts are present on site or within 100 feet of the Project boundaries. Areas adjacent to the Project site that are inaccessible due to private property restrictions shall be surveyed using binoculars from the nearest vantage point. Field surveys shall be conducted early in the breeding season before any construction activities begin, when bats are establishing maternity roosts but before pregnant females give birth (April through early May). If no roosting bats are found, then no further mitigation is required. If roosting bats are found, then disturbance of the maternity roosts shall be avoided by halting construction until the end of the breeding season or a qualified bat biologist excludes the roosting bats in consultation with CDFW. If construction activities begin prior to April 1, it is assumed that no bats would roost in the Project site during active construction activities and no pre-construction surveys are required. If at any time during the roosting season construction stops for a period of two weeks or longer, pre-construction surveys shall be conducted prior to construction resuming.	TUD and its designated qualified biologist shall implement measures as described.	Early in the breeding season (April through early May) before the start of construction activities.
	Mitigation Measure BIO-4: No Net Loss of Wetland and Riparian Habitats. The Project proponent shall demonstrate that there is no net loss of wetlands and other waters of the U.S. and state protected waters/wetlands. To ensure this, wetland mitigation shall be developed as a part of the permitting process. Mitigation shall be provided prior to construction-related impacts on the existing waters/wetlands. The exact mitigation ratio would be determined in consultation with the applicable permitting agencies, which may include USACE, CDFW, and/or RWQCB. The amount of mitigation will be based on the type and value of the waters/wetlands affected by the Project, but the Project shall compensate for impacted waters/wetlands at a ratio no less than 1:1 per State policy. Compensation shall take the form of preservation or creation in accordance with USACE, RWQCB and/or CDFW mitigation requirements, as required under Project permits. Preservation and creation may occur off-site through purchasing credits at a USACE, CDFW, and/or RWQCB-approved mitigation bank.	TUD or its designated contractor shall implement measure as described.	Prior to construction.
Cultural Resources			
	Mitigation Measure CUL-1: Prior to authorization to proceed, or issuance of permits, TUD shall retain a Secretary of the Interior-qualified archaeologist to prepare a cultural resources monitoring plan. Monitoring shall be required for all subsurface excavation work within 200 feet of the recorded boundaries of resources P-55-004190 and P-55-001403. The plan shall include the following: • Training program for all construction personnel involved in ground disturbance; • Person responsible for conducting monitoring activities, including Native American monitors; • Person responsible for overseeing and directing the monitors; • How the monitoring shall be conducted and the required format and content of monitoring reports; • Physical monitoring boundaries (e.g., 200-feet radius of a known site) and maps; • Schedule for submittal of monitoring reports and person responsible for review and approval of monitoring reports; • Protocol for notifications in case of encountering of cultural resources, as well as methods of evaluating the encountered resources (e.g., collection, identification, curation);	TUD and its designated qualified archaeologist shall implement measure as described.	Prior to an authorization to proceed or issuance of permits.

TABLE 5-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE SIERRA PINES RWTF PROJECT

Resource Area	Mitigation Measures Proposed in this IS/MND	Implementing Actions/ Responsible Party	Timing
Cultural Resources (cont.)			
	• Methods to ensure security of cultural resources sites; • Protocol for notifying local authorities (i.e. Sheriff, Police) should site looting and other illegal activities occur during construction. If cultural materials are encountered, all soil disturbing activities within 100 feet shall cease until the materials are evaluated. The archaeological monitor shall immediately notify TUD of the encountered cultural materials. The monitor shall, after making a reasonable effort to assess the identity, integrity, and significance of the encountered cultural materials, present the findings of this assessment to TUD. During the course of the monitoring, the archaeologist may adjust the frequency—from continuous to intermittent—of the monitoring based on the conditions and professional judgment regarding the potential to impact resources.		
	Mitigation Measure CUL-2: If prehistoric or historic-period cultural materials are encountered during Project implementation, all construction activities within 100 feet shall halt, and a qualified archaeologist, defined as an archaeologist meeting the U.S. Secretary of the Interior's Professional Qualification Standards for Archeology, shall inspect the find within 24 hours of discovery and notify the TUD of their initial assessment. Prehistoric cultural materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period cultural materials might include building or structure footings and walls, and deposits of metal, glass, and/or ceramic refuse. If TUD determines, based on recommendations from a qualified archaeologist or a Native American representative, that the resource may qualify as a historic property (meeting the National Register listing criteria at 36 CFR 60.4), a historical resource or unique archaeological resource (as defined in CEQA Guidelines Section 15064.5), or a tribal cultural resource (as defined in PRC Section 21080.3), the resource shall be avoided if feasible. If avoidance is not feasible, TUD shall consult with appropriate Native American representative and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource. This shall include documentation of the resource and may include data recovery (according to PRC Section 21083.2), if deemed appropriate, or other actions such as treating the resource with culturally appropriate dignity and protecting the cultural character and integrity of the resource (according to PRC Section 21084.3).	TUD and its designated qualified archaeologist shall implement measure as described.	During construction, as applicable, within 24-hours of discovery.
	Mitigation Measure CUL-3: In the event of discovery of any human remains during project activities, such activities within 100 feet of the find shall cease until the Tuolumne County Coroner has been contacted to determine that no investigation of the cause of death is required. The Native American Heritage Commission will be contacted within 24 hours if it is determined that the remains are Native American. The Commission will then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn would make recommendations to TUD for the appropriate means of treating the human remains and any grave goods.	TUD and its designated qualified archaeologist shall implement measure as described.	During construction.

TABLE 5-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE SIERRA PINES RWFT PROJECT

Resource Area	Mitigation Measures Proposed in this IS/MND	Implementing Actions/ Responsible Party	Timing
Hazards and Hazardous Materials			
	Mitigation Measure WIL-1: Fire Safety. See *Wildfire below*.	TUD or its designated contractor shall implement the measure as described.	FPP shall be prepared prior to construction and implemented during construction of the project.
Noise and Vibration			
	Mitigation Measure NOI-1a: Construction Noise Management Plan. The following noise reduction measures shall be implemented to reduce the impact of temporary construction-related noise on nearby receptors: 1. Require construction equipment and trucks used for project construction to utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds). 2. Turn off construction equipment when not in use, where applicable. 3. Locate stationary equipment, construction staging areas, and construction material areas as far from sensitive receptors as possible. Stationary noise sources that must be located near existing receptors shall be adequately designed to minimize noise exposure at sensitive receptors such that County noise standards are met. 4. Require any impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction be hydraulically or electrical powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatically powered tools is unavoidable, the use of an exhaust muffler on the compressed air exhaust is recommended to lower noise levels from the exhaust by up to about 10 dBA. When feasible, external jackets on the impact equipment should also be incorporated to achieve a further reduction of 5 dBA. In the event that external jackets on impact equipment are not feasible, other BMP techniques shall be employed to reduce noise by 5 dBA. Whenever feasible, require the use of quieter procedures, such as drilling rather than impact equipment operation (such as pile driving). 5. When construction takes place within 100 feet of sensitive receptors, use specific techniques such as, but not limited to, restrictions on construction timing, use of sound blankets on stationary construction equipment, and the use of temporary walls and noise barriers to block and deflect noise.	TUD or its designated contractor shall implement the measure as described.	During construction.
	Mitigation Measure NOI-1b: Notification and Noise Disturbance Coordinator. 1. Notify neighbors within 300 feet of the project site of the construction schedule in writing, at least 10-days prior to construction. 2. Designate a “disturbance coordinator” who will be responsible for responding within 24-hours to any complaints regarding construction noise. The coordinator will determine the cause of the complaint and will require that reasonable measures, if warranted to correct the problem, be implemented. A daytime and nighttime telephone number for the noise disturbance coordinator shall be conspicuously posted at the construction site fence and on the notification sent to neighbors adjacent to the site.	TUD or its designated contractor shall implement the measure as described.	Notification to occur, at minimum, 10 days prior to construction.

TABLE 5-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE SIERRA PINES RWTF PROJECT

Resource Area	Mitigation Measures Proposed in this IS/MND	Implementing Actions/ Responsible Party	Timing
Noise and Vibration (cont.)			
	Mitigation Measure NOI-2: Noise from Operational Equipment. Mechanical equipment used in project facilities shall not cause ambient noise levels to exceed 45 dBA L_{eq} at the property line of nearby sensitive receptors. For project equipment to meet this criterion, the following measures shall be incorporated into the design of proposed facilities, if necessary: • Project equipment shall be fully enclosed, and vents or louvers on the enclosure shall be located on the façades of the enclosure facing away from the nearest residential receptors to achieve maximum noise reduction. • Based on the equipment chosen, the enclosure shall be designed to provide the required attenuation to reduce noise levels at the property line to less than or equal to 45 dBA L_{eq}. • Once construction is complete, if nighttime noise is perceptible at the Project site boundaries, TUD shall retain an acoustical engineer to perform noise measurements in the vicinity of the nearby residences to verify that the operational noise levels comply with the County's nighttime stationary source noise level standard of 45 dBA L_{eq}.	TUD or its designated contractor shall implement the measure as described.	During final design of the project and during operation, as applicable.
	Mitigation Measure NOI-3: Prohibit Vibratory Construction Activities Near Historic Wooden Structures. To avoid impacts to historic resources on the Project site, vibratory construction equipment such as vibratory rollers and compactors shall not be used for trail construction within 50 feet of the Tuolumne Main Canal Flume or other wooden historic resources in the Project site.	TUD and/or its designated contractor shall implement the measure as described.	During construction and operation of the project.
Transportation			
	Mitigation Measure TRAF-1: Prepare and Implement Construction Traffic Management Plan. TUD shall prepare and implement a construction traffic management plan, to be implemented where roadway lane closures would be required as part of construction. The construction traffic management plan shall include provisions for lane closures, which may include the temporary placement of cones, barriers, signs, flagging personnel, and other such methods intended to direct traffic, allow passage for emergency vehicles, and maintain the safety of all modes of travel through areas affected by proposed lane closures associated with the Project.	TUD and/or its designated contractor shall implement the measure as described.	Prior to and during construction of the project.
Tribal Cultural Resources			
	Mitigation Measures CUL-1 and CUL-2: See *Cultural Resources* above	TUD and its designated qualified archaeologist shall implement measure as described.	Prior to an authorization to proceed or issuance of permits. During construction, as applicable, within 24-hours of discovery.

TABLE 5-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE SIERRA PINES RWFT PROJECT

Resource Area	Mitigation Measures Proposed in this IS/MND	Implementing Actions/ Responsible Party	Timing
Wildfire			
	Mitigation Measure WIL-1: Fire Prevention Plan. TUD and/or its contractors shall prepare and implement a FPP to ensure the health and safety of construction workers, Project staff, and the public from fire-related hazards during both the Project construction and operation and maintenance phases. Prior to construction, the TUD or its designated contractor shall contact and consult with the Tuolumne-Calaveras Unit of CAL FIRE and the Twain Harte FFS to determine the appropriate amounts of fire equipment to be carried on the vehicles and appropriate prevention measures to be taken. TUD or its designated contractor shall make the FPP available to all construction crew members prior to construction of the proposed Project. The FPP shall list fire safety measures including fire prevention and extinguishment procedures, as well as specific emergency response and evacuation measures that would be followed during emergency situations for all construction workers and staff; examples are listed below. The FPP also shall provide perimeter sprinklers proximal to welding operations and fire-related rules for smoking, storage and parking areas, usage of spark arrestors on construction equipment, and fire-suppression tools and equipment. The FPP shall include or require, but not be limited to, the following: • As construction may occur simultaneously at several locations, each construction site shall be equipped with fire extinguishers and fire-fighting equipment sufficient to extinguish small fires. • TUD shall instruct construction personnel to park vehicles within roads, road shoulders, graveled areas, and/or cleared areas (i.e., away from dry vegetation) wherever such surfaces are present at the construction site. • TUD and its contractor shall cease construction work during Red Flag Warning events in areas where vegetation would be susceptible to accidental ignition by Project activities (such as welding or use of equipment that could create a spark). • TUD or its designated contractor shall coordinate the finalization of road access improvements (i.e. frequency of grading and vegetation clearance) with CAL FIRE and other emergency responders to ensure that sufficient ingress and egress exists onsite. TUD and/or its contractors shall have water tanks, water trucks, or portable water backpacks (where space or access for a water truck or water tank is limited) sited/available in the study area for fire protection. • During construction of the proposed Project, TUD and/or its contractors shall implement ongoing fire patrols during construction hours and for 1 hour after the end of daily construction and hotwork, as applicable, during the dry season (May to November) unless conditions warrant more or less fire patrols. • All construction crews and inspectors shall be provided with radio and cellular telephone access that is operational along the entire length of the approved route to allow communications with other vehicles and construction crews. All fires shall be reported immediately upon detection. • All internal combustion engines, stationary and mobile shall be equipped with spark arresters in good working order. • Light trucks and cars with factory-installed mufflers shall be used only on roads where the roadway is cleared of vegetation.	TUD or its designated contractor shall implement the measure as described.	FPP shall be prepared prior to construction and implemented during construction of the project.

TABLE 5-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE SIERRA PINES RWTF PROJECT

Resource Area	Mitigation Measures Proposed in this IS/MND	Implementing Actions/ Responsible Party	Timing
Wildfire (cont.)			
	• Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable material. • A fire conditions monitoring program to monitor meteorological data during construction and operation. • A monitoring and inspection protocol for electrical infrastructure. • Prohibition of smoking in wildland areas, with smoking limited to paved areas or areas cleared of all vegetation. • All construction vehicles shall have fire suppression equipment. • TUD or its designated contractor shall ensure that all construction workers and operational staff receive training on the proper use of fire-fighting equipment and procedures to be followed in the event of a fire.		

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Appendix A

Air Quality: Emissions Calculations

TUD Sierra Pines RWTF - CalEEMod Output & Calcs

Thresholds

TCAPCD Criteria Pollutant Thresholds

	ROG	NOx	PM10	CO
TPY	100	100	100	100
PPD	1,000	1,000	1,000	1,000

Tuolumne County Regional Blueprint GHG Study Efficiency Metric

MTCO2e/SP/yr	4.6

Unmitigated Emissions

Construction

TPY	ROG	NOx	PM10	CO
2021	0.361	4.165	0.5056	2.704
2022	0.1033	0.7322	0.0746	0.8079

MT/yr	CO2e
2021	833.0270
2022	189.1451

PPD	ROG	NOx	PM10	CO
2021	3.1255	36.0606	4.3775	23.4113
2022	1.0931	7.7481	0.7894	8.5492

Operation

TPY	ROG	NOx	PM10	CO
Area	0.00734	0.0	0.0	0.00016
Mobile	0.00217	0.00655	0.00354	0.0229
Stationary	0.0275	0.0768	0.00404	0.0701
Total	0.03701	0.08335	0.00758	0.09316

MT/yr	CO2e
Area	0.00034
Energy	67.48
Mobile	3.8249
Stationary	12.8014
Waste	4.0232

Operational	88.13
Construction	1,022.17
Amortized Construction	25.55
Total Annual	113.68
MTCO2e/SP/yr	**0.01**

PPD	ROG	NOx	PM10	CO
Area	0.04022	0.0	0.0	0.00088
Mobile	0.01189	0.03589	0.01940	0.12548
Stationary	0.15068	0.42082	0.02214	0.38411
Total	0.20279	0.45671	0.04153	0.51047

Mitigated Emissions (Fugitive Dust Measures)

Construction

TPY	ROG	NOx	PM10	CO
2021	0.361	4.165	0.3608	2.704
2022	0.1033	0.7322	0.0738	0.8079

MT/yr	CO2e
2021	833.0270
2022	189.1451

PPD	ROG	NOx	PM10	CO
2021	3.1255	36.0606	3.1238	23.4113
2022	1.0931	7.7481	0.7810	8.5492

TUD Sierra Pines Water Treatment Facility

Tuolumne County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Golf Course	17.88	Acre	17.88	778,852.80	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	66
Climate Zone	1			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - http://www.pgecorp.com/corp_responsibility/reports/2019/assets/PGE_CRSR_2019.pdf

Land Use - Acreage = sum of construction areas provided by client in "Acreages & Quantities" file

Construction Phase - Start dates pulled from Appendix E of prelim design report; work days provided by client

Off-road Equipment - provided by client

Off-road Equipment - provided by client

Off-road Equipment - provided by client

Off-road Equipment - provided by client

Off-road Equipment - provided by client

Off-road Equipment - provided by client

Off-road Equipment - provided by client

Off-road Equipment - provided by client

Off-road Equipment - provided by client

Off-road Equipment - provided by client

Off-road Equipment - provided by client

Off-road Equipment - provided by client

Off-road Equipment - provided by client

Trips and VMT - based on PD info, import/export volumes, and location of quarries

Grading - from "acreages and quantities" spreadsheet provided by client

Vehicle Trips - based on PD and info provided by client

Landscape Equipment - no landscaping

Energy Use -

Water And Wastewater - no water use

Solid Waste - halved the default - will produce significantly less waste than a golf course

Construction Off-road Equipment Mitigation - MM AQ-1 - Tuolumne County GP AQ Element PM Measures

Stationary Sources - Emergency Generators and Fire Pumps - 500 kW diesel backup generator - annual testing limit based on baaqmd guidance

TUD Sierra Pines Water Treatment Facility - Tuolumne County APCD Air District, Annual

Table Name	Column Name	Default Value	New Value
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tblConstructionPhase	NumDaysWeek	5.00	6.00
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tblWater	OutdoorWaterUseRate	21,303,686.53	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					
2021	0.3610	4.1650	2.7040	9.1000e-003	0.4008	0.1049	0.5056	0.1766	0.0971	0.2737	0.0000	829.7250	829.7250	0.1321	0.0000	833.0270
2022	0.1033	0.7322	0.8079	2.0900e-003	0.0538	0.0208	0.0746	0.0143	0.0194	0.0337	0.0000	188.3765	188.3765	0.0307	0.0000	189.1451
Maximum	**0.3610**	**4.1650**	**2.7040**	**9.1000e-003**	**0.4008**	**0.1049**	**0.5056**	**0.1766**	**0.0971**	**0.2737**	**0.0000**	**829.7250**	**829.7250**	**0.1321**	**0.0000**	**833.0270**

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					
2021	0.3610	4.1650	2.7040	9.1000e-003	0.2559	0.1049	0.3608	0.1000	0.0971	0.1971	0.0000	829.7245	829.7245	0.1321	0.0000	833.0266
2022	0.1033	0.7322	0.8079	2.0900e-003	0.0530	0.0208	0.0738	0.0142	0.0194	0.0336	0.0000	188.3764	188.3764	0.0307	0.0000	189.1450
Maximum	**0.3610**	**4.1650**	**2.7040**	**9.1000e-003**	**0.2559**	**0.1049**	**0.3608**	**0.1000**	**0.0971**	**0.1971**	**0.0000**	**829.7245**	**829.7245**	**0.1321**	**0.0000**	**833.0266**

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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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**32.04**	**0.00**	**25.10**	**40.19**	**0.00**	**24.96**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-6-2021**	**7-5-2021**	0.0870	0.0870
2	**7-6-2021**	**10-5-2021**	1.3193	1.3193
3	**10-6-2021**	**1-5-2022**	3.1396	3.1396
4	**1-6-2022**	**4-5-2022**	0.4926	0.4926
5	**4-6-2022**	**7-5-2022**	0.2862	0.2862
6	**7-6-2022**	**9-30-2022**	0.0297	0.0297
		Highest	3.1396	3.1396

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	7.3400e-003	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.1700e-003	6.5500e-003	0.0229	4.0000e-005	3.4900e-003	5.0000e-005	3.5400e-003	9.4000e-004	5.0000e-005	9.9000e-004	0.0000	3.8191	3.8191	2.3000e-004	0.0000	3.8249
Stationary	0.0275	0.0768	0.0701	1.3000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	12.7567	12.7567	1.7900e-003	0.0000	12.8014
Waste						0.0000	0.0000		0.0000	0.0000	1.6239	0.0000	1.6239	0.0960	0.0000	4.0232
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0370**	**0.0834**	**0.0932**	**1.7000e-004**	**3.4900e-003**	**4.0900e-003**	**7.5800e-003**	**9.4000e-004**	**4.0900e-003**	**5.0300e-003**	**1.6239**	**16.5762**	**18.2001**	**0.0980**	**0.0000**	**20.6499**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	7.3400e-003	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.1700e-003	6.5500e-003	0.0229	4.0000e-005	3.4900e-003	5.0000e-005	3.5400e-003	9.4000e-004	5.0000e-005	9.9000e-004	0.0000	3.8191	3.8191	2.3000e-004	0.0000	3.8249
Stationary	0.0275	0.0768	0.0701	1.3000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	12.7567	12.7567	1.7900e-003	0.0000	12.8014
Waste						0.0000	0.0000		0.0000	0.0000	1.6239	0.0000	1.6239	0.0960	0.0000	4.0232
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0370**	**0.0834**	**0.0932**	**1.7000e-004**	**3.4900e-003**	**4.0900e-003**	**7.5800e-003**	**9.4000e-004**	**4.0900e-003**	**5.0300e-003**	**1.6239**	**16.5762**	**18.2001**	**0.0980**	**0.0000**	**20.6499**

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

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Electrical Work	Building Construction	4/6/2021	4/1/2022	6	310	
2	Site Work - Mobilization & Staging	Site Preparation	6/29/2021	10/11/2021	6	90	
3	Raw Water Reservoir	Grading	9/21/2021	11/29/2021	6	60	
4	Access Roads	Grading	9/21/2021	11/29/2021	6	60	
5	Stormwater Detention Basin	Grading	9/21/2021	9/25/2021	6	5	
6	Raw Water Pump Station	Grading	10/5/2021	12/18/2021	6	65	
7	Site Work - Pipeline	Site Preparation	10/12/2021	11/15/2021	6	30	
8	Filters	Building Construction	10/12/2021	5/3/2022	6	175	
9	Pretreatment	Building Construction	10/26/2021	3/19/2022	6	125	
10	Sludge Lagoons	Grading	11/9/2021	4/20/2022	6	140	
11	Clearwell	Grading	11/16/2021	3/23/2022	6	110	
12	Filter Operations Building	Grading	3/22/2022	5/30/2022	6	60	
13	Landscaping & Fencing	Site Preparation	5/30/2022	8/8/2022	6	61	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Electrical Work	Cranes	1	0.10	231	0.29
Electrical Work	Off-Highway Trucks	1	0.10	402	0.38
Electrical Work	Pumps	1	0.40	84	0.74

Electrical Work	Tractors/Loaders/Backhoes	1	0.50	97	0.37
Site Work - Mobilization & Staging	Excavators	2	3.30	158	0.38
Site Work - Mobilization & Staging	Off-Highway Trucks	3	3.30	402	0.38
Site Work - Mobilization & Staging	Pavers	1	1.30	130	0.42
Site Work - Mobilization & Staging	Pumps	1	0.70	84	0.74
Site Work - Mobilization & Staging	Rollers	1	1.30	80	0.38
Site Work - Mobilization & Staging	Rollers	1	0.30	80	0.38
Site Work - Mobilization & Staging	Rubber Tired Dozers	1	2.00	247	0.40
Site Work - Mobilization & Staging	Tractors/Loaders/Backhoes	2	3.30	97	0.37
Site Work - Mobilization & Staging	Tractors/Loaders/Backhoes	1	1.30	97	0.37
Raw Water Reservoir	Excavators	2	4.00	158	0.38
Raw Water Reservoir	Off-Highway Trucks	4	5.30	402	0.38
Raw Water Reservoir	Rollers	1	1.30	80	0.38
Raw Water Reservoir	Rubber Tired Dozers	2	2.70	247	0.40
Raw Water Reservoir	Tractors/Loaders/Backhoes	1	1.30	97	0.37
Access Roads	Cranes	1	0.30	231	0.29
Access Roads	Excavators	1	1.30	158	0.38
Access Roads	Graders	1	0.70	187	0.41
Access Roads	Off-Highway Trucks	2	2.70	402	0.38
Access Roads	Pavers	1	0.70	130	0.42
Access Roads	Pumps	1	0.70	84	0.74
Access Roads	Rollers	1	0.70	80	0.38
Access Roads	Rubber Tired Dozers	1	1.30	247	0.40
Access Roads	Tractors/Loaders/Backhoes	1	2.70	97	0.37
Stormwater Detention Basin	Excavators	1	4.80	158	0.38
Stormwater Detention Basin	Off-Highway Trucks	1	8.00	402	0.38
Stormwater Detention Basin	Rollers	1	1.60	80	0.38

Stormwater Detention Basin	Rubber Tired Dozers	1	4.80	247	0.40
Stormwater Detention Basin	Tractors/Loaders/Backhoes	1	3.20	97	0.37
Raw Water Pump Station	Cranes	1	0.10	231	0.29
Raw Water Pump Station	Excavators	1	0.60	158	0.38
Raw Water Pump Station	Off-Highway Trucks	1	1.20	402	0.38
Raw Water Pump Station	Pumps	1	0.60	84	0.74
Raw Water Pump Station	Rough Terrain Forklifts	1	0.40	100	0.40
Raw Water Pump Station	Tractors/Loaders/Backhoes	1	0.60	97	0.37
Site Work - Pipeline	Excavators	2	3.30	158	0.38
Site Work - Pipeline	Off-Highway Trucks	3	3.30	402	0.38
Site Work - Pipeline	Pavers	1	0.30	130	0.42
Site Work - Pipeline	Pumps	1	0.70	84	0.74
Site Work - Pipeline	Rollers	1	1.30	80	0.38
Site Work - Pipeline	Rollers	1	0.30	80	0.38
Site Work - Pipeline	Rubber Tired Dozers	1	2.00	247	0.40
Site Work - Pipeline	Tractors/Loaders/Backhoes	2	3.30	97	0.37
Site Work - Pipeline	Tractors/Loaders/Backhoes	1	1.30	97	0.37
Filters	Excavators	1	1.10	158	0.38
Filters	Off-Highway Trucks	2	1.10	402	0.38
Filters	Pumps	1	0.90	84	0.74
Filters	Rubber Tired Dozers	1	0.90	247	0.40
Pretreatment	Excavators	1	1.10	158	0.38
Pretreatment	Off-Highway Trucks	2	1.10	402	0.38
Pretreatment	Pumps	1	0.90	84	0.74
Pretreatment	Rubber Tired Dozers	1	0.90	247	0.40
Sludge Lagoons	Excavators	1	1.10	158	0.38
Sludge Lagoons	Off-Highway Trucks	2	1.10	402	0.38

Sludge Lagoons	Pumps	1	0.90	84	0.74
Sludge Lagoons	Rough Terrain Forklifts	1	0.90	100	0.40
Clearwell	Excavators	1	0.70	158	0.38
Clearwell	Off-Highway Trucks	1	0.40	402	0.38
Clearwell	Pumps	1	0.20	84	0.74
Clearwell	Rough Terrain Forklifts	1	2.90	100	0.40
Filter Operations Building	Cranes	1	0.10	231	0.29
Filter Operations Building	Excavators	1	0.60	158	0.38
Filter Operations Building	Off-Highway Trucks	1	1.20	402	0.38
Filter Operations Building	Pumps	1	0.60	84	0.74
Filter Operations Building	Rough Terrain Forklifts	1	0.40	100	0.40
Filter Operations Building	Tractors/Loaders/Backhoes	1	0.60	97	0.37
Landscaping & Fencing	Off-Highway Trucks	1	0.30	402	0.38
Landscaping & Fencing	Pumps	1	0.40	84	0.74
Landscaping & Fencing	Skid Steer Loaders	1	1.30	65	0.37
Landscaping & Fencing	Tractors/Loaders/Backhoes	1	1.30	97	0.37
Landscaping & Fencing	Trenchers	1	1.30	78	0.50

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
Electrical Work	4	20.00	2.00	0.00	10.00	6.60	0.00	LD_Mix	HDT_Mix	HHDT
Site Work - Mobilization & Staging	13	20.00	2.00	0.00	10.00	6.60	0.00	LD_Mix	HDT_Mix	HHDT
Raw Water Reservoir	10	20.00	2.00	12,000.00	10.00	6.60	14.60	LD_Mix	HDT_Mix	HHDT
Access Roads	10	20.00	2.00	188.00	10.00	6.60	22.60	LD_Mix	HDT_Mix	HHDT
Stormwater Detention Basin	5	20.00	2.00	0.00	10.00	6.60	0.00	LD_Mix	HDT_Mix	HHDT
Raw Water Pump Station	6	20.00	2.00	380.00	10.00	6.60	20.50	LD_Mix	HDT_Mix	HHDT
Site Work - Pipeline	13	20.00	2.00	0.00	10.00	6.60	0.00	LD_Mix	HDT_Mix	HHDT
Filters	5	20.00	2.00	0.00	10.00	6.60	0.00	LD_Mix	HDT_Mix	HHDT
Pretreatment	5	20.00	2.00	0.00	10.00	6.60	0.00	LD_Mix	HDT_Mix	HHDT
Sludge Lagoons	5	20.00	2.00	0.00	10.00	6.60	0.00	LD_Mix	HDT_Mix	HHDT
Clearwell	4	20.00	2.00	0.00	10.00	6.60	0.00	LD_Mix	HDT_Mix	HHDT
Filter Operations Building	6	20.00	2.00	1,060.00	10.00	6.60	22.60	LD_Mix	HDT_Mix	HHDT
Landscaping & Fencing	5	20.00	3.00	0.00	10.00	6.60	0.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Electrical Work - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.0400e-003	0.0470	0.0462	9.0000e-005		2.4100e-003	2.4100e-003		2.3000e-003	2.3000e-003	0.0000	7.6740	7.6740	1.6000e-003	0.0000	7.7140
Total	**5.0400e-003**	**0.0470**	**0.0462**	**9.0000e-005**		**2.4100e-003**	**2.4100e-003**		**2.3000e-003**	**2.3000e-003**	**0.0000**	**7.6740**	**7.6740**	**1.6000e-003**	**0.0000**	**7.7140**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0800e-003	0.0281	0.0101	6.0000e-005	1.3600e-003	1.0000e-004	1.4600e-003	3.9000e-004	9.0000e-005	4.9000e-004	0.0000	5.4825	5.4825	1.8000e-004	0.0000	5.4871
Worker	0.0207	0.0159	0.1490	1.8000e-004	0.0170	1.9000e-004	0.0172	4.5100e-003	1.8000e-004	4.6900e-003	0.0000	15.7129	15.7129	1.3300e-003	0.0000	15.7461
Total	**0.0218**	**0.0440**	**0.1591**	**2.4000e-004**	**0.0183**	**2.9000e-004**	**0.0186**	**4.9000e-003**	**2.7000e-004**	**5.1800e-003**	**0.0000**	**21.1955**	**21.1955**	**1.5100e-003**	**0.0000**	**21.2331**

3.2 Electrical Work - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.0400e-003	0.0470	0.0462	9.0000e-005		2.4100e-003	2.4100e-003		2.3000e-003	2.3000e-003	0.0000	7.6740	7.6740	1.6000e-003	0.0000	7.7140
Total	**5.0400e-003**	**0.0470**	**0.0462**	**9.0000e-005**		**2.4100e-003**	**2.4100e-003**		**2.3000e-003**	**2.3000e-003**	**0.0000**	**7.6740**	**7.6740**	**1.6000e-003**	**0.0000**	**7.7140**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0800e-003	0.0281	0.0101	6.0000e-005	1.3600e-003	1.0000e-004	1.4600e-003	3.9000e-004	9.0000e-005	4.9000e-004	0.0000	5.4825	5.4825	1.8000e-004	0.0000	5.4871
Worker	0.0207	0.0159	0.1490	1.8000e-004	0.0170	1.9000e-004	0.0172	4.5100e-003	1.8000e-004	4.6900e-003	0.0000	15.7129	15.7129	1.3300e-003	0.0000	15.7461
Total	**0.0218**	**0.0440**	**0.1591**	**2.4000e-004**	**0.0183**	**2.9000e-004**	**0.0186**	**4.9000e-003**	**2.7000e-004**	**5.1800e-003**	**0.0000**	**21.1955**	**21.1955**	**1.5100e-003**	**0.0000**	**21.2331**

3.2 Electrical Work - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.5300e-003	0.0139	0.0153	3.0000e-005		6.8000e-004	6.8000e-004		6.5000e-004	6.5000e-004	0.0000	2.5811	2.5811	5.3000e-004	0.0000	2.5944
Total	**1.5300e-003**	**0.0139**	**0.0153**	**3.0000e-005**		**6.8000e-004**	**6.8000e-004**		**6.5000e-004**	**6.5000e-004**	**0.0000**	**2.5811**	**2.5811**	**5.3000e-004**	**0.0000**	**2.5944**

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	3.3000e-004	9.0400e-003	3.0500e-003	2.0000e-005	4.6000e-004	3.0000e-005	4.9000e-004	1.3000e-004	3.0000e-005	1.6000e-004	0.0000	1.8345	1.8345	6.0000e-005	0.0000	1.8360
Worker	6.5700e-003	4.8200e-003	0.0445	6.0000e-005	5.7000e-003	6.0000e-005	5.7600e-003	1.5200e-003	6.0000e-005	1.5700e-003	0.0000	5.1109	5.1109	4.0000e-004	0.0000	5.1208
Total	**6.9000e-003**	**0.0139**	**0.0476**	**8.0000e-005**	**6.1600e-003**	**9.0000e-005**	**6.2500e-003**	**1.6500e-003**	**9.0000e-005**	**1.7300e-003**	**0.0000**	**6.9454**	**6.9454**	**4.6000e-004**	**0.0000**	**6.9567**

3.2 Electrical Work - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.5300e-003	0.0139	0.0153	3.0000e-005		6.8000e-004	6.8000e-004		6.5000e-004	6.5000e-004	0.0000	2.5811	2.5811	5.3000e-004	0.0000	2.5944
Total	**1.5300e-003**	**0.0139**	**0.0153**	**3.0000e-005**		**6.8000e-004**	**6.8000e-004**		**6.5000e-004**	**6.5000e-004**	**0.0000**	**2.5811**	**2.5811**	**5.3000e-004**	**0.0000**	**2.5944**

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	3.3000e-004	9.0400e-003	3.0500e-003	2.0000e-005	4.6000e-004	3.0000e-005	4.9000e-004	1.3000e-004	3.0000e-005	1.6000e-004	0.0000	1.8345	1.8345	6.0000e-005	0.0000	1.8360
Worker	6.5700e-003	4.8200e-003	0.0445	6.0000e-005	5.7000e-003	6.0000e-005	5.7600e-003	1.5200e-003	6.0000e-005	1.5700e-003	0.0000	5.1109	5.1109	4.0000e-004	0.0000	5.1208
Total	**6.9000e-003**	**0.0139**	**0.0476**	**8.0000e-005**	**6.1600e-003**	**9.0000e-005**	**6.2500e-003**	**1.6500e-003**	**9.0000e-005**	**1.7300e-003**	**0.0000**	**6.9454**	**6.9454**	**4.6000e-004**	**0.0000**	**6.9567**

3.3 Site Work - Mobilization & Staging - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0682	0.0000	0.0682	0.0373	0.0000	0.0373	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0674	0.6297	0.5209	1.2500e-003		0.0283	0.0283		0.0261	0.0261	0.0000	109.3284	109.3284	0.0348	0.0000	110.1975
Total	**0.0674**	**0.6297**	**0.5209**	**1.2500e-003**	**0.0682**	**0.0283**	**0.0965**	**0.0373**	**0.0261**	**0.0634**	**0.0000**	**109.3284**	**109.3284**	**0.0348**	**0.0000**	**110.1975**

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	4.2000e-004	0.0109	3.9200e-003	2.0000e-005	5.3000e-004	4.0000e-005	5.7000e-004	1.5000e-004	4.0000e-005	1.9000e-004	0.0000	2.1269	2.1269	7.0000e-005	0.0000	2.1286
Worker	8.0400e-003	6.1600e-003	0.0578	7.0000e-005	6.5800e-003	8.0000e-005	6.6500e-003	1.7500e-003	7.0000e-005	1.8200e-003	0.0000	6.0955	6.0955	5.1000e-004	0.0000	6.1084
Total	**8.4600e-003**	**0.0171**	**0.0617**	**9.0000e-005**	**7.1100e-003**	**1.2000e-004**	**7.2200e-003**	**1.9000e-003**	**1.1000e-004**	**2.0100e-003**	**0.0000**	**8.2224**	**8.2224**	**5.8000e-004**	**0.0000**	**8.2370**

3.3 Site Work - Mobilization & Staging - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0307	0.0000	0.0307	0.0168	0.0000	0.0168	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0674	0.6297	0.5209	1.2500e-003		0.0283	0.0283		0.0261	0.0261	0.0000	109.3283	109.3283	0.0348	0.0000	110.1973
Total	**0.0674**	**0.6297**	**0.5209**	**1.2500e-003**	**0.0307**	**0.0283**	**0.0590**	**0.0168**	**0.0261**	**0.0428**	**0.0000**	**109.3283**	**109.3283**	**0.0348**	**0.0000**	**110.1973**

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	4.2000e-004	0.0109	3.9200e-003	2.0000e-005	5.3000e-004	4.0000e-005	5.7000e-004	1.5000e-004	4.0000e-005	1.9000e-004	0.0000	2.1269	2.1269	7.0000e-005	0.0000	2.1286
Worker	8.0400e-003	6.1600e-003	0.0578	7.0000e-005	6.5800e-003	8.0000e-005	6.6500e-003	1.7500e-003	7.0000e-005	1.8200e-003	0.0000	6.0955	6.0955	5.1000e-004	0.0000	6.1084
Total	**8.4600e-003**	**0.0171**	**0.0617**	**9.0000e-005**	**7.1100e-003**	**1.2000e-004**	**7.2200e-003**	**1.9000e-003**	**1.1000e-004**	**2.0100e-003**	**0.0000**	**8.2224**	**8.2224**	**5.8000e-004**	**0.0000**	**8.2370**

3.4 Raw Water Reservoir - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1286	0.0000	0.1286	0.0679	0.0000	0.0679	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0781	0.7238	0.4867	1.4100e-003		0.0304	0.0304		0.0280	0.0280	0.0000	123.4749	123.4749	0.0399	0.0000	124.4733
Total	**0.0781**	**0.7238**	**0.4867**	**1.4100e-003**	**0.1286**	**0.0304**	**0.1590**	**0.0679**	**0.0280**	**0.0959**	**0.0000**	**123.4749**	**123.4749**	**0.0399**	**0.0000**	**124.4733**

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	0.0503	1.7067	0.4809	3.7900e-003	0.0728	7.0300e-003	0.0798	0.0199	6.7300e-003	0.0266	0.0000	359.3043	359.3043	8.6300e-003	0.0000	359.5200
Vendor	2.8000e-004	7.2700e-003	2.6200e-003	1.0000e-005	3.5000e-004	2.0000e-005	3.8000e-004	1.0000e-004	2.0000e-005	1.3000e-004	0.0000	1.4179	1.4179	5.0000e-005	0.0000	1.4191
Worker	5.3600e-003	4.1100e-003	0.0385	5.0000e-005	4.3800e-003	5.0000e-005	4.4300e-003	1.1700e-003	5.0000e-005	1.2100e-003	0.0000	4.0637	4.0637	3.4000e-004	0.0000	4.0723
Total	**0.0560**	**1.7180**	**0.5221**	**3.8500e-003**	**0.0775**	**7.1000e-003**	**0.0846**	**0.0212**	**6.8000e-003**	**0.0280**	**0.0000**	**364.7859**	**364.7859**	**9.0200e-003**	**0.0000**	**365.0113**

3.4 Raw Water Reservoir - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0579	0.0000	0.0579	0.0306	0.0000	0.0306	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0781	0.7238	0.4867	1.4100e-003		0.0304	0.0304		0.0280	0.0280	0.0000	123.4748	123.4748	0.0399	0.0000	124.4731
Total	**0.0781**	**0.7238**	**0.4867**	**1.4100e-003**	**0.0579**	**0.0304**	**0.0883**	**0.0306**	**0.0280**	**0.0585**	**0.0000**	**123.4748**	**123.4748**	**0.0399**	**0.0000**	**124.4731**

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	0.0503	1.7067	0.4809	3.7900e-003	0.0728	7.0300e-003	0.0798	0.0199	6.7300e-003	0.0266	0.0000	359.3043	359.3043	8.6300e-003	0.0000	359.5200
Vendor	2.8000e-004	7.2700e-003	2.6200e-003	1.0000e-005	3.5000e-004	2.0000e-005	3.8000e-004	1.0000e-004	2.0000e-005	1.3000e-004	0.0000	1.4179	1.4179	5.0000e-005	0.0000	1.4191
Worker	5.3600e-003	4.1100e-003	0.0385	5.0000e-005	4.3800e-003	5.0000e-005	4.4300e-003	1.1700e-003	5.0000e-005	1.2100e-003	0.0000	4.0637	4.0637	3.4000e-004	0.0000	4.0723
Total	**0.0560**	**1.7180**	**0.5221**	**3.8500e-003**	**0.0775**	**7.1000e-003**	**0.0846**	**0.0212**	**6.8000e-003**	**0.0280**	**0.0000**	**364.7859**	**364.7859**	**9.0200e-003**	**0.0000**	**365.0113**

3.5 Access Roads - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0308	0.0000	0.0308	0.0163	0.0000	0.0163	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0242	0.2311	0.1608	4.3000e-004		9.9600e-003	9.9600e-003		9.2000e-003	9.2000e-003	0.0000	37.3928	37.3928	0.0117	0.0000	37.6851
Total	**0.0242**	**0.2311**	**0.1608**	**4.3000e-004**	**0.0308**	**9.9600e-003**	**0.0408**	**0.0163**	**9.2000e-003**	**0.0255**	**0.0000**	**37.3928**	**37.3928**	**0.0117**	**0.0000**	**37.6851**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0700e-003	0.0370	0.0101	9.0000e-005	1.7600e-003	1.6000e-004	1.9300e-003	4.8000e-004	1.6000e-004	6.4000e-004	0.0000	8.3922	8.3922	1.6000e-004	0.0000	8.3963
Vendor	2.8000e-004	7.2700e-003	2.6200e-003	1.0000e-005	3.5000e-004	2.0000e-005	3.8000e-004	1.0000e-004	2.0000e-005	1.3000e-004	0.0000	1.4179	1.4179	5.0000e-005	0.0000	1.4191
Worker	5.3600e-003	4.1100e-003	0.0385	5.0000e-005	4.3800e-003	5.0000e-005	4.4300e-003	1.1700e-003	5.0000e-005	1.2100e-003	0.0000	4.0637	4.0637	3.4000e-004	0.0000	4.0723
Total	**6.7100e-003**	**0.0483**	**0.0513**	**1.5000e-004**	**6.4900e-003**	**2.3000e-004**	**6.7400e-003**	**1.7500e-003**	**2.3000e-004**	**1.9800e-003**	**0.0000**	**13.8738**	**13.8738**	**5.5000e-004**	**0.0000**	**13.8876**

3.5 Access Roads - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0139	0.0000	0.0139	7.3300e-003	0.0000	7.3300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0242	0.2311	0.1608	4.3000e-004		9.9600e-003	9.9600e-003		9.2000e-003	9.2000e-003	0.0000	37.3927	37.3927	0.0117	0.0000	37.6851
Total	**0.0242**	**0.2311**	**0.1608**	**4.3000e-004**	**0.0139**	**9.9600e-003**	**0.0238**	**7.3300e-003**	**9.2000e-003**	**0.0165**	**0.0000**	**37.3927**	**37.3927**	**0.0117**	**0.0000**	**37.6851**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0700e-003	0.0370	0.0101	9.0000e-005	1.7600e-003	1.6000e-004	1.9300e-003	4.8000e-004	1.6000e-004	6.4000e-004	0.0000	8.3922	8.3922	1.6000e-004	0.0000	8.3963
Vendor	2.8000e-004	7.2700e-003	2.6200e-003	1.0000e-005	3.5000e-004	2.0000e-005	3.8000e-004	1.0000e-004	2.0000e-005	1.3000e-004	0.0000	1.4179	1.4179	5.0000e-005	0.0000	1.4191
Worker	5.3600e-003	4.1100e-003	0.0385	5.0000e-005	4.3800e-003	5.0000e-005	4.4300e-003	1.1700e-003	5.0000e-005	1.2100e-003	0.0000	4.0637	4.0637	3.4000e-004	0.0000	4.0723
Total	**6.7100e-003**	**0.0483**	**0.0513**	**1.5000e-004**	**6.4900e-003**	**2.3000e-004**	**6.7400e-003**	**1.7500e-003**	**2.3000e-004**	**1.9800e-003**	**0.0000**	**13.8738**	**13.8738**	**5.5000e-004**	**0.0000**	**13.8876**

3.6 Stormwater Detention Basin - 2021

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					9.2900e-003	0.0000	9.2900e-003	4.9900e-003	0.0000	4.9900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0357	0.0232	6.0000e-005		1.6100e-003	1.6100e-003		1.4800e-003	1.4800e-003	0.0000	5.0944	5.0944	1.6500e-003	0.0000	5.1356
Total	**3.7100e-003**	**0.0357**	**0.0232**	**6.0000e-005**	**9.2900e-003**	**1.6100e-003**	**0.0109**	**4.9900e-003**	**1.4800e-003**	**6.4700e-003**	**0.0000**	**5.0944**	**5.0944**	**1.6500e-003**	**0.0000**	**5.1356**

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	2.0000e-005	6.1000e-004	2.2000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1182	0.1182	0.0000	0.0000	0.1183
Worker	4.5000e-004	3.4000e-004	3.2100e-003	0.0000	3.7000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3386	0.3386	3.0000e-005	0.0000	0.3394
Total	**4.7000e-004**	**9.5000e-004**	**3.4300e-003**	**0.0000**	**4.0000e-004**	**0.0000**	**4.0000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.4568**	**0.4568**	**3.0000e-005**	**0.0000**	**0.4576**

3.6 Stormwater Detention Basin - 2021

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					4.1800e-003	0.0000	4.1800e-003	2.2500e-003	0.0000	2.2500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0357	0.0232	6.0000e-005		1.6100e-003	1.6100e-003		1.4800e-003	1.4800e-003	0.0000	5.0944	5.0944	1.6500e-003	0.0000	5.1355
Total	**3.7100e-003**	**0.0357**	**0.0232**	**6.0000e-005**	**4.1800e-003**	**1.6100e-003**	**5.7900e-003**	**2.2500e-003**	**1.4800e-003**	**3.7300e-003**	**0.0000**	**5.0944**	**5.0944**	**1.6500e-003**	**0.0000**	**5.1355**

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	2.0000e-005	6.1000e-004	2.2000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1182	0.1182	0.0000	0.0000	0.1183
Worker	4.5000e-004	3.4000e-004	3.2100e-003	0.0000	3.7000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3386	0.3386	3.0000e-005	0.0000	0.3394
Total	**4.7000e-004**	**9.5000e-004**	**3.4300e-003**	**0.0000**	**4.0000e-004**	**0.0000**	**4.0000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.4568**	**0.4568**	**3.0000e-005**	**0.0000**	**0.4576**

3.7 Raw Water Pump Station - 2021

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					1.1000e-004	0.0000	1.1000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.2600e-003	0.0479	0.0447	1.1000e-004		2.0800e-003	2.0800e-003		1.9500e-003	1.9500e-003	0.0000	9.5014	9.5014	2.7000e-003	0.0000	9.5689
Total	**5.2600e-003**	**0.0479**	**0.0447**	**1.1000e-004**	**1.1000e-004**	**2.0800e-003**	**2.1900e-003**	**2.0000e-005**	**1.9500e-003**	**1.9700e-003**	**0.0000**	**9.5014**	**9.5014**	**2.7000e-003**	**0.0000**	**9.5689**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0200e-003	0.0693	0.0190	1.6000e-004	3.2300e-003	3.0000e-004	3.5400e-003	8.8000e-004	2.9000e-004	1.1800e-003	0.0000	15.4969	15.4969	3.1000e-004	0.0000	15.5048
Vendor	3.0000e-004	7.8700e-003	2.8300e-003	2.0000e-005	3.8000e-004	3.0000e-005	4.1000e-004	1.1000e-004	3.0000e-005	1.4000e-004	0.0000	1.5361	1.5361	5.0000e-005	0.0000	1.5373
Worker	5.8100e-003	4.4500e-003	0.0418	5.0000e-005	4.7500e-003	5.0000e-005	4.8000e-003	1.2600e-003	5.0000e-005	1.3100e-003	0.0000	4.4023	4.4023	3.7000e-004	0.0000	4.4116
Total	**8.1300e-003**	**0.0816**	**0.0636**	**2.3000e-004**	**8.3600e-003**	**3.8000e-004**	**8.7500e-003**	**2.2500e-003**	**3.7000e-004**	**2.6300e-003**	**0.0000**	**21.4353**	**21.4353**	**7.3000e-004**	**0.0000**	**21.4537**

3.7 Raw Water Pump Station - 2021

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					5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.2600e-003	0.0479	0.0447	1.1000e-004		2.0800e-003	2.0800e-003		1.9500e-003	1.9500e-003	0.0000	9.5014	9.5014	2.7000e-003	0.0000	9.5689
Total	**5.2600e-003**	**0.0479**	**0.0447**	**1.1000e-004**	**5.0000e-005**	**2.0800e-003**	**2.1300e-003**	**1.0000e-005**	**1.9500e-003**	**1.9600e-003**	**0.0000**	**9.5014**	**9.5014**	**2.7000e-003**	**0.0000**	**9.5689**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0200e-003	0.0693	0.0190	1.6000e-004	3.2300e-003	3.0000e-004	3.5400e-003	8.8000e-004	2.9000e-004	1.1800e-003	0.0000	15.4969	15.4969	3.1000e-004	0.0000	15.5048
Vendor	3.0000e-004	7.8700e-003	2.8300e-003	2.0000e-005	3.8000e-004	3.0000e-005	4.1000e-004	1.1000e-004	3.0000e-005	1.4000e-004	0.0000	1.5361	1.5361	5.0000e-005	0.0000	1.5373
Worker	5.8100e-003	4.4500e-003	0.0418	5.0000e-005	4.7500e-003	5.0000e-005	4.8000e-003	1.2600e-003	5.0000e-005	1.3100e-003	0.0000	4.4023	4.4023	3.7000e-004	0.0000	4.4116
Total	**8.1300e-003**	**0.0816**	**0.0636**	**2.3000e-004**	**8.3600e-003**	**3.8000e-004**	**8.7500e-003**	**2.2500e-003**	**3.7000e-004**	**2.6300e-003**	**0.0000**	**21.4353**	**21.4353**	**7.3000e-004**	**0.0000**	**21.4537**

3.8 Site Work - Pipeline - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0260	0.0000	0.0260	0.0128	0.0000	0.0128	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0220	0.2050	0.1682	4.1000e-004		9.1800e-003	9.1800e-003		8.4700e-003	8.4700e-003	0.0000	35.6688	35.6688	0.0113	0.0000	35.9522
Total	**0.0220**	**0.2050**	**0.1682**	**4.1000e-004**	**0.0260**	**9.1800e-003**	**0.0351**	**0.0128**	**8.4700e-003**	**0.0213**	**0.0000**	**35.6688**	**35.6688**	**0.0113**	**0.0000**	**35.9522**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4000e-004	3.6300e-003	1.3100e-003	1.0000e-005	1.8000e-004	1.0000e-005	1.9000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.7090	0.7090	2.0000e-005	0.0000	0.7095
Worker	2.6800e-003	2.0500e-003	0.0193	2.0000e-005	2.1900e-003	3.0000e-005	2.2200e-003	5.8000e-004	2.0000e-005	6.1000e-004	0.0000	2.0318	2.0318	1.7000e-004	0.0000	2.0361
Total	**2.8200e-003**	**5.6800e-003**	**0.0206**	**3.0000e-005**	**2.3700e-003**	**4.0000e-005**	**2.4100e-003**	**6.3000e-004**	**3.0000e-005**	**6.7000e-004**	**0.0000**	**2.7408**	**2.7408**	**1.9000e-004**	**0.0000**	**2.7457**

3.8 Site Work - Pipeline - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0117	0.0000	0.0117	5.7500e-003	0.0000	5.7500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0220	0.2050	0.1682	4.1000e-004		9.1800e-003	9.1800e-003		8.4700e-003	8.4700e-003	0.0000	35.6687	35.6687	0.0113	0.0000	35.9521
Total	**0.0220**	**0.2050**	**0.1682**	**4.1000e-004**	**0.0117**	**9.1800e-003**	**0.0209**	**5.7500e-003**	**8.4700e-003**	**0.0142**	**0.0000**	**35.6687**	**35.6687**	**0.0113**	**0.0000**	**35.9521**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4000e-004	3.6300e-003	1.3100e-003	1.0000e-005	1.8000e-004	1.0000e-005	1.9000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.7090	0.7090	2.0000e-005	0.0000	0.7095
Worker	2.6800e-003	2.0500e-003	0.0193	2.0000e-005	2.1900e-003	3.0000e-005	2.2200e-003	5.8000e-004	2.0000e-005	6.1000e-004	0.0000	2.0318	2.0318	1.7000e-004	0.0000	2.0361
Total	**2.8200e-003**	**5.6800e-003**	**0.0206**	**3.0000e-005**	**2.3700e-003**	**4.0000e-005**	**2.4100e-003**	**6.3000e-004**	**3.0000e-005**	**6.7000e-004**	**0.0000**	**2.7408**	**2.7408**	**1.9000e-004**	**0.0000**	**2.7457**

3.9 Filters - 2021

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	0.0126	0.1169	0.0811	2.1000e-004		5.1600e-003	5.1600e-003		4.8000e-003	4.8000e-003	0.0000	18.5282	18.5282	5.3900e-003	0.0000	18.6631
Total	**0.0126**	**0.1169**	**0.0811**	**2.1000e-004**		**5.1600e-003**	**5.1600e-003**		**4.8000e-003**	**4.8000e-003**	**0.0000**	**18.5282**	**18.5282**	**5.3900e-003**	**0.0000**	**18.6631**

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	3.3000e-004	8.4800e-003	3.0500e-003	2.0000e-005	4.1000e-004	3.0000e-005	4.4000e-004	1.2000e-004	3.0000e-005	1.5000e-004	0.0000	1.6542	1.6542	5.0000e-005	0.0000	1.6556
Worker	6.2600e-003	4.7900e-003	0.0450	5.0000e-005	5.1200e-003	6.0000e-005	5.1700e-003	1.3600e-003	5.0000e-005	1.4100e-003	0.0000	4.7410	4.7410	4.0000e-004	0.0000	4.7510
Total	**6.5900e-003**	**0.0133**	**0.0480**	**7.0000e-005**	**5.5300e-003**	**9.0000e-005**	**5.6100e-003**	**1.4800e-003**	**8.0000e-005**	**1.5600e-003**	**0.0000**	**6.3952**	**6.3952**	**4.5000e-004**	**0.0000**	**6.4065**

3.9 Filters - 2021

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	0.0126	0.1169	0.0811	2.1000e-004		5.1600e-003	5.1600e-003		4.8000e-003	4.8000e-003	0.0000	18.5282	18.5282	5.3900e-003	0.0000	18.6630
Total	**0.0126**	**0.1169**	**0.0811**	**2.1000e-004**		**5.1600e-003**	**5.1600e-003**		**4.8000e-003**	**4.8000e-003**	**0.0000**	**18.5282**	**18.5282**	**5.3900e-003**	**0.0000**	**18.6630**

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	3.3000e-004	8.4800e-003	3.0500e-003	2.0000e-005	4.1000e-004	3.0000e-005	4.4000e-004	1.2000e-004	3.0000e-005	1.5000e-004	0.0000	1.6542	1.6542	5.0000e-005	0.0000	1.6556
Worker	6.2600e-003	4.7900e-003	0.0450	5.0000e-005	5.1200e-003	6.0000e-005	5.1700e-003	1.3600e-003	5.0000e-005	1.4100e-003	0.0000	4.7410	4.7410	4.0000e-004	0.0000	4.7510
Total	**6.5900e-003**	**0.0133**	**0.0480**	**7.0000e-005**	**5.5300e-003**	**9.0000e-005**	**5.6100e-003**	**1.4800e-003**	**8.0000e-005**	**1.5600e-003**	**0.0000**	**6.3952**	**6.3952**	**4.5000e-004**	**0.0000**	**6.4065**

3.9 Filters - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0161	0.1403	0.1152	3.2000e-004		6.1100e-003	6.1100e-003		5.7000e-003	5.7000e-003	0.0000	27.7955	27.7955	8.0800e-003	0.0000	27.9975
Total	**0.0161**	**0.1403**	**0.1152**	**3.2000e-004**		**6.1100e-003**	**6.1100e-003**		**5.7000e-003**	**5.7000e-003**	**0.0000**	**27.7955**	**27.7955**	**8.0800e-003**	**0.0000**	**27.9975**

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	4.5000e-004	0.0122	4.1100e-003	3.0000e-005	6.2000e-004	4.0000e-005	6.6000e-004	1.8000e-004	4.0000e-005	2.2000e-004	0.0000	2.4696	2.4696	8.0000e-005	0.0000	2.4715
Worker	8.8400e-003	6.4900e-003	0.0599	8.0000e-005	7.6700e-003	8.0000e-005	7.7600e-003	2.0400e-003	8.0000e-005	2.1200e-003	0.0000	6.8801	6.8801	5.3000e-004	0.0000	6.8934
Total	**9.2900e-003**	**0.0187**	**0.0640**	**1.1000e-004**	**8.2900e-003**	**1.2000e-004**	**8.4200e-003**	**2.2200e-003**	**1.2000e-004**	**2.3400e-003**	**0.0000**	**9.3496**	**9.3496**	**6.1000e-004**	**0.0000**	**9.3648**

3.9 Filters - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0161	0.1403	0.1152	3.2000e-004		6.1100e-003	6.1100e-003		5.7000e-003	5.7000e-003	0.0000	27.7955	27.7955	8.0800e-003	0.0000	27.9975
Total	**0.0161**	**0.1403**	**0.1152**	**3.2000e-004**		**6.1100e-003**	**6.1100e-003**		**5.7000e-003**	**5.7000e-003**	**0.0000**	**27.7955**	**27.7955**	**8.0800e-003**	**0.0000**	**27.9975**

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	4.5000e-004	0.0122	4.1100e-003	3.0000e-005	6.2000e-004	4.0000e-005	6.6000e-004	1.8000e-004	4.0000e-005	2.2000e-004	0.0000	2.4696	2.4696	8.0000e-005	0.0000	2.4715
Worker	8.8400e-003	6.4900e-003	0.0599	8.0000e-005	7.6700e-003	8.0000e-005	7.7600e-003	2.0400e-003	8.0000e-005	2.1200e-003	0.0000	6.8801	6.8801	5.3000e-004	0.0000	6.8934
Total	**9.2900e-003**	**0.0187**	**0.0640**	**1.1000e-004**	**8.2900e-003**	**1.2000e-004**	**8.4200e-003**	**2.2200e-003**	**1.2000e-004**	**2.3400e-003**	**0.0000**	**9.3496**	**9.3496**	**6.1000e-004**	**0.0000**	**9.3648**

3.10 Pretreatment - 2021

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	0.0104	0.0968	0.0672	1.8000e-004		4.2700e-003	4.2700e-003		3.9800e-003	3.9800e-003	0.0000	15.3520	15.3520	4.4700e-003	0.0000	15.4637
Total	**0.0104**	**0.0968**	**0.0672**	**1.8000e-004**		**4.2700e-003**	**4.2700e-003**		**3.9800e-003**	**3.9800e-003**	**0.0000**	**15.3520**	**15.3520**	**4.4700e-003**	**0.0000**	**15.4637**

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	2.7000e-004	7.0200e-003	2.5300e-003	1.0000e-005	3.4000e-004	2.0000e-005	3.7000e-004	1.0000e-004	2.0000e-005	1.2000e-004	0.0000	1.3706	1.3706	5.0000e-005	0.0000	1.3718
Worker	5.1800e-003	3.9700e-003	0.0373	4.0000e-005	4.2400e-003	5.0000e-005	4.2900e-003	1.1300e-003	4.0000e-005	1.1700e-003	0.0000	3.9282	3.9282	3.3000e-004	0.0000	3.9365
Total	**5.4500e-003**	**0.0110**	**0.0398**	**5.0000e-005**	**4.5800e-003**	**7.0000e-005**	**4.6600e-003**	**1.2300e-003**	**6.0000e-005**	**1.2900e-003**	**0.0000**	**5.2989**	**5.2989**	**3.8000e-004**	**0.0000**	**5.3083**

3.10 Pretreatment - 2021

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	0.0104	0.0968	0.0672	1.8000e-004		4.2700e-003	4.2700e-003		3.9800e-003	3.9800e-003	0.0000	15.3519	15.3519	4.4700e-003	0.0000	15.4637
Total	**0.0104**	**0.0968**	**0.0672**	**1.8000e-004**		**4.2700e-003**	**4.2700e-003**		**3.9800e-003**	**3.9800e-003**	**0.0000**	**15.3519**	**15.3519**	**4.4700e-003**	**0.0000**	**15.4637**

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	2.7000e-004	7.0200e-003	2.5300e-003	1.0000e-005	3.4000e-004	2.0000e-005	3.7000e-004	1.0000e-004	2.0000e-005	1.2000e-004	0.0000	1.3706	1.3706	5.0000e-005	0.0000	1.3718
Worker	5.1800e-003	3.9700e-003	0.0373	4.0000e-005	4.2400e-003	5.0000e-005	4.2900e-003	1.1300e-003	4.0000e-005	1.1700e-003	0.0000	3.9282	3.9282	3.3000e-004	0.0000	3.9365
Total	**5.4500e-003**	**0.0110**	**0.0398**	**5.0000e-005**	**4.5800e-003**	**7.0000e-005**	**4.6600e-003**	**1.2300e-003**	**6.0000e-005**	**1.2900e-003**	**0.0000**	**5.2989**	**5.2989**	**3.8000e-004**	**0.0000**	**5.3083**

3.10 Pretreatment - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0103	0.0895	0.0735	2.0000e-004		3.9000e-003	3.9000e-003		3.6300e-003	3.6300e-003	0.0000	17.7362	17.7362	5.1600e-003	0.0000	17.8651
Total	**0.0103**	**0.0895**	**0.0735**	**2.0000e-004**		**3.9000e-003**	**3.9000e-003**		**3.6300e-003**	**3.6300e-003**	**0.0000**	**17.7362**	**17.7362**	**5.1600e-003**	**0.0000**	**17.8651**

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	2.9000e-004	7.7600e-003	2.6200e-003	2.0000e-005	3.9000e-004	3.0000e-005	4.2000e-004	1.1000e-004	2.0000e-005	1.4000e-004	0.0000	1.5758	1.5758	5.0000e-005	0.0000	1.5770
Worker	5.6400e-003	4.1400e-003	0.0382	5.0000e-005	4.9000e-003	5.0000e-005	4.9500e-003	1.3000e-003	5.0000e-005	1.3500e-003	0.0000	4.3901	4.3901	3.4000e-004	0.0000	4.3986
Total	**5.9300e-003**	**0.0119**	**0.0409**	**7.0000e-005**	**5.2900e-003**	**8.0000e-005**	**5.3700e-003**	**1.4100e-003**	**7.0000e-005**	**1.4900e-003**	**0.0000**	**5.9660**	**5.9660**	**3.9000e-004**	**0.0000**	**5.9757**

3.10 Pretreatment - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0103	0.0895	0.0735	2.0000e-004		3.9000e-003	3.9000e-003		3.6300e-003	3.6300e-003	0.0000	17.7362	17.7362	5.1600e-003	0.0000	17.8651
Total	**0.0103**	**0.0895**	**0.0735**	**2.0000e-004**		**3.9000e-003**	**3.9000e-003**		**3.6300e-003**	**3.6300e-003**	**0.0000**	**17.7362**	**17.7362**	**5.1600e-003**	**0.0000**	**17.8651**

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	2.9000e-004	7.7600e-003	2.6200e-003	2.0000e-005	3.9000e-004	3.0000e-005	4.2000e-004	1.1000e-004	2.0000e-005	1.4000e-004	0.0000	1.5758	1.5758	5.0000e-005	0.0000	1.5770
Worker	5.6400e-003	4.1400e-003	0.0382	5.0000e-005	4.9000e-003	5.0000e-005	4.9500e-003	1.3000e-003	5.0000e-005	1.3500e-003	0.0000	4.3901	4.3901	3.4000e-004	0.0000	4.3986
Total	**5.9300e-003**	**0.0119**	**0.0409**	**7.0000e-005**	**5.2900e-003**	**8.0000e-005**	**5.3700e-003**	**1.4100e-003**	**7.0000e-005**	**1.4900e-003**	**0.0000**	**5.9660**	**5.9660**	**3.9000e-004**	**0.0000**	**5.9757**

3.11 Sludge Lagoons - 2021

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					2.1000e-004	0.0000	2.1000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.8600e-003	0.0526	0.0488	1.3000e-004		2.1700e-003	2.1700e-003		2.0400e-003	2.0400e-003	0.0000	11.0171	11.0171	3.1700e-003	0.0000	11.0963
Total	**5.8600e-003**	**0.0526**	**0.0488**	**1.3000e-004**	**2.1000e-004**	**2.1700e-003**	**2.3800e-003**	**2.0000e-005**	**2.0400e-003**	**2.0600e-003**	**0.0000**	**11.0171**	**11.0171**	**3.1700e-003**	**0.0000**	**11.0963**

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	2.1000e-004	5.5700e-003	2.0000e-003	1.0000e-005	2.7000e-004	2.0000e-005	2.9000e-004	8.0000e-005	2.0000e-005	1.0000e-004	0.0000	1.0871	1.0871	4.0000e-005	0.0000	1.0880
Worker	4.1100e-003	3.1500e-003	0.0296	3.0000e-005	3.3600e-003	4.0000e-005	3.4000e-003	8.9000e-004	4.0000e-005	9.3000e-004	0.0000	3.1155	3.1155	2.6000e-004	0.0000	3.1221
Total	**4.3200e-003**	**8.7200e-003**	**0.0316**	**4.0000e-005**	**3.6300e-003**	**6.0000e-005**	**3.6900e-003**	**9.7000e-004**	**6.0000e-005**	**1.0300e-003**	**0.0000**	**4.2026**	**4.2026**	**3.0000e-004**	**0.0000**	**4.2100**

3.11 Sludge Lagoons - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.0000e-005	0.0000	9.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.8600e-003	0.0526	0.0488	1.3000e-004		2.1700e-003	2.1700e-003		2.0400e-003	2.0400e-003	0.0000	11.0171	11.0171	3.1700e-003	0.0000	11.0963
Total	**5.8600e-003**	**0.0526**	**0.0488**	**1.3000e-004**	**9.0000e-005**	**2.1700e-003**	**2.2600e-003**	**1.0000e-005**	**2.0400e-003**	**2.0500e-003**	**0.0000**	**11.0171**	**11.0171**	**3.1700e-003**	**0.0000**	**11.0963**

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	2.1000e-004	5.5700e-003	2.0000e-003	1.0000e-005	2.7000e-004	2.0000e-005	2.9000e-004	8.0000e-005	2.0000e-005	1.0000e-004	0.0000	1.0871	1.0871	4.0000e-005	0.0000	1.0880
Worker	4.1100e-003	3.1500e-003	0.0296	3.0000e-005	3.3600e-003	4.0000e-005	3.4000e-003	8.9000e-004	4.0000e-005	9.3000e-004	0.0000	3.1155	3.1155	2.6000e-004	0.0000	3.1221
Total	**4.3200e-003**	**8.7200e-003**	**0.0316**	**4.0000e-005**	**3.6300e-003**	**6.0000e-005**	**3.6900e-003**	**9.7000e-004**	**6.0000e-005**	**1.0300e-003**	**0.0000**	**4.2026**	**4.2026**	**3.0000e-004**	**0.0000**	**4.2100**

3.11 Sludge Lagoons - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.1000e-004	0.0000	2.1000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0106	0.0869	0.0963	2.6000e-004		3.5400e-003	3.5400e-003		3.3200e-003	3.3200e-003	0.0000	22.5175	22.5175	6.4700e-003	0.0000	22.6792
Total	**0.0106**	**0.0869**	**0.0963**	**2.6000e-004**	**2.1000e-004**	**3.5400e-003**	**3.7500e-003**	**2.0000e-005**	**3.3200e-003**	**3.3400e-003**	**0.0000**	**22.5175**	**22.5175**	**6.4700e-003**	**0.0000**	**22.6792**

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	4.0000e-004	0.0109	3.6800e-003	2.0000e-005	5.5000e-004	4.0000e-005	5.9000e-004	1.6000e-004	3.0000e-005	1.9000e-004	0.0000	2.2109	2.2109	7.0000e-005	0.0000	2.2126
Worker	7.9200e-003	5.8100e-003	0.0536	7.0000e-005	6.8700e-003	7.0000e-005	6.9400e-003	1.8300e-003	7.0000e-005	1.9000e-003	0.0000	6.1593	6.1593	4.8000e-004	0.0000	6.1712
Total	**8.3200e-003**	**0.0167**	**0.0573**	**9.0000e-005**	**7.4200e-003**	**1.1000e-004**	**7.5300e-003**	**1.9900e-003**	**1.0000e-004**	**2.0900e-003**	**0.0000**	**8.3701**	**8.3701**	**5.5000e-004**	**0.0000**	**8.3838**

3.11 Sludge Lagoons - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.0000e-005	0.0000	9.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0106	0.0869	0.0963	2.6000e-004		3.5400e-003	3.5400e-003		3.3200e-003	3.3200e-003	0.0000	22.5174	22.5174	6.4700e-003	0.0000	22.6792
Total	**0.0106**	**0.0869**	**0.0963**	**2.6000e-004**	**9.0000e-005**	**3.5400e-003**	**3.6300e-003**	**1.0000e-005**	**3.3200e-003**	**3.3300e-003**	**0.0000**	**22.5174**	**22.5174**	**6.4700e-003**	**0.0000**	**22.6792**

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	4.0000e-004	0.0109	3.6800e-003	2.0000e-005	5.5000e-004	4.0000e-005	5.9000e-004	1.6000e-004	3.0000e-005	1.9000e-004	0.0000	2.2109	2.2109	7.0000e-005	0.0000	2.2126
Worker	7.9200e-003	5.8100e-003	0.0536	7.0000e-005	6.8700e-003	7.0000e-005	6.9400e-003	1.8300e-003	7.0000e-005	1.9000e-003	0.0000	6.1593	6.1593	4.8000e-004	0.0000	6.1712
Total	**8.3200e-003**	**0.0167**	**0.0573**	**9.0000e-005**	**7.4200e-003**	**1.1000e-004**	**7.5300e-003**	**1.9900e-003**	**1.0000e-004**	**2.0900e-003**	**0.0000**	**8.3701**	**8.3701**	**5.5000e-004**	**0.0000**	**8.3838**

3.12 Clearwell - 2021

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					1.0000e-004	0.0000	1.0000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0900e-003	0.0223	0.0278	5.0000e-005		9.2000e-004	9.2000e-004		8.5000e-004	8.5000e-004	0.0000	4.4318	4.4318	1.3600e-003	0.0000	4.4657
Total	**2.0900e-003**	**0.0223**	**0.0278**	**5.0000e-005**	**1.0000e-004**	**9.2000e-004**	**1.0200e-003**	**1.0000e-005**	**8.5000e-004**	**8.6000e-004**	**0.0000**	**4.4318**	**4.4318**	**1.3600e-003**	**0.0000**	**4.4657**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9000e-004	4.8400e-003	1.7400e-003	1.0000e-005	2.4000e-004	2.0000e-005	2.5000e-004	7.0000e-005	2.0000e-005	8.0000e-005	0.0000	0.9453	0.9453	3.0000e-005	0.0000	0.9460
Worker	3.5700e-003	2.7400e-003	0.0257	3.0000e-005	2.9200e-003	3.0000e-005	2.9600e-003	7.8000e-004	3.0000e-005	8.1000e-004	0.0000	2.7091	2.7091	2.3000e-004	0.0000	2.7148
Total	**3.7600e-003**	**7.5800e-003**	**0.0274**	**4.0000e-005**	**3.1600e-003**	**5.0000e-005**	**3.2100e-003**	**8.5000e-004**	**5.0000e-005**	**8.9000e-004**	**0.0000**	**3.6544**	**3.6544**	**2.6000e-004**	**0.0000**	**3.6609**

3.12 Clearwell - 2021

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					5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0900e-003	0.0223	0.0278	5.0000e-005		9.2000e-004	9.2000e-004		8.5000e-004	8.5000e-004	0.0000	4.4318	4.4318	1.3600e-003	0.0000	4.4657
Total	**2.0900e-003**	**0.0223**	**0.0278**	**5.0000e-005**	**5.0000e-005**	**9.2000e-004**	**9.7000e-004**	**0.0000**	**8.5000e-004**	**8.5000e-004**	**0.0000**	**4.4318**	**4.4318**	**1.3600e-003**	**0.0000**	**4.4657**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9000e-004	4.8400e-003	1.7400e-003	1.0000e-005	2.4000e-004	2.0000e-005	2.5000e-004	7.0000e-005	2.0000e-005	8.0000e-005	0.0000	0.9453	0.9453	3.0000e-005	0.0000	0.9460
Worker	3.5700e-003	2.7400e-003	0.0257	3.0000e-005	2.9200e-003	3.0000e-005	2.9600e-003	7.8000e-004	3.0000e-005	8.1000e-004	0.0000	2.7091	2.7091	2.3000e-004	0.0000	2.7148
Total	**3.7600e-003**	**7.5800e-003**	**0.0274**	**4.0000e-005**	**3.1600e-003**	**5.0000e-005**	**3.2100e-003**	**8.5000e-004**	**5.0000e-005**	**8.9000e-004**	**0.0000**	**3.6544**	**3.6544**	**2.6000e-004**	**0.0000**	**3.6609**

3.12 Clearwell - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0000e-004	0.0000	1.0000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2700e-003	0.0339	0.0482	9.0000e-005		1.3100e-003	1.3100e-003		1.2200e-003	1.2200e-003	0.0000	7.7557	7.7557	2.3700e-003	0.0000	7.8150
Total	**3.2700e-003**	**0.0339**	**0.0482**	**9.0000e-005**	**1.0000e-004**	**1.3100e-003**	**1.4100e-003**	**1.0000e-005**	**1.2200e-003**	**1.2300e-003**	**0.0000**	**7.7557**	**7.7557**	**2.3700e-003**	**0.0000**	**7.8150**

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	3.0000e-004	8.1100e-003	2.7400e-003	2.0000e-005	4.1000e-004	3.0000e-005	4.4000e-004	1.2000e-004	3.0000e-005	1.4000e-004	0.0000	1.6464	1.6464	5.0000e-005	0.0000	1.6476
Worker	5.9000e-003	4.3300e-003	0.0399	5.0000e-005	5.1200e-003	5.0000e-005	5.1700e-003	1.3600e-003	5.0000e-005	1.4100e-003	0.0000	4.5867	4.5867	3.5000e-004	0.0000	4.5956
Total	**6.2000e-003**	**0.0124**	**0.0427**	**7.0000e-005**	**5.5300e-003**	**8.0000e-005**	**5.6100e-003**	**1.4800e-003**	**8.0000e-005**	**1.5500e-003**	**0.0000**	**6.2331**	**6.2331**	**4.0000e-004**	**0.0000**	**6.2432**

3.12 Clearwell - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2700e-003	0.0339	0.0482	9.0000e-005		1.3100e-003	1.3100e-003		1.2200e-003	1.2200e-003	0.0000	7.7557	7.7557	2.3700e-003	0.0000	7.8150
Total	**3.2700e-003**	**0.0339**	**0.0482**	**9.0000e-005**	**5.0000e-005**	**1.3100e-003**	**1.3600e-003**	**0.0000**	**1.2200e-003**	**1.2200e-003**	**0.0000**	**7.7557**	**7.7557**	**2.3700e-003**	**0.0000**	**7.8150**

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	3.0000e-004	8.1100e-003	2.7400e-003	2.0000e-005	4.1000e-004	3.0000e-005	4.4000e-004	1.2000e-004	3.0000e-005	1.4000e-004	0.0000	1.6464	1.6464	5.0000e-005	0.0000	1.6476
Worker	5.9000e-003	4.3300e-003	0.0399	5.0000e-005	5.1200e-003	5.0000e-005	5.1700e-003	1.3600e-003	5.0000e-005	1.4100e-003	0.0000	4.5867	4.5867	3.5000e-004	0.0000	4.5956
Total	**6.2000e-003**	**0.0124**	**0.0427**	**7.0000e-005**	**5.5300e-003**	**8.0000e-005**	**5.6100e-003**	**1.4800e-003**	**8.0000e-005**	**1.5500e-003**	**0.0000**	**6.2331**	**6.2331**	**4.0000e-004**	**0.0000**	**6.2432**

3.13 Filter Operations Building - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.1000e-004	0.0000	4.1000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3000e-003	0.0363	0.0400	1.0000e-004		1.5500e-003	1.5500e-003		1.4500e-003	1.4500e-003	0.0000	8.7727	8.7727	2.4900e-003	0.0000	8.8350
Total	**4.3000e-003**	**0.0363**	**0.0400**	**1.0000e-004**	**4.1000e-004**	**1.5500e-003**	**1.9600e-003**	**6.0000e-005**	**1.4500e-003**	**1.5100e-003**	**0.0000**	**8.7727**	**8.7727**	**2.4900e-003**	**0.0000**	**8.8350**

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	5.6300e-003	0.1943	0.0517	4.9000e-004	9.9400e-003	8.5000e-004	0.0108	2.7200e-003	8.2000e-004	3.5400e-003	0.0000	46.9475	46.9475	8.4000e-004	0.0000	46.9685
Vendor	2.6000e-004	6.9500e-003	2.3500e-003	1.0000e-005	3.5000e-004	2.0000e-005	3.8000e-004	1.0000e-004	2.0000e-005	1.2000e-004	0.0000	1.4112	1.4112	4.0000e-005	0.0000	1.4123
Worker	5.0500e-003	3.7100e-003	0.0342	4.0000e-005	4.3800e-003	5.0000e-005	4.4300e-003	1.1700e-003	4.0000e-005	1.2100e-003	0.0000	3.9315	3.9315	3.0000e-004	0.0000	3.9391
Total	**0.0109**	**0.2049**	**0.0883**	**5.4000e-004**	**0.0147**	**9.2000e-004**	**0.0156**	**3.9900e-003**	**8.8000e-004**	**4.8700e-003**	**0.0000**	**52.2901**	**52.2901**	**1.1800e-003**	**0.0000**	**52.3198**

3.13 Filter Operations Building - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.8000e-004	0.0000	1.8000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3000e-003	0.0363	0.0400	1.0000e-004		1.5500e-003	1.5500e-003		1.4500e-003	1.4500e-003	0.0000	8.7727	8.7727	2.4900e-003	0.0000	8.8350
Total	**4.3000e-003**	**0.0363**	**0.0400**	**1.0000e-004**	**1.8000e-004**	**1.5500e-003**	**1.7300e-003**	**3.0000e-005**	**1.4500e-003**	**1.4800e-003**	**0.0000**	**8.7727**	**8.7727**	**2.4900e-003**	**0.0000**	**8.8350**

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	5.6300e-003	0.1943	0.0517	4.9000e-004	9.9400e-003	8.5000e-004	0.0108	2.7200e-003	8.2000e-004	3.5400e-003	0.0000	46.9475	46.9475	8.4000e-004	0.0000	46.9685
Vendor	2.6000e-004	6.9500e-003	2.3500e-003	1.0000e-005	3.5000e-004	2.0000e-005	3.8000e-004	1.0000e-004	2.0000e-005	1.2000e-004	0.0000	1.4112	1.4112	4.0000e-005	0.0000	1.4123
Worker	5.0500e-003	3.7100e-003	0.0342	4.0000e-005	4.3800e-003	5.0000e-005	4.4300e-003	1.1700e-003	4.0000e-005	1.2100e-003	0.0000	3.9315	3.9315	3.0000e-004	0.0000	3.9391
Total	**0.0109**	**0.2049**	**0.0883**	**5.4000e-004**	**0.0147**	**9.2000e-004**	**0.0156**	**3.9900e-003**	**8.8000e-004**	**4.8700e-003**	**0.0000**	**52.2901**	**52.2901**	**1.1800e-003**	**0.0000**	**52.3198**

3.14 Landscaping & Fencing - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1100e-003	0.0388	0.0404	7.0000e-005		2.2100e-003	2.2100e-003		2.0500e-003	2.0500e-003	0.0000	5.9145	5.9145	1.6800e-003	0.0000	5.9565
Total	**4.1100e-003**	**0.0388**	**0.0404**	**7.0000e-005**	**7.5000e-004**	**2.2100e-003**	**2.9600e-003**	**8.0000e-005**	**2.0500e-003**	**2.1300e-003**	**0.0000**	**5.9145**	**5.9145**	**1.6800e-003**	**0.0000**	**5.9565**

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	3.9000e-004	0.0106	3.5800e-003	2.0000e-005	5.4000e-004	3.0000e-005	5.7000e-004	1.6000e-004	3.0000e-005	1.9000e-004	0.0000	2.1521	2.1521	7.0000e-005	0.0000	2.1537
Worker	5.1400e-003	3.7700e-003	0.0348	4.0000e-005	4.4600e-003	5.0000e-005	4.5100e-003	1.1900e-003	4.0000e-005	1.2300e-003	0.0000	3.9970	3.9970	3.1000e-004	0.0000	4.0047
Total	**5.5300e-003**	**0.0144**	**0.0384**	**6.0000e-005**	**5.0000e-003**	**8.0000e-005**	**5.0800e-003**	**1.3500e-003**	**7.0000e-005**	**1.4200e-003**	**0.0000**	**6.1490**	**6.1490**	**3.8000e-004**	**0.0000**	**6.1584**

3.14 Landscaping & Fencing - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.4000e-004	0.0000	3.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1100e-003	0.0388	0.0404	7.0000e-005		2.2100e-003	2.2100e-003		2.0500e-003	2.0500e-003	0.0000	5.9145	5.9145	1.6800e-003	0.0000	5.9564
Total	**4.1100e-003**	**0.0388**	**0.0404**	**7.0000e-005**	**3.4000e-004**	**2.2100e-003**	**2.5500e-003**	**4.0000e-005**	**2.0500e-003**	**2.0900e-003**	**0.0000**	**5.9145**	**5.9145**	**1.6800e-003**	**0.0000**	**5.9564**

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	3.9000e-004	0.0106	3.5800e-003	2.0000e-005	5.4000e-004	3.0000e-005	5.7000e-004	1.6000e-004	3.0000e-005	1.9000e-004	0.0000	2.1521	2.1521	7.0000e-005	0.0000	2.1537
Worker	5.1400e-003	3.7700e-003	0.0348	4.0000e-005	4.4600e-003	5.0000e-005	4.5100e-003	1.1900e-003	4.0000e-005	1.2300e-003	0.0000	3.9970	3.9970	3.1000e-004	0.0000	4.0047
Total	**5.5300e-003**	**0.0144**	**0.0384**	**6.0000e-005**	**5.0000e-003**	**8.0000e-005**	**5.0800e-003**	**1.3500e-003**	**7.0000e-005**	**1.4200e-003**	**0.0000**	**6.1490**	**6.1490**	**3.8000e-004**	**0.0000**	**6.1584**

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	2.1700e-003	6.5500e-003	0.0229	4.0000e-005	3.4900e-003	5.0000e-005	3.5400e-003	9.4000e-004	5.0000e-005	9.9000e-004	0.0000	3.8191	3.8191	2.3000e-004	0.0000	3.8249
Unmitigated	2.1700e-003	6.5500e-003	0.0229	4.0000e-005	3.4900e-003	5.0000e-005	3.5400e-003	9.4000e-004	5.0000e-005	9.9000e-004	0.0000	3.8191	3.8191	2.3000e-004	0.0000	3.8249

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Golf Course	3.93	3.93	3.93	9,373	9,373
Total	3.93	3.93	3.93	9,373	9,373

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
Golf Course	10.00	0.00	68.60	99.00	0.00	1.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Golf Course	0.494917	0.045179	0.208299	0.152927	0.045754	0.006973	0.019174	0.011899	0.003300	0.001230	0.006642	0.001778	0.001928

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

Mitigated

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Golf Course	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Golf Course	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	7.3400e-003	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-004
Unmitigated	7.3400e-003	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.3200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-004
Total	**7.3400e-003**	**0.0000**	**1.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.2000e-004**	**3.2000e-004**	**0.0000**	**0.0000**	**3.4000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.3200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-004
Total	**7.3400e-003**	**0.0000**	**1.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.2000e-004**	**3.2000e-004**	**0.0000**	**0.0000**	**3.4000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Golf Course	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Golf Course	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.6239	0.0960	0.0000	4.0232
Unmitigated	1.6239	0.0960	0.0000	4.0232

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Golf Course	8	1.6239	0.0960	0.0000	4.0232
Total		**1.6239**	**0.0960**	**0.0000**	**4.0232**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Golf Course	8	1.6239	0.0960	0.0000	4.0232
Total		**1.6239**	**0.0960**	**0.0000**	**4.0232**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0	50	670.5	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (600 - 750 HP)	0.0275	0.0768	0.0701	1.3000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	12.7567	12.7567	1.7900e-003	0.0000	12.8014
Total	**0.0275**	**0.0768**	**0.0701**	**1.3000e-004**		**4.0400e-003**	**4.0400e-003**		**4.0400e-003**	**4.0400e-003**	**0.0000**	**12.7567**	**12.7567**	**1.7900e-003**	**0.0000**	**12.8014**

11.0 Vegetation

Appendix B

Biological Resources: Species Occurrence

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Twain Harte (3812012) OR Stanislaus (3812023) OR Crandall Peak (3812022) OR Strawberry (3812021) OR Hull Creek (3812011) OR Duckwall Mtn. (3712081) OR Tuolumne (3712082) OR Standard (3712083) OR Columbia SE (3812013))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter gentilis northern goshawk	ABNKC12060	None	None	G5	S3	SSC
Accipiter striatus sharp-shinned hawk	ABNKC12020	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
Allium tribracteatum three-bracted onion	PMLIL022D0	None	None	G2	S2	1B.2
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Atractelmis wawona Wawona riffle beetle	IICOL58010	None	None	G3	S1S2	
Balsamorhiza macrolepis big-scale balsamroot	PDAST11061	None	None	G2	S2	1B.2
Banksula melones Melones Cave harvestman	ILARA14010	None	None	G1	S1	
Banksula tuolumne Tuolumne cave harvestman	ILARA14090	None	None	G1	S1	
Big Tree Forest Big Tree Forest	CTT84250CA	None	None	G3	S3.2	
Bombus crotchii Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	
Botrychium crenulatum scalloped moonwort	PPOPH010L0	None	None	G4	S3	2B.2
Botrychium minganense Mingan moonwort	PPOPH010R0	None	None	G4G5	S3	2B.2
Bruchia bolanderi Bolander's bruchia	NBMUS13010	None	None	G3G4	S3	4.2
Clarkia australis Small's southern clarkia	PDONA05040	None	None	G2	S2	1B.2
Clarkia biloba ssp. australis Mariposa clarkia	PDONA05051	None	None	G4G5T3	S3	1B.2
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
Diplacus pulchellus yellow-lip pansy monkeyflower	PDSCR1B280	None	None	G2	S2	1B.2
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Erethizon dorsatum North American porcupine	AMAFJ01010	None	None	G5	S3	
Eryngium pinnatisectum Tuolumne button-celery	PDAPI0Z0P0	None	None	G2	S2	1B.2
Erythranthe marmorata Stanislaus monkeyflower	PDPHR01130	None	None	G2?	S2?	1B.1
Erythronium tuolumnense Tuolumne fawn lily	PMLIL0U0H0	None	None	G2G3	S2S3	1B.2
Euderma maculatum spotted bat	AMACC07010	None	None	G4	S3	SSC
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
Gulo gulo California wolverine	AMAJF03010	Proposed Threatened	Threatened	G4	S1	FP
Haliaeetus leucocephalus bald eagle	ABNKC10010	Delisted	Endangered	G5	S3	FP
Horkelia parryi Parry's horkelia	PDROS0W0C0	None	None	G2	S2	1B.2
Hydroporus simplex simple hydroporus diving beetle	IICOL55050	None	None	G1?	S1?	
Iris hartwegii ssp. columbiana Tuolumne iris	PMIRI090D2	None	None	G4T1	S1	1B.2
Larca laceyi Lacey's Cave pseudoscorpion	ILARA39010	None	None	G1G2	S1	
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Lavinia symmetricus ssp. 1 San Joaquin roach	AFCJB19021	None	None	G4T3Q	S3	SSC
Lepus americanus tahoensis Sierra Nevada snowshoe hare	AMAEB03012	None	None	G5T3T4Q	S2	SSC
Lomatium stebbinsii Stebbins' lomatium	PDAPI1B1V0	None	None	G2	S2	1B.1
Margaritifera falcata western pearlshell	IMBIV27020	None	None	G4G5	S1S2	
Monadenia circumcarinata keeled sideband	IMGASC7020	None	None	G1	S1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Monadenia mormonum buttoni Button's Sierra sideband	IMGASC7071	None	None	G2T1	S1S2	
Monadenia mormonum hirsuta hirsute Sierra sideband	IMGASC7072	None	None	G2T1	S1	
Monadenia tuolumneana Tuolumne sideband	IMGASC7100	None	None	G1	S1	
Navarretia miwukensis Mi-Wuk navarretia	PDPLM0C210	None	None	G1G2	S1S2	1B.2
Pandion haliaetus osprey	ABNKC01010	None	None	G5	S4	WL
Peltigera gowardii western waterfan lichen	NLVER00460	None	None	G4?	S3	4.2
Pseudogarypus orpheus Music Hall Cave pseudoscorpion	ILARA40010	None	None	G1G2	S1	
Rana boylii foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Rhynchospora capitellata brownish beaked-rush	PMCYP0N080	None	None	G5	S1	2B.2
Strix nebulosa great gray owl	ABNSB12040	None	Endangered	G5	S1	
Stygobromus harai Hara's Cave amphipod	ICMAL05470	None	None	G1G2	S1S2	

Record Count: 51

CNPS California Native Plant Society

Inventory of Rare and Endangered Plants

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

28 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3812023, 3812022, 3812021, 3812013, 3812012, 3812011, 3712083 3712082 and 3712081;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Allium jepsonii	Jepson's onion	Alliaceae	perennial bulbiferous herb	Apr-Aug	1B.2	S2	G2
Allium tribracteatum	three-bracted onion	Alliaceae	perennial bulbiferous herb	Apr-Aug	1B.2	S2	G2
Botrychium crenulatum	scalloped moonwort	Ophioglossaceae	perennial rhizomatous herb	Jun-Sep	2B.2	S3	G4
Botrychium minganense	Mingan moonwort	Ophioglossaceae	perennial rhizomatous herb	Jul-Sep	2B.2	S3	G4G5
Bruchia bolanderi	Bolander's bruchia	Bruchianceae	moss		4.2	S3	G3G4
Ceanothus fresnensis	Fresno ceanothus	Rhamnaceae	perennial evergreen shrub	May-Jul	4.3	S4	G4
Clarkia australis	Small's southern clarkia	Onagraceae	annual herb	May-Aug	1B.2	S2	G2
Clarkia biloba ssp. australis	Mariposa clarkia	Onagraceae	annual herb	Apr-Jul	1B.2	S3	G4G5T3
Clarkia virgata	Sierra clarkia	Onagraceae	annual herb	May-Aug	4.3	S3	G3
Claytonia parviflora ssp. grandiflora	streambank spring beauty	Montiaceae	annual herb	Feb-May	4.2	S3	G5T3
Claytonia umbellata	Great Basin claytonia	Montiaceae	perennial herb	May-Aug	2B.3	S1	G4
		Orchidaceae		Mar-Aug	4.2	S4	G4

Cypripedium montanum	mountain lady's-slipper		perennial rhizomatous herb				
Delphinium hansenii ssp. ewanianum	Ewan's larkspur	Ranunculaceae	perennial herb	Mar-May	4.2	S3	G4T3
Diplacus pulchellus	yellow-lip pansy monkeyflower	Phrymaceae	annual herb	Apr-Jul	1B.2	S2	G2
Eryngium jepsonii	Jepson's coyote thistle	Apiaceae	perennial herb	Apr-Aug	1B.2	S2?	G2?
Eryngium pinnatisectum	Tuolumne button-celery	Apiaceae	annual / perennial herb	May-Aug	1B.2	S2	G2
Erythranthe marmorata	Stanislaus monkeyflower	Phrymaceae	annual herb	Mar-May	1B.1	SX	GXQ
Erythronium tuolumnense	Tuolumne fawn lily	Liliaceae	perennial bulbiferous herb	Mar-Jun	1B.2	S2S3	G2G3
Horkelia parryi	Parry's horkelia	Rosaceae	perennial herb	Apr-Sep	1B.2	S2	G2
Iris hartwegii ssp. columbiana	Tuolumne iris	Iridaceae	perennial rhizomatous herb	May-Jun	1B.2	S1	G4T1
Lewisia kelloggii ssp. hutchisonii	Hutchison's lewisia	Montiaceae	perennial herb	(Apr)May-Aug	3.2	S3	G3G4T3Q
Lilium humboldtii ssp. humboldtii	Humboldt lily	Liliaceae	perennial bulbiferous herb	May-Jul(Aug)	4.2	S3	G4T3
Lomatium stebbinsii	Stebbins' lomatium	Apiaceae	perennial herb	Mar-May	1B.1	S2	G2
Mielichhoferia elongata	elongate copper moss	Mielichhoferiaceae	moss		4.3	S4	G5
Peltigera gowardii	western waterfan lichen	Peltigeraceae	foliose lichen (aquatic)		4.2	S3	G3G4
Piperia colemanii	Coleman's rein orchid	Orchidaceae	perennial herb	Jun-Aug	4.3	S4	G4
Pseudobahia bahiifolia	Hartweg's golden sunburst	Asteraceae	annual herb	Mar-Apr	1B.1	S2	G2
Rhynchospora capitellata	brownish beaked-rush	Cyperaceae	perennial herb	Jul-Aug	2B.2	S1	G5

Suggested Citation

California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 02 October 2020].

Questions and Comments
rareplants@cnps.org

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: October 02, 2020
Consultation Code: 08ESMF00-2020-SLI-2210
Event Code: 08ESMF00-2021-E-00043
Project Name: Sierra Pines Regional Water Treatment Project

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2020-SLI-2210

Event Code: 08ESMF00-2021-E-00043

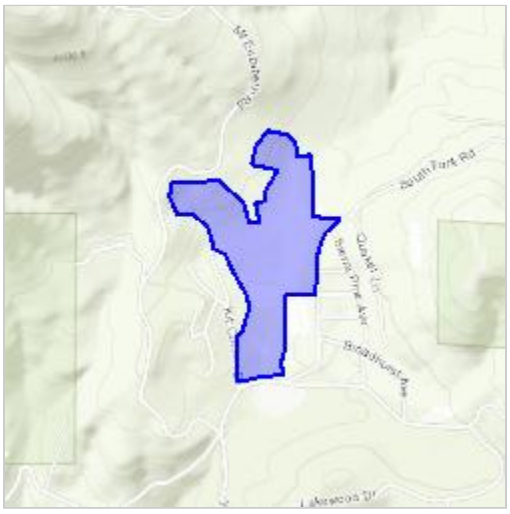
Project Name: Sierra Pines Regional Water Treatment Project

Project Type: WATER FACILITY

Project Description: Construction and operation of Sierra Pines Water Treatment Facility (SPWTF) with an initial operating capacity of 3 million gallons per day (mgd) to be ultimately increased to 5 mgd through future phased buildout. The proposed project would also include construction and operation of a new 30-acre-foot-capacity raw water reservoir, a raw water pump station, associated appurtenant and electrical structures, water conveyance pipelines, and a stormwater detention basin.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/38.055457677344165N120.23222285846144W



Counties: Tuolumne, CA

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.