INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION

Markleeville Water System Improvements Project

APRIL 21, 2021

Initial Study/Mitigated Negative Declaration

for the

Markleeville Water System Improvements Project

Prepared for:

State Water Resources Control Board
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LIST OF ABBREVIATIONS

AB	Assembly Bill
BLM	Bureau of Land Management
BMP	best management practices
CAAQS	California ambient air quality standards
Cal EPA	California Environmental Protection Agency
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CCIC	Central California Information Center
CDF	California Department of Forestry
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	Carbon monoxide
CO_2	carbon dioxide
dB	decibels
DDW	Division of Drinking Water
DFA	Division of Financial Assistance
DPR	Department of Parks and Recreation
DTSC	California Department of Toxic Substances Control
DWSRF	Drinking Water State Revolving Fund
EAP	Energy Action Plan
EIR	Environmental Impact Report
ESA	Endangered Species Act
FTA	Federal Transit Administration
GAC	granular activated carbon
GBUAPCD	Great Basin Unified Air Pollution Control District
GBVAB	Great Basin Valleys Air Basin
GHG	Greenhouse gases
GLO	General Land Office
gpm	gallons per minute
hp	horsepower
HTNF	Humboldt-Toiyabe National Forest
IS/MND	Initial Study/Proposed Mitigated Negative Declaration
Lahontan Regional Board	California Regional Water Quality Control Board
L_{eq}	Equivalent Continuous Sound Level
LF	lineal feet

L_{max}	Maximum Sound Level
MCL	maximum contaminant levels
MWC	Markleeville Water Company
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NO_2	Nitrogen dioxide
NO_X	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to 10 microns
$PM_{2.5}$	fine particulate matter with an aerodynamic diameter less than or equal to 2.5 microns in diameter
PPV	peak particle velocity
project	Water System Improvements Project
PRS	pressure reducing station
Qog	outwash gravel deposits
RMS	root-mean-square
ROG	reactive organic gases
RTU	remote terminal unit
RWQCB	Regional Water Quality Control Board
SLF	Sacred Lands File
SO_2	Sulfur dioxide
SPL	sound pressure level
SR	State Route
SRA	State Responsibility Area
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TCR	tribal cultural resources
Trp	volcanic andesite flows and breccias
UCMP	University of California Museum of Paleontology
USACE	U.S. Army Corps of Engineers
USFS	United States Forest Service
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tanks
VdB	decibel notation
WTP	water treatment plant

1 INTRODUCTION

This Initial Study/Proposed Mitigated Negative Declaration (IS/MND) has been prepared by the State Water Resources Control Board (SWRCB) to evaluate the potential environmental effects resulting from the Markleeville Water Company's (MWC) Markleeville Water System Improvements Project. Chapter 2, "Project Description," presents the detailed project information.

1.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT REQUIREMENTS

This document has been prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Section 15000 et seq.). An initial study is prepared by a lead agency to determine if a project may have a significant effect on the environment (State CEQA Guidelines Section 15063[a]), and thus to determine the appropriate environmental document. In accordance with State CEQA Guidelines Section 15070, a "public agency shall prepare…a proposed negative declaration or mitigated negative declaration…when: (a) The Initial Study shows that there is no substantial evidence…that the project may have a significant impact on the environment, or (b) The Initial Study identifies potentially significant effects but revisions to the project plans or proposal are agreed to by the applicant and such revisions would reduce potentially significant effects to a less-than-significant level." In this circumstance, the lead agency prepares a written statement describing its reasons for concluding that the project would not have a significant effect on the environment and, therefore, does not require the preparation of an Environmental Impact Report (EIR). By contrast, an EIR is required when the project may have a significant environmental impact that cannot clearly be reduced to a less-than-significant effect by adoption of mitigation or by revisions in the project design.

As described in the environmental checklist (Chapter 3), the Markleeville Water System Improvements Project ("project") would not result in any unmitigated significant environmental impacts. Therefore, an IS/MND is the appropriate document for compliance with the requirements of CEQA. This IS/MND conforms to these requirements and to the content requirements of State CEQA Guidelines Section 15071.

1.2 LEAD AGENCY

Under CEQA, the lead agency is the public agency with primary responsibility over approval of the project. The SWRCB, Division of Financial Assistance (DFA), is the CEQA lead agency because we are the primary public agency making a discretionary decision on the project, related to funding through the State Revolving Fund program.

1.3 CIRCULATION OF THE INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

The purpose of this document is to present to decision-makers and the public information about the environmental consequences of implementing the project. This disclosure document is being made available to the public for review and comment. This IS/MND will be available for a 30-day public review period from April 21, 2021 to May 21, 2021.

Due to restrictions related to COVID, hard-copy review of the IS/MND will not be provided. However, the IS/MND is available for review at:

- Markleeville Water Company https://markleevillewatercompany.com/

In addition, the supporting documents are available upon request from the SWRCB.

Comments should be addressed to:

- State Water Resources Control Board, Division of Financial Assistance, Drinking Water State Revolving Fund Environmental Review Unit

  1001 I Street, 16th Floor, Sacramento, CA 95814

- E-mail comments may be addressed to: Gabriel.Edwards@Waterboards.ca.gov

If you have questions regarding the IS/MND, please call Gabriel Edwards at: 916/449-5990. If you wish to send written comments (including via e-mail), they must be postmarked by May 21, 2021.

After comments are received from the public and reviewing agencies, SWRCB may (1) adopt the MND and approve project funding; (2) undertake additional environmental studies; or (3) decide not to fund the project. If the MND is adopted and the funding is approved, MWC may proceed with the project.

1.4 SUMMARY OF FINDINGS

Chapter 3 of this document contains the analysis and discussion of potential environmental impacts of the project.

Based on the issues evaluated in that chapter, it was determined that the project would have either no impact or a less-than-significant impact related to most of the issue areas identified in the Environmental Checklist, included as Appendix G of the State CEQA Guidelines. These include the following issue areas:

- Aesthetics
- Agriculture and Forest Resources
- Air Quality
- Tribal Cultural Resources
- Energy
- Geology / Soils
- Greenhouse Gas Emissions and Climate Change
- Hydrology / Water Quality
- Land Use / Planning
- Mineral Resources
- Population / Housing
- Public Services
- Recreation
- Transportation
- Utilities / Service Systems

Potentially significant impacts were identified for:

- Biological Resources;
- Cultural Resources;
- Hazards / Hazardous Materials; and
- Wildfire Hazard.

However, mitigation measures included in this IS/MND would reduce all impacts to a less-than-significant level.

1.5 ENVIRONMENTAL PERMITS

In addition to SWRCB CEQA compliance and approval of State Revolving Fund financing, the project is anticipated to require permits from the following agencies:

- Alpine County right of way (ROW) encroachment permit
- California Department of Transportation (Caltrans) ROW encroachment permit
- U.S. Forest Service encroachment permit (MWC has an easement)
- Bureau of Land Management encroachment permit (MWC has an easement)
- California Regional Water Quality Control Board (Lahontan Regional Board) National Pollution Discharge Elimination System (NPDES) construction activities permit
- California State Water Resources Control Board Division of Drinking Water, Water Supply Permit
- Great Basin Unified Air Pollution Control District permit to construct

All applicable permits shall be obtained before commencement of project construction.

1.6 DOCUMENT ORGANIZATION

This IS/MND is organized as follows:

Chapter 1: Introduction. This chapter provides an introduction to the environmental review process. It describes the purpose and organization of this document as well as presents a summary of findings.

Chapter 2: Project Description and Background. This chapter describes the purpose of and need for the proposed project, identifies project objectives, and provides a detailed description of the project.

Chapter 3: Environmental Checklist. This chapter presents an analysis of a range of environmental issues identified in the CEQA Environmental Checklist and determines if project actions would result in no impact, a less-than-significant impact, a less-than-significant impact with mitigation incorporated, or a potentially significant impact. If any impacts were determined to be potentially significant, an EIR would be required. For this project, however, none of the impacts were determined to be significant after implementation of mitigation measures.

Chapter 4: References. This chapter lists the references used in preparation of this IS/MND.

Chapter 5: List of Preparers. This chapter identifies report preparers.

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2 PROJECT DESCRIPTION

2.1 PROJECT OVERVIEW

The Markleeville Water Company (MWC), a non-profit California Mutual Benefit Corporation, is planning to design and construct a Water System Improvements Project (project) to upgrade its aging water system. The project would be constructed under one or more construction contracts funded in part or in whole by a construction grant administered by the California State Water Resources Control Board (SWRCB), Division of Financial Assistance (DFA) through the Drinking Water State Revolving Fund (DWSRF) program.

2.2 PROJECT LOCATION

The project is located in Markleeville, a census-designated place with a total of 6.5 square miles in Alpine County on State Route (SR) 89, approximately 31 miles south of South Lake Tahoe, California (Figure 2-1). The MWC water system includes a water treatment plant (WTP) located on Hot Springs Road, south of SR 89, a tank at the top of Pleasant Valley Road, a pump station at the corner of Pleasant Valley Road and Hot Springs Road, and associated pipelines, fire hydrants, and meters throughout the Marklee Village and Thornburg Subdivision, K&I subdivision, and downtown Markleeville (Figure 2-2).

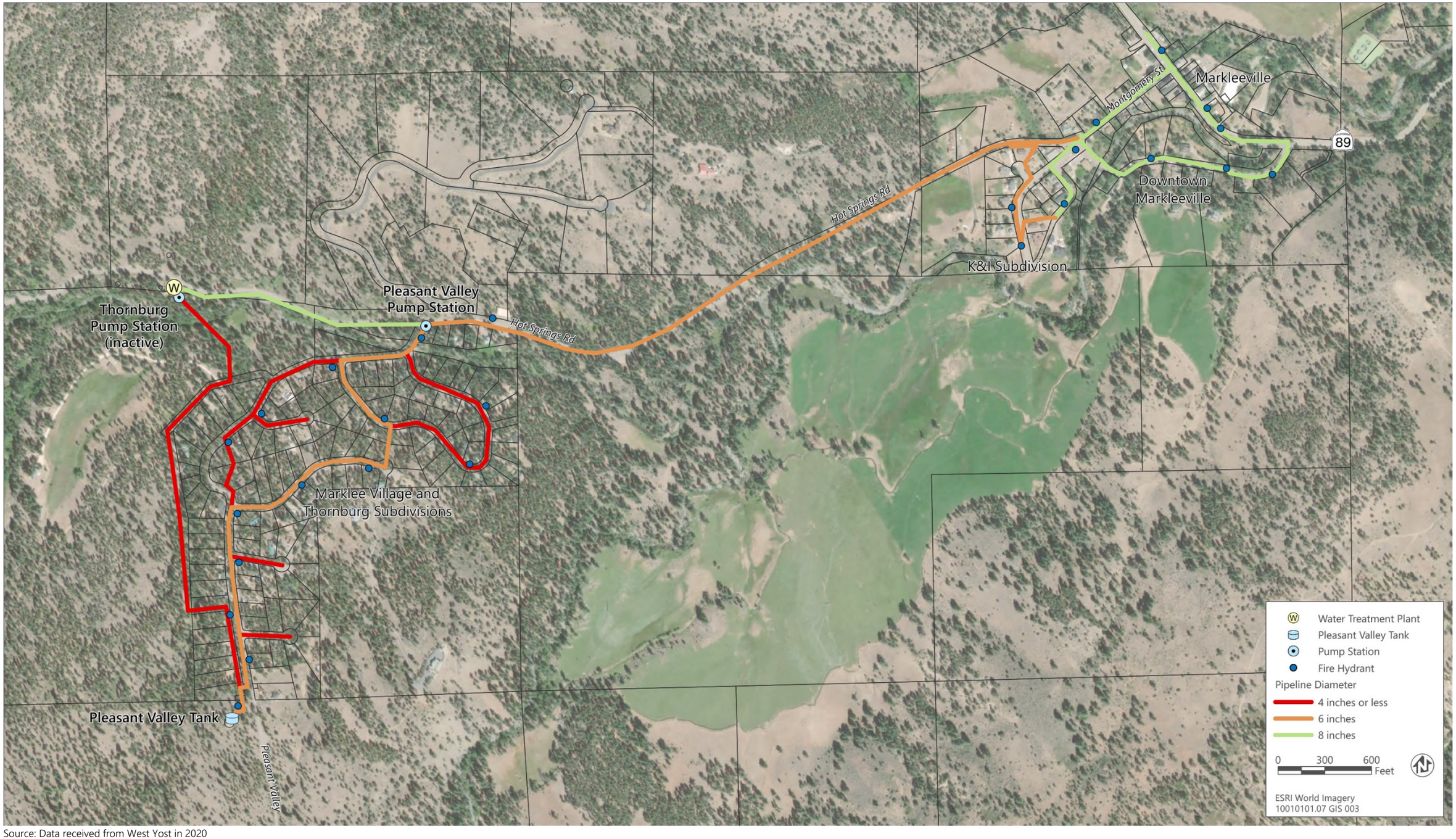
2.3 EXISTING SETTING

The existing MWC water system is shown in Figure 2-2. As of August 2020, MWC serves 300 people via a total of 161 active residential and commercial connections, with an additional 31 "standby" members without an active connection. There are five unpaid connections that have been guaranteed service in the future, including one developer lot and four lots in Marklee Village. Including approximately 13 unconnected lots whose owners have expressed interest to MWC in becoming future members, MWC projects a maximum of approximately 210 total future service connections. MWC receives water supplies from two relatively small-capacity groundwater wells (Wells 1 and 2), and from a surface water intake along Musser and Jarvis Creek. Supplies from these sources are conveyed and treated at MWC's WTP located near Hot Springs Road. The WTP is classified by the Division of Drinking Water (DDW) as a direct filtration plant, and its processes include equalization (via a 20,000-gallon raw water storage/settling tank); filtration (via four granular media pressure vessels); free chlorine disinfection (using sodium hypochlorite); and finished water storage (in two 40,000-gallon tanks located on-site at the WTP). The system features two pump stations: the Pleasant Valley Pump Station (located at the intersection of Hot Springs Road and Pleasant Valley Road) and the Thornburg Pump Station (located at the WTP site). Both pump stations were designed to be capable of pumping to the Marklee Village and Thornburg subdivisions area and the Pleasant Valley treated water storage tank (Pleasant Valley Tank). However, the Thornburg Pump Station been inactive for some time. (When active, this pump station consists of two 20-horsepower (hp) pumps and discharges to a 4-inch diameter pipeline that runs directly to the Pleasant Valley Tank, bypassing the majority of the Marklee Village subdivision. This pipeline runs along or between property lines and not within a right-of-way.) The Pleasant Valley Pump Station is equipped with two 20-hp pumps to pump an estimated 185 gallons per minute (gpm).

Potable water is conveyed by gravity to the downtown Markleeville area, including the K&I subdivision, and is pumped to customers within the Marklee Village and Thornburg subdivisions, as well as to the Pleasant Valley Tank, thereby establishing two pressure zones. The Pleasant Valley Tank is a 52-foot diameter welded steel cylindrical storage tank and has a storage capacity of approximately 240,000 gallons. The Pleasant Valley Tank is normally kept mostly full and is operated within a narrow band between a level of approximately 13.5 and 13.8 feet, in an effort to maximize pressures at service connections nearest to the tank.

Source: adapted by Ascent Environmental in 2020

Figure 2-1 Regional Location



Source: Data received from West Yost in 2020

Figure 2-2 Existing Water System Configuration

The existing MWC water distribution system totals approximately 26,970 feet (5.1 miles) of pipeline, varying in diameter from 2 to 8 inches (Table 2-1).

Table 2-1 Existing MWC Water System Pipelines

Pipeline Diameter, inches	Approximate Existing Length of Pipeline, feet
2	1,040
4	9,460
6	10,650
8	5,820
Total	26,970

Source: West Yost June 2020

2.4 PROJECT OBJECTIVES

The primary objectives of the project are to:

- **Replace aging, failure-prone distribution system piping.** The majority of the MWC distribution system has reached the end of its useful life, and pipeline failures have occurred periodically since the 1970s (with numerous pipeline failures since 2016), resulting in damage to roadways, temporary service disruptions, and water waste.
- **Implement distribution system changes intended to increase turnover of stored water and reduce the incidence of disinfection byproduct (DBP) exceedances.** The Pleasant Valley treated water storage tank has historically not been hydraulically connected to the downtown Markleeville area, which has limited tank turnover and resulted in increased water age in portions of the distribution system and historical exceedances of maximum contaminant levels (MCLs) for DBPs in MWC's distribution system. Between September 2007 and January 2019, MWC records indicate a total of 21 instances in which measured DBP concentrations were higher than MCLs.

MWC implemented a variety of measures to reduce DBP concentrations in response to the past exceedances. These measures included:

- optimized blending of groundwater and surface water (i.e., Musser and Jarvis Creek) sources to reduce usage of surface water when higher concentrations of DBP precursors are present;
- increased frequency of sludge removal from WTP settling tank;
- adjustments to coagulant dose to promote removal of organic matter prior to chlorination;
- adjustments to polymer dose to improve filter performance; and
- adjustments to sodium hypochlorite dose to reduce DBP formation while maintaining adequate disinfectant residuals in the distribution system.

Since implementation of the above measures in approximately January 2018, MWC has observed a significant reduction in DBP concentrations measured in the distribution system. Since April 2018, only two DBP exceedances have been measured, and no exceedances have been observed since July 2018. However, the proposed MWC Water System Improvements Project is designed to further improve MWC's ability to consistently manage DBP concentrations at levels comfortably below regulatory limits.

2.5 PROJECT ELEMENTS

The Markleeville Water System Improvements Project includes the following infrastructure improvements, illustrated on Figure 2-3.

2.5.1 Pipeline Replacement

Approximately 18,340 lineal feet (LF) of existing potable water pipelines would be replaced as shown in Figure 2-3 and summarized in Table 2-2. Replacement pipeline diameters would range from 6 inches to 10 inches and would be placed within public rights-of-way. In addition, approximately 665 LF of 2-inch pipeline would be installed for the new facilities, primarily for the hydropneumatic facility and the pressure reducing station, and the hydropneumatic facility would also involve approximately 585 LF of 3-inch pipe and 630 LF of 4-inch pipe. The pipeline from the WTP to downtown Markleeville, including in downtown Markleeville and a portion on Pleasant Valley Road, would be replaced with 8-inch pipe (approximately 7,870 LF). The pipeline from the Pleasant Valley Tank would be replaced with 10-inch pipe (approximately 1,365 LF) and the pipelines within the Marklee Village and Thornburg subdivisions would be replaced with 6-inch pipe (7,225 LF). Gate valves would be located in the vicinity of piping intersections to allow as-needed isolation during maintenance or repair activities. Blowoffs would be located at local low points to provide for as-needed draining. Air relief valves and/or combination air-vacuum relief valves would be provided at local high points to minimize air entrapment and protect against vacuum conditions. Existing pipelines that are not within public rights-of-way would be abandoned.

Table 2-2 Proposed Replacement of MWC Water System Pipelines

Pipeline Diameter, inches	Approximate Proposed Length of Pipeline, linear feet*
2	665
3	585
4	630
6	7,225
8	7,870
10	1,365
Total	Approximately 18,340

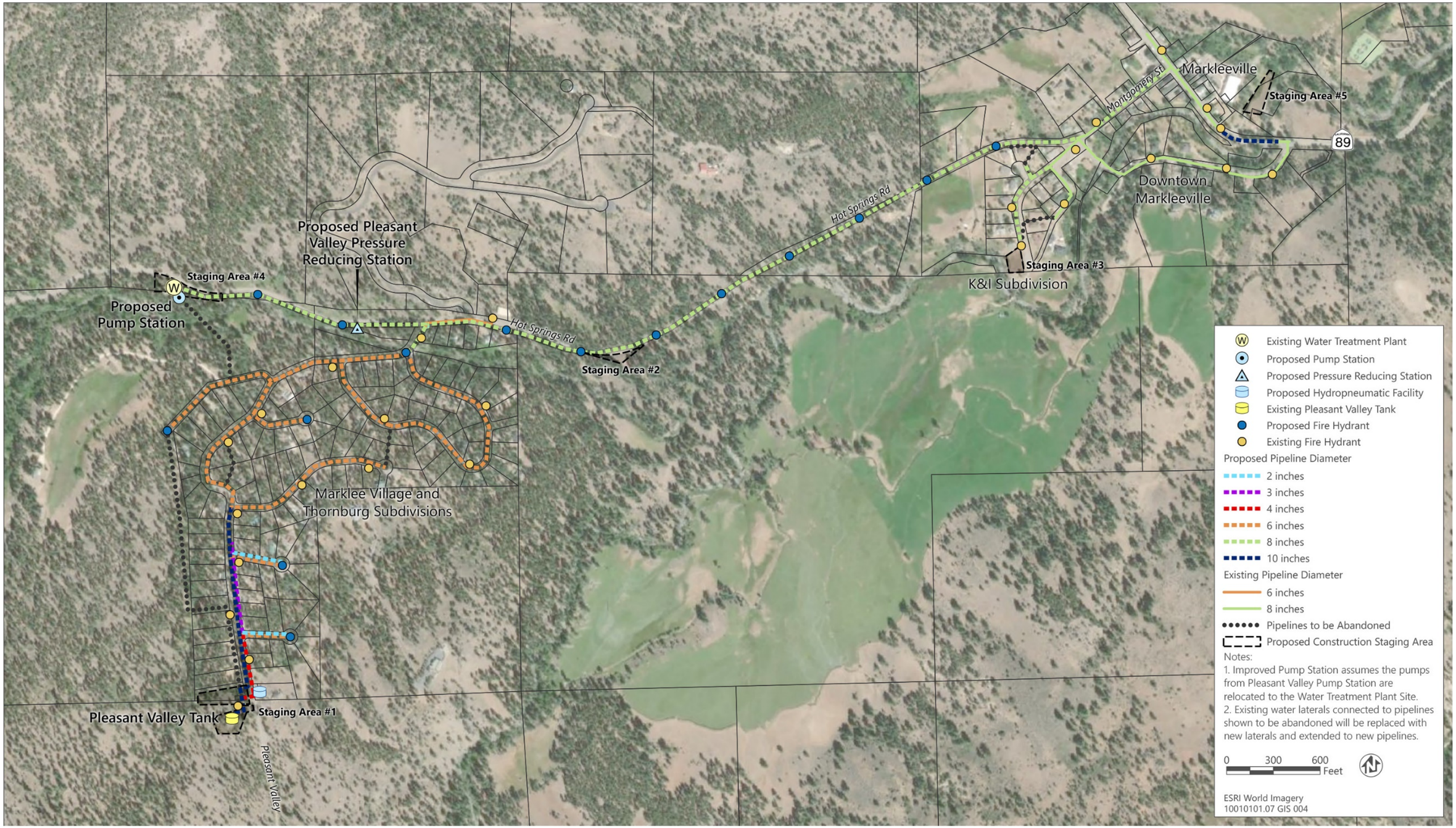
* Numbers rounded. Source: West Yost January 2021

Replacement service connections would be constructed in conjunction with mainline distribution piping construction activities. Existing service connections would be field located prior to beginning work. Customers would be notified prior to construction activities that would temporarily affect water service.

Approximately 15 new fire hydrants would be installed. Approximately ten of the new fire hydrants would be installed along Hot Springs Road between the K&I subdivision and the WTP, and another five new fire hydrants would be installed in the Marklee Village and Thornburg subdivisions, as shown on Figure 2-3. The new fire hydrants would improve fire protection and assist with unidirectional flushing of the distribution system. New hydrants would be constructed to MWC standards for adequate protection from freezing temperatures and from vehicles, and would be clearly marked so that hydrants can be located if they are buried in snow. Concrete thrust blocks would be placed at piping bends in the immediate vicinity of new hydrants.

2.5.2 Relocation of Pleasant Valley Pump Station

The Pleasant Valley Pump Station would be relocated to the WTP to allow electrical backup of the pumps by the standby propane generator MWC has recently installed, and to make room, if needed, for a new pressure reducing station in the general location of the existing Pleasant Valley Pump Station. The relocated pump station would require an approximately 1-foot-thick reinforced concrete pad approximately 14 feet by 14 feet in size. This footprint may be provided either by construction of new, standalone building, or by enlargement of the existing WTP treatment building, which presently houses the plant's raw water pumps, chemical feed equipment and filtration vessels. Structure improvements would be designed to protect the pump station from the elements, would be sized for proper clearances and ease of maintenance, and may require the replacement and relocation of one or more of the



Source: Data received from West Yost in 2020

Figure 2-3 Proposed Water System Improvements

WTP's existing storage tanks. The pad and structure would be sized to allow for an additional pump to be installed in the future if needed, and connection points would be provided in the above grade pipe to allow for such a future pump to be installed without shutting down the facility for an extended period. The pad and structure may also be enlarged to also house the granular activated carbon (GAC) reactor vessels described in Section 2.5.4. Sequencing and constraints during relocation of the pump station would be closely coordinated with the demolition of the existing pump station site and the construction of the new pressure reducing station. Temporary pumping equipment may be required to facilitate filling of the Pleasant Valley Tank while existing pump station is out of service and/or the new pump station is under construction.

2.5.3 New Pressure Reducing Station

A new pressure reducing station (PRS) would be constructed in the vicinity of the existing MWC Pleasant Valley Pump Station after the pump station is removed and relocated to the WTP. The PRS cannot be located in the location of the existing pump station (at the southeastern corner of Pleasant Valley Road and Hot Springs Road) due to size and vehicular sight distance constraints. Therefore, the PRS would be located approximately 400 feet to the west of the existing Pleasant Valley Pump Station on the south side of Hot Springs Road, as shown on Figure 2-3. The new PRS would be placed on an approximately 1-foot-thick reinforced concrete pad, approximately 14 feet by 8 feet in size. The PRS would facilitate a reconfiguration of the existing MWC distribution system, allowing the downtown Markleeville area to be fed by water stored in the Pleasant Valley Tank. This change would increase turnover of the tank, thereby reducing water age and improving water quality in parts of the distribution system. Additionally, this change, when coupled with pipeline replacements, would dramatically improve flows to hydrants in the downtown area during a fire event.

The PRS would be constructed above grade to facilitate maintenance access and avoid the need for confined space entry procedures. A new structure would be constructed around the above-grade PRS equipment for security and protection from the elements.

2.5.4 New Granular Activated Carbon Reactor Vessels

Two new granular activated carbon (GAC) reactor vessels would be installed at the WTP to provide additional removal of DBP precursor material before finished potable water enters the distribution system. The new GAC reactors would either be installed inside of the WTP's existing chemical feed, filtration and control building (which would be enlarged), or installed inside a new, standalone structure away from the existing treatment building. If a new, standalone building is constructed, it may be sized to house only the GAC vessels, or to house the GAC vessels plus the relocated Pleasant Valley Pump Station. In either case, the GAC vessels would require a new reinforced concrete foundation, approximately 1-foot-thick and 10 feet by 20 feet in size. Each of the two new GAC vessels would be approximately 8 feet tall. The vessels and exposed process piping would be insulated, as needed, to protect contents from freezing. To prolong the life of the GAC media, the vessels would be plumbed such that water is introduced to the reactors upstream of disinfection with free chlorine. A new static mixer would be installed in existing process piping, downstream of the point at which water leaving the reactors re-enters the existing treatment system, for effective mixing of free chlorine upstream of the finished water tanks. Existing process piping would be modified as needed to allow bypassing of the GAC reactors during periods in which DBP formation is easily managed using MWC's existing operating procedures, or to facilitate maintenance of the GAC reactors.

2.5.5 New Tank Mixing Equipment

New mixing equipment would be installed at the existing Pleasant Valley Tank to promote volatilization and removal of certain DBP species, thereby reducing DBP concentrations in the distribution system. A new ventilation fan would be installed to promote exchange of tank headspace air and facilitate removal of volatilized DBPs. The new fan, approximately 36 inches long by 36 inches wide and 48 inches in height, would either be mounted atop the tank, or at grade adjacent to the tank. Minor structural and/or mechanical modifications to the tank would be made to

accommodate the new equipment. Two new control panels, one for the mixer in the tank and one for the new fan, would be installed. Each panel would be approximately 22 inches in height, by 20 inches wide, by 10 inches deep. The panels would be mounted on posts, anchored to a new reinforced concrete landing pad adjacent to the tank. The posts would be approximately 4 or 5 feet tall and the concrete landing pads would be approximately 6 inches thick and 6 feet by three feet in size. Depending on the voltage of the new system, a new electrical service may be required. The status of the mixing and ventilation system, as well as tank level, would be communicated to the WTP site via a new remote terminal unit (RTU) or similar telemetry device.

2.5.6 Replacement Storage Tank(s) and/or New Clarification Process

Replacement of one or more existing tanks at the WTP may be required to accommodate the relocation of the Pleasant Valley Pump Station and/or the installation of new GAC reactor vessels, and to improve WTP performance. Each of the WTP's existing tanks are over 30 years old and have reached the end of their useful lives. If the raw water storage tank (approximately 17 feet in diameter, 12 feet tall and a 19-foot diameter roof) is replaced, improvements to chemical injection, clarification, and solids removal capabilities may be incorporated to improve the WTP's ability to treat water during periods in which surface water from Musser and Jarvis Creek has elevated turbidity, to increase removal of DBP precursor material, and/or reduce the quantity of solids reaching the WTP's existing pressure filters. Alternatively, a new clarification process may be constructed upstream of the existing raw water storage tank, thereby allowing the existing tank to operate strictly as an equalization vessel upstream of the existing filtration process.

If it is determined during detailed design that available space at the WTP is insufficient for the relocated Pleasant Valley Pump Station and/or the new GAC reactor vessels, the existing WTP building may be enlarged to accommodate one or both facilities. Doing so would require either the removal and replacement of one or more of the existing finished water storage tanks (to facilitate building expansion to the east), or expansion of the building to the south.

Potential improvements related to replacement storage tank(s) and/or construction of a new clarification process may include: demolition of one or more existing tanks; demolition of a portion of the existing WTP building; relocation of the WTP's existing standby propane storage tank and generator; site grading and preparation to accommodate new tank and/or building facilities and appurtenances; construction of new foundation(s) for the tank(s) and/or building and appurtenances; construction of new tank vessel(s); installation of new mechanical equipment and access platforms; installation of new raw water chemical injection and mixing equipment; installation of new granular media pretreatment tank(s)/vessel(s) and equipment; installation of new flocculation and sedimentation tanks and equipment; installation of new settled solids removal equipment; modification and/or expansion of the WTP's existing backwash basin and appurtenances to accommodate residuals management from new or modified raw water storage, clarification and/or GAC reactor vessel operations; modification of existing process piping as needed to accommodate the new tank and appurtenances; and installation of associated electrical and instrumentation equipment, including an increase to the WTP's main electrical service from 200A to 400A to accommodate increased electrical loads. The largest clarification system under consideration has three tanks, and combined footprint of the three tanks would be approximately 15 feet by 16 feet and 18 feet in height.

For the increase in electrical service, which is provided by Liberty Utilities, depending on the layout of the WTP, several existing power poles may need replacement. Additionally, power pole adjustments (i.e., restringing conductors between poles) would be required to reduce resistance associated with increased electrical demand. The existing pole-mounted transformer at the WTP would be replaced with new pad-mounted, freestanding transformer. Connection between the power drop on the pole and the new transformer would involve an underground connection, requiring additional trenching within the disturbed WTP site.

2.5.7 New Hydropneumatic System in Vicinity of Pleasant Valley Storage Tank

Due to the proximity of a number of properties in the Marklee Village and Thornburg subdivision to the Pleasant Valley storage tank, minimum pressures to these homes may periodically drop beneath a pressure of 20 pounds per square inch (psi), which is recommended for maintaining sufficient pressure for fixtures and appliances, and for minimizing the risk of contamination of the drinking water supply due to unplanned negative pressure events. To address this situation, MWC would construct a new, small pressure zone intended to increase minimum service pressures to these homes. The pressure zone would consist of a hydropneumatic tank (a tank that holds water and air under pressure) for storage and release of pressurized water, and a new network of distribution pipelines to supply the at-risk properties with the pressurized water. The 600-gallon hydropneumatic tank would be equipped with up to three electrically-operated booster pumps (two main pumps and a stand-by, to fill the tank), and up to two electrically operated compressors to fill an air bladder within the tank to maintain pressure. To protect the facility against freezing temperatures, the system (tank, pumps, and compressors) would be located on a concrete pad and within a 16 by 16 foot insulated building. The building would be located at the abandoned MWC tank, which would be removed, on the east side of Pleasant Valley Road, across the street from the Pleasant Valley storage tank (Figure 2-3). Approximately 635-feet of 2-inch pipe, approximately 585 feet of 3-inch pipe, and approximately 627-feet of 4-inch pipe would be installed to reach the affected homes, as included in Table 2-2 and as shown on Figure 2-3.

2.6 CONSTRUCTION

Construction is anticipated to begin in spring or summer 2022 and occur over approximately one year. The pipeline construction would be by open cut method in previously disturbed areas along public rights-of-way, namely existing paved roadways. The trenches for pipeline construction are anticipated to be between two and 3 feet wide and would be constructed in 200-LF segments. Following pipeline installation, trench paving repairs would be made according to Alpine County standards. In addition, Alpine County has plans to reconstruct the section of Hot Springs Road affected by this project in the summer of 2023. The new section of 8-inch pipeline on Pleasant Valley Road (near the intersection with Hot Springs Road) would be attached to the underside or side of the Pleasant Valley Road bridge over Hot Springs Creek; there would be no construction in the bed or bank of the creek. Similarly, if a section of pipeline is added to the new SR 89 bridge in downtown Markleeville (currently planned for construction by Caltrans), the piping would be either be contained within the bridge structure, or be installed along the side or underside of the bridge; no construction activities would occur in bed or bank of the creek. Depending on the project element, construction of other facilities is expected to involve the following: decommissioning and removal of existing facilities; installation of temporary equipment (e.g., pumps); tree removal, clearing, excavation and grading; construction of equipment foundations; construction of new structures (e.g., pump station building); installation of new equipment, including electrical systems, instrumentation and controls; disinfection of facilities in contact with potable water; and testing and demonstration of installed facilities. Construction of improvements at the WTP, PRS and Pleasant Valley Tank sites would occur concurrently with any or all of the pipeline construction phases, in accordance with suitable weather conditions, seasonal water demand patterns, and the completion of required predecessor improvements (e.g., the PRS cannot be constructed until the existing Pleasant Valley Pump Station has been removed and either a temporary pumping facility or the replacement pump station is operational). Pipeline construction would generally be phased as follows:

- Phase 1: Construction in Hot Springs Road
- Phase 2: Construction in Marklee Village, Thornburg subdivision, and downtown Markleeville (K&I subdivision)

Construction crews would consist of approximately eight to twelve personnel for peak construction. This includes approximately four to six personnel for peak pipeline construction as well as four to six personnel for all other improvements. In addition, approximately two construction management personnel would be present. Construction personnel would primarily access the site via SR 89, Hot Springs Road, and Pleasant Valley Road. Construction equipment, materials, and vehicle staging would occur at designated locations shown on Figure 2-3, including at the

Pleasant Valley Tank site (Staging Area #1), along the shoulder of Hot Springs Road (Staging Area #2), at the end of Montgomery Street in the K&I subdivision (Staging Area #3), at the WTP site (Staging Area #4), and potentially Heritage Park on the north side of SR 89 in downtown Markleeville (Staging Area #5). Typical construction equipment would include excavators, loaders, backhoes, graders, pipelayers, telescoping forklifts, scissor lifts, water trucks, paving machines, flatbed trucks, pickup trucks, and small tools and equipment. Construction activities would be limited to 8:00 a.m. to 6:00 p.m. Monday through Friday and 9:00 a.m. to 3:00 p.m. on weekends to comply with the Alpine County Code construction noise exemption and minimize disruption to the community.

2.6.1 Greenhouse Gas Emission Reduction Measures

In 2006, California passed Assembly Bill 32 (AB 32), the California Global Warming Solutions Act, which created a program to reduce greenhouse gas (GHG) emissions in the State. The Scoping Plan, most recently updated in 2017, identifies how California will reach its 2030 GHG target to reduce GHG emissions by 40 percent from 1990 levels. Appendix B of the 2017 Scoping Plan provides potential actions that could be undertaken at a local level to support the State's climate goals (CARB 2017).

The Markleeville Water Company shall require its construction contractors to implement measures to minimize the level of GHG emissions associated with project construction. These shall include, but are not limited to, the measures listed below, which are based on recommended GHG reduction measures in Appendix B of the 2017 Scoping Plan:

- All on-road vehicles, including delivery trucks, and off-road construction equipment shall not idle for more than 5 minutes while on site. Signs shall be posted in any designated queuing areas and/or job sites to inform drivers and operators of the 5-minute idling limit.
- All diesel-powered off-road equipment used in construction shall meet EPA's Tier 4 emission standards as defined in 40 CFR 1039 and comply with the exhaust emission test procedures and provisions of 40 CFR Parts 1065 and 1068. Tier 3 models can be used if a Tier 4 version of the equipment type is not yet produced by manufacturers. This measure can also be achieved by using battery-electric off-road equipment, if available.

2.7 OPERATIONS AND MAINTENANCE

Assuming that the existing raw water settling tank is replaced or augmented with a more robust clarification system and that the hydropneumatics system is constructed, the day-to-day and periodic operations and maintenance responsibilities would increase. This increase may result in the need for existing staff to work additional hours, or for additional part-time operations staff to be hired.

3 ENVIRONMENTAL CHECKLIST

Project Information

1. Project Title: Markleeville Water System Improvements Project
2. Lead Agency Name and Address: State Water Resources Control Board, Division of Financial Assistance

   Street Address: 1001 I Street Sacramento, CA 95814
3. Contact Person and Phone Number: Gabriel Edwards Phone: 916/449-5990
4. Project Location: Markleeville, California
5. Project Sponsor's Name and Address: Markleeville Water Company PO Box 131 Markleeville, CA 96120
6. General Plan Designation: Residential Medium, Residential High, Commercial, Planned Development, Institutional, Open Space
7. Zoning: Timber Preserve, Agriculture, Residential Neighborhood, Residential Estate (20 acre, 5 acre), Commercial – Historical Design, Planned Development, Institutional
8. Description of Project: See Chapter 2 of this Initial Study.
9. Surrounding Land Uses and Setting: The project is located in Markleeville, a census-designated place with a total of 6.5 square miles in Alpine County on State Route (SR) 89. Land uses within the alignment and surrounding area include a small area of public facilities and commercial uses along SR 89 and residential uses along Hot Springs Road. The community is bordered by forested areas and several creeks are located within the residential and central area along SR 89.
10. Other public agencies whose approval is required: See Chapter 1, "Introduction," Section 1.3, "Environmental Permits," of this Initial Study.
11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

    No California Native American tribes have provided a written request for consultation with the State Water Resources Control Board pursuant to Public Resources Code section 21080.3.1 in Alpine County. Therefore, no consultation pursuant to AB 52 has been initiated for this project.

    Natural Investigations contacted the Native American Heritage Commission (NAHC) requesting a search of its Sacred Lands File (SLF) for traditional cultural resources within or near the project site. The results of the search returned by the NAHC on September 30, 2020 were negative for Native American cultural resources in the project vicinity. The NAHC provided contact information for the regionally affiliated Washoe Tribe of Nevada and California and recommended that they be contacted for more information on the potential for Native American cultural resources within or near the project site.

    Natural Investigations sent a project information letter to Mr. Darrel Cruz of the Washoe Tribal Historic Preservation Office/Cultural Resources Office on October 5, 2020. Mr. Cruz responded via email on the same day stating that he does not have knowledge of cultural resources that may be affected by the project or any concerns about the project at this time. He asked to be informed in the event of inadvertent cultural resource discoveries. Natural Investigations responded on the same day acknowledging receipt of his message.

Environmental Factors Potentially Affected

Based on the impact evaluations in this chapter, the project would not result in a potentially significant impact and would not require an environmental impact report. The project would result in no impact or less-than-significant impacts for the following issue areas:

- Aesthetics
- Agriculture and Forest Resources
- Air Quality
- Tribal Cultural Resources
- Energy
- Geology / Soils
- Greenhouse Gas Emissions and Climate Change
- Hydrology / Water Quality
- Land Use / Planning
- Mineral Resources
- Population / Housing
- Public Services
- Recreation
- Transportation
- Utilities / Service Systems

Potentially significant impacts were identified for:

- Biological Resources;
- Cultural Resources;
- Hazards / Hazardous Materials; and
- Wildfire Hazard.

However, mitigation measures included in this IS/MND would reduce all impacts to a less-than-significant level. Therefore, the project would result in no potentially significant impacts with mitigation incorporated.

Determination

On the basis of this initial evaluation:

No I find that the proposed project could not have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.

Yes 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.

No I find that the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.

No 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.

No 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.

Signature_____ Date_____

Bridget Binning, Sr. Environmental Scientist

State Water Resources Control Board, Division of Financial Assistance

3.1 AESTHETICS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
I. Aesthetics. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	No	No	Yes	No
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No	No	Yes	No
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	No	No	Yes	No
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	No	No	No	Yes

3.1.1 Environmental Setting

A variety of residential, commercial, and public uses exist along the alignment. Most structures along the alignment are one and two stories in height. Other built features include above-ground power lines, signage, bear-box waste disposal, and limited pedestrian sidewalks along SR 89. The visual character of the project alignment and surrounding area is forested with mature trees, rock outcroppings, and Hot Springs Creek, with developed public facilities and commercial uses along SR 89 in downtown Markleeville and residential lots and homes along Hot Springs Road and in the subdivisions.

Along SR 89 distant views of the surrounding sierras can be seen from all directions. SR 89 is an officially designated State Scenic Highway (Caltrans 2011). As seen in Figure 2-3, a portion of the existing water system (8-inch water line), as well as three fire hydrants, are located along SR 89. Views along Hot Springs Road are limited by the undulating topography, curving roadway, and surrounding forested areas. Because of this, Hot Springs Road does not offer expansive scenic views. Developed features along Hot Springs Road include the road, residences, Alpine County Fire Station #92, water infrastructure (i.e., water tanks), and overhead utility lines. Primary viewer groups along the alignment and project area include local residents of the subdivisions, drivers along SR 89, and visitors in downtown.

3.1.2 Discussion

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

Less-than-significant impact. A scenic vista is generally defined as a distant public view along or through an opening or corridor that is recognized and valued for its scenic quality, or a natural or cultural resource that is indigenous to the area. The project alignment is located along a developed road, with existing commercial, public facility, and residential uses. Though views of the surrounding Sierras can be seen along the project alignment, construction

activities associated with project implementation would be temporary and would not permanently impede scenic views along SR 89, Hot Springs Road, K&I Subdivision, or the Marklee Village and Thornburg Subdivisions. Further, the project would not result in above-ground facilities that would impede long-distance views in the area, which are primarily from roadways. The pipelines would be underground, the new above-ground PRS would be located approximately 400 feet to the west of the existing Pleasant Valley Pump Station on the south side of Hot Springs Road, the new hydropneumatic system building would be located by the existing Pleasant Valley tank, and the new pump station, tanks, and electrical equipment would be located at the existing WTP (as shown on Figure 2-3). The facilities would be consistent with the existing WTP facilities and would not permanently alter public views along the project area roadways. Therefore, the project would have a less-than-significant impact related to a substantial adverse effect on a scenic vista, and no mitigation is required.

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

Less-than-significant impact. SR 89 is a designated state scenic highway. Visible project elements along this segment would be limited to installation above-ground water metering infrastructure. If a section of pipeline is added to the new SR 89 bridge in downtown Markleeville (currently planned for construction by Caltrans), the piping would be either be contained within the bridge structure, or be installed along the side or underside of the bridge. Construction activities associated with installation of these facilities would be temporary; the piping would be attached to the bridge, and placement of new water meters would be proximate to developed uses (i.e., buildings within downtown Markleeville). Therefore, the project elements in the vicinity of SR 89 would not alter the views of drivers on SR 89. The project would not degrade or damage existing scenic resources along SR 89 and this impact would be less than significant; no mitigation is required.

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

Less-than-significant impact. Project implementation would include replacement of aging piping within public rights-of-way (i.e., roadways), construction of several new facilities (i.e., pump station, PRS, GAC reactor vessels, tank mixing equipment, hydropneumatic system building, storage tanks and/or treatment vessels), and staging activities within several proposed staging areas (see Figure 2-3). These activities would include tree removal, vegetation clearing, ground disturbance (e.g., excavation, grading), installation of new concrete pads, and demolition of existing facilities. Therefore, construction would temporarily alter views in the area. Once construction activities are complete, the new pipelines would be underground, the roadways would be restored, and the WTP facilities would be in the same location and visually similar to the existing facilities. The new above-ground PRS would be located approximately 400 feet to the west of the existing Pleasant Valley Pump Station on the south side of Hot Springs Road; the new hydropneumatic system building would be located by the existing Pleasant Valley tank; and the new pump station, tanks, and tank mixing equipment, as well as electrical equipment would be located at the existing WTP facilities (as shown on Figure 2-3). In addition, the placement of new fire hydrants or water meters would be within close proximity of developed uses. Therefore, the above-ground replacement facilities and new facilities would be consistent with the existing WTP facilities and would not substantially degrade the existing visual character of the project area. The project would have a less-than-significant impact related to a scenic quality and no mitigation is required.

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

No impact. Construction activities would occur during daylight hours and would not require nighttime lighting. Construction equipment is unlikely to have reflective surfaces and would not be a substantial source of glare in the area. The new pipelines would be underground, and the above-ground facilities would be within building enclosures or would be painted to prevent glare. The new facilities would have limited exterior security lighting, which would be

shielded and downcast to prevent light pollution on surrounding residences and the night sky. Therefore, the project would have no impact related to light and glare and no mitigation is required.

3.2 AGRICULTURE AND FOREST RESOURCES

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

3.2.1 Environmental Setting

The project is located in Alpine County, in the unincorporated community of Markleeville. The water system facilities are located within lands designated as Residential Medium, Residential High, Commercial, Planned Development, Institutional, Open Space. In addition, there are lands zoned for both timber preserve and agriculture located north of Hot Springs Road (Alpine County 2020a). See Section 3.11, "Land Use and Planning" for information related to land use designations in the project area.

3.2.2 Discussion

a, e) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use; or Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

No impact. Alpine County is not included in the area mapped pursuant to the California Department of Conservation's Farmland Mapping and Monitoring Program (DOC 2015). As such, no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance is designated along the project alignment or within the project area. In addition, the water treatment facilities are not located on agricultural lands; project construction and operation would occur within existing developed uses in Markleeville, including under existing roadways and at existing MWC water treatment facilities. Therefore, the project would not result in the conversion of farmland to non-agricultural uses. No impact would occur and no mitigation is required.

b) Conflict with existing zoning for agricultural use or a Williamson Act contract?

No Impact. The project would not alter any land use designation, would not conflict with land zoned for agricultural use, and there is no land under Williamson Act contract within the project site. The project would not conflict with agricultural zoning or a Williamson Act contract. No impact would occur, and no mitigation is required.

c, d) 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)); or result in the loss of forest land or conversion of forest land to non-forest use?

No impact. Though forest land is present within the project site and vicinity, project construction and operation would occur within existing developed roadways, previously disturbed areas for construction staging, and at existing MWC WTP facilities. The MWC water pipelines and water treatment facilities are within the developed town of Markleeville, including Hot Springs Road and roads within the K&I Subdivision, Marklee Village, and Thornburg Subdivisions. The water infrastructure and above-ground WTP facilities are allowed as quasi-public uses in residential zoning districts and public roads (Pers Comm., Woods 2020). Project construction would require some individual tree removal; however, project implementation would not alter any existing zoning related to forest land or timberland and would not convert existing forest or timberland in the project area. Therefore, no impacts related to forest and timberland zoning conflicts or loss/conversion of forest land would occur and no mitigation is required.

3.3 AIR QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
III. Air Quality.				
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	No	No	Yes	No
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?	No	No	Yes	No
c) Expose sensitive receptors to substantial pollutant concentrations?	No	No	Yes	No
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	No	No	Yes	No

3.3.1 Environmental Setting

The U.S. Environmental Protection Agency established national ambient air quality standards (NAAQS) for six criteria air pollutants, which are known to be harmful to human health and the environment: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter (which is categorized into respirable particulate matter with an aerodynamic diameter less than or equal to 10 microns [PM_{10}] and fine particulate matter with an aerodynamic diameter less than or equal to 2.5 microns in diameter [$PM_{2.5}$]), nitrogen dioxide, and sulfur dioxide. The State of California has established the California ambient air quality standards (CAAQS) for these six pollutants, as well as for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. NAAQS and CAAQS are scientifically substantiated, numerical concentrations of criteria air pollutants established to protect the public from adverse health impacts caused by exposure to air pollution. A brief description of the criteria air pollutants and their effects on health is provided in Table 3.3-1.

Table 3.3-1 Criteria Air Pollutants

Pollutant	Sources	Effects
Ozone	Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG), also sometimes referred to as volatile organic compounds by some regulating agencies, and nitrogen oxides (NO_X). The main sources of ROG and NO_X, often referred to as ozone precursors, are products of combustion processes (including motor vehicle engines) and the evaporation of solvents, paints, and fuels.	Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases, such as asthma, bronchitis, and emphysema.
Carbon monoxide	Carbon monoxide (CO) is usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicle engines; the highest emissions occur during low travel speeds, stop-and-go driving, cold starts, and hard acceleration.	Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue; impair central nervous system function; and induce angina (chest pain)

Pollutant	Sources	Effects
		in persons with serious heart disease. Very high levels of CO can be fatal.
Particulate matter	Some sources of particulate matter, such as wood burning in fireplaces, demolition, and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect.	Scientific studies have suggested links between fine particulate matter and numerous health problems, including asthma, bronchitis, and acute and chronic respiratory symptoms, such as shortness of breath and painful breathing. Recent studies have shown an association between morbidity and mortality and daily concentrations of particulate matter in the air.
Nitrogen dioxide	Nitrogen dioxide (NO_2) is a reddish-brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2.	Aside from its contribution to ozone formation, NO_2 can increase the risk of acute and chronic respiratory disease and reduce visibility.
Sulfur dioxide	Sulfur dioxide (SO_2) is a combustion product of sulfur or sulfur-containing fuels, such as coal and diesel.	SO_2 is also a precursor to the formation of particulate matter, atmospheric sulfate, and atmospheric sulfuric acid formation that could precipitate downwind as acid rain.
Lead	Leaded gasoline, lead-based paint, smelters (metal refineries), and the manufacture of lead storage batteries have been the primary sources of lead released into the atmosphere, with lead levels in the air decreasing substantially since leaded gasoline was eliminated in the United States.	Lead has a range of adverse neurotoxic health effects.

Notes: CO = carbon monoxide; NO_2 = nitrogen dioxide; NO_x = nitrogen oxides; ROG = reactive organic gases; SO_2 = sulfur dioxide.

Source: EPA 2020.

The project site is located in Alpine County, which is in the northernmost section of the Great Basin Valleys Air Basin (GBVAB). Alpine County is currently designated as nonattainment with respect to the CAAQS for PM_{10}. The prominent sources of PM_{10} in Alpine County are controlled burns and wildfires. The region is designated as in attainment unclassifiable with respect to the NAAQS and CAAQS for all other pollutants (CARB 2019).

The Great Basin Unified Air Pollution Control District (GBUAPCD) is the regional agency responsible for air quality planning and the development of air quality plans within the GBVAB. GBUAPCD has developed four distinct air quality plans that are being implemented in specific locations within the GBVAB, but none of the plans have been developed for or implemented in Alpine County. These separate plans focus on improving air quality in Owens Valley, Mono Basin, Coso Junction, and Mammoth Lakes. GBUAPCD has also not established significance criteria for the evaluation of air quality impacts under CEQA. However, GBUAPCD implements rules and regulations within their jurisdiction, including Rule 401, which regulates fugitive dust emissions and would apply to the project. This rule requires that reasonable precautions be taken to prevent visible particulate matter from being airborne, under normal wind conditions, beyond the property or source from which the emission originates (GBUAPCD 2016).

3.3.2 Discussion

After project construction, operational emissions from the project would be similar, if not less than, existing conditions. Therefore, the analysis below focuses on emissions generated by project-related construction activity.

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

Less-than-significant impact. As explained in Section 3.3.1, "Environmental Setting," GBUAPCD has developed four distinct air quality plans that are being implemented in specific locations within the GBVAB. These separate plans focus on improving air quality in Owens Valley, Mono Basin, Coso Junction, and Mammoth Lakes. None of the plans apply to locations in Alpine County, where the project is located. Because there are no air quality plans applicable to the project location and considering that project-generated emissions would primarily be associated with short-term

construction activities, the project would not conflict with or obstruct implementation of any air quality plans. Also, the project would not result in a long-term increase in population, economic activity, or other emissions-generating activity in the region. The project will be required to comply with GBUAPCD rules and regulations including Rule 401 regulating fugitive dust emissions. For these reasons, this impact would be less than significant.

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

Less-than-significant impact. Project construction would be completed over the span of approximately one year. Project construction and demolition would result in temporary emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ associated with the use of off-road equipment, haul trucks delivering equipment and materials, and worker commute trips. Fugitive PM_{10} and $PM_{2.5}$ dust emissions would be associated primarily with site preparation and earthwork and would vary as a function of soil silt content, soil moisture, wind speed, acreage of disturbance, and vehicle activity on unpaved surfaces. Exhaust emitted by off-road equipment, haul trucks, and passenger vehicles would also contain PM_{10} and $PM_{2.5}$. Emissions of ozone precursors, ROG and NO_X, would primarily be emitted by construction equipment and on-road vehicle trips. Construction activities associated with the project would likely require the use of equipment such as excavators, loaders, backhoes, graders, pipelayers, telescoping forklifts, scissor lifts/manlifts, water trucks, pavers, flatbed trucks, pickup trucks, and small hand-held tools and equipment.

Most emissions-generating construction activity would occur during pipeline replacement, which is linear in nature. Thus, emissions associated with project construction were estimated using Sacramento Metropolitan Air Quality Management District's Roadway Construction Emissions Model Version 9.0 (SMAQMD 2018), which is designed for estimating emissions from construction of roadways and other projects that are linear in nature. Modeling was based on project-specific information, where available; assumptions based on typical construction activities; and default values in Roadway Construction Emissions Model. Table 3.3-2 summarizes the total modeled emissions from project construction. These emissions estimates are conservatively high because they do not account for any reductions that would result from adhering to the requirements of GBUAPCD's Rule 401 for fugitive dust control. For detailed assumptions and modeling inputs, refer to Appendix A.

Table 3.3-2 Summary of Criteria Air Pollutants and Precursors Emitted during Project Construction

	ROG	NO_X	PM_{10} Exhaust	PM_{10} Fugitive	$PM_{2.5}$ Exhaust	$PM_{2.5}$ Fugitive
Maximum Daily Emissions (lb/day)	1.8	14.8	0.7	10.0	0.7	2.1
Total Emissions (tons)	0.2	1.5	<0.1	1.1	<0.1	0.2

Notes: lb/day = pounds per day; ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter with an aerodynamic diameter less than or equal to 10 microns; PM2.5 = fine particulate matter with an aerodynamic diameter less than or equal to 2.5 microns in diameter

See Appendix A for detailed modeling and calculations.

Source: Modeled by Ascent Environmental in 2020.

GBUAPCD has not established mass emissions levels or other quantitative criteria for determining whether a project's emissions of criteria air pollutants or precursors would result in, or contribute to, an exceedance of the NAAQS or CAAQS. PM_{10} is the pollutant of primary concern in Alpine County because the county is currently designated as nonattainment with respect to the CAAQS for PM_{10} and is not designated as nonattainment with respect to any other criteria air pollutants. The primary way GBUAPCD addresses PM_{10} emissions is through the enforcement of rules that aim to minimize emissions of PM_{10}. Rule 401, which requires that projects implement fugitive dust and emission control measures, is the only rule focused on minimizing PM_{10} emissions that is applicable to construction activity. Compliance with Rule 401 would ensure that construction-related emissions of PM_{10} would not be a cumulatively considerable contribution to the county's nonattainment status with respect to the CAAQS for PM_{10}. Therefore, this impact would be less than significant.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less-than-significant impact. Sensitive receptors are generally considered to include those land uses where exposure to pollutants could result in health-related risks to sensitive individuals, such as children and the elderly. Residential dwellings, schools, hospitals, playgrounds, and similar facilities are of primary concern because of the presence of individuals particularly sensitive to pollutants, including children and the elderly, and the potential for these individuals to experience increased and prolonged exposure to pollutants. Sensitive receptors in the project vicinity include rural residences located throughout Markleeville.

During project construction, sensitive receptors could be temporarily exposed to criteria air pollutants and precursors, described above, as well as toxic air contaminants (TACs). Emissions of particulate matter, particularly fugitive PM_{10} and $PM_{2.5}$ dust emissions generated by excavation and other earth disturbance activities, have the potential to contribute to an increase in localized concentrations of both PM_{10} and $PM_{2.5}$. However, compliance with Rule 401, as required by the GBUAPCD, would minimize fugitive emissions of PM_{10} and $PM_{2.5}$. With implementation of dust control measures required under Rule 401, construction-related emissions would not expose sensitive receptors to concentrations of criteria air pollutants that locally exceed the NAAQS or CAAQS.

Particulate matter emitted from diesel construction equipment (diesel PM) would be the primary TAC of concern associated with the project. As shown above in Table 3.3-2, construction-related activities would emit up to 0.13 total tons of exhaust PM combined. The health risk posed by a pollutant depends on dose, which is a function of the concentration of the pollutant and the duration of exposure. Dose is positively correlated with time, meaning that a longer exposure period results in a higher exposure level for the maximally exposed individual. Thus, the risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer period. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 30- or 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project (OEHHA 2015:5-23, 5-24). Project construction would occur temporarily and intermittently over a one-year period, a duration substantially shorter than the exposure period used for typical health risk calculations (i.e., 30 years and 70 years). Additionally, not all diesel PM–emitting construction activity would occur in the same location near the same residences for the entire year of construction activity. For these reasons, it is expected that the cancer risk associated with construction-generated diesel PM would be less than 10 in one million at any nearby sensitive receptors and would not result in an increase in other, noncarcinogenic TACs that could expose nearby receptors to an acute or chronic Hazard Index greater than 1.0.

In summary, with compliance with GBUAPCD's Rule 401, project construction would not expose sensitive receptors to concentrations of criteria air pollutants that would locally exceed the NAAQS or CAAQS; or expose sensitive receptors to a dose of TACs that would result in an incremental increase in cancer risk greater than 10 in one million or a Hazard Index greater than 1.0. Therefore, this impact would be less than significant.

Furthermore, this impact would be further reduced by implementation of GHG emissions reduction measures, discussed in Section 2.6.1 of this Initial Study, which would minimize exhaust emissions of PM_{10} and $PM_{2.5}$ by limiting construction equipment idling times.

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

Less-than-significant impact. Odorous exhaust would be emitted from diesel-fueled heavy equipment and during the application of fresh asphalt. These emissions would be temporary and intermittent and would dissipate rapidly from the source with increases in distance. Although some construction activities would occur near rural residences, construction activity would be limited to 8 a.m. to 6 p.m., Monday through Friday, and 9 a.m. to 3 p.m. on weekends and, due to the linear nature of the project, would not occur in one area for the entire year of construction activity. Therefore, project construction would not result in the exposure of a substantial number of people to objectionable odors. This impact would be less than significant.

3.4 BIOLOGICAL RESOURCES

ENVIRONMENTAL ISSUES	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 Wildlife or the U.S. Fish and Wildlife Service?	No	Yes	No	No
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	No	Yes	No	No
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	No	Yes	No	No
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	No	No	Yes	No
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No	Yes	No	No
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No	No	No	Yes

3.4.1 Environmental Setting

The project site is characterized by rural residential development surrounded by natural vegetation, including forest and scrub habitats. Forest habitat within and adjacent to the project site is dominated by Jeffrey pine (*Pinus jeffreyi*) with some pinyon pine (*Pinus monophylla*) and juniper (*Juniperus* sp.). Generally, the understory of this forest habitat contains sagebrush (*Artemisia tridentata*), rabbitbrush (*Ericameria* sp.), and bitterbrush (*Purshia tridentata*) Areas closer to homes are often largely free of vegetation (i.e., purposefully cleared for defensible space). Scrub habitat is composed of sagebrush, rabbitbrush, bitterbrush, mountain mahogany (*Cercocarpus* sp.), and tobacco brush (*Ceanothus velutinus*). The elevation of the project site is approximately 5,400–5,900 feet.

Hot Springs Creek, a perennial stream with cobble substrate, runs east to west and is located directly adjacent to Hot Springs Road in some areas of the project site. Portions of Hot Springs Creek contain associated riparian vegetation, including willows (*Salix* spp.), black cottonwood (*Populus trichocarpa*), and creek alder (*Alnus incana* ssp. *tenuifolia*). Intermittent drainage habitat feeding into Hot Springs Creek is present south of the existing pump station, as well as a small (i.e., less than 5 feet in diameter) human-made holding pond and backwash basin, and seasonal wetland habitat is present in association with these features. Additionally, several narrow wetland features (e.g., seasonal wetlands, seeps) are present directly adjacent to Hot Springs Road, some containing wetland vegetation (e.g., cattails [*Typha* sp.]).

The project includes five proposed temporary construction staging areas (Figure 2-3). Staging Area #1, which is located adjacent to the Pleasant Valley tank, contains primarily scrub habitat with sparse Jeffrey pine, pinyon pine, and juniper. Staging Areas #2 and #3 are disturbed, with no vegetation. Staging Area #4 is located adjacent to the existing WTP and is mostly disturbed with a gravel driveway, existing buildings, and material storage (e.g., pipes, lumber). Staging Area #4 is surrounded by natural forest, scrub, seasonal wetland, and intermittent drainage habitat, some of which is either near or encroaches into the disturbed areas. Staging Area #5 is located near downtown Markleeville within a graded parking area adjacent to Markleeville Creek. Staging Area #5 contains graded dirt surfaces, picnic tables, and some areas of ruderal, nonnative vegetation (e.g., sweet pea [*Lathyrus latifolius*], alfalfa [*Medicago sativa*]).

Queries of the California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants for the Freel Peak, Woodfords, Carters Station, Carson Pass, Markleeville, Heenan Lake, Wolf Creek, Ebbetts Pass, and Pacific Valley U.S. Geological Survey 7.5-minute quadrangles were conducted to identify sensitive biological resources within the vicinity of the project site. Additionally, the U.S. Forest Service Intermountain Region (Region 4) Threatened, Endangered, Proposed, and Sensitive Species list and the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation lists were referenced to identify species listed under the federal Endangered Species Act (ESA) or considered sensitive by U.S. Forest Service that may occur within the project site or be affected by projects implemented in the area (U.S. Forest Service 2016, USFWS 2020).

Based on a review of the results, documented species ranges, and habitat within the project site as confirmed during a site visit by an Ascent Environmental biologist on October 2, 2020, 12 special-status plant species and 19 special-status wildlife species may occur on the project site (Table 3.4-1, Table 3.4-2, CNDDB 2020, CNPS 2020, U.S. Forest Service 2016, USFWS 2020). Thirty-six plant species and four butterfly species considered sensitive by U.S. Forest Service within the Toiyabe portion of the Humboldt-Toiyabe National Forest do not occur in California, and these species are not included in Table 3.4-1 and Table 3.4-2.

Table 3.4-1 Special-Status Plant Species Known to Occur in the Vicinity of the Project Site and Potential for Occurrence in the Project Site

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR	Habitat	Potential for Occurrence
Mountain bent grass *Agrostis humilis*	–	–	2B.3	Alpine boulder and rock field, meadows and seeps, subalpine coniferous forest. Sometimes on calcareous substrates. 5,003–11,155 feet in elevation. Blooms July–September.	May occur. The project site contains seep habitat potentially suitable for this species.
Long Valley milkvetch *Astragalus johannis-howellii*	FSS	–	1B.2	Usually found in swales in vicinity of former or present hot springs activity. 6,600–8,300 feet in elevation. Blooms June–August.	Not expected to occur. The project site is outside of the known range of this species.
Lavin's milk-vetch *Astragalus oophorus* var. *lavinii*	FSS	–	1B.2	Great Basin scrub, pinyon and juniper woodland. Dry, open areas. 8,038–10,007 feet in elevation. Blooms June.	Not expected to occur. The project site is outside of the elevation range of this species.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR	Habitat	Potential for Occurrence
Bodie Hills rockcress *Boechera bodiensis*	FSS	–	1B.3	Alpine boulder and rock field, Great Basin scrub, pinyon and juniper woodland, subalpine coniferous forest. In rock crevices, outcrops, and on steep slopes. Granite and volcanic substrates. 6,890–11,598 feet in elevation. Blooms June–July.	Not expected to occur. The project site is outside of the known range of this species.
Galena Creek rockcress *Boechera rigidissima* var. *demota*	FSS	–	1B.2	Broadleaved upland forest, upper montane coniferous forest. Well-drained, stony soil underlain by basic volcanic rock. 7,398–8,399 feet in elevation. Blooms July–August.	Not expected to occur. The project site does not contain rocky soil habitat suitable for this species.
Tiehm's rockcress *Boechera tiehmii*	FSS	–	1B.3	Alpine boulder and rock field. On windswept rocky ridges and in crevices on rocky slopes; in cushion plant community on granite. 9,744–11,778 feet in elevation. Blooms July–August.	Not expected to occur. The project site does not contain rocky ridge or rocky slope habitat.
Upswept moonwort *Botrychium ascendens*	FSS	–	2B.3	Grassy fields, conifer forests near springs and creeks. 3,658–10,712 feet in elevation. Blooms July–August.	May occur. The project site contains conifer forest habitat near creeks (i.e., Hot Springs Creek) that may be suitable for this species.
Scalloped moonwort *Botrychium crenulatum*	FSS	–	2B.2	Moist meadows, freshwater marsh, and near creeks. 3,888–10,203 feet in elevation. Blooms June–September.	May occur. The project site contains creek habitat (i.e., Hot Springs Creek) and associated wet areas potentially suitable for this species.
Slender moonwort *Botrychium lineare*	FSS	–	1B.1	Upper coniferous forest, subalpine coniferous forest, meadows, and seeps. 8,399–10,220 feet in elevation.	Not expected to occur. The project site is outside of the elevation range of this species.
Moosewort *Botrychium tunux*	FSS	–	2B.1	Limestone. Alpine boulder and rock field. Calcareous substrates. 10,007–10,499 feet in elevation. Blooms August–September.	Not expected to occur. The project site is outside of the elevation range of this species.
Davy's sedge *Carex davyi*	–	–	1B.3	Subalpine coniferous forest, upper montane coniferous forest. 4,790–10,597 feet in elevation. Blooms May–August.	May occur. The project site contains forest habitat potentially suitable for this species.
Porcupine sedge *Carex hystericina*	–	–	2B.1	Wet places, such as stream edges. 1,985–3,150 feet in elevation. Blooms May–June.	May occur. The project site contains creek habitat (i.e., Hot Springs Creek) and associated wet areas potentially suitable for this species.
Mud sedge *Carex limosa*	–	–	2B.2	In floating bogs and soggy meadows and edges of lakes. 4,495–9,154 feet in elevation. Blooms June–August.	Not expected to occur. The project site does not contain bog, meadow, or lake habitat.
Liddon's sedge *Carex petasata*	–	–	2B.3	Broadleafed upland forest, lower montane coniferous forest, meadows and seeps, pinyon and juniper woodland. 2,740–9,941 feet in elevation. Blooms May–July.	May occur. The project site contains forest and seep habitat potentially suitable for this species.
Tioga Pass sedge *Carex tiogana*	FSS	–	1B.3	On terraces next to lakes; mesic sites. 10,187–10,909 feet in elevation. Blooms July–August.	Not expected to occur. The project site is outside of the elevation range of this species.
Western valley sedge *Carex vallicola*	–	–	2B.3	Great Basin scrub, meadows, and seeps. Mesic sites. 5,003–9,203 feet in elevation. Blooms July–August.	May occur. The project site contains scrub and seep habitat potentially suitable for this species.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR	Habitat	Potential for Occurrence
Alpine dusty maidens *Chaenactis douglasii* var. *alpina*	–	–	2B.3	Open, subalpine to alpine gravel and crevices; granitic substrate. 7,749–11,007 feet in elevation. Blooms July–September.	Not expected to occur. The project site does not contain gravel or rocky crevice habitat suitable for this species.
Fell-fields claytonia *Claytonia megarhiza*	–	–	2B.3	In the crevices between rocks, rocky or gravelly soil. 8,530–10,942 feet in elevation. Blooms July–September.	Not expected to occur. The project site is outside of the elevation range of this species.
Great Basin claytonia *Claytonia umbellata*	–	–	2B.3	Subalpine coniferous forest. Talus slopes, stony flats, crevices. 5,594–11,483 feet in elevation. Blooms May–August.	Not expected to occur. The project site does not contain talus slope habitat.
Fiddleleaf hawksbeard *Crepis runcinata*	–	–	2B.2	Moist, alkaline valley bottoms. 1,247–10,203 feet in elevation. Blooms May–August.	Not expected to occur. The project site does not contain alkaline valley bottom habitat suitable for this species.
Subalpine cryptantha *Cryptantha crymophila*	–	–	1B.3	Subalpine coniferous forest. On dry talus of volcanic formation. 8,793–10,810 feet in elevation. Blooms July–August.	Not expected to occur. The project site does not contain talus slope habitat and is outside of the elevation range of this species.
Bodie Hills cusickiella *Cusickiella quadricostata*	FSS	–	1B.2	Endemic to the Walker River drainage; mainly confined to the shallow decomposed granite or clay soils. 6,562–9,186 feet in elevation. Blooms May–July.	Not expected to occur. The project site is outside of the known range of this species.
Tahoe draba *Draba asterophora* var. *asterophora*	FSS	–	1B.2	On open talus slopes, rock outcrops, and crevices. On decomposed granite. 9,088–11,499 feet in elevation. Blooms July–August.	Not expected to occur. The project site does not contain talus slope or rock outcrop habitat and is outside of the elevation range of this species.
Tall draba *Draba praealta*	–	–	2B.3	Mesic sites. 8,202–11,204 feet in elevation. Blooms July–August.	Not expected to occur. The project site is outside of the elevation range of this species.
Scribner's wheat grass *Elymus scribneri*	–	–	2B.3	On rocky slopes. 9,514–13,780 feet in elevation. Blooms July–August.	Not expected to occur. The project site is outside of the elevation range of this species.
Marsh willowherb *Epilobium palustre*	–	–	2B.3	Mesic sites. 5,430–7,710 feet in elevation. Blooms July–August.	May occur. The project site contains mesic habitat associated with Hot Springs Creek potentially suitable for this species.
Jack's wild buckwheat *Eriogonum luteolum* var. *saltuarium*	FSS	–	1B.2	Sandy, granitic substrates. 5,577–7,874 feet in elevation. Blooms July–September.	Not expected to occur. The project site does not contain sandy, rocky habitat and is outside of the known range of this species.
Carson Valley monkeyflower *Erythranthe carsonensis*	–	–	1B.1	Granitic openings. 4,856–4,856 feet in elevation. Blooms April–June.	Not expected to occur. The project site is outside of the known range of this species.
Blandow's bog moss *Helodium blandowii*	FSS	–	2B.3	Moss growing on damp soil, especially under willows among leaf litter. 6,109–8,858 feet in elevation.	May occur. The project site contains damp soil habitat and willows.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR	Habitat	Potential for Occurrence
Sierra Valley ivesia *Ivesia aperta* var. *aperta*	FSS	–	1B.2	Usually in loamy, volcanic soils. Grassy areas within sagebrush scrub or other communities. 4,856–7,546 feet in elevation. Blooms June–September.	Not expected to occur. The project site is outside of the known range of this species.
Dog Valley ivesia *Ivesia aperta* var. *canina*	FSS	–	1B.1	Lower montane coniferous forest, meadows. Shallow rocky soil of volcanic origin. 5,249–6,562 feet in elevation. Blooms June–August.	Not expected to occur. The project site is outside of the known range of this species.
Jaeger's ivesia *Ivesia jaegeri*	FSS	–	1B.3	Limestone cliffs in pinyon-juniper or pinyon-white fir forest. 5,955–11,811 feet in elevation. Blooms June–July.	Not expected to occur. The project site is outside of the known range of this species.
Plumas ivesia *Ivesia sericoleuca*	FSS	–	1B.2	Vernally mesic areas; usually volcanic substrates. 4,314–7,005 feet in elevation. Blooms May–October.	May occur. The project site contains mesic habitat potentially suitable for this species.
Webber's ivesia *Ivesia webberi*	FT FSS	–	1B.1	Rocky or gravelly volcanic soils. 3,396–6,299 feet in elevation. Blooms May–July.	Not expected to occur. The project site is outside of the known range of this species.
Three-ranked hump moss *Meesia triquetra*	FSS	–	4.2	Moss growing on mesic soil. Saturated bogs, fens, seeps, and meadows in coniferous to subalpine forests. 4,265–9,695 feet in elevation. Blooms July.	May occur. The project site contains mesic habitat associated with Hot Springs Creek potentially suitable for this species.
Shevock rockmoss *Orthotrichum shevockii*	FSS	–	–	Endemic to a small area of California and Nevada in Joshua tree woodland, pinyon and juniper woodland on granitic rock.	Not expected to occur. The project site does not contain Joshua tree or pinyon and juniper woodland habitat.
Spjut's bristle moss *Orthotrichum spjutii*	FSS	–	1B.3	Moss growing on volcanic rock; known only from near Sonora Pass. 6,890–7,874 feet in elevation.	Not expected to occur. The project site is outside of the known range of this species.
Mono County phacelia *Phacelia monoensis*	FSS	–	1B.1	Ridgetops in alkaline mountain meadows in clay soils; also roadsides. 6,988–9,498 feet in elevation. Blooms May–July.	Not expected to occur. The project site is outside of the known range of this species.
Whitebark pine *Pinus albicaulis*	FC FSS	–	–	Thin, rocky, cold soils at or near timberline in subalpine forests. 7,000–12,100 feet in elevation. Blooms July–August.	Not expected to occur. The project site is outside of the elevation range of this species.
Marsh's blue grass *Poa abbreviata* ssp. *marshii*	FSS	–	2B.3	Alpine boulder and rock field. North-facing wall of cirque; with *Poa abbreviata* ssp. *pattersonii*. One site in California. 11,975–11,975 feet in elevation. Blooms June.	Not expected to occur. The project site is outside of the elevation range of this species.
Mason's skypilot *Polemonium chartaceum*	FSS	–	1B.3	Gravelly slopes and rocky ledges on granitic or volcanic soils. 10,794–14,009 feet in elevation. Blooms June–August.	Not expected to occur. The project site is outside of the elevation range of this species.
Williams' combleaf *Polyctenium williamsiae*	FSS	–	1B.2	Sandy or volcanic soils and lake margins. 4,413–8,301 feet in elevation. Blooms March–July.	Not expected to occur. The project site does not contain sandy soils or lake habitat suitable for this species.
Robbins' pondweed *Potamogeton robbinsii*	–	–	2B.3	Deep water, lakes. 5,020–10,827 feet in elevation. Blooms July–August.	Not expected to occur. The project site does not contain lake habitat.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR	Habitat	Potential for Occurrence
Alder buckthorn *Rhamnus alnifolia*	–	–	2B.2	Mesic sites. 4,692–7,005 feet in elevation. Blooms May–July.	May occur. The project site contains mesic habitat associated with Hot Springs Creek potentially suitable for this species.
Water bulrush *Schoenoplectus subterminalis*	–	–	2B.3	Montane lake margins, in shallow water. 2,461–7,382 feet in elevation. Blooms June–August.	Not expected to occur. The project site does not contain montane lake habitat.
Mt. Patterson sencio *Senecio pattersonensis*	FSS	–	1B.3	Alpine boulder and rock field. 9,514–12,205 feet in elevation. Blooms July–August.	Not expected to occur. The project site is outside of the elevation range of this species.
Masonic Mountain jewelflower *Streptanthus oliganthus*	FSS	–	1B.2	Volcanic or decomposed granite soils, along roadsides and in old mine dumps. 6,496–10,007 feet in elevation. Blooms June–July.	Not expected to occur. The project site is outside of the known range of this species.
Cream-flowered bladderwort *Utricularia ochroleuca*	–	–	2B.2	Mesic sites, including lake margins. 4,298–7,710 feet in elevation. Blooms June–July.	Not expected to occur. The project site is outside of the known range of this species.
Golden violet *Viola purpurea* ssp. *aurea*	–	–	2B.2	Great Basin scrub, pinyon-juniper woodland. Dry, sandy slopes. 3,281–8,202 feet in elevation. Blooms April–June.	Not expected to occur. The project site is outside of the known range of this species.

Notes: CRPR = California Rare Plant Rank; CESA = California Endangered Species Act; CEQA = California Environmental Quality Act; ESA = Endangered Species Act; NPPA = Native Plant Protection Act

1 Legal Status Definitions

Federal:

FC Federal Candidate

FSS US Forest Service Sensitive

California Rare Plant Ranks:

1A Plant species that are presumed extirpated or extinct because they have not been seen or collected in the wild in California for many years. A plant is extinct if it no longer occurs anywhere. A plant that is extirpated from California has been eliminated from California but may still occur elsewhere in its range.

1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA).

2B Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA).

3 Plant species for which there is not enough information to assign the species to one of the other ranks or reject them.

4 Plant species with limited distribution or infrequent distribution throughout a broader area in California.

Threat Ranks:

0.1 Seriously threatened in California (over 80% of occurrences threatened; high degree and immediacy of threat)

0.2 Moderately threatened in California (20-80% occurrences threatened; moderate degree and immediacy of threat)

0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Sources: CNDDB 2020; CNPS 2020; U.S. Forest Service 2016

Table 3.4-2 Special-Status Wildlife Species Known to Occur in the Vicinity of the Project Site and Potential for Occurrence in the Project Site

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence
Amphibians and Reptiles				
Columbian spotted frog *Rana luteiventris*	FSS	–	Found in diverse habitats, usually in places with strong sun exposure near water with floating vegetation, including beaver ponds, mountaintop wetlands, small lakes, boreal ponds, wet springs, and slow-moving stream edges.	Not expected to occur. The project site is outside of the known range of this species.
Desert tortoise *Gopherus agassizii*	FT FSS	ST	Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat. Require friable soil for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms preferred.	Not expected to occur. The project site is outside of the known range of this species.
Northern leopard frog *Lithobates pipiens*	–	SSC	Native range is east of Sierra Nevada-Cascade Crest. Near permanent or semi-permanent water in a variety of habitats. Highly aquatic species. Shoreline cover, submerged and emergent aquatic vegetation are important habitat characteristics.	Not expected to occur. The project site is outside of the known range of this species.
Sierra Nevada yellow-legged frog *Rana sierrae*	FE FSS	ST	Always encountered within a few feet of water. Tadpoles may require 2 to 4 years to complete their aquatic development.	Not expected to occur. The project site is outside of the known range of this species.
Southern long-toed salamander *Ambystoma macrodactylum sigillatum*	–	SSC	High elevation wet meadows and lakes in the Sierra Nevada, Cascade, and Klamath mountains. Aquatic larvae occur in ponds and lakes. Outside of breeding season adults are terrestrial and associated with underground burrows of mammals and moist areas under logs and rocks.	Not expected to occur. The project site does not contain wet meadow, lake, or pond habitat suitable for this species.
Southern mountain yellow-legged frog *Rana muscosa*	FE FSS	SE	Federal listing refers to populations in the San Gabriel, San Jacinto and San Bernardino Mountains (southern DPS). Northern DPS was determined to warrant listing as endangered, April 2014, effective June 30, 2014. Always encountered within a few feet of water. Tadpoles may require 2 - 4 years to complete their aquatic development.	Not expected to occur. The project site is outside of the known range of this species.
Yosemite toad *Anaxyrus canorus*	FT FSS	SSC	Vicinity of wet meadows in central High Sierra, 6,400 to 11,300 feet in elevation. Primarily montane wet meadows; also in seasonal ponds associated with lodgepole pine and subalpine conifer forest.	Not expected to occur. The project site does not contain wet meadow or seasonal pond habitat suitable for this species.
Birds				
American peregrine falcon *Falco peregrinus anatum*	FD FSS	SD FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	Not expected to occur. The project site does not contain cliff or ledge nesting habitat suitable for this species.

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence
Bald eagle *Haliaeetus leucocephalus*	FD FSS	SE FP	Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	May occur. The project site contains forest nesting habitat potentially suitable for this species.
Black swift *Cypseloides niger*	–	SSC	Coastal belt of Santa Cruz and Monterey County; central and southern Sierra Nevada; San Bernardino and San Jacinto Mountains. Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above the surf; forages widely	Not expected to occur. The project site does not contain cliff or canyon habitat suitable for this species.
California spotted owl *Strix occidentalis occidentalis*	FSS	SSC	Mixed conifer forest, often with an understory of black oaks and other deciduous hardwoods. Canopy closure greater than 40 percent. Most often found in deep-shaded canyons, on north-facing slopes, and within 300 meters of water.	Not expected to occur. The forest habitat within the project is generally not characterized by high canopy closure or late seral forest features (e.g., old growth trees and snags, coarse woody debris). There is a documented nest site approximately 3 miles west of the project site within an area of denser forest habitat (CNDDB 2020).
Flammulated owl *Psiloscops flammeolus*	FSS	–	Breed in montane forests with some understory brush. In California, the breeding range is closely associated with the presence of ponderosa pine and Jeffrey pine.	May occur. The project site contains forest habitat potentially suitable for this species.
Golden eagle *Aquila chrysaetos*	–	FP	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	May occur. The project site contains large trees that may provide nesting habitat suitable for this species.
Great gray owl *Strix nebulosa*	FSS	SE	Resident of mixed conifer or red fir forest habitat, in or on edge of meadows. Requires large diameter snags in a forest with high canopy closure, which provide a cool sub-canopy microclimate.	May occur. There is one documented great gray owl nesting occurrence approximately 2 miles west of the project site in Grover Hot Springs State Park (CNDDB 2020). The forest habitat adjacent to the project site may provide nesting habitat potentially suitable for this species.
Greater sage-grouse *Centrocercus urophasianus*	FSS	SSC	Found in the northeastern, Great Basin portion of state. Restricted to flat/rolling terrain vegetated by sagebrush, upon which it depends for both food and shelter.	Not expected to occur. The project site is outside of the known range of this species.
Greater sage-grouse Bi-State DPS	FSS	SSC	Great basin scrub. Bi-state DPS ranges from Carson City, Nevada to the White Mountains in Inyo County. Restricted to flat/rolling terrain vegetated by sagebrush, upon which it depends for both food and shelter.	Not expected to occur. The project site is outside of the known range of this species.
Mountain quail *Oreortyx pictus*	FSS	–	Found in shrub stands of coniferous and deciduous forest habitats, including chaparral. Typically nests on the ground near the base of a tree, rocks, or other structures.	May occur. The project site contains shrub and forest habitat potentially suitable for this species.

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence
Northern goshawk *Accipiter gentilis*	FSS	SSC	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.	May occur. The forest habitat within the project is generally not characterized by high canopy closure or late seral forest features (e.g., large diameter trees, snags, coarse woody debris). However, northern goshawks sometimes select nesting sites adjacent to edge habitat (e.g., roads, trails), and while the habitat within the project site is marginal, it is possible that northern goshawks occur.
Purple martin *Progne subis*	–	SSC	Inhabits woodlands, low elevation coniferous forest of Douglas-fir, ponderosa pine, and Monterey pine. Nests in old woodpecker cavities mostly, also in human-made structures. Nest often located in tall, isolated tree/snag.	Not expected to occur. The project site is outside of the known range of this species.
Three-toed woodpecker *Picoides tridactylus*	FSS	–	Found in boreal and montane coniferous forests. Inhabits disturbed forests with decaying or dying trees and snags.	Not expected to occur. The project site is outside of the known range of this species.
White-headed woodpecker *Picoides albolarvatus*	FSS	–	Nests in open montane conifer forests with large trees and snags. Prefers semi-open areas. Excavates cavity in large snag or stump at least 2 feet in diameter at nest height.	May occur. The project site contains forest nesting habitat potentially suitable for this species.
Willow flycatcher *Empidonax traillii*	FSS	SE	Inhabits extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters; 2,000-8,000 feet elevation. Requires dense willow thickets for nesting/roosting. Low, exposed branches are used for singing posts/hunting perches.	Not expected to occur. Riparian habitat associated with Hot Springs Creek does not provide sufficient cover or the habitat components (e.g., meadow, marsh) preferred by this species.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FT FSS	SE	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Not expected to occur. The project site is outside of the known range of this species.
Fish				
California golden trout *Oncorhynchus mykiss aguabonita*	FSS	SSC	Native to Kern Plateau in wide, shallow, and exposed streams with little riparian vegetation. Transplanted within and outside of California beyond native range. Stream bottoms of sand, gravel, and some cobble. Water is clear and usually cold, but summer temperatures can vary from 3 to 22 Celsius.	Not expected to occur. The project site is outside of the known range of this species.
Lahontan cutthroat trout *Oncorhynchus clarkii henshawi*	FT FSS	–	Historically in all accessible cold waters of the Lahontan Basin in a wide variety of water temperatures and conditions. Cannot tolerate presence of other salmonids. Requires gravel riffles in streams for spawning.	Not expected to occur. While the project site is within the historic range of Lahontan cutthroat trout, the species range does not currently include Hot Springs Creek (USFWS 2009).
Mountain sucker *Catostomus platyrhynchus*	–	SSC	Restricted to the Lahontan drainage system and the north fork of the Feather River. Generally occupy pool-like habitats. Abundance greatest in areas with dense cover.	Known to occur. Mountain sucker has been documented within Hot Springs Creek (CNDDB 2020).

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence
Mountain whitefish *Prosopium williamsoni*	–	SSC	Mountain whitefish in California inhabit clear, cold streams and rivers at elevations of 4,500–7,600 feet. While they are known to occur in a few natural lakes (e.g., Lake Tahoe), there are few records from reservoirs. In streams, they are generally associated with large pools (i.e., less than 3 feet deep) or deep runs.	Known to occur. Mountain whitefish has been documented within Hot Springs Creek (CNDDB 2020).
Paiute cutthroat trout *Oncorhynchus clarkii seleniris*	FT FSS	–	Cool, well-oxygenated waters. Cannot tolerate presence of other salmonids, requires clean gravel for spawning.	Not expected to occur. The project site is outside of the current range of this species.
Railroad Valley springfish *Crenichthys nevadae*	FSS	–	Isolated in six thermal springs distributed in two areas of Railroad Valley in central Nevada. Native to Big Warm and Little Warm Springs and Duckwater Creek on the Duckwater Shoshone Indian Reservation and Big, Reynolds, Hay Corral, and North Springs near Lockes Ranch, Nevada.	Not expected to occur. The project site is outside of the current range of this species.
Invertebrates				
Western bumble bee *Bombus occidentalis*	FSS	SC	Bumble bees have three basic habitat requirements: suitable nesting sites for the colonies, availability of nectar and pollen from floral resources throughout the duration of the colony period (spring, summer, and fall), and suitable overwintering sites for the queens.	Not expected to occur. The project site is within the historic range of this species and there is one historic (1948) occurrence of the species within approximately 8 miles north of the project site (CNDDB 2020). However, western bumble bee has recently undergone a decline in abundance and distribution and is no longer present across much of its historic range. In California, western bumble bee populations are currently largely restricted to high elevation sites in the northern Sierra Nevada and a few locations on the northern California coast (Xerces Society 2018).
Mammals				
American badger *Taxidea taxus*	–	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	May occur. The project site contains shrub and forest habitat potentially suitable for American badger. The nearest known occurrence of this species is approximately 10 miles west of the project site (CNDDB 2020).
California wolverine *Gulo gulo*	FP FSS	ST FP	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, burrows for cover and den area. Hunts in more open areas. Can travel long distances.	Not expected to occur. While the project site is located within the historic range of this species, the only known wolverine in California was last detected in Tahoe National Forest near Truckee. This detection is a significant distance from the project site (i.e., greater than 50 miles) and the likelihood of this individual dispersing to the project site is extremely low.

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence
Desert bighorn sheep *Ovis canadensis nelsoni*	FSS	FP	Widely distributed from the White Mountains in Mono County to the Chocolate Mountains in Imperial County. Open, rocky, steep areas with available water and herbaceous forage.	Not expected to occur. The project site is outside of the known range of this species.
Fisher - West Coast DPS *Pekania pennanti*	FE FSS	SSC	Uses cavities, snags, logs and rocky areas for cover and denning. Needs large areas of mature, dense forest. Endangered status applies to Southern Sierra DPS.	Not expected to occur. Fisher is considered to be extirpated from most of the northern and central Sierra Nevada (Zielinski et al. 1995; Sweitzer et al. 2015) and has not been detected within or in the vicinity of the project site since the late 1970s (CNDDB 2020).
Pallid bat *Antrozous pallidus*	–	SSC	Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	May occur. The project site contains trees that may provide roost habitat potentially suitable for this species.
Pygmy rabbit *Brachylagus idahoensis*	FSS	SSC	Sagebrush, bitterbrush, and pinyon-juniper habitats in Modoc, Lassen, and Mono counties. Tall dense, large-shrub stages of sagebrush, greasewood and rabbitbrush. May avoid heavily grazed areas.	Not expected to occur. The project site is outside of the known range of this species.
Ringtail *Bassariscus astutus*	–	FP	Riparian habitats, forest habitats, and shrub habitats in lower to middle elevations. Hollow trees, logs, snags, cavities in talus and other rocky areas, and other recesses are used for cover. Usually found within 0.6 mile of a permanent water source.	May occur. The riparian habitat associated with Hot Springs Creek and forest habitat within the project site may provide habitat potentially suitable for ringtail.
Sierra Nevada bighorn sheep *Ovis canadensis sierrae*	FE FSS	SE FP	Historically found along the east side and crest of the Sierra Nevada, and on the Great Western Divide. Available water and steep, open terrain free of competition from other grazing ungulates.	Not expected to occur. The project site is outside of the known range of this species.
Sierra Nevada mountain beaver *Aplodontia rufa californica*	–	SSC	Dense growth of small deciduous trees and shrubs, wet soil, and abundance of forbs in the Sierra Nevada and east slope. Needs dense understory for food and cover. Burrows into soft soil. Needs abundant supply of water.	May occur. Riparian habitat potentially suitable for Sierra Nevada mountain beaver is present along Hot Springs Creek.
Sierra Nevada red fox *Vulpes vulpes necator*	FC	ST	Historically found from the Cascades down to the Sierra Nevada. Found in a variety of habitats from wet meadows to forested areas. Use dense vegetation and rocky areas for cover and den sites. Prefer forests interspersed with meadows or alpine fell-fields.	Not expected to occur. The project site may be within the historic range of Sierra Nevada red fox; however, only two small populations of the species are currently known: one near Lassen Peak and one near Sonora Pass. This species is currently unlikely to occur in the vicinity of the project site.
Sierra Nevada snowshoe hare *Lepus americanus tahoensis*	–	SSC	Boreal riparian areas in the Sierra Nevada. Thickets of deciduous trees in riparian areas and thickets of young conifers.	May occur. The project site contains forest habitat and nearby riparian habitat potentially suitable for this species.

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence
Spotted bat *Euderma maculatum*	FSS	SSC	Occupies a wide variety of habitats from arid deserts and grasslands through mixed conifer forests. Feeds over water and along washes. Feeds almost entirely on moths. Needs rock crevices in cliffs or caves for roosting.	May occur. The project site is located in close proximity to rocky habitats which may provide suitable roost habitat for this species.
Townsend's big-eared bat *Corynorhinus townsendii*	FSS	SCC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	May occur. The project site contains bridges and buildings that may provide roost habitat potentially suitable for this species.
Western red bat *Lasiurus blossevillii*	–	SSC	Roosts primarily in foliage of trees, 2-40 feet above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	May occur. The project site contains trees that may provide roost habitat potentially suitable for this species.
Western white-tailed jackrabbit *Lepus townsendii townsendii*	–	SSC	Open areas with scattered shrubs and exposed flat-topped hills with open stands of trees, brush, and herbaceous understory.	May occur. The project site contains brush and forest habitat potentially suitable for this species.

Notes: CNDDB = California Natural Diversity Database; CEQA = California Environmental Quality Act

1 Legal Status Definitions

Federal:

FE Federally Listed as Endangered (legally protected)
FT Federally Listed as Threatened (legally protected)
FC Federal Candidate for listing (legally protected)
FD Federally Delisted
FP Proposed for listing
FSS U.S. Forest Service Sensitive

State:

FP Fully protected (legally protected)
SSC Species of special concern (no formal protection other than CEQA consideration)
SE State Listed as Endangered (legally protected)
ST State Listed as Threatened (legally protected)
SC State Candidate for listing (legally protected)
SD State Delisted

Sources: CNDDB 2020; Xerces 2018; U.S. Forest Service 2016; USFWS 2020

3.4.2 Discussion

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

Less than significant with mitigation incorporated.

Special-Status Plants

A total of 12 special-status plant species were identified as having potential to occur in the project site: mountain bent grass, upswept moonwort, scalloped moonwort, Davy's sedge, porcupine sedge, Liddon's sedge, western valley sedge, marsh willowherb, Blandow's bog moss, Plumas ivesia, three-ranked hump moss, and alder buckthorn (Table 3.4-1; CNDDB 2020, CNPS 2020, U.S. Forest Service 2016). These species are associated with various habitats, including forest, scrub, wetland, seep, and streambank.

As described in Chapter 2, "Project Description," the project would include replacement of aging piping within public roadways, construction of several new facilities, and staging activities within several proposed staging areas. These activities would include tree removal, vegetation clearing, trenching, excavation, grading, installation of new concrete pads, installation of new buildings, and demolition of existing facilities. These activities could result in damage (e.g., trampling, alteration of root structure) or direct loss of special-status plants or their habitat if they are present. This would be a potentially significant impact.

Mitigation Measure 3.4-1: Conduct Special-Status Plant Surveys and Implement Avoidance Measures and Mitigation

- Prior to implementation of project activities and during the period when special-status plant species with potential to occur in the project site (Table 3.4-3) are most identifiable (generally, the blooming period of flowering plants or sporophyte period of bryophytes), a qualified botanist will conduct protocol-level surveys for special-status plants within the project site following survey methods from the California Department of Fish and Wildlife (CDFW) Protocols for Surveying and Evaluating Impacts on Special Status Native Plant Populations and Natural Communities (CDFW 2018). The qualified botanist will 1) be knowledgeable about plant taxonomy, 2) be familiar with plants of the Sierra Nevada region, including special-status plants and sensitive natural communities, 3) have experience conducting floristic botanical field surveys as described in CDFW 2018, 4) be familiar with the *California Manual of Vegetation* (Sawyer et al. 2009 or current version, including updated natural communities data at http://vegetation.cnps.org/), and 5) be familiar with federal and state statutes and regulations related to plants and plant collecting.
- If special-status plants are not found, the botanist will document the findings in a letter report to Markleeville Water Company (MWC) and no further mitigation will be required.
- If special-status plant species are found, the occupied habitat will be avoided completely, if feasible (i.e., project objectives can still be met). This may include establishing a no-disturbance buffer around the plant population and demarcation of this buffer by a qualified botanist using flagging or high-visibility construction fencing. The size of the buffer will be determined by the qualified botanist and will be large enough to avoid direct or indirect impacts on the plant.

Table 3.4-3 Normal Blooming Period for Special-Status Plants that May Occur within the Project Site

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mountain bent grass							X	X	X			
Upswept moonwort							X	X				
Scalloped moonwort						X	X	X	X			
Davy's sedge					X	X	X	X				
Porcupine sedge					X	X						
Liddon's sedge					X	X	X					
Western valley sedge							X	X				
Marsh willowherb							X	X				
Blandow's bog moss[1]	–	–	–	–	–	–	–	–	–	–	–	–
Plumas ivesia					X	X	X	X	X	X		
Three-ranked hump moss							X					
Alder buckthorn					X	X	X					

[1] Non-blooming bryophyte species

Source: Data compiled by Ascent Environmental in 2020; CNPS 2020

- If special-status plants are found during rare plant surveys and cannot be avoided, MWC will consult with CDFW, Humboldt-Toiyabe National Forest, or U.S. Fish and Wildlife Service (USFWS), as appropriate depending on species status, to determine the compensation necessary to achieve no net loss of occupied habitat or individuals. Mitigation measures may include, but are not limited to, preserving and enhancing existing populations, creating off-site populations on mitigation sites through seed collection or transplantation at a 1:1 ratio, and restoring or creating suitable habitat in sufficient quantities to achieve no net loss of occupied habitat or individuals. Potential mitigation sites could include suitable locations within or outside of the project site. MWC will develop and implement a site-specific mitigation strategy describing how unavoidable losses of special-status plants will be compensated. Success criteria for preserved and compensatory populations will include:
  - The extent of occupied area and plant density (number of plants per unit area) in compensatory populations will be equal to or greater than the affected occupied habitat.
  - Compensatory and preserved populations will be self-producing. Populations will be considered self-producing when:
    - plants reestablish annually for a minimum of five years with no human intervention such as supplemental seeding; and
    - reestablished and preserved habitats contain an occupied area and flower density comparable to existing occupied habitat areas in similar habitat types in the project vicinity.
  - If off-site mitigation includes dedication of conservation easements, purchase of mitigation credits, or other off-site conservation measures, the details of these measures will be included in the mitigation plan, including information on responsible parties for long-term management, conservation easement holders, long-term management requirements, success criteria such as those listed above and other details, as appropriate to target the preservation of long-term viable populations.

Because implementation of Mitigation Measure 3.4-1 would avoid or adequately compensate for special-status plants that may be affected by the project, it would reduce project impacts on special-status plants to a less-than-significant level.

Special-Status Wildlife

A total of 18 special-status wildlife species were identified as having potential to occur in the project site: bald eagle, flammulated owl, golden eagle, great gray owl, mountain quail, northern goshawk, white-headed woodpecker, mountain sucker, mountain whitefish, American badger, pallid bat, ringtail, Sierra Nevada mountain beaver, Sierra Nevada snowshoe hare, spotted bat, Townsend's big-eared bat, western red bat, and western white-tailed jackrabbit (Table 1.4-2; CNDDB 2020, U.S. Forest Service 2016, USFWS 2020).

Special-Status Birds and Other Native Birds

Six special-status bird species have potential to occur in the project site: bald eagle, flammulated owl, golden eagle, great gray owl, mountain quail, northern goshawk, and white-headed woodpecker. Bald eagle is listed as endangered under the California Endangered Species Act (CESA), is fully protected under California Fish and Game Code, and is a Region 4 U.S. Forest Service Sensitive species. Golden eagle is also fully protected under California Fish and Game Code. Great gray owl is listed as endangered under CESA and is a Region 4 U.S. Forest Service Sensitive species. Northern goshawk is a CDFW species of special concern and is a Region 4 U.S. Forest Service Sensitive species.

Flammulated owl, mountain quail, and white-headed woodpecker are Region 4 U.S. Forest Service Sensitive species. Because these species are not considered endangered, threatened, or species of special concern under any other state or federal law, they are only considered special-status on U.S. Forest Service land. However, all of these species are also protected under California Fish and Game Code (Sections 3503 and 3503.5). In addition to special-status bird species, other nesting raptors (e.g., red-shouldered hawk [*Buteo lineatus*], Cooper's hawk [*Accipiter cooperi*]) and common nesting native birds are also protected under California Fish and Game Code (Sections 3503 and 3503.5).

As described above, project implementation would include replacement of aging piping within public roadways, construction of several new facilities, and staging activities within several proposed staging areas. These activities

would include tree removal, vegetation clearing, excavation, grading, installation of new concrete pads, and demolition of existing facilities. These activities could result in inadvertent disturbance, injury, or mortality of nesting birds. Bald eagle, golden eagle, great gray owl, flammulated owl, northern goshawk, and white-headed woodpecker typically nest in very large trees or snags (i.e., greater than 12 inches diameter at breast height). Trees of this size are primarily only located adjacent to the project site and are not expected to be removed; however, a small number of large trees in the project site may be removed during project implementation, which could result in direct loss of nests of these species. In addition, if present, nesting birds, including these special-status species and common native species, could be disturbed due to the presence of and noise from equipment and personnel in close proximity to a nest, potentially resulting in nest abandonment. Active nests of common native bird species could be inadvertently removed if trees or shrubs containing these nests are pruned or removed, resulting in loss of eggs or chicks. This would be a potentially significant impact.

Mitigation Measure 3.4-2: Conduct Focused Surveys for Special-Status Birds and Other Native Nesting Birds and Implement Protective Buffers

- To minimize the potential for loss of special-status bird species, raptors, and other native birds, project activities (e.g., tree removal, other vegetation removal, ground disturbance, staging) will be conducted during the nonbreeding season (approximately September 1-January 31, as determined by a qualified biologist), if feasible. If project activities are conducted during the nonbreeding season, no further mitigation will be required.
- Within 14 days before the onset of project activities during the breeding season (approximately February 1 through August 31, as determined by a qualified biologist), a qualified biologist familiar with birds of California and with experience conducting nesting bird surveys will conduct focused surveys for special-status birds, other nesting raptors, and other native birds and will identify active nests within 500 feet of the project site (where accessible).
- Impacts on nesting birds will be avoided by establishing appropriate buffers around active nest sites identified during focused surveys to prevent disturbance to the nest. Project activity will not commence within the buffer areas until a qualified biologist has determined that the young have fledged, the nest is no longer active, or reducing the buffer will not likely result in nest abandonment. An avoidance buffer of a minimum of 0.25 mile will be implemented for bald eagle, golden eagle, great gray owl, flammulated owl, and northern goshawk, in consultation with CDFW. A qualified biologist will determine the appropriate buffer size for non-raptor nests after a site- and nest-specific analysis. Buffers typically will be 500 feet for raptors (other than special-status raptors) and 100 feet for non-raptor species. Factors to be considered for determining buffer size will include presence of natural buffers provided by vegetation or topography, nest height above ground, baseline levels of noise and human activity, species sensitivity, and proposed project activities. The size of the buffer may be adjusted if a qualified biologist determines that such an adjustment would not be likely to adversely affect the nest. Any buffer reduction for a special-status species will require consultation with CDFW. Periodic monitoring of the nest by a qualified biologist during project activities will be required if the activity has potential to adversely affect the nest, the buffer has been reduced, or if birds within active nests are showing behavioral signs of agitation (e.g., standing up from a brooding position, flying off the nest) during project activities, as determined by the qualified biologist.
- Removal of bald eagle and golden eagle nests is prohibited regardless of the occupancy status (i.e., including unoccupied nests outside of the breeding season) under the federal Bald and Golden Eagle Protection Act. If bald eagle or golden eagle nests are found during focused surveys, then the nest will not be removed.

Because implementation of Mitigation Measure 3.4-2 would avoid or adequately compensate for potential impacts to special-status bird species, raptors, and other native birds, it would reduce project impacts on special-status birds and other native nesting birds to a less-than-significant level.

Special-Status Fish

Two special-status fish species, mountain sucker and mountain whitefish, are known to occur in Hot Springs Creek. Both of these species are CDFW species of special concern. Project activities would occur adjacent to Hot Springs Creek within Hot Springs Road and a portion of Pleasant Valley Road which crosses over the creek; however, no construction or staging activities are proposed within the bed or bank of Hot Springs Creek. All pipeline construction

would be by open cut method in previously disturbed areas along public rights-of-way, namely existing paved roadways. However, some portions of the project site are located in relatively close proximity to Hot Springs Creek, including the portion of Hot Springs Road between the existing pump station and the proposed Pleasant Valley PRS, as well as the portion of Pleasant Valley Road that crosses over Hot Springs Creek. Project activities, including ground disturbance, vegetation removal, and staging in these areas may result in inadvertent sedimentation or inadvertent fill of Hot Springs Creek which could result in adverse effects on special-status fish in the creek. This would be a potentially significant impact.

Mitigation Measure 3.4-3: Implement Best Management Practices to Prevent Indirect Effects on Water Quality in Hot Springs Creek

- To avoid indirect impacts on Hot Springs Creek and potential adverse effects on special-status fish known to occur in the creek (i.e., mountain sucker, mountain whitefish), prior to any ground disturbance or vegetation removal activities, MWC shall:
  - Install sediment fencing, fiber rolls, or other erosion and sediment control measures between the designated work area and Hot Springs Creek, as necessary, to prevent construction debris and sediment from inadvertently entering the creek.
  - Stabilize all exposed soil prior to potential precipitation events greater than 0.5 inch of rain.
  - Implement effective handling, storage, usage, and disposal practices to control hazardous materials and manage waste and non-stormwater runoff in the project site.
  - No refueling, storage, servicing, or maintenance of equipment shall take place within 100 feet of Hot Springs Creek.
  - Implement spill and leak prevention procedures in accordance with applicable local, state, or federal regulations.

Because implementation of Mitigation Measure 3.4-3 would prevent or minimize potential water quality impacts that could affect special-status fish, it would reduce potential impacts to a less-than-significant level.

American Badger

Habitat potentially suitable for American badger is present within scrub and forest habitat in the project site. Project activities will include tree removal, vegetation clearing, excavation, grading, installation of new concrete pads, and demolition of existing facilities. These activities could result in disturbance or direct loss of American badgers or their dens, if present on the project site. This would be a potentially significant impact.

Mitigation Measure 3.4-4: Conduct Survey for American Badger and Protect Occupied Dens

- A qualified wildlife biologist will conduct surveys to identify any American badger burrows/dens. These surveys will be conducted not more than 15 days prior to the start of construction. If occupied burrows are not found, further mitigation will not be required. If occupied burrows are found, impacts on active badger dens will be avoided by establishing exclusion zones around all active badger dens, within which construction-related activities will be prohibited until denning activities are complete or the den is abandoned. A qualified biologist will monitor each den once per week to track the status of the den and to determine when a den area has been cleared for construction.

Because implementation of Mitigation Measure 3.4-4 would prevent or minimize potential effects on American badger, it would reduce project impacts on this species to a less-than-significant level.

Ringtail

Habitat potentially suitable for ringtail is present within forest, riparian, and scrub habitat in and adjacent to the project site. Ringtails use a variety of habitats for denning, including rock crevices, snags, and tree hollows, all of which may be present within portions of the project site. If project construction activities occur within habitat suitable for ringtail, they could result in inadvertent disturbance, injury, or mortality of ringtail or removal of dens. If present, ringtails could be disturbed due to the presence of equipment and personnel in close proximity to a den, potentially resulting in abandonment of the den and loss of young. Active dens, if present, could be inadvertently destroyed

during vegetation removal activities, potentially resulting in the loss of young. This would be a potentially significant impact.

Mitigation Measure 3.4-5: Implement Limited Operating Period or Conduct Focused Surveys for Ringtail

- To minimize the potential for loss of ringtail and active ringtail dens, project activities (e.g., tree removal, other vegetation removal, ground disturbance, staging) within habitat potentially suitable for ringtail (i.e., forest habitat, scrub habitat) will be conducted outside of the ringtail maternity season (not well defined, but approximately April 15–July 31), if feasible.
- No more than 30 days before initiation of project activities within potentially suitable ringtail habitat, a qualified biologist with familiarity with ringtail and experience conducting ringtail surveys will conduct a focused survey for potential ringtail dens (e.g., hollow trees, snags, rock crevices) within the project site. The qualified biologist will document sightings of individual ringtails, as well as potential dens.
- If individuals or potential or occupied dens are not found, the qualified biologist will submit a letter report summarizing the results of the survey to MWC, and further mitigation will not be required.
- If ringtails are identified or if potential dens are located, an appropriate method will be used by the qualified wildlife biologist to confirm whether a ringtail is occupying the den. This may include use of remote field cameras, track plates, or hair snares. Other devices, such as a fiber optic scope, may be utilized to determine occupancy.
    - If potential dens are not occupied, the entrances will be temporarily blocked so that no other animals occupy the project site during project activities, but only after it has been fully inspected. The blockage will be removed once the project activities are completed.
    - If a den is found to be occupied by a ringtail, a no-disturbance buffer will be established around the occupied den. The no-disturbance buffer will include the den tree (or other structure) plus a suitable buffer as determined by the biologist in coordination with CDFW. Project activities in the no-disturbance buffer will be avoided until the den is unoccupied as determined by the qualified wildlife biologist in coordination with CDFW.

Because implementation of Mitigation Measure 3.4-5 would avoid or minimize potential effects on ringtail, it would reduce project impacts on this species to a less-than-significant level.

Sierra Nevada Mountain Beaver

Sierra Nevada mountain beaver is a CDFW species of special concern. Mountain beavers typically occur within dense riparian habitat adjacent to creeks, streams, drainages, and lakes. Habitat potentially suitable for this species is present adjacent to Hot Springs Creek. Mountain beaver burrows are almost always located directly adjacent to a stream or spring, and daily movements typically occur within 80 feet of the burrow. While it is likely that project components are located a sufficient distance from Hot Springs Creek to avoid most impacts on Sierra Nevada mountain beavers, if present, it is possible that a burrow could be located farther from the creek, especially in areas with nearby intermittent drainages and wetlands. Sierra Nevada mountain beavers typically breed February 1–July 31.

If project construction activities occur in the vicinity of habitat suitable for Sierra Nevada mountain beaver, they could result in inadvertent disturbance, injury, or mortality of mountain beavers or removal of dens. This would be a potentially significant impact.

Mitigation Measure 3.4-6: Conduct Preconstruction Surveys for Sierra Nevada Mountain Beaver and Implement Protective Buffers

- No more than 30 days prior to any ground disturbance or vegetation removal activities within 200 feet of Hot Springs Creek, a preconstruction survey for Sierra Nevada mountain beaver will be conducted by a qualified biologist familiar with the species. Surveys would consist of burrow searches within habitat suitable for the species.
- If individuals or occupied burrows are not found, the qualified biologist will submit a letter report summarizing the results of the survey to MWC, and further mitigation will not be required.

- If active breeding/burrow sites are identified within 250 feet of project activities, MWC will implement a limited operating period during the Sierra Nevada mountain beaver breeding season (February 1–July 31) during which no ground disturbance, vegetation or tree removal, or staging activities will occur within 250 feet of the identified burrow. The limited operating period, area within which it is implemented (e.g., 250-foot buffer), and activities allowed or prohibited within the limited operating period may be adjusted through consultation with CDFW.

Because implementation of Mitigation Measure 3.4-6 would avoid or minimize potential effects on Sierra Nevada mountain beaver, it would reduce impacts on this species to a less-than-significant level.

Sierra Nevada Snowshoe Hare and Western White-Tailed Jackrabbit

Sierra Nevada snowshoe hare and western white-tailed jackrabbit are both CDFW species of special concern. Habitat potentially suitable for both of these species may be present within riparian habitat associated with Hot Springs Creek, scrub habitat, and open forest habitat. Sierra Nevada snowshoe hare and western white-tailed jackrabbit typically breed approximately February 1–July 31. Both species nest in shallow depressions on the ground, also known as "forms."

Outside of the breeding season, snowshoe hares and jackrabbits would likely flee due to the presence of equipment, vehicles, or personnel associated with project implementation, and injury or mortality would not be expected. However, project activities, including vegetation removal and ground disturbance conducted within habitat suitable for the species during the maternity season (i.e., the period during which young would be present in a nest) could result in destruction of active nests or disturbance to active nests potentially resulting in abandonment and loss of young, which may not yet be capable of fleeing successfully. This would be a potentially significant impact.

Mitigation Measure 3.4-7: Conduct Preconstruction Surveys for Sierra Nevada Snowshoe Hare and Western White-Tailed Jackrabbit and Implement Protective Buffers

- No more than 30 days prior to any ground disturbance or vegetation removal activities during the Sierra Nevada snowshoe hare and western white-tailed jackrabbit breeding season (February 1–July 31), a preconstruction survey for nests of both species will be conducted by a qualified biologist familiar with the species. Surveys would consist of walking transects to determine whether active nests of either species are present within suitable habitat areas of the project site (e.g., scrub, forest).
- If individuals or active nests are not found, the qualified biologist will submit a letter report summarizing the results of the survey to MWC, and further mitigation will not be required.
- If active nests are identified, MWC will implement a limited operating period during the Sierra Nevada snowshoe hare and western white-tailed jackrabbit breeding season (February 1–July 31) during which no ground disturbance, vegetation or tree removal, or staging activities will occur within 250 feet of the identified nest. The limited operating period, area within which it is implemented (e.g., 250-foot buffer), and activities allowed or prohibited within the limited operating period may be adjusted through consultation with CDFW.

Because implementation of Mitigation Measure 3.4-7 would avoid or minimize potential effects on Sierra Nevada snowshoe hare and western white-tailed jackrabbit, it would reduce impacts on these species to less-than-significant levels.

Special-Status Bats

Four species of special-status bats have potential to occur in the project site: pallid bat, spotted bat, Townsend's big-eared bat, and western red bat. All of these species are CDFW species of special concern. Roosting habitat potentially suitable for these species is present within and adjacent to the project site in crevices (e.g., exfoliating bark, cracks and fissures in tree stems or branches, crevices in buildings), cavities (e.g., large tree hollows, unoccupied buildings), and tree foliage.

Project activities will include tree removal and demolition of existing facilities. If these activities occur in the vicinity of habitat suitable for special-status bat species, they could result in inadvertent disturbance, injury, or mortality of

individual bats or removal of maternity roosts resulting in loss of young. This would be a potentially significant impact.

Mitigation Measure 3.4-8: Conduct Focused Special-Status Bat Surveys and Implement Avoidance Measures

- In the early planning stages of the project, a qualified biologist familiar with bats and bat ecology and experienced in conducting bat surveys will conduct surveys for bat roosts in suitable habitat (e.g., large trees, crevices, cavities, exfoliating bark, bridges, unoccupied buildings) within and adjacent to the project site.
- If no evidence of bat roosts is found, the qualified biologist will submit a letter report summarizing the results of the survey to MWC, and no further study will be required.
- If evidence of bat roosts is observed, the species and number of bats using the roost will be determined. Bat detectors shall be used if deemed necessary to supplement survey efforts by the qualified biologist.
- A no-disturbance buffer of 250 feet will be established around active pallid bat, spotted bat, Townsend's big-eared bat, or western red bat roosts, and project activities will not occur within this buffer until after the roosts are unoccupied.
- If roosts of pallid bat, spotted bat, Townsend's big-eared bat, or western red bat are determined to be present and must be removed, the bats will be excluded from the roosting site before the tree, building, or other structure is removed. A program addressing compensation, exclusion methods, and roost removal procedures will be developed in consultation with CDFW before implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave but not reenter) or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion from active maternity roosts will not occur while females in maternity colonies are nursing young. Exclusion efforts may be restricted during other periods of sensitive activity (e.g., during hibernation). The loss of each roost (if any) will be replaced in consultation with CDFW and may require construction and installation of bat boxes suitable to the bat species and colony size excluded from the original roosting site. If determined necessary during consultation with CDFW, replacement roosts will be implemented before bats are excluded from the original roost sites. Once the replacement roosts are constructed and a qualified biologist confirms that bats are not present in the original roost site, the roost tree, building, or other structure may be removed.

Because implementation of Mitigation Measure 3.4-8 would avoid or minimize potential effects on special-status bats, it would reduce project impacts on these species to less-than-significant levels.

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

Less than significant with mitigation incorporated. Riparian habitat is present adjacent to the project site and is associated with Hot Springs Creek. This riparian habitat would not be removed because project activities would be conducted within previously disturbed areas in public roadways. However, some portions of the project site are relatively close to the riparian corridor associated with Hot Springs Creek, including the portion of Hot Springs Road between the existing pump station and the proposed Pleasant Valley PRS, as well as the portion of Pleasant Valley Road that crosses over Hot Springs Creek. Project activities, including ground disturbance, vegetation removal, and staging in these areas may result in inadvertent removal of riparian vegetation. This would be a potentially significant impact.

Mitigation Measure 3.4-9: Identify and Demarcate Riparian Habitat, Implement Avoidance Measures, and Compensate for Unavoidable Impacts

- At least 7 days prior to commencement of ground disturbance or vegetation removal activities, a qualified biologist will demarcate riparian habitat within the project site and areas within approximately 100 feet of the project site with brightly visible construction flagging and/or fencing. No project activities (e.g., vegetation removal, ground disturbance, staging) will occur within these areas. Foot traffic by personnel will also be prohibited in these areas to prevent the introduction of invasive or weedy species or inadvertent crushing of plants. Periodic inspections during

construction will be conducted by the qualified biologist to maintain the integrity of exclusion fencing/flagging throughout the period of construction involving ground disturbance.

If riparian habitat is determined to be present within a project site and the habitat cannot be avoided, the following measures will be implemented:

- A Streambed Alteration Notification will be submitted to CDFW, pursuant to Section 1602 of the California Fish and Game Code. If proposed project activities are determined to be subject to CDFW jurisdiction, MWC will abide by the measures to protect fish and wildlife resources required by an executed streambed alteration agreement prior to any vegetation removal or activity that may affect the resource.
- MWC will compensate for the loss of riparian habitat such that no net loss of habitat function and values occurs by:
  - restoring riparian habitat function and value within the project site;
  - restoring degraded riparian habitat outside of the project site;
  - purchasing riparian habitat credits at a CDFW-approved mitigation bank; or
  - preserving existing riparian habitat of equal or better value to the affected riparian habitat through a conservation easement at a sufficient ratio to offset the loss of riparian habitat function (at least 1:1).
- MWC will prepare and implement a Compensatory Mitigation Plan that will include the following:
  - For preserving existing riparian habitat outside of the project site in perpetuity, the Compensatory Mitigation Plan will include a summary of the proposed compensation lands (e.g., the number and type of credits, location of mitigation bank or easement), parties responsible for the long-term management of the land, and the legal and funding mechanism for long-term conservation (e.g., holder of conservation easement or fee title). MWC will provide evidence in the plan that the necessary mitigation has been implemented or that MWC has entered into a legal agreement to implement it and that compensatory habitat will be preserved in perpetuity.
  - For restoring or enhancing riparian habitat within the project site or outside of the project site, the Compensatory Mitigation Plan will include a description of the proposed habitat improvements, success criteria that demonstrate the performance standard of maintained habitat function has been met, legal and funding mechanisms, and parties responsible for long-term management and monitoring of the restored or enhanced habitat.
  - Compensatory mitigation may be satisfied through compliance with permit conditions, or other authorizations obtained by MWC (e.g., Lake and Streambed Alteration Agreement), if these requirements are equally or more effective than the mitigation identified above.

Because implementation of Mitigation Measure 3.4-9 would avoid, minimize, and/or compensate for impacts to riparian habitat such that no net loss of habitat function and values occurs, it will reduce project impacts on riparian habitat to a less-than-significant level.

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?

Less than significant with mitigation incorporated. Wetland habitat is present within and adjacent to the existing pump station, including intermittent drainage habitat feeding into Hot Springs Creek, a small (i.e., less than 5 feet in diameter) human-made holding pond, a backwash basin, and seasonal wetland habitat associated with these features. Additionally, several narrow wetland features (e.g., seasonal wetlands, seeps) are present directly adjacent to Hot Springs Road, some containing wetland vegetation (e.g., cattails [*Typha* sp.]). All of these features, and potential additional wetland features not previously identified, may be considered waters of the United States or state. Project activities would include ground disturbance, vegetation removal, and staging in close proximity or directly adjacent to

these wetlands, which may result in direct removal of the wetland features or disturbance or fill of these features. This would be a potentially significant impact.

Mitigation Measure 3.4-10: Identify State or Federally Protected Wetlands, Implement Avoidance Measures, and Obtain Permits for Unavoidable Impacts on Wetlands

- Prior to implementing project activities, MWC will obtain a qualified biologist to delineate the boundaries of state or federally protected wetlands within the project site according to methods established in the U.S. Army Corps of Engineers (USACE) wetlands delineation manual (Environmental Laboratory 1987) and the Western Mountains, Valleys, and Coast regional supplement (USACE 2010). The qualified biologist will also delineate the boundaries of wetlands that may not meet the definition of waters of the United States, but would qualify as waters of the state, according to State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (SWRCB 2019). This delineation report will be submitted by MWC to USACE and the Lahontan Regional Water Quality Control Board (RWQCB) and a preliminary jurisdictional determination will be requested.
- If state or federally protected wetlands are determined to be present within the project site that can be avoided, the qualified biologist will establish a buffer around wetlands and mark the buffer boundary with high-visibility flagging, fencing, stakes, or clear, existing landscape demarcations (e.g., edge of a roadway). The buffer will be a minimum width of 25 feet but may be larger if deemed necessary by the qualified biologist. The appropriate size and shape of the buffer zone will be determined in coordination with the qualified biologist and will depend on the type of wetland present (e.g., stream, seep, pond), the timing of project activities (e.g., wet or dry time of year), whether any special-status species may occupy the wetland and the species' vulnerability to the project activities, environmental conditions and terrain, and the project activity being implemented.

  Project activities (e.g., ground disturbance, vegetation removal, staging) will be prohibited within the established buffer. The qualified biologist will periodically inspect the materials demarcating the buffer to confirm that they are intact and visible, and wetland impacts are being avoided.
- If it is determined that fill of waters of the United States would result from project implementation, authorization for such fill will be secured from USACE through the Section 404 permitting process. Any waters of the United States that would be affected by the project will be replaced or restored on a no-net-loss basis in accordance with the applicable USACE mitigation guidelines in place at the time of construction. In association with the Section 404 permit (if applicable) and prior to the issuance of any grading permit, Section 401 Water Quality Certification from the Lahontan RWQCB will be obtained.
- If it is determined that fill of waters of the state, including state-protected wetlands, cannot be avoided, MWC will submit an application for discharges of dredged or fill material to the Lahontan RWQCB before commencing activity that may result in discharge of dredged or fill material to waters of the state. MWC will not commence any activity in waters of the state until permitted by the Lahontan RWQCB and MWC will implement all protection measures and comply with all conditions of the permit.
- MWC will restore all waters of the state following completion of project construction. A draft restoration plan outlining design, implementation, assessment, and maintenance for restoring temporary disturbance areas will be submitted to the Lahontan RWQCB with the application for discharge of dredged or fill material to waters of the state and will be implemented as approved by the Lahontan RWQCB.
- If any waters of the state cannot be restored on site, MWC will implement a compensatory mitigation plan resulting in no net loss of the overall abundance, diversity, and condition of aquatic resources based on an assessment of the affected watershed. MWC may compensate for loss of waters of the state by purchasing credits from a RWQCB-approved mitigation bank or in-lieu fee program, or through restoration or establishment of wetlands or non-wetland waters comparable to those affected by the project.

Because implementation of Mitigation Measure 3.4-10 would avoid, minimize, or compensate for impacts to waters of the United States or state, including wetlands, such that no net loss is achieved, this measure would reduce project impacts to such waters to a less-than-significant level.

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?

Less-than-significant impact. The project site is located within a developed, rural residential area. The rural residential development is surrounded by natural vegetation (i.e., forest, scrub); however, project activities would largely be limited to existing public rights-of-way (i.e., roadways) and previously disturbed areas. While wildlife likely use the natural habitat surrounding the project site as movement corridors, especially Hot Springs Creek and the associated riparian corridor, project implementation would not result in conversion or a substantial change in the character of these natural habitats and potential impacts would be temporary, only occurring during construction. Additionally, there are no known native wildlife nursery sites in the vicinity of the project and any future wildlife nursery site would be more likely to occur within the natural habitat areas surrounding the project site than disturbed project footprint. This impact would be less than significant, and mitigation would not be required.

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

Less than significant with mitigation incorporated. The Alpine County General Plan Conservation Element contains goals and policies related to protection and conservation of wetlands; threatened, rare, or endangered plant species; sensitive, threatened, rare, or endangered wildlife species; and important deer migration routes (Alpine County 2003). Implementation of the mitigation measures outlined in this section (Mitigation Measures 3.4-1 through 3.4-10) would result in compliance with all of the general plan policies pertaining to biological resources. Thus, the project would not result in conflict with any local policies or ordinances protecting biological resources.

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

No impact. The project would not result in conflict with any adopted habitat conservation plans, natural community conservation plans, or adopted biological resources recovery or conservation plans of any federal or state agency, because the project site is not within the coverage area of any such plan. Thus, there would be no impact and mitigation would not be required.

3.5 CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	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?	No	Yes	No	No
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	No	Yes	No	No
c) Substantially disturb human remains, including those interred outside of formal cemeteries?	No	No	Yes	No

3.5.1 Environmental Setting

ARCHAEOLOGICAL SETTING

Five temporal periods have been defined for archaeological resources in the Northern Sierra, which forms the greater region in which the project is located. These periods, described below, are marked by changes in distinct artifact types, subsistence orientation, and settlement patterns.

Early Archaic Period (11,500–7000 calibrated before present [cal BP])

There is little evidence of the Early Archaic Period in the named Sierran foothill region watersheds. Stratified cultural deposits at two sites have yielded wide stemmed and large stemmed dart points, as well as handstones and millingslabs, cobble core tools, and large percussion-flaked greenstone bifaces. Relatively high frequencies of obsidian from the Bodie Hills, located east of the Sierran crest, was also recovered (NIC 2021).

Middle Archaic Period (7000–3000 cal BP)

A number of buried sites have been found in the western Sierran foothills that date to the Middle Archaic Period. The cultural material is primarily distinguished by corner-notched dart points, with an occasional mortar and pestle, as well as the earliest house structures in association with large subterranean storage pits. Various stone pendants, incised slate, and stone beads, as well as soapstone "frying pans" and other vessels first appear in the local archaeological record during this period. The presence of atlatl weights and spurs in these deposits confirms that the dart and atlatl were the primary hunting implements (NIC 2021).

Late Archaic Period (3000–1100 cal BP)

Although Late Archaic lifeways, technologies, and subsistence patterns are similar to those of the Middle Archaic, a primary difference is an increase in the use of obsidian. Flaked stone assemblages found above 6,000 feet on the western slope are composed almost entirely of obsidian (greater than 80 percent). The use of chert, which is only available in the foothills of the western Sierra below about 3,000 feet, is more common below 6,000 feet. This pattern suggests that groups who utilized the upper elevations of the western Sierra likely arrived from the east side where obsidian was the primary toolstone (NIC 2021).

Recent Prehistoric I Period (1100–610 cal BP)

Among the most important changes in the archaeological record of the western slope at this time was the introduction of the bow and arrow at the start of the period. This innovation appears to have been 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 period sites (NIC 2021).

Recent Prehistoric II Period (610–100 cal BP)

During the Recent Prehistoric II Period, bedrock milling features are established across the western Sierran landscape, near well-developed residential middens and as isolated features. The common occurrence of bedrock mortars suggests they became an important milling technology by the start of the period. Greater settlement differentiation is also evident during this period, with focused residential sites that often include house depressions and other structural remains, as well as with special-use localities consisting simply of bedrock milling features. Additional specialized technologies associated with the Recent Prehistoric II include stone drills and bone awls. The common occurrence of bone awls suggests basketry and other composite implements may have taken on a new importance. Desert Side-notched arrow points, which were likely adopted from Great Basin people to the east, appear in the archaeological record near the beginning of this period. Circular stone shaft-straighteners are also common in Recent Prehistoric II sites, consistent with use of the bow and arrow. The increase in sedentism and population growth led to the development of social stratification, with a more elaborate social and ceremonial organization. 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 (NIC 2021).

HISTORIC SETTING

Regional History

Post-contact history for California generally is divided into three specific periods: the Spanish Period (1769–1822), the Mexican Period (1822–1848), and the American Period (1848–present). Between 1769 and 1823, 21 missions were established by the Spanish and the Franciscan Order along the coast between San Diego and San Francisco. The Spanish expeditions into the Central Valley in 1806 and 1808 led by Lieutenant Gabriel Moraga explored along the main rivers, including the American, Calaveras, Cosumnes, Feather, Merced, Mokelumne, Sacramento, San Joaquin, and Stanislaus.

The first American trapper to enter California was Jedediah Smith, who explored along the Sierra Nevada in 1826 and in 1827, entering the Sacramento Valley and traveling along the American and Cosumnes Rivers. Between 1830 and 1833, and again in 1837, diseases were introduced by the non-indigenous explorers, trappers, and settlers. These along with relocation to the missions, military raids, and settlement by non-native groups, decimated native Californian populations, communities, and tribes in the Sacramento and San Joaquin valleys.

The American Period was initiated in 1848 with the signing of the Treaty of Guadalupe Hidalgo, which ended the Mexican–American War (1846–1848), and California became a territory of the United States. Gold was discovered at Sutter's Mill on the American River in Coloma the same year, and by 1849, nearly 90,000 people had journeyed to the gold fields. In 1850, largely as a result of the Gold Rush, California became the thirty-first state. In contrast to the economic boom and population growth that enabled statehood, the loss of land and territory (including traditional hunting and gathering locales), malnutrition, starvation, and violence further contributed to the decline of indigenous Californians in the Central Valley and all along the Sierra Nevada foothills (NIC 2021).

Local History

Alpine County is said to have been named for its similarity to the mountainous Alpine region of Europe. It is located along the crest of the Sierra Nevada Mountains in eastern California, south of Lake Tahoe and southwest of Nevada. It was incorporated on March 16, 1864 from portions of Amador, Calaveras, El Dorado, and Tuolumne Counties. The county seat was moved from Silver Mountain to Markleeville in 1875. At its founding, Alpine County had a population of about 11,000 people, most attracted to the silver mines discovered there shortly after the famous Comstock Lode

discovery of 1859 in Nevada. By 1868 however, that population had fallen to about 1,200, as the local silver yield had decreased considerably.

One of the first explorers to reach Alpine County was John C. Frémont. He made a difficult passage through the area on his way to Klamath Lake with a small company of fur trappers in 1843. Among the trappers was Kit Carson, whose considerable knowledge of the terrain made him an ideal guide. One of the places they settled to camp was near the confluence of Markleeville Creek and the East Fork of Carson River, and another, at Grover's Hot Springs five miles to the west. A bronze memorial plate commemorates their arrival at the 8,600-foot summit known today as Kit Carson Pass where they were afforded a majestic view of the central Sierra Nevada.

The first discovery of silver in Alpine County was made in 1860 by three prospectors, Johnson, Harris, and Perry. Within a year, no fewer than six additional claims were established within the same lode- the Mountain No. 1, the Mammoth, Silver Creek, Jefferson, Washington, and the Astor. The Mountain Vernon Company worked the Napoleon Ledge in Slinkard's Valley from 1863, producing a significant amount of silver by roasting in an ordinary fire. Silver was found mainly on the eastern slopes of the Sierras in Alpine County, as well as in Mono, Inyo, and San Bernardino Counties, generally between 5,000 and 11,000 feet above sea level. The mines of Alpine County produced silver as well as gold, though production was greatly limited by the severity of the terrain and climate, and the short mining season that these environmental factors necessitated. Among the most significant mineral producers were the mines of the Monitor and Mogul District formerly located in central Alpine County about six miles southeast of Markleeville. The mining industry began to decline by the late-1860s, though a few operations continued into the 1930s.

Roadways were surveyed and constructed through the county as early as the 1850s, one of the earliest being placed over the High Sierra, between Herman and Hope Valleys. Carson Valley and Big Tree Road bisected the county by 1864 and carried wagoners on their way to the Comstock Lode in Nevada. Farming, ranching, and logging replaced silver mining in Alpine County after the silver rush, though by the 1920s the local economy only attracted around 200 people. With the construction of the Bear Valley and Kirkwood ski resorts in the late 1960s however, the population increased to 1,175 by 2010 (NIC 2021).

Markleeville

One historical mine operated within one mile of the project area, the Isabella Gold and Silver Mine. It was owned by Henry Syme of London, England, from at least 1862. The mine is part of the Monitor-Mogul Mining District which is now within the Humboldt-Toiyabe National Forest. Production output was small, with ore being composed of silver and gold and waste material consisting primarily of quartz. The 1877 Bureau of Land Management (BLM) General Land Office (GLO) land plat map shows the project vicinity to be almost completely undeveloped at that time. A small number of buildings are in place in Markleeville to the southeast and an unpaved roadway labeled Road from Woodford extends northward from it along the approximate path of modern State Route 89, bisecting the western end of the project area.

A review of later historical aerials and topographic maps shows that the project area has been subject to some subsequent development. Hangman's Bridge and Mount Bullion are two small developed areas southeast of Markleeville and a number of structures are depicted in Diamond Valley to the northwest. 1956 topographic maps show that Markleeville has taken much the same configuration as it has today, with several new residences and commercial structures in place (NIC 2021).

ETHNOGRAPHIC SETTING

The project is in the ethnographic territory of the Washoe Tribe. There are few or no records of the Washoe until after the 1849 California gold rush and the 1858 Nevada silver strike because of their remoteness in the high Sierra. Because they stayed away from early settlers, the bulk of information begins around the turn of the twentieth century. Since that time, considerable ethnographic work with the Washoe has been accomplished, which continues today.

The ethnographically unique Washoe engaged in a seasonal round, relying on a diverse range of resources (fish, animals, and plants) that were harvested at specific times of the year. This seasonal round was flexible depending upon the availability or abundance of resources. There was a tendency to live on the lakeshore or other lower

elevation areas during colder times and move up to higher elevations in warmer times. Permanent winter villages were established by local groups on high ground near springs and rivers, usually at the ecotone of several ecological zones. Temporary summer dwellings were dome-shaped and thatched with grass and tule. Unlike the tribes to the west, the Washoe did not construct communal sweat lodges, dance houses, or granaries. The dead were disposed of in a variety of ways, including cremation, tree or scaffold exposure, burial under logs, or burial in remote places.

Washoe territory provided them with a rich variety of local food resources, and groups also dispersed as much as 20 to 40 miles in any direction outside their core area to collect seasonally available foods (e.g., acorns, pine nuts, spawning fishes). Trout, suckers, tui chub, white fish, and other fish were caught in large numbers from numerous lakes, including Tahoe, Mono, Walker, Pyramid, and Honey Lakes, as well as the rivers and creeks feeding these lakes, and then dried for later use. Since the spring growing season was short in the high elevations of the Washoe core area, the community dispersed widely to make effective use of harvesting locations. To gather and collect food resources, the Washoe used a wide array of tools, implements, and enclosures, including bows and arrows, traps and snares, nets, and rock blinds for hunting mammals and birds, and duck and other shaped decoys for hunting waterfowl.

Although the Washoe escaped the waves of infectious epidemics encountered by California coastal and valley tribes, and avoided direct contact with European American immigrants, the miners and settlers affected their traditional collecting, hunting, and fishing areas heavily. As a consequence, their numbers were reduced by 1910 to perhaps 800 from a pre-contact population estimated at 1,500 (NIC 2021).

KNOWN RESOURCES AND SITE SURVEY

Records Search and Results

A cultural resources literature search was conducted in September 2020 by the Central California Information Center (CCIC) of the California Historical Resources Information System (CHRIS) at California State University, Stanislaus. The records search was conducted to determine if prehistoric or historic cultural resources had been previously recorded within the project site, the extent to which the project site had been previously surveyed, and the number and type of cultural resources within a 0.5-mile radius of the project area.

The CCIC records search indicated that four prior cultural resource studies have been completed which included portions of the project area, and an additional seven have been completed outside the project area but within the 0.5-mile record search radius. The records search revealed that five cultural resources have been previously recorded within the project area, and 21 additional resources have been previously identified within the 0.5-mile record search radius. Known cultural sites and features in the project area include a bedrock mortar site (P-02-000347), an earthen water conveyance ditch (P-02-000658), a four-mile segment of Hot Springs Road (P-02-001056), a 17-mile segment of the Liberty Utilities Muller 1296 Circuit electrical transmission line (P-02-001057), and the Leviathan Lookout Bridge (B31C0004). Of the five cultural features identified within the project area, features P-02-000658, P-02-001056, P-02-001057, and B31C0004 have been previously determined ineligible for NRHP/CRHR listing and therefore, these features are not considered a resource under CEQA Guidelines Section 15064.5 and are not discussed further. The bedrock mortar site (P-02-000347) has not been previously evaluated, and therefore, it is recommended that eligibility of the site be assumed.

An intensive pedestrian survey of the 22.5-acre project area was conducted on September 29 and September 30, 2020. An additional intensive pedestrian survey was completed on two potential staging areas, located on private property, on March 29, 2021. During the survey, all visible ground surfaces were carefully examined for cultural material (e.g., flaked stone tools, tool-making debris, stone milling tools, or fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions and features indicative of the former presence of structures or buildings (e.g., postholes, foundations), and historic-era debris (e.g., metal, glass, ceramics). Ground disturbances (e.g., animal burrows, dirt roads, etc.) were also visually inspected. No previously unrecorded cultural resources were identified during the field survey. Five previously recorded cultural resources within the project area were revisited and California Department of Parks and Recreation (DPR) 523 Series site record updates were completed where applicable. One previously unrecorded built environment resource, the MWC water system, was

also identified within the project area during the field survey. The resource was evaluated and does not appear to meet the eligibility criteria for either the NRHP or CRHR. Given the extent of past impacts to the project footprint from roadway construction, utility installation, and other construction activities, as well as the lack of significant cultural resources identified during nearly a dozen previous cultural resource surveys in the area, the overall cultural resource sensitivity of the Project Area is estimated to be low (NIC 2021).

Tribal Coordination

Natural Investigations contacted the Native American Heritage Commission (NAHC) requesting a search of its Sacred Lands File (SLF) for traditional cultural resources within or near the project site. The results of the search returned by the NAHC on September 30, 2020 were negative for Native American cultural resources in the project vicinity. The NAHC provided contact information for the regionally affiliated Washoe Tribe of Nevada and California and recommended that they be contacted for more information on the potential for Native American cultural resources within or near the project site.

Natural Investigations sent a project information letter to Mr. Darrel Cruz of the Washoe Tribal Historic Preservation Office/Cultural Resources Office on October 5, 2020. Mr. Cruz responded via email on the same day stating that he does not have knowledge of cultural resources that may be affected by the project or any concerns about the project at this time. He asked to be informed in the event of inadvertent cultural resource discoveries. Natural Investigations responded on the same day acknowledging receipt of his message.

3.5.2 Discussion

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

and

b) Cause a substantial adverse change in the significance of prehistoric or historic-era archaeological resources pursuant to Section 15064.5?

Less than significant with mitigation incorporated. A bedrock mortar site (P-02-000347) was identified during a records search and survey of the project area. Because the site has not been previously evaluated, it has been recommended that eligibility of the site be assumed for the purposes of this project. As previously described, the cultural sensitivity of the project area is low due to previous roadway construction, utility installation, and other past construction activities. However, is possible that known and unknown archaeological features or sites could be discovered and/or damaged during ground-disturbing activities associated with construction. Any disturbance to known or unknown archaeological features would result in a potentially significant impact. Mitigation Measure 3.5-1 below will be implemented to reduce significance impacts to P-02-000347 and any potential post-review discoveries identified during construction of the project.

Mitigation Measure 3.5-1: Protection of Known and Unknown Historical and Archaeological Resources

The following should be implemented during any ground-disturbing activities associated with project construction:

- The bedrock mortar site (P-02-000347) and a buffer of 30-feet from the site shall be avoided by all project-related ground-disturbance and construction activities, including construction personnel presence. The 30-foot buffer around the bedrock mortar shall be delineated with construction safety fencing. The buffer can be established at the edge of the road, allowing cars to pass on the road, while providing a visual marker around the bedrock mortar site so construction personnel and equipment know where not to trespass. Only after construction is complete, shall the safety fencing be removed. If construction related impacts to the bedrock mortar site cannot be avoided, then Phase II evaluation testing shall be performed by a qualified professional archaeologist (36 Code of Federal Regulations [CFR] 61) to confirm whether the site meets eligibility criteria for NRHP/CRHR inclusion. Further study may include presence/absence testing, artifact collection and analysis, feature excavation, and/or protein residue analysis.

- In the event that unknown buried cultural deposits (e.g., prehistoric stone tools, milling stones, historic glass bottles, foundations, cellars, privy pits) are encountered during project construction, all ground-disturbing activity within 30 feet of the resources shall be halted and a qualified professional archaeologist (36 Code of Federal Regulations [CFR] 61) shall be notified immediately and retained to assess the significance of the find. Construction activities could continue in other areas. If the find is determined to be significant by the qualified archaeologist (i.e., because it is determined to constitute either a historical resource or a unique archaeological resource), the archaeologist shall develop appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected. Procedures could include but would not necessarily be limited to preservation in place, archival research, subsurface testing, or contiguous block unit excavation and data recovery. If the qualified archaeologist determines the archaeological material to be Native American in nature, the SWRCB shall contact the culturally affiliated Native American tribe for their input on the preferred treatment of the find.

Implementation of Mitigation Measure 3.5-1 would reduce impacts to P-02-000347 and any potential post-review discoveries to a less-than-significant level by requiring protection of known resources, as well as cessation of work, implementation of proper data recovery, and/or preservation procedures upon discovery of previously unknown resources.

c) Substantially disturb human remains, including those interred outside of formal cemeteries?

Less-than-significant impact. Based on documentary research, no evidence suggests that any prehistoric or historic-era marked or un-marked human interments are present within or in the immediate vicinity of the project site. However, the location of grave sites and Native American remains can occur outside of identified cemeteries or burial sites. Therefore, although unlikely, there is a possibility that unmarked, previously unknown Native American or other graves could be present within the project site and could be uncovered by project-related construction activities.

California law recognizes the need to protect Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction. The procedures for the treatment of Native American human remains are contained in California Health and Safety Code Sections 7050.5 and PRC Section 5097.

These statutes require that, if human remains are discovered during any construction activities, potentially damaging ground-disturbing activities in the area of the remains shall be halted immediately, and the Alpine County coroner shall be notified immediately in accordance with Section 7050.5 of California's Health and Safety Code. If the remains are determined by the coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified and guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains in accordance with PRC Section 5097.98. Following the coroner's findings, the archaeologist, the NAHC-designated Most Likely Descendant, and the landowner shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in PRC Section 5097.94.

Compliance with California Health and Safety Code Sections 7050.5 and PRC Section 5097 would provide an opportunity to avoid or minimize the disturbance of human remains, and to appropriately treat any remains that are discovered. Therefore, this impact would be less than significant, and no mitigation is required.

3.6 ENERGY

ENVIRONMENTAL ISSUES	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?	No	No	Yes	No
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	No	No	Yes	No

3.6.1 Environmental Setting

The primary forms of energy consumed in Alpine County are electricity and propane, as well as automotive fuels for transportation (gasoline and diesel). In Markleeville, electricity is supplied by Liberty Utilities and propane is supplied by several regional providers operating from nearby areas such as Gardnerville and South Lake Tahoe (Alpine County 2016).

In 2016, Alpine County adopted an Energy Action Plan (EAP), which set a goal to reduce electricity use in 2025 by 17 percent and propane use by 9 percent compared to the business-as-usual forecast. The EAP focuses on three energy use sectors: residential, non-residential, and municipal (Alpine County 2016). Because the project consists of improvements to water supply infrastructure, the following EAP goals and strategies relating to municipal energy use would apply to the project:

GOAL 4. Increase energy efficiency in municipal structures and operations.

- Strategy 4.1. Increase the energy efficiency of existing municipal structures.

GOAL 5. Reduce water waste and associated energy use.

The Alpine County General Plan and Alpine County Code also contain goals, policies, and codes related to energy use and efficiency. However, none are applicable to the project, as they predominantly focus on the energy consumption and the efficiency of residential land uses and new land use development projects.

3.6.2 Discussion

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less-than-significant impact. Energy, primarily diesel and gasoline, would be consumed during project construction to operate construction equipment and transport construction materials. Gasoline would also be consumed for worker commutes. Levels of construction-related fuel consumption were estimated based on equipment assumptions consistent with the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 computer program (CalEEMod) (CAPCOA 2016) and fuel consumption factors derived from the California Air Resources Board's Emission Factor (EMFAC2014). See Appendix B for detailed calculations. An estimated 2,829 gallons of gasoline and 33,089 gallons of diesel would be consumed during project construction, accounting for both on-site equipment use and off-site vehicle travel for worker commutes and haul trips. This one-time energy expenditure required to construct the

project would be nonrecoverable. However, energy needs for project construction would be temporary and would not require additional capacity or increase peak or base period demands for electricity or other forms of energy.

Project operation would require electricity to power various components of the water system, including pumps, electrically-operated mixers, lighting, and fans. However, the new facilities would generally replace existing facilities, and thus, would likely be more energy efficient. The operation of the water system improvements would not appreciably increase in vehicle trips because the project would not involve any land use change or development, would not increase residents, businesses, or population in Markleeville, and system maintenance would require a minor increase in staff hours. Thus, the project would not appreciably increase the amount of gasoline consumption associated with employee trips or maintenance activities during operation.

The project would be beneficial for the community of Markleeville because these water system improvements would improve Markleeville's aging water system, thus avoiding future pipe failures and making water facilities and infrastructure safer and more accessible. For these reasons, the project would not result in the inefficient, wasteful, or unnecessary consumption of energy resources during project construction or operation. This impact would be less than significant.

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

Less-than-significant impact. As discussed above in Section 3.6.1, "Environmental Setting," the Alpine County EAP is the local plan that provides a roadmap for expanding energy efficiency, water efficiency, and renewable energy efforts already underway in the County. The project would be consistent with all applicable EAP goals and strategies, particularly Goal 4, Goal 5, and Strategy 4.1, because the project would increase energy efficiency in existing municipal structures (i.e., water system facilities) and would reduce water waste by preventing future pipeline failures and leaks. Furthermore, all new equipment used for project operation would be required to meet the latest California code requirements and structures built would comply with the most recent building permit requirements. Thus, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. This impact would be less than significant.

3.7 GEOLOGY AND SOILS

ENVIRONMENTAL ISSUES	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 California Geological Survey Special Publication 42.)	No	No	Yes	No
ii) Strong seismic ground shaking?	No	No	Yes	No
iii) Seismic-related ground failure, including liquefaction?	No	No	Yes	No
iv) Landslides?	No	No	No	Yes
b) Result in substantial soil erosion or the loss of topsoil?	No	No	Yes	No
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?	No	No	Yes	No
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial direct or indirect risks to life or property?	No	No	Yes	No
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?	No	No	No	Yes
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	No	No	Yes	No

3.7.1 Environmental Setting

GEOGRAPHIC SETTING

The proposed project is located in Alpine County within the physiographic unit referred to as the Sierra Nevada Geomorphic Province. The Sierra is a tilted fault block nearly 400 miles long. The geologic formation of the Sierra Nevada is tilted fault block with deep river canyons coursing through the western slope (DOC 2002).

Earthquake Potential

According to the California Department of Conservation Data Viewer, the project alignment is located within an Alquist-Priolo Earthquake Fault Zone. Hot Springs Road crosses the Genoa Fault (movement within the last 15,000 years), and approximately 0.6 miles west of Genoa Fault is an unnamed Quaternary age fault (no movement in the last 1.6 million years). The project area has moderate earthquake shaking potential (DOC 2020)

Soils

Soil characteristics within the project site are well drained with high water capacity (USDA 2020). Soils in the area are within hydrologic soil group C, which includes a classification of soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission (USDA n.d.).

Paleontological Resources

A search of the paleontological records maintained by the University of California Museum of Paleontology (UCMP) was conducted on October 22, 2020. The UCMP database indicates 13 fossil localities have been recorded in Alpine County (UCMP 2020). Of these, eleven have produced plant or microfossil plant specimens, and two have produced invertebrate remains. The database shows no record of vertebrate fossils recovered from the county.

Review of recent geologic mapping published by the CGS and USGS indicates that the project area is underlain by late-Pleistocene-aged (129,000 to 11,650 years ago) outwash gravel deposits (Qog) along Markleeville Creek, and middle-Miocene-aged (16 to 11.5 million years ago) volcanic andesite flows and breccias (Trp) of the Relief Peak Formation south of the creek. The outwash deposits (Qog) consist of poorly to moderately sorted silt, sand, and gravel, of fluvioglacial origin. On the eastern end of the project area these materials have been extensively disturbed by the construction of concrete walls for flood protection and the deposition of up to three feet of nonnative fill.

No paleontological resources or unique geological features have been previously documented within or near the project area and the underlying early andesites (Trp) of the Relief Peak Formation have not yielded significant paleontological remains. Finally, the outwash deposits (Qog) along Markleeville Creek have not yielded significant paleontological resources either, and have also been extensively disturbed during past construction-related activities. These factors suggest that the project area has low paleontological resource sensitivity (NIC 2021).

3.7.2 Discussion

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 California Geological Survey Special Publication 42.)

Less-than-significant impact. The project area is located within an Alquist-Priolo Earthquake Fault Zone. The project does not involve the construction of inhabitable structures. However, implementation of the project includes ground-disturbing activities associated with construction of new water conveyance pipelines and associated infrastructure.

The project would be constructed consistent with the California Building Code, which includes standards intended to protect structures from earthquake-related and seismic activity. Furthermore, the construction and operation of the water pipelines and new facilities would not exacerbate rupture of a known fault. Impacts would be less than significant and no mitigation is required.

ii) Strong seismic ground shaking?

Less-than-significant impact. The project area is within a moderate potential earthquake damage area (DOC 2020). However, the project would be constructed consistent with the California Building Code (CBC), which includes standards intended to protect structures from earthquake related and seismic activity. The construction and operation of the water pipelines and new facilities would not exacerbate existing seismic conditions. Impacts related to seismic hazards or ground shaking would be less than significant and no mitigation is required.

iii) Seismic-related ground failure, including liquefaction?

Less-than-significant impact. Soil liquefaction most commonly occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and take on the characteristics of a fluid, thus becoming similar to quicksand. Liquefaction may also occur in the absence of a seismic event when unconsolidated soil above a hardpan becomes saturated with water. As previously described, the project is located in an area with moderate earthquake potential and contains soils that are well drained with high water capacity (USDA 2020). In the unlikely event of a significant earthquake, widespread liquefaction could occur resulting in significant damage. However, the project would comply with CBC Title 24, which includes specific design requirements to reduce damage from ground failure. Through compliance with current building codes, the project-related impact would be less than significant and no mitigation is required.

iv) Landslides?

No impact. The project alignment is located in a developed area that does not include steep slopes; there is no risk of landslides in such terrain. Consequently, the project would not expose people or structures to landslides and no mitigation is required.

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

Less-than-significant impact. Soils in the project area have a moderate erosion potential (Alpine County 2018). The project would involve ground disturbing activities, including trenching and minor grading, which could cause soil erosion and contaminate nearby surface water, in particular Hot Springs Creek. Construction and post-construction activities would be required to adhere to various federal, State, and regional water quality standards. Erosion and sediment controls identified in the Storm Water Pollution Prevention Plan (SWPPP), under the SWRCB's General Construction Stormwater Permit, would substantially reduce the amount of soil disturbance, erosion and sediment transport into receiving waters, and pollutants in site runoff during construction. Through compliance with current building code requirements related to construction activities and SWPPP best management practices (BMPs), the project project-related erosion impacts would be less than significant, and no mitigation is required.

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

Less-than-significant impact. As previously described under criterion (a-iii), soils within the project site are well drained with high water capacity and a slow rate of water transmission (USDA 2020). The project would be required to comply with the current CBC, which provides specifications related to soil compaction and stability. Based on existing site conditions and through conformance with the CBC, the project would not result in on- or off-site adverse geologic conditions such as landslide, lateral spreading, subsidence, liquefaction, or collapse. Impacts would be less than significant, and no mitigation is required.

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

Less-than-significant impact. As previously described under criterion (c), soils within the project area are well drained and contain slow permeability. Construction of the project would conform to the CBC, which contains specifications to address shrink-swell soils where they might occur. Through conformance with the CBC and implementation of applicable measures (if needed) to address expansive soils, implementation of the project would not result in direct or indirect risks to life or property. The project impact would be less than significant, and no mitigation is required.

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

No impact. The project would not require the use of septic tanks or alternative wastewater disposal systems. Thus, the project would have no impact related to soil suitability for use of septic tanks or alternative wastewater disposal systems, and no mitigation is required.

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

Less-than-significant impact. As stated above, the paleontological sensitivity of the project area is considered low (NIC 2021). Because no known paleontological resources have been documented within or near the project area, it is unlikely that project construction activities would result in the discovery of previously unknown paleontological resources or unique geologic features. This impact would be less than significant, and no mitigation is required.

3.8 GREENHOUSE GAS EMISSIONS

ENVIRONMENTAL ISSUES	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?	No	No	Yes	No
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	No	No	Yes	No

3.8.1 Environmental Setting

Greenhouse gases (GHGs) are gases in the earth's atmosphere that trap heat through a phenomenon called the greenhouse effect. Prominent GHGs that contribute to the greenhouse effect are carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The greenhouse effect occurs when solar radiation enters the earth's atmosphere, and GHGs absorb infrared radiation rather than reflect it back into space. This trapping of infrared radiation results in the warming of the atmosphere and is responsible for maintaining a habitable climate on earth. However, GHG emissions from human activities have greatly increased GHG concentrations in the atmosphere and caused levels of warming far above natural levels, resulting in global climate change. It is "extremely likely" that more than half of the observed increase in average global temperature from 1951 to 2010 was caused by anthropogenic (i.e., human-caused) increases in GHG concentrations (IPCC 2014:5).

Climate change is a global issue because GHGs are global pollutants, and even local GHG emissions contribute to global impacts. Many GHGs have long atmospheric lifetimes, from one to several thousand years, and persist in the atmosphere for long enough durations to be dispersed around the globe. Although the lifetime of any particular GHG molecule is dependent on multiple variables and cannot be determined with certainty, scientists have concluded that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration, resulting in a net increase in atmospheric CO_2 (IPCC 2013:467).

In 2006, California passed Assembly Bill 32 (AB 32), the California Global Warming Solutions Act, which created a program to reduce GHG emissions in the State. The Scoping Plan, most recently updated in 2017, identifies how California will reach its 2030 GHG target to reduce GHG emissions by 40 percent from 1990 levels. Appendix B of the 2017 Scoping Plan provides potential actions that could be undertaken at a local level to support the State's climate goals (CARB 2017). At the regional level, the Great Basin Unified Air Pollution Control District (GBUAPCD) is responsible for air quality planning in Alpine County, as discussed in Section 3.3, "Air Quality," but has not established any guidance or significance thresholds for determining whether a project's contribution of GHG emissions would be a cumulatively considerable contribution to global climate change.

3.8.2 Discussion

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

Less-than-significant impact. The project would not result in an increase in operational GHG emissions because the project involves replacing existing infrastructure, and the same operational activities would occur during project operation. Additionally, the level of GHG emissions may be nominally less than existing conditions because the new

facilities and infrastructure would be outfitted with new equipment, resulting in higher energy efficiency. Although there may be minor additional staff trips for operations and maintenance of the system, the increase in GHG-emitting vehicle trips relative to existing conditions would be minor and would not impede California's ability to attain Statewide GHG targets.

The project would generate GHGs during construction from the use of heavy-duty construction equipment and worker commute trips. The project's construction-related GHG emissions were estimated using Sacramento Metropolitan Air Quality Management District's Roadway Construction Emissions Model Version 9.0, which is designed for estimating emissions from construction projects that are linear in nature. A more detailed discussion of this model and the modeling is provided in Section 3.3, "Air Quality," and model outputs are provided in Appendix A. Based on this modeling, project-related construction activity would generate a total of 394 $MTCO_2e$ over a period of approximately one year. Emissions generated during project construction would occur once.

Appendix B of the Statewide 2017 Scoping Plan provides potential actions that could be undertaken at a local level to support the State's climate goals, including several that apply to construction activity (CARB 2017). To stay consistent with Statewide climate change goals and targets and ensure that project construction emissions would not be a cumulatively considerable contribution to climate change, the project would follow all feasible construction-related actions included in the 2017 Scoping Plan to reduce GHG emissions, as presented in Section 2.6.1, "Greenhouse Gas Emission Reduction Measures," in Chapter 2. Because all feasible actions have been included as part of the project, this impact would be less than significant.

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

Less-than-significant impact. Alpine County has not developed or adopted a climate action plan or other plan for reducing local GHG emissions. However, the State of California has set GHG emissions reduction targets and has outlined how these targets will be met in the 2017 Scoping Plan. As discussed under item a), Appendix B of the Statewide 2017 Scoping Plan provides potential actions that could be undertaken at a local level to support the state's climate goals, including several that apply to construction activity (CARB 2017). To stay consistent with Statewide climate change goals and targets and ensure that project construction emissions would not be a cumulatively considerable contribution to climate change, the project would follow all feasible construction-related actions included in the 2017 Scoping Plan to reduce GHG emissions, as presented in Section 2.6.1, "Greenhouse Gas Emission Reduction Measures," in Chapter 2. Because all feasible actions have been included as part of the project, this impact would be less than significant.

3.9 HAZARDS AND HAZARDOUS MATERIALS

ENVIRONMENTAL ISSUES	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?	No	No	Yes	No
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?	No	No	Yes	No
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	No	No	No	Yes
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	No	No	No	Yes
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	No	No	No	Yes
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	No	No	Yes	No
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	No	Yes	No	No

3.9.1 Environmental Setting

The SWRCB GeoTracker website, which provides data relating to leaking underground storage tanks (USTs) and other types of soil and groundwater contamination, along with associated cleanup activities, does not identify any active hazards related to USTs and other types of contamination within the project site or surrounding area (SWRCB 2019). The California Department of Toxic Substances Control's Envirostor Web site, which provides data related to hazardous materials spills and clean ups, also does not identify any hazards related to any cleanup sites within the project site and surrounding area (DTSC 2020).

The nearest school, Diamond Valley Elementary, is located over 5 miles north of the project area.

The Alpine County Airport is located approximately 2.3 miles north of the project area. The airport is a small, unattended facility with no services or lighting.

The project site as well as the surrounding area is within the State Responsibility Area (SRA) and is within a very-high fire hazard severity zone (CALFIRE 2020).

3.9.2 Discussion

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less-than-significant impact. Construction activities would involve the use of hazardous materials, such as fuels, solvents, gasoline, asphalt, and oil, and operation of the WTP would continue to involve hazardous materials. The transport, storage, and use of hazardous materials could potentially expose and adversely affect workers, the public, or the environment as a result of improper handling or use, accident, environmentally unsound disposal methods, fire, explosion, or other emergencies, resulting in adverse health or environmental effects.

The California Highway Patrol and Caltrans are responsible for enforcing regulations related to the transportation of hazardous materials on local roadways, and the use of these materials is regulated by the California Department of Toxic Substances Control (DTSC), as outlined in CCR Title 22. MWC and its construction contractors would be required to comply with the California Environmental Protection Agency's (Cal EPA's) Unified Program, which protects Californians from hazardous waste and hazardous materials by ensuring consistency throughout the state regarding the implementation of administrative requirements, permits, inspections, and enforcement at the local regulatory level. Regulated activities would be managed by the Alpine County Health Department, which is the Cal/EPA-designated Certified Unified Program Agency, and in accordance with the regulations included in the Unified Program (e.g., hazardous materials release response plans and inventories, California Uniform Fire Code hazardous material management plans and inventories) (Alpine County 2020). Such compliance would reduce the potential for accidental release of hazardous materials during project construction.

MWC is required to comply with existing laws and regulations regarding the transportation, storage, use, and disposal of hazardous materials in relation to the Markleeville water system. These regulations are specifically designed to protect the public health and the environment and must be adhered to during project construction and operation. Compliance with applicable regulations would ensure that this impact would be less than significant, and no mitigation is required.

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

Less-than-significant impact. As discussed above, there are no existing hazardous materials sites within the project site. However, project construction and operation would involve the transport, storage, use, and disposal of hazardous materials. MWC is required to comply with existing laws and regulations regarding the transportation, use, and disposal of hazardous materials in relation to construction and operation of the Markleeville water system. These regulations are specifically designed to protect the public health and the environment and must be adhered to during project construction and operation. Compliance with applicable regulations would ensure that this impact would be less than significant, and no mitigation is required.

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

No impact. As discussed above, the nearest school is over 5 miles north of the project area. No schools are proposed in the project area. Therefore, the project would not result in the emission of hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school. No impact would occur, and no mitigation is required.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No impact. Government Code Section 65962.5 requires that DTSC compile and maintain a list of hazardous waste facilities subject to corrective action, land designated as hazardous waste property, or hazardous waste disposals on public land. This list is known as the Cortese List, which can be accessed on Cal EPA's website. As described above, the project site and surrounding area are not located on a site included on a list of hazardous materials sites (SWRCB 2019; DTSC 2020). There would be no impact and no mitigation is required.

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

No impact. The project area is not located within an airport land use plan, within 2 miles of a public airport, or in the vicinity of a known private airstrip. The Alpine County airport is located 2.3 miles north of the project area. Project construction and operation would not result in any safety hazards or excessive noise within the vicinity of the airport. No impact would occur, and no mitigation is required.

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

Less-than-significant impact. Project construction would require temporary lane closures and other roadway effects on Hot Springs Road and SR 89, as well as surrounding neighborhoods within the project area, that could interfere with or slow down emergency vehicles, temporarily increasing response times and impeding existing services on these roadways. However, any project activities that may involve public right-of-way would be required to obtain an encroachment permit from Alpine County. As part of this encroachment permit application, MWC would be required to prepare and then later implement a traffic control plan, which would require the provision of temporary traffic controls and maintenance of emergency access during construction. Once project construction is complete, all roads would return to their pre-construction state and project operations would not interfere with emergency response or evacuation plans. This impact would be less than significant, and no mitigation is required.

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

Less than significant with mitigation incorporated. The project is located within the SRA in a very high fire hazard severity zone. The project would involve replacement of existing water conveyance infrastructure as well as relocation and new water supply infrastructure in the community of Markleeville in Alpine County. Equipment and vehicles used during construction as well as certain worker behavior, such as smoking and disposing of cigarettes or parking vehicles on dry vegetation, could create sparks and ignite a fire. Once operational, water conveyance pipeline and associated water supply infrastructure (i.e., pump stations, fire hydrants) would not exacerbate existing fire risk. Rather, the water system improvements would improve water pressure for improved fire flow and would add approximately 15 fire hydrants, which would aid fire suppression. However, because the project site is in a high fire hazard zone and fire events could result from construction and or worker behavior, this impact is considered potentially significant.

Mitigation Measure 3.9-1: Fire Prevention and Cessation

Implement the following measures to reduce the potential for wildfires:

- Train and brief all construction workers on fire prevention and suppression methods, including requirements for carrying emergency fire suppression equipment on the project site.
- Construction "tailgate meetings" shall be held daily, prior to construction and cover the following topics: fire safety, smoking restrictions, idling vehicles, and restricting construction during red flag warnings.

- Store prescribed fire tools, including backpack pumps with water, within 50 feet of work activities.
- Construction shall cease in periods of extreme fire danger when conditions in the area require that power is shut down by Liberty Energy.

Implementation of Mitigation Measure 3.9-1 would reduce potentially significant impacts to a less-than-significant level by requiring that construction personnel are educated on fire prevention and safety practices and that accurate responses to fire emergencies occur.

3.10 HYDROLOGY AND WATER QUALITY

ENVIRONMENTAL ISSUES	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 groundwater quality?	No	Yes	No	No
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	No	No	Yes	No
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 on- or offsite erosion or siltation;	No	No	Yes	No
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	No	No	Yes	No
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	No	No	Yes	No
iv) Impede or redirect flood flows?	No	No	Yes	No
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	No	No	No	Yes
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	No	No	Yes	No

3.10.1 Environmental Setting

The project is located in the Upper Carson Sub-basin and the Upper East Fork Carson River Watershed. Water in the project area originates from precipitation events, groundwater, and snowmelt, which flows from the uplands in the surrounding steep slopes and across the landscape to drainages and creeks that flow to the East Fork Carson River. The project area includes intermittent and ephemeral streams, as well as culverts and roadside ditches, which transport water through the area into Hot Springs Creek, a tributary to Markleeville Creek and eventually, the East Fork Carson River.

Alpine County is currently mapped by FEMA as Zone D (Alpine County 2018). The Zone D designation is used for areas where there are possible but undetermined flood hazards, as no analysis of flood hazards has been conducted (FEMA 2011).

3.10.2 Discussion

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

Less than significant with mitigation incorporated. Portions of the project site are located in relatively close proximity to Hot Springs Creek, including the portion of Hot Springs Road between the existing pump station and the proposed Pleasant Valley PRS, as well as the portion of Pleasant Valley Road that crosses over Hot Springs Creek. Project activities, including ground disturbance, vegetation removal, and staging in these areas may result in inadvertent sedimentation or contamination of Hot Springs Creek. This would be a potentially significant impact.

Construction and post-construction activities would be required to adhere to various federal, State, and regional water quality standards. As such, runoff volumes and pollutants leaving sites during construction and post-construction operations would be substantially reduced through source control, site design, and/or treatment-control BMPs mandated by these permits. Erosion and sediment controls identified in the SWPPP, under the SWRCB's General Construction Stormwater Permit, would substantially reduce the amount of soil disturbance, erosion and sediment transport into receiving waters, and pollutants in site runoff during construction. BMPs would include sediment fencing, fiber rolls, or other erosion control measures; stabilizing all exposed soils prior to potential precipitation; preventing equipment storage, servicing, or refueling within 100 feet of Hot Springs Creek; and implementing spill and leak prevention procedures in accordance with applicable regulations. Compliance with regulations would ensure that the project would not violate any water quality standards or waste discharge requirements set forth by the SWRCB and Lahontan RWQCB. Furthermore, to avoid indirect impacts on Hot Springs Creek, MWC shall implement Mitigation Measure 3.4-3, "Implement Best Management Practices to Prevent Indirect Effects on Water Quality in Hot Springs Creek." Because implementation of Mitigation Measure 3.4-3 would prevent or minimize potential water quality impacts, it would reduce potential impacts to a less-than-significant level.

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

Less-than-significant impact. The project would involve construction, replacement, and relocation of water conveyance infrastructure and water supply equipment. Trenching and minor grading associated with replacement of water conveyance infrastructure is not expected to occur to a depth that would encounter groundwater. In addition, the replacement treatment facilities and new facilities are not expected to increase impervious surface such that groundwater recharge would be altered. Therefore, the project would not interfere with groundwater recharge. This impact would be less than significant, and no mitigation is required.

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 on- or offsite erosion or siltation;

Less-than-significant impact. Soils in the project area have a moderate erosion potential (Alpine County 2018). The project would involve ground disturbing activities, including trenching and minor grading, which could cause soil erosion and contaminate nearby surface water, in particular Hot Springs Creek. As described in Chapter 2, "Project Description," no construction in the bed or bank of the creek would occur. Further, construction and post-construction activities would be required to adhere to various federal, State, and regional water quality standards. Erosion and sediment controls identified in the SWPPP, under the SWRCB's General Construction Stormwater Permit, would substantially reduce the amount of soil disturbance, erosion and sediment transport into receiving waters, and

pollutants in site runoff during construction. Through compliance with current building code requirements related to construction activities and SWPPP BMPs, project-related erosion impacts would be less than significant, and no mitigation is required.

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

Less-than-significant impact. Surface runoff and drainage occurs naturally within the project site. During construction activities, water may be used to control dust, but would not be used in great enough quantities to result in runoff or to alter drainage patterns. Operation of the project would not result in any changes to existing drainage patterns because project roadways would be restored to pre-project conditions and the replacement treatment facilities and new facilities are not expected to increase impervious surface such that surface runoff or drainage would be altered. The project would not alter project site runoff in a manner that would result in on- or off-site flooding. This impact would be less than significant, and no mitigation is required.

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

Less-than-significant impact. As discussed above, surface runoff and drainage occurs naturally in the project site and the project would not contribute substantial amounts of runoff. Construction and post-construction activities would be required to adhere to various federal, State, and regional water quality standards. Erosion and sediment controls identified in the SWPPP, under the SWRCB's General Construction Stormwater Permit, would substantially reduce the amount of soil disturbance, erosion and sediment transport into receiving waters, and pollutants in site runoff during construction. Operation of the Markleeville water system would not change from current operations and would not result in additional sources of polluted runoff. This impact would be less than significant, and no mitigation is required.

iv) Impede or redirect flood flows?

Less-than-significant impact. Alpine County is located within FEMA flood zone D, where there are possible but undetermined flood hazards, and no analysis of flood hazards has been conducted (Alpine County 2018). Construction of the project would involve temporary trenching and minor grading, but would restore roadways to pre-project conditions, would not alter impervious surfaces in a manner that would result in on- or offsite flooding, and would not result in facilities within the floodplain. Therefore, this impact would be less than significant, and no mitigation is required.

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

No impact. The project is not within a coastal region that is subject to tsunami, an area with steep slopes that is subject to mudflows, or adjacent to a waterbody that would generate a seiche. No impact would occur, and no mitigation is required.

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

Less-than-significant impact. Construction activities would be required to adhere to the SWPPP, under the SWRCB's General Construction Stormwater Permit, which would substantially reduce the amount of soil disturbance, erosion and sediment transport into receiving waters, and pollutants in site runoff during construction. During operation, the continued operation of the WTP would not generate wastewater nor increase stormwater runoff. Furthermore, the project does not involve development that would increase water demand, but rather would repair current deficiencies in the current water supply system. The project would not conflict with or obstruction of a water quality control plan or groundwater management plan. This impact would be less than significant, and no mitigation is required.

3.11 LAND USE AND PLANNING

ENVIRONMENTAL ISSUES	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?	No	No	No	Yes
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	No	No	No	Yes

3.11.1 Environmental Setting

The project is located in Markleeville, a census-designated place with a total of 6.5 square miles in Alpine County on SR 89. Land uses within the project site include a small area of public facilities and commercial uses along SR 89 and residential subdivisions along Hot Springs Road and Pleasant Valley Road. The community is bordered by forested areas and several creeks are located within the residential and central area along SR 89. The project site includes land designated in the Alpine General Plan as Residential Medium, Residential High, Commercial, Planned Development, Institutional, Open Space. Lands in the project site are zoned Timber Preserve, Agriculture, Residential Neighborhood, Residential Estate (20 acre, 5 acre), Commercial - Historical Design, Planned Development, Institutional (Alpine County 2020a,b).

3.11.2 Discussion

a) Physically divide an established community?

No impact. The replacement of existing water conveyance pipelines and water treatment equipment would support more reliable water the community of Markleeville. The water pipes would be undergrounded and after construction the roadways would be restored to pre-project conditions. The above-ground facilities would be located at the existing WTP or would replace existing treatment facilities. The project would not physically divide the established community of Markleeville. There would be no impact, and no mitigation is required.

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

No impact. Utility infrastructure and above-ground utility uses are allowed as quasi-public uses in residential zoning districts and public roads (Pers Comm., Woods 2020). The project would replace the water pipelines under existing roadways, would restore the roads to pre-project conditions, and would upgrade treatment facilities at the existing WTP and associated facilities. The project would not result in any land use changes, and would not conflict with any adopted plans, policies, or regulations adopted for avoiding or mitigating an environmental effect. Therefore, no impact would occur, and no mitigation is required.

3.12 MINERAL RESOURCES

ENVIRONMENTAL ISSUES	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?	No	No	No	Yes
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?	No	No	No	Yes

3.12.1 Environmental Setting

Surface Mining and Reclamation Act Mineral Land Classification Report data is not available for Alpine County (DOC 2020b). Within the county, known or suspected mineral deposits, primarily sand and gravel, have been identified by the California Division of Mines and Geology. These deposits are protected by appropriate land use designations and buffers identified within the County's Land Use Map (Alpine County 2017). No known mineral resources are present in the project site or immediate vicinity.

3.12.2 Discussion

a, b) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No impact. No mineral resources, including sand and gravel, are known to be present within the project site and surrounding area. Project implementation would not result in a loss of availability of known or locally important mineral resources. The project would have no impact related to mineral resources and no mitigation is required.

3.13 NOISE

ENVIRONMENTAL ISSUES	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 in other applicable local, state, or federal standards?	No	No	Yes	No
b) Generation of excessive groundborne vibration or groundborne noise levels?	No	No	Yes	No
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No	No	No	Yes

3.13.1 Environmental Setting

ACOUSTIC FUNDAMENTALS

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. Sound is the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a human ear. Noise is defined as loud, unexpected, annoying, or unwanted sound. As sound travels through the atmosphere from the source to the receiver, noise levels attenuate (i.e., decrease) depending on a variety of factors, including geometric spreading (i.e., spherical or cylindrical spreading), ground absorption (i.e., hard versus soft sites), atmospheric conditions (e.g., wind direction and speed, air temperature, humidity, turbulence), and shielding by natural or human-made features.

The amplitude of pressure waves generated by a sound source determines the loudness of that source, also called the sound pressure level (SPL). SPL is most commonly described by using decibels (dB) because this logarithmic unit best corresponds to the way the human ear interprets sound pressures. However, the decibel scale does not adequately characterize how humans perceive noise because the human ear is not equally sensitive to loudness at all frequencies (i.e., pitch) in the audible spectrum. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies. Then, an "A-weighted" sound level (expressed in units of A-weighted decibels or dBA) can be computed based on this information. All sound levels discussed in this section are expressed in A-weighted decibels.

Because decibels are logarithmic units, SPLs expressed in dB cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In typical noisy environments, changes in noise of 1–2 dB are generally not perceptible. However, it is widely accepted that people can begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness (Caltrans 2013a:2-10).

Various noise descriptors have been developed to describe time-varying noise levels. The noise descriptors used in this chapter include:

- Equivalent Continuous Sound Level (L_{eq}): L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound level that occurs during the same period (Caltrans 2013a:2-48). For instance, the 1-hour equivalent sound level, also referred to as the hourly L_{eq}, is the energy average of sound levels occurring during a 1-hour period; and
- Maximum Sound Level (L_{max}): L_{max} is the highest instantaneous sound level measured during a specified period (Caltrans 2013a:2-48; FTA 2018:207–208).

GROUND VIBRATION

Vibration is the periodic oscillation of a medium or object with respect to a given reference point. Groundborne vibration is vibration of and through the ground. Sources ground-borne of vibration include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, (e.g., operating factory machinery) or transient in nature (e.g., explosions).

Groundborne vibration amplitudes are commonly expressed in peak particle velocity (PPV) or root-mean-square (RMS) vibration velocity. PPV and RMS vibration velocity are normally described in inches per second (in/sec) but can also be expressed in decibel notation (VdB), which is used mainly in evaluating human response to vibration.

EXISTING NOISE SOURCES AND SENSITIVE RECEPTORS

Because the land uses surrounding the project site primarily consist of open space and rural residences and do not contain any typical stationary noise-generating land uses (i.e., industrial land uses), the predominant noise source in the area is vehicle traffic along local roadways including State Route 89 and Hot Springs Road. Recreation and tourism in the county can cause traffic-related noise levels to increase during certain times of the year, particularly the summer months. The Alpine County Airport is located approximately 2.3 miles north of the project site, and thus, does not influence the noise environment in Markleeville.

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels, and because of the potential for nighttime noise to result in sleep disruption. Vibration-sensitive land uses are generally considered to be buildings or structures that could be damaged due to vibration or land uses where vibration levels could interfere with operations or cause human annoyance.

As shown in Figure 2-3 in Section 2, "Project Description," the Markleeville water system includes conveyance pipelines under roadways throughout the residential subdivisions and downtown, the WTP is located off of Hot Springs Road, and a pump station and tank are located on Pleasant Valley Road. Sensitive receptors located close to various components of the project site include residential land uses, primarily rural single-family residences. For example, single-family residences are located along roads beneath which new pipelines would be constructed and fire hydrants would be installed as part of the project. These roadways include Montgomery Street, Hot Springs Road, Pleasant Valley Road, Timber Lane, Sawmill Road, Ox Bow, Pinon Road, Canon View, and Lava Cap. Two single-family residences along Pleasant Valley Road are located approximately 280 feet north and east of the Pleasant Valley Tank; the closest single-family residence to the proposed PRS at the intersection of Hot Springs Road and Pleasant Valley Road is approximately 65 feet away; and no sensitive receptors are located in close proximity to the WTP, where a replacement pump station would be installed, along with other improvements.

APPLICABLE NOISE AND VIBRATION STANDARDS

The Alpine County General Plan Noise Element (Alpine County 2017) and Chapter 18.68.090 of the Alpine County Code (Alpine County 2020) contain noise policies and standards that are used as thresholds of significance in the evaluation of project-related noise impacts. Because the county has not established local vibration standards, thresholds recommended by California Department of Transportation (Caltrans) and Federal Transit Administration (FTA) are used in the evaluation of project-related vibration impacts (Caltrans 2013b). Consistent with county planning efforts, the project would result in a significant noise or vibration impact if it would result in:

- construction-generated noise levels exceeding the non-transportation noise level standards as specified in Policy No. 24b of the General Plan, except during exempt daytime hours (8 a.m. to 6 p.m., Monday through Friday, and between 9 a.m. and 3 p.m. on weekends, as specified in Section 18.68.090.F.1 in the County Code);
- long-term, traffic-generated noise levels exceeding the maximum allowable noise exposure standards for transportation noise sources as specified in Policy No. 24d of the General Plan;
- long-term, operational noise levels generated by stationary or area sources exceeding the non-transportation noise level standards as specified in Policy No. 24b of the General Plan (50 dB L_{eq} and 70 dB L_{max} during daytime hours [7 a.m. to 10 p.m.] and 45 dB L_{eq} and 65 dB L_{max} during nighttime hours [10 p.m. to 7 a.m.]);
- construction-generated vibration levels exceeding Caltrans-recommended standards with respect to the prevention of structural building damage (0.5 in/sec PPV for new residential buildings) or FTA's maximum-acceptable-vibration standard with respect to human response (80 VdB for residential uses) at nearby existing vibration-sensitive land uses during daytime hours; and
- 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, public use airport, or private airstrip, the exposure of people residing or working in the project area to excessive noise levels.

3.13.2 Discussion

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 in other applicable local, state, or federal standards?

Less-than-significant impact. Noise would be generated by the project during construction and operation, which are discussed separately, below.

Temporary Construction Noise

The operation of heavy equipment during project construction would generate noise, resulting in a temporary increase in noise levels at nearby sensitive receptors. Project construction is anticipated to begin in summer 2022 and would be completed over the span of approximately one year. As stated in Section 2, "Project Description," construction hours would be limited to 8 a.m. to 6 p.m., Monday through Friday, and 9 a.m. to 3 p.m. on weekends, pursuant to the construction noise exemption specified in Section 18.68.090.F.1 of the Alpine County Code. Construction equipment, materials, and vehicle staging would occur at designated locations along the shoulder of Hot Springs Road, at the WTP site, at the Pleasant Valley Tank site, at the end of Montgomery Street, and potentially Heritage Park in downtown Markleeville.

Construction activities would vary depending on the specific project component being constructed, but activities would generally include decommissioning and removal of existing facilities; installation of temporary equipment (e.g., pumps); tree removal, clearing, excavation and grading; construction of equipment foundations; construction of new structures (e.g., pump station building); installation of new equipment, including electrical systems, instrumentation and controls; disinfection of facilities in contact with potable water; and testing and demonstration of installed facilities.

Construction activities would involve the use of heavy equipment such as excavators, loaders, backhoes, graders, pipelayers, telescoping forklifts, scissor lifts/manlifts, water trucks, pavers, flatbed trucks, pickup trucks, and small hand-held tools and equipment. The loudest pieces of equipment that would be used during construction and demolition would include excavators, graders, manlifts, and pavers, all of which individually generate 85 dB L_{eq} at 50 feet (FHWA 2006:3). Table 3.13-1 shows the estimated levels of noise exposure at nearby receptors during various components of construction. Noise modeling assumed simultaneous operation of three pieces of heavy equipment in close proximity to each other at the specific construction activity nearest to the receptor. Detailed calculations are provided in Appendix C.

Table 3.13-1 Exterior and Interior Noise Levels at Nearby Receptors during Project Construction and Demolition

Construction Type	Receptor	Approximate Distance from Construction Activity to Receptor (feet)	Exterior Noise Level at Receptor (dB L_{eq})[2]	Indoor Noise Level at Receptor [2,3] (dB L_{eq})
Construction of new pipelines and installation of new fire hydrants	Various residences located along the pipeline route	30[1]	91	67
Construction of new pressure reducing station	Single-family residences near the intersection of Hot Springs Road and Pleasant Valley Road	65	82	58
Installation of Pleasant Valley Tank improvements	Single-family residences near the intersection of Pleasant Valley Road and Lava Cap	280	65	41

Notes: dB = decibel; L_{eq} = equivalent continuous sound level

[1] Residences located along the pipeline route vary in distance from the pipeline route and, thus, would experience varying noise levels. The distance listed in the table (30 feet) represents the distance for the residences located closest to the areas where construction would occur. More distant residences would be exposed to lower noise levels while construction activities are taking place.

[2] Noise exposure level estimates assume simultaneous operation of three pieces of equipment (a man lift, an excavator, and a grader) in close proximity to each other at the boundary of construction activity nearest to the receptor. Noise level estimates assume all equipment is properly maintained and fitted with operational noise control device, per manufacturer specifications. See Appendix C for detailed noise modeling and input parameters.

[3] Building walls would provide 24 dB of attenuation (EPA 1971:11).

Source: Modeled by Ascent Environmental in 2020

As shown in Table 3.13-1, construction activity would generate exterior noise levels that range from 65 to 91 dB L_{eq} and interior noise levels that range from 41 to 67 dB L_{eq} at nearby residences. Construction noise would fluctuate throughout the duration of project construction at individual receptors depending on the type of construction activities occurring and equipment used on any given day; the distances from construction activity to noise-sensitive receptors; any noise-attenuating features, such as topography, dense stands of trees, and existing structures; and existing ambient noise levels. Construction noise levels at more distant receptors not listed in Table 3.13-1 would be lower because noise levels attenuate over distance.

Although construction activity would result in elevated noise levels at nearby residences, construction noise would be temporary and intermittent and would only occur during daytime hours when residents are less sensitive to noise. Because construction activity would only occur between 8 a.m. and 6 p.m., Monday through Friday, and 9 a.m. to 3 p.m. on weekends, it would be exempt from the county's daytime noise standards.

Long-Term, Operational Noise

Transportation Noise Sources

After construction is completed, the project would not appreciably increase the number of employees or visitors to the project area. Therefore, after construction of project facilities is complete, operation of the project would result in minimal, if any, new vehicle trips to and from the area and there would be no measurable increase in traffic noise levels.

Stationary Noise Sources

The types of operational, noise-generating equipment used throughout the project site would be similar to the types of equipment currently used in existing facilities. The PRS would be located approximately 400 feet to the west of the existing Pleasant Valley Pump Station on the south side of Hot Springs Road. The PRS would generate similar noise levels as the existing pump station and would be enclosed within a structure to protect the equipment, which would provide additional attenuation. Therefore, it is anticipated that the new PRS would not expose any sensitive receptors to disruptive noise that would exceed county standards.

Tank mixing equipment installed at the existing Pleasant Valley Tank would include a ventilation fan, which would be mounted atop the tank or at grade adjacent to the tank. The fans would be electrically powered. It is not expected that the ventilation fan would generate substantial noise, and the nearest receptors are located 280 feet away. At this distance, any noise generated by the ventilation fan would be imperceptible at offsite residential receptors.

For the reasons listed above, noise levels related to project operation would not exceed county noise standards.

Summary

Because noise generated during both construction and operation of the project would not exceed applicable county noise standards, this impact would be less than significant, and no mitigation is required.

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

Less-than-significant impact. Project construction would not involve the use of ground vibration–intensive activities, such as pile driving and blasting. Activities involving pile driving and blasting typically generate the highest vibration levels compared to other construction methods and are, therefore, of greatest concern when evaluating construction-related vibration impacts. Pieces of equipment that generate lower levels of ground vibration, such as excavators, backhoes, and pavers, would be used during construction. These types of common construction equipment do not generate substantial levels of ground vibration that could result in structural damage, except at extremely close distances (i.e., within at least 10 feet). Because construction would not require vibration-intensive equipment and construction hours would be limited to 8 a.m. to 6 p.m., Monday through Friday, and 9 a.m. to 3 p.m. on weekends, project construction would also not result in human annoyance. For these reasons, project construction would not result vibration levels at sensitive receptors exceeding Caltrans- or FTA-recommended standards with respect to the prevention of structural damage and human annoyance, respectively. Therefore, there would be no adverse vibration effects to off-site receptors, this impact would be less than significant, and no mitigation is required.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No impact. The project is not located within an airport land use plan or within two miles of a public airport or public use airport. Additionally, the project is not located within two miles of a private airstrip. Alpine County Airport is the closest airport and is located approximately 2.3 miles north of the project site. Also, the project would not include any new land uses where people would live or work. Thus, the project would have no impact regarding the exposure of people residing or working in the project area to excessive aircraft-related noise levels, and no mitigation is required.

3.14 POPULATION AND HOUSING

ENVIRONMENTAL ISSUES	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)?	No	No	No	Yes
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No	No	No	Yes

3.14.1 Environmental Setting

There are a total of 198 parcels within the Markleeville Water Company service area; two (2) are vacant homes, 42 are vacant lots, 51 are vacation homes, and 14 are commercial (RCAC 2017). The estimated population of Markleeville for 2020 is 143 people (World Population Review 2020). The project would not generate any new residents in the area and would not provide any new jobs.

3.14.2 Discussion

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

No impact. The project does not include new homes or businesses that would induce or generate unplanned population growth. The improvements to the water system would serve the existing parcels in Markleeville; it would not increase water supply, remove an obstacle to growth, nor support unplanned population growth. Therefore, the project would have no impact, and no mitigation is required.

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

No impact. The project would not displace existing homes or businesses and would not require the construction of replacement housing. No right-of-way would be acquired from private landowners. Therefore, the project would have no impact on housing, and no mitigation is required.

3.15 PUBLIC SERVICES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XV. Public Services.				
Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	No	No	No	Yes
Police protection?	No	No	No	Yes
Schools?	No	No	No	Yes
Parks?	No	No	No	Yes
Other public facilities?	No	No	No	Yes

3.15.1 Environmental Setting

Fire protection within the project area is provided by Eastern Alpine Fire and Rescue Volunteer Fire Department (Woodfords Fire Department). Alpine County Fire Station #92 and Woodfords Fire Station are located along Hot Springs Road and adjacent to downtown Markleeville. Wildland fire protection is provided by the USFS and BLM through an interagency agreement (Alpine County 2017).

Police protection is provided by the Alpine County Sheriff's Department, which is located along the project alignment in downtown Markleeville.

Public education is provided by the Alpine Unified School District. As previously described in Section 3.9 "Hazards and Hazardous Materials," the nearest school, Diamond Valley Elementary, is located over 5 miles north of the project area.

The nearest parks include the Grover Hot Springs State Park and the Markleeville campground, both located within 2 miles of the project alignment.

3.15.2 Discussion

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant

environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

Fire protection?

No impact. Implementation of the project would not increase demand for fire protection services because the project would not generate new residents or businesses, which is the driving factor for fire protection services. The project would increase the number of fire hydrants in Markleeville and would improve flows to hydrants in downtown. Furthermore, during construction, a construction traffic control plan would be implemented to ensure that available access be maintained along roadways for emergency vehicles and services. Because the project would not increase demand for fire protection services and would improve water pressure in the system for flows to hydrants, the construction of new or expansion of existing fire service facilities would not be required. Therefore, the project would have no impact on fire protection services, and no mitigation is required.

Please also see Section 3.20, "Wildfire," for impacts related to wildfire.

Police protection?

No impact. Implementation of the project would not increase demand for police protection services because the project would not generate new residents or businesses, which is the driving factor for police protection services. During construction, a construction traffic control plan would be implemented to ensure that available access be maintained along roadways for emergency vehicles and services. Because the project would not increase demand for police protection services, the construction of new or expansion of existing police service facilities would not be required. Therefore, the project would have no impact on police protection services, and no mitigation is required.

Schools?

No impact. The project would not provide any new housing that would generate new students in the community nor result in an increase in employment opportunities that could indirectly contribute new students to the local school district. Therefore, the project would have no impact on school services and facilities, and no mitigation is required.

Parks?

No impact. The project would not alter or remove any parks, would not result in additional housing, and would not generate new residents. In addition, operations and maintenance of the system would potentially require existing staff to work additional hours, or for additional part-time operations staff to be hired. However, this would not necessitate new or expanded park facilities. Therefore, the project would have no impact on parks, and no mitigation is required.

Other public facilities?

No impact. As previously described, the project would improve water service to the community of Markleeville, not residences would be removed or added, no businesses removed or added, and the limited additional staffing time to maintain the system would not impact demand for public facilities in Markleeville. The project would have no impact on other public facilities, and no mitigation is required.

3.16 RECREATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XVI. Recreation. Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	No	No	No	Yes
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	No	No	No	Yes

3.16.1 Environmental Setting

The project is located within Markleeville, a census designated place in Alpine County. As previously described in Section 3.15, "Public Services," the nearest parks include the Grover Hot Springs State Park and the Markleeville campground, both located within 2 miles of the project alignment.

3.16.2 Discussion

a,b) 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? Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

No impact. The project would not alter or remove any parks, would not result in additional housing, and would not increase the population in Markleeville, which could increase use of parks or necessitate new or expanded recreation facilities. Hot Springs Road, which is used to access Grover Hot Springs State Park and trail heads, would remain open during construction of pipelines, with one-way traffic control. This would result in short-term traffic delays for recreation users but would not alter the long-term use of recreation facilities. Therefore, the project would have no impact on recreational facilities, and no mitigation is required.

3.17 TRANSPORTATION

ENVIRONMENTAL ISSUES	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?	No	No	Yes	No
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	No	No	Yes	No
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	No	No	No	Yes
d) Result in inadequate emergency access?	No	No	Yes	No

3.17.1 Environmental Setting

Transportation within Alpine County is predominantly automobile-oriented due to the rural setting, small population, and limited options for other modes of transportation. Road closures can occur in winter months, though traffic peaks occur in the summer months, when all roadways are open, and winter weekends due to proximity to nearby resort communities such as Bear Valley and Kirkwood (Alpine County 2017).

The project site includes water conveyance pipelines under roadways throughout Markleeville, including Montgomery Street, Hot Springs Road, Pleasant Valley Road, Timber Lane, Sawmill Road, Ox Bow, Pinon Road, Canon View, and Lava Cap. Hot Springs Road is an important route for commuters traveling to Grover Hot Springs Park from SR 89, as it is the only access point for the State Park. The local-access roads provide access to residences throughout the subdivisions in Markleeville.

3.17.2 Discussion

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

Less-than-significant impact. The project would not conflict with the Circulation Element of the Alpine County General Plan (Goal 29, "Develop and maintain an efficient, safe, and effective road system," Goal 30, "Establish alternative transportation modes consistent with demand and available resources," and Goal 31, "Encourage bicycling and walking in Alpine County"). The project area is predominantly automobile-oriented and the project would not impact other modes of transportation. Temporary construction activities would result in a temporary increase in vehicle trips to the project site during construction by workers and equipment. The roadways affected by the project would remain open during construction, but construction would result in short-term delays for motorists. MWC would be required to obtain an encroachment permit from Alpine County. As part of this encroachment permit application, MWC would be required to prepare and implement a traffic control plan, which would require temporary traffic controls and maintenance of emergency access during construction. Once project construction is complete, all affected roads would be restored to their pre-project conditions. The project would result in a less than significant impact, and no mitigation is required.

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3(b), which pertains to vehicle miles traveled?

Less-than-significant impact. Temporary construction activities would result in a temporary increase in vehicle trips to the project site during construction by workers and equipment. However, the project would not alter existing land uses, would not generate new residents or businesses, and the minor increase in system maintenance activities would not appreciably alter the vehicle miles traveled. This is a less-than-significant impact and no mitigation is required.

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

No impact. The project would not alter roadway alignments nor the circulation system in Markleeville. All project site roads would be restored to pre-project conditions after construction of pipelines is complete. The project would replace and enhance water treatment equipment; it would not create any incompatible uses that would increase road hazards. The project would have no impact on roadway design or hazards and no mitigation is required.

d) Result in inadequate emergency access?

Less-than-significant impact. The roadways affected by the project would remain open during construction, but construction would result in short-term delays for motorists. MWC would be required to obtain an encroachment permit from Alpine County. As part of this encroachment permit application, MWC would be required to prepare and implement a traffic control plan, which would require temporary traffic controls and maintenance of emergency access during construction. Once project construction is complete, all affected roads would be restored to their pre-project conditions. The project would result in a less-than-significant impact on emergency access and no mitigation is required.

3.18 TRIBAL CULTURAL RESOURCES

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

3.18.1 Environmental Setting

Assembly Bill (AB) 52, signed by Governor Edmund G. Brown, Jr., in September 2014, established a new class of resources under CEQA: "tribal cultural resources" (TCRs). AB 52, as provided in Public Resource Code Sections 21080.3.1, 21080.3.2, and 21082.3, requires that lead agencies undertaking CEQA review must, upon written request of a California Native American Tribe, begin consultation once the lead agency determines that the application for the project is complete, prior to the issuance of a NOP of an EIR or notice of intent to adopt a negative declaration or mitigated negative declaration. No California Native American tribes have provided a written request for consultation with the State Water Resources Control Board pursuant to Public Resources Code section 21080.3.1 in Alpine County. Therefore, no consultation pursuant to AB 52 has been initiated for this project.

The project site is within the ethnographic territory of the Washoe Tribe. As stated in Section 3.5, "Cultural Resources," above, the NAHC was contacted to request a Sacred Lands File search for known cultural resources within or near the project site. The results of the search returned by the NAHC on September 30, 2020 were negative for Native American cultural resources in the project vicinity. The NAHC provided contact information for the regionally affiliated Washoe Tribe of Nevada and California and recommended that they be contacted for more information on the potential for Native American cultural resources within or near the Project Area. An informational letter regarding the proposed project was sent to Mr. Darrel Cruz of the Washoe Tribal Historic Preservation Office/Cultural Resources Office on October 5, 2020. Coordination with Mr. Cruz indicated no knowledge of cultural resources that may be affected by the project, nor any concerns about the project at this time (NIC 2021). Therefore, no tribal cultural resources have been identified in the project area.

3.18.2 Discussion

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

a,b) 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)? A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

No impact. No California Native American tribes have provided a written request for consultation with the State Water Resources Control Board pursuant to Public Resources Code section 21080.3.1 in Alpine County. Therefore, no consultation pursuant to AB 52 has been initiated for this project. Outreach performed by Natural Investigations Company with the NAHC and the Washoe Tribe of California and Nevada did not result in the identification of tribal cultural resources in the project area.

3.19 UTILITIES AND SERVICE SYSTEMS

ENVIRONMENTAL ISSUES	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 construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects?	No	No	Yes	No
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	No	No	No	Yes
c) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	No	No	No	Yes
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?	No	No	Yes	No
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	No	No	Yes	No

3.19.1 Environmental Setting

Domestic water service in Markleeville, which is the subject of this project, is provided by MWC. The Markleeville Public Utilities District provides wastewater collection and conveyance service to Markleeville. Waste collection services are provided by Douglas County Disposal service. Electricity is provided by Liberty Utilities (Alpine County 2018).

3.19.2 Discussion

a) Require or result in the relocation or construction of construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects?

Less-than-significant impact. The project includes construction, replacement, and relocation of water conveyance infrastructure and water treatment facilities in Markleeville. To accommodate the WTP improvements, the main WTP electrical service would need to be increased from 200A to 400A, which would require replacement of several existing power poles, pole adjustments, and a new pad-mounted, freestanding transformer. Construction and operation of

new, replacement, and relocated water and electrical infrastructure are evaluated throughout this Initial Study and, with required mitigation measures the project would not result in significant environmental impacts. This impact would be less than significant, and no mitigation is required.

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

No impact. As described in Section 3.14, "Population and Housing," the project would not include new homes or businesses that would induce or generate population growth within the area, resulting in an increase in local water demand. MWC has sufficient water supply to serve their customers and the project would not alter the water supply but would rather improve the reliability of water treatment and conveyance. No impact would occur to water supply and no mitigation is required.

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

No impact. As described above in criterion (b), the project would not result in increased population in Markleeville, would not increase water demand, and therefore, would not result in an increase in wastewater discharge. The project area would continue to be adequately served by the Markleeville Public Utilities District. No impact would occur, and no mitigation is required.

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

Less-than-significant impact. Construction of the project could result in waste generation through disposal of excess soils or materials used during construction activities. Waste generated from construction would be temporary and would not adversely affect services provided by the Douglas County Disposal Service. Operation of a new clarification process at the WTP would result in additional treatment residuals (i.e., sludge) being produced. Water would be decanted from the sludge (and returned to the process to be treated), and the dewatered sludge would be collected and disposed of periodically (e.g., collected by a hauler and taken to a landfill). The solids would be mostly inert - suspended silt materials in the raw water bound up with a chemical coagulant, like aluminum sulfate. All waste disposal and recycling would comply with regulations and statutes related to hazardous wastes. Impacts would be less than significant, and no mitigation is required.

3.20 WILDFIRE

ENVIRONMENTAL ISSUES	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?	No	No	Yes	No
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?	No	Yes	No	No
c) Require the installation 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?	No	Yes	No	No
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?	No	No	Yes	No

3.20.1 Environmental Setting

As discussed in Section 3.9, "Hazards and Hazardous Materials," the project alignment as well as the surrounding area is within the State Responsibility Area (SRA) and is within a very-high fire hazard severity zone (CALFIRE 2020). There have been four major wildland fires in Alpine County in the last 20 years; three of which were determined to be caused by human activity (Alpine County 2020b).

In 2009, a Community Wildfire Protection Plan was prepared to include recommendations for mitigating wildland fire threats to property. The document includes mitigation such as identifying wildland urban interface areas, reduce fire fuels, and develop partnerships to reduce fire risk (Alpine County 2018). Alpine County prepared a Draft Wildfire Risk Mitigation Plan in December 2020, with the goal to reduce wildfire risk in Alpine County, including Markleeville. This Plan identifies fuels reduction projects that could be implemented over the next 10 years; fuels reduction around Markleeville is identified as the highest priority (Alpine County 2020).

The California Department of Forestry (CDF) is responsible for providing wildland fire protection on all State and private timberlands, watersheds, and rangelands in Alpine County. The CDF contracts out this responsibility to the United States Forest Service (USFS). In general, the USFS is adequately prepared to protect developed areas in the instance of wildland fire, however, Forest Service fire fighters are not equipped, trained, or legally permitted to fight structural fires. The County is served by volunteer fire departments located in the population centers of the county for structural fire protection. As discussed in Section 3.15, "Public Services," fire protection within the project area is provided by Eastern Alpine Fire and Rescue Volunteer Fire Department (Woodfords Fire Department). Alpine County

Fire Station #92 and Woodfords Fire Station are located along Hot Springs Road and adjacent to Downtown Markleeville.

3.20.2 Discussion

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

Less-than-significant impact. The roadways affected by the project would remain open during construction, but construction would result in short-term delays for motorists. MWC would be required to obtain an encroachment permit from Alpine County. As part of this encroachment permit application, MWC would be required to prepare and implement a traffic control plan, which would require temporary traffic controls and maintenance of emergency access during construction. Once project construction is complete, all affected roads would be restored to their pre-project conditions. The project would not impair an adopted emergency response plan or evacuation plan and would result in a less-than-significant impact on emergency access and no mitigation is required.

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?

Less than significant with mitigation incorporated. As discussed in Section 3.7, "Geology and Soils," the project alignment and area is located in an area that does have a steep incline. As previously described, the project includes replacement of water conveyance infrastructure as well as construction, replacement, and relocation of water treatment facilities. The post-project continued operation of the water treatment and conveyance system in Markleeville would not exacerbate fire risk in the project area, but rather would improve fire flows and would add approximately 15 new fire hydrants in the town. However, during construction, as described in Section 3.9, "Hazards and Hazardous Materials," construction equipment and vehicles as well as worker behavior, such as smoking and disposing of cigarettes or parking vehicles on dry vegetation, could create sparks and ignite a fire. Wildfire resulting from construction and/or worker behavior would be potentially significant. Implementation of Mitigation Measure 3.9-1, "Fire Prevention and Cessation," would reduce potentially significant wildfire impacts to a less-than-significant level by avoiding construction activities during periods of extreme fire danger and requiring that construction personnel are educated on fire prevention and safety practices.

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

Less than significant with mitigation incorporated. As previously described, the project includes replacement of water conveyance infrastructure as well as construction, replacement, and relocation of water treatment facilities. To accommodate the WTP improvements, the main WTP electrical service would need to be increased from 200A to 400A, which would require replacement of several existing power poles, pole adjustments, and a new pad-mounted, freestanding transformer. The post-project continued operation of the water treatment and conveyance system in Markleeville would not exacerbate fire risk in the project area, but rather would improve fire flows and would add approximately 15 new fire hydrants in the town. However, during construction, as described in Section 3.9, "Hazards and Hazardous Materials," construction equipment and vehicles as well as worker behavior, such as smoking and disposing of cigarettes or parking vehicles on dry vegetation, could create sparks and ignite a fire. Wildfire resulting from construction and/or worker behavior would be potentially significant. Implementation of Mitigation Measure 3.9-1, "Fire Prevention and Cessation," would reduce potentially significant wildfire impacts to a less-than-significant level by avoiding construction activities during periods of extreme fire danger and requiring that construction personnel are educated on fire prevention and safety practices.

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?

Less-than-significant impact. As discussed in Sections 3.7, "Geology and Soils," and 3.10, "Hydrology and Water Quality," runoff occurs naturally within the project area and flooding and landslide events are not common. Once operational, drainage along the project alignment would not affect offsite drainage conditions, including runoff that naturally occurs in the project area. The project site and surrounding areas have not been subject to recent wildfire burns such that downslope areas would be affected by project implementation. Impacts would be less than significant, and no mitigation is required.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

	ENVIRONMENTAL ISSUES	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 an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?	No	Yes	No	No
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.)	No	Yes	No	No
c)	Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	No	Yes	No	No

3.21.1 Discussion

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 an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?

Less than significant with mitigation incorporated. Implementation of Mitigation Measures 3.4-1 through 3.4-10, identified in Section 3.4, "Biological Resources," of this Initial Study would ensure that the project would not 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 an endangered, rare, or threatened species. Implementation of Mitigation Measure 3.5-1 identified in Section 3.5, "Cultural Resources," would prevent the project from significantly affecting previously undiscovered resources or eliminating important examples of the major periods of California history or prehistory.

The project-related impacts would primarily occur during construction and would be mitigated to be less than significant. The post-project operation of the water treatment and conveyance system would not impact biological or

cultural resources. Therefore, the potential of the project to potentially degrade the environment is considered less than significant with mitigation.

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

Less than significant with mitigation incorporated. Foreseeable cumulative projects that have the potential to be implemented concurrently with the Markleeville Water System Improvements Project include the Hot Springs Road Reconstruction Project, the Caltrans replacement of the SR 89 bridge over Markleeville Creek, the Markleeville Public Utility District Sewer Pump Station Relocation Project, and the Markleeville Creek Floodplain Restoration Project. The proposed construction of the new water conveyance pipelines is intended to be complete before the Hot Springs Road reconstruction to prevent construction impacts to the newly reconstructed Hot Springs Road. However, one element of the Hot Springs Road Project, replacement of a bridge west of the WTP project site, and the Caltrans replacement of the SR89 bridge over Markleeville Creek may potentially be under construction concurrently with this project. In addition, the cumulative projects would lead to a longer timeframe of temporary construction activities, which would result in disruption to the Markleeville community due to partially closed roadways, presence of construction equipment and workers, noise, and dust. Although the sewer pump station relocation project is located north of SR 89, this project could generate general construction-related disruption in Markleeville although it is uncertain if the project would be in construction at the same time as the water system improvements. The Floodplain Restoration Project would not be implemented until after the sewer pump station relocation is completed; therefore, this project is anticipated to be constructed later than the water system improvements. It should be noted that the project site of the sewer pump station relocation project is identified as one of the staging areas for this Markleeville Water System Improvements Project and has therefore been considered as part of the project site and has been included in the environmental impact evaluations in this Initial Study. As presented throughout this environmental checklist, the proposed water conveyance pipelines and water treatment system improvements would result in temporary construction impacts, which are mitigable to less-than-significant levels. The project would not result in long-term operational environmental impacts. The project is unlikely to be in its peak-construction period at the same time as the cumulative projects in Markleeville and would not contribute to significant cumulative impacts.

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

Less than significant with mitigation incorporated. Potential adverse effects to human beings would occur due to project-related construction impacts, including air quality, hazardous materials, noise, and wildfire hazard. However, these impacts would be short-term, they have been determined to be less than significant or less than significant with mitigation (see Mitigation Measure 3.9-1), and they would cease upon completion of construction. Therefore, potential adverse effects on human beings as a result of the project would be less than significant.

4 REFERENCES

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3.21 Mandatory Findings of Significance

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Appendix A

Air Quality and Greenhouse Gas Emissions Data

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Markleeville Water System Improvements

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.30	9.45	9.96	10.45	0.45	10.00	2.47	0.39	2.08	0.03	3,058.32	0.91	0.03	3,091.43
Grading/Excavation	1.10	13.67	11.30	10.54	0.54	10.00	2.54	0.46	2.08	0.03	3,334.47	0.46	0.21	3,409.27
Drainage/Utilities/Sub-Grade	1.79	18.82	14.76	10.73	0.73	10.00	2.73	0.65	2.08	0.04	3,657.40	0.60	0.16	3,718.90
Paving	0.68	8.39	7.74	0.38	0.38	0.00	0.31	0.31	0.00	0.02	2,146.99	0.37	0.14	2,198.88
Maximum (pounds/day)	1.79	18.82	14.76	10.73	0.73	10.00	2.73	0.65	2.08	0.04	3,657.40	0.91	0.21	3,718.90
Total (tons/construction project)	0.17	1.85	1.54	1.20	0.07	1.12	0.30	0.06	0.23	0.00	425.78	0.07	0.02	434.12

Notes:

Project Start Year ->	2022
Project Length (months) ->	12
Total Project Area (acres) ->	6
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	320	5
Grading/Excavation	25	8	200	100	320	5
Drainage/Utilities/Sub-Grade	37	0	200	0	320	5
Paving	0	25	0	200	320	5

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Markleeville Water System Improvements

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.02	0.12	0.13	0.14	0.01	0.13	0.03	0.01	0.03	0.00	40.37	0.01	0.00	37.02
Grading/Excavation	0.07	0.81	0.67	0.63	0.03	0.59	0.15	0.03	0.12	0.00	198.07	0.03	0.01	183.72
Drainage/Utilities/Sub-Grade	0.07	0.75	0.58	0.42	0.03	0.40	0.11	0.03	0.08	0.00	144.83	0.02	0.01	133.60
Paving	0.01	0.17	0.15	0.01	0.01	0.00	0.01	0.01	0.00	0.00	42.51	0.01	0.00	39.50
Maximum (tons/phase)	0.07	0.81	0.67	0.63	0.03	0.59	0.15	0.03	0.12	0.00	198.07	0.03	0.01	183.72
Total (tons/construction project)	0.17	1.85	1.54	1.20	0.07	1.12	0.30	0.06	0.23	0.00	425.78	0.07	0.02	393.83

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model
Data Entry Worksheet

Version 9.0.0

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Markleeville Water System Improvements	
Construction Start Year	2022	Enter a Year between 2014 and 2040 (inclusive)
Project Type For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	12.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	3.50	miles
Total Project Area	5.80	acres
Maximum Area Disturbed/Day	1.00	acre
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing	20.00	0.00	0.00
	Grading/Excavation	20.00	0.00	25.00
	Drainage/Utilities/Sub-Grade	20.00	37.00	0.00
	Paving	20.00	0.00	0.00
Asphalt	Grubbing/Land Clearing	20.00	0.00	0.00
	Grading/Excavation	20.00	0.00	8.00
	Drainage/Utilities/Sub-Grade	20.00	0.00	0.00
	Paving	20.00	25.00	0.00

Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard
Off-road Equipment Emissions Mitigation	No Mitigation	

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		1.20		1/1/2022
Grading/Excavation		5.40		2/7/2022
Drainage/Utilities/Sub-Grade		3.60		7/22/2022
Paving		1.80		11/9/2022
Totals (Months)	12			

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing	100.00			0	0.00
Miles/round trip: Grading/Excavation	100.00			2	200.00
Miles/round trip: Drainage/Utilities/Sub-Grade	100.00			2	200.00
Miles/round trip: Paving	100.00			0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grading/Excavation (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Draining/Utilities/Sub-Grade (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Paving (grams/mile)	0.17	0.65	4.65	0.14	0.08	0.02	1,790.40	0.01	0.28	1,874.46
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.08	0.29	2.09	0.06	0.03	0.01	790.91	0.00	0.12	828.05
Tons per const. Period - Grading/Excavation	0.00	0.02	0.12	0.00	0.00	0.00	46.98	0.00	0.01	49.19
Pounds per day - Drainage/Utilities/Sub-Grade	0.08	0.29	2.09	0.06	0.03	0.01	790.91	0.00	0.12	828.05
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.01	0.08	0.00	0.00	0.00	31.32	0.00	0.00	32.79
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.01	0.03	0.21	0.01	0.00	0.00	78.30	0.00	0.01	81.98

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing	100.00			0	0.00
Miles/round trip: Grading/Excavation	100.00			1	100.00
Miles/round trip: Drainage/Utilities/Sub-Grade	100.00			0	0.00
Miles/round trip: Paving	100.00			2	200.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grading/Excavation (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Draining/Utilities/Sub-Grade (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Paving (grams/mile)	0.17	0.65	4.65	0.14	0.08	0.02	1,790.40	0.01	0.28	1,874.46
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.04	0.15	1.05	0.03	0.02	0.00	395.46	0.00	0.06	414.03
Tons per const. Period - Grading/Excavation	0.00	0.01	0.06	0.00	0.00	0.00	23.49	0.00	0.00	24.59
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.08	0.29	2.07	0.06	0.03	0.01	789.43	0.00	0.12	826.50
Tons per const. Period - Paving	0.00	0.01	0.04	0.00	0.00	0.00	15.63	0.00	0.00	16.36
Total tons per construction project	0.00	0.01	0.10	0.00	0.00	0.00	39.12	0.00	0.01	40.96

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions User Input	User Override of Worker Commute Default Values	Default Values	Calculated Daily Trips	Calculated Daily VMT
Miles/ one-way trip	20			
One-way trips/day	2			
No. of employees: Grubbing/Land Clearing	8		16	320.00
No. of employees: Grading/Excavation	8		16	320.00
No. of employees: Drainage/Utilities/Sub-Grade	8		16	320.00
No. of employees: Paving	8		16	320.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Grading/Excavation (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Draining/Utilities/Sub-Grade (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Paving (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.17	0.00	0.01	330.39
Grubbing/Land Clearing (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Grading/Excavation (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Draining/Utilities/Sub-Grade (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Paving (grams/trip)	1.10	2.84	0.31	0.00	0.00	0.00	70.42	0.08	0.03	82.28
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.05	0.81	0.07	0.03	0.01	0.00	234.39	0.01	0.01	236.39
Tons per const. Period - Grubbing/Land Clearing	0.00	0.01	0.00	0.00	0.00	0.00	3.09	0.00	0.00	3.12

Pounds per day - Grading/Excavation	0.05	0.81	0.07	0.03	0.01	0.00	234.39	0.01	0.01	236.39
Tons per const. Period - Grading/Excavation	0.00	0.05	0.00	0.00	0.00	0.00	13.92	0.00	0.00	14.04
Pounds per day - Drainage/Utilities/Sub-Grade	0.05	0.81	0.07	0.03	0.01	0.00	234.39	0.01	0.01	236.39
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.03	0.00	0.00	0.00	0.00	9.28	0.00	0.00	9.36
Pounds per day - Paving	0.05	0.80	0.07	0.03	0.01	0.00	234.00	0.01	0.01	235.99
Tons per const. Period - Paving	0.00	0.02	0.00	0.00	0.00	0.00	4.63	0.00	0.00	4.67
Total tons per construction project	0.01	0.11	0.01	0.00	0.00	0.00	30.93	0.00	0.00	31.20

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated	User Override of	Default Values	Calculated
User Input	Default # Water Trucks	Number of Water Trucks	Round Trips/Vehicle/Day	Round Trips/Vehicle/Day	Trips/day	Miles/Round Trip	Miles/Round Trip	Daily VMT
Grubbing/Land Clearing - Exhaust	1		1.00			5.00		5.00
Grading/Excavation - Exhaust	1		1.00			5.00		5.00
Drainage/Utilities/Subgrade	1		1.00			5.00		5.00
Paving	1		1.00			5.00		5.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Grading/Excavation (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Draining/Utilities/Sub-Grade (grams/mile)	0.18	0.66	4.71	0.14	0.08	0.02	1,793.76	0.01	0.28	1,877.99
Paving (grams/mile)	0.17	0.65	4.65	0.14	0.08	0.02	1,790.40	0.01	0.28	1,874.46
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.01	0.06	0.00	0.00	0.00	19.77	0.00	0.00	20.70
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.27
Pounds per day - Grading/Excavation	0.00	0.01	0.06	0.00	0.00	0.00	19.77	0.00	0.00	20.70
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	1.17	0.00	0.00	1.23
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.01	0.06	0.00	0.00	0.00	19.77	0.00	0.00	20.70
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.82
Pounds per day - Paving	0.00	0.01	0.06	0.00	0.00	0.00	19.74	0.00	0.00	20.66
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.41
Total tons per construction project	0.00	0.00	0.01	0.00	0.00	0.00	2.61	0.00	0.00	2.73

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing	1.00		10.00	0.13	2.08	0.03
Fugitive Dust - Grading/Excavation	1.00		10.00	0.59	2.08	0.12
Fugitive Dust - Drainage/Utilities/Subgrade	1.00		10.00	0.40	2.08	0.08

Values in cells D195 through D228, D246 through D279, D297 through D330, and D348 through D381 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Off-Highway Trucks	1.06	6.72	8.03	0.29	0.27	0.03	2,557.97	0.83	0.02	2,585.51
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Sweepers/Scrubbers	0.19	1.92	1.80	0.12	0.11	0.00	246.18	0.08	0.00	248.83
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing	pounds per day	1.25	8.63	9.83	0.41	0.38	0.03	2,804.15	0.91	0.03	2,834.34
Grubbing/Land Clearing	tons per phase	0.02	0.11	0.13	0.01	0.01	0.00	37.01	0.01	0.00	37.41

Grading/Excavation	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Concrete/Industrial Saws	0.36	3.66	2.80	0.15	0.15	0.01	592.67	0.03	0.00	594.80
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Excavators	0.40	6.51	3.55	0.17	0.16	0.01	1,000.03	0.32	0.01	1,010.81
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Tractors/Loaders/Backhoes	0.16	2.24	1.68	0.09	0.08	0.00	301.24	0.10	0.00	304.48
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day

0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation		pounds per day	0.93	12.41	8.03	0.41	0.39	0.02	1,893.94	0.45	0.02	1,910.10
Grading/Excavation		tons per phase	0.06	0.74	0.48	0.02	0.02	0.00	112.50	0.03	0.00	113.46

Drainage/Utilities/Subgrade	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Off-Highway Tractors	0.22	3.07	2.15	0.10	0.09	0.00	454.97	0.15	0.00	459.88
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Other Material Handling Equipm	0.53	7.53	4.49	0.24	0.22	0.01	1,119.35	0.36	0.01	1,131.42
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Pumps	0.35	3.73	2.97	0.16	0.16	0.01	623.04	0.03	0.00	625.23
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Welders	0.55	3.39	2.93	0.13	0.13	0.01	414.96	0.05	0.00	417.23

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade		pounds per day	1.66	17.72	12.54	0.63	0.60	0.03	2,612.32	0.59	0.02	2,633.76
Drainage/Utilities/Sub-Grade		tons per phase	0.07	0.70	0.50	0.02	0.02	0.00	103.45	0.02	0.00	104.30

Paving	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Pavers	0.21	2.88	2.09	0.10	0.09	0.00	455.26	0.15	0.00	460.16
1.00			Model Default Tier	Paving Equipment	0.18	2.55	1.73	0.08	0.08	0.00	394.47	0.13	0.00	398.73
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Rollers	0.17	1.86	1.72	0.10	0.09	0.00	254.10	0.08	0.00	256.84
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Paving	pounds per day	0.55	7.29	5.54	0.28	0.26	0.01	1,103.83	0.36	0.01	1,115.73
Paving	tons per phase	0.01	0.14	0.11	0.01	0.01	0.00	21.86	0.01	0.00	22.09
Total Emissions all Phases (tons per construction period) =>		0.15	1.70	1.21	0.06	0.06	0.00	274.82	0.07	0.00	277.26

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

Appendix B

Energy Data

Instructions: Input all construction equipment by each phase and phase length and use CalEEMod outputs for amount, usage hours, horsepower, and load factor.

Construction Offroad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Diesel Fuel Usage
Grubbing/Land Clearing	off-highway trucks	2	8	402	0.3819	26	3,193
Grubbing/Land Clearing	sweepers/scrubbers	1	8	64	0.4556	26	303
Grading/Excavation	concrete/industrial saws	1	8	81	0.73	119	2,815
Grading/Excavation	excavators	2	8	158	0.3819	119	5,744
Grading/Excavation	tractors/loaders/backhoes	1	8	97	0.37	119	1,708
Pipeline Installation	off-highway trucks	1	8	402	0.3819	79	4,851
Pipeline Installation	other material handling equipment	2	8	168	0.40	79	4,197
Pipeline Installation	pumps	1	8	84	0.74	79	1,964
Pipeline Installation	welders	2	8	46	0.45	79	1,308
Paving	pavers	1	8	130	0.42	40	874
Paving	paving equipment	1	8	132	0.36	40	750
Paving	rollers	1	8	80	0.38	40	486
						TOTAL	28,195

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

Trips and VMT

Phase Name	Daily Worker Trip	Daily Vendor Trip	Daily Hauling Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	**Total gallons of gasoline**	**Total gallons of diesel**
Grubbing/Land Clearing	16	0	0	26	416	0	0	20.00	6.50	50.00	8320	0.00	-	279	0
Grading/Excavation	16	0	3	119	1904	0	357	20.00	6.50	50.00	38080	0.00	17,850.00	1,275	2,936
Pipeline Installation	16	0	2	79	1264	0	158	20.00	6.50	50.00	25280	0.00	7,900.00	847	1,300
Paving	16	0	2	40	640	0	80	20.00	6.50	50.00	12800	0.00	4,000.00	429	658
													TOTAL	2,829	4,894

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

Total gallons of diesel (construction equipment plus hauling trips)	33,089

Instructions: Input EMFAC run for LDA, LDT1, LTD2 for gas, and T7 tractor construction for diesel into template below.

EMFAC2014 (v1.0.7) Emissions Inventory
Region Type: County
Region: Alpine
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Miles per gallon
Alpine	2022	LDA	Aggregated	Aggregated	GAS	2,939	103,599	18,526	3.1	32.94
Alpine	2022	LDA	Aggregated	Aggregated	DSL	35	1,250	217	0.0	42.00
Alpine	2022	LDA	Aggregated	Aggregated	ELEC	110	5,244	714	-	-
Alpine	2022	LDT1	Aggregated	Aggregated	GAS	263	7,943	1,561	0.3	27.04
Alpine	2022	LDT1	Aggregated	Aggregated	DSL	0	7	2	0.0	30.70
Alpine	2022	LDT1	Aggregated	Aggregated	ELEC	0	4	1	-	-
Alpine	2022	LDT2	Aggregated	Aggregated	GAS	1,122	39,535	7,040	1.6	24.40
Alpine	2022	LDT2	Aggregated	Aggregated	DSL	2	75	12	0.0	32.93
Alpine	2022	T7 tractor construction	Aggregated	Aggregated	DSL	1	45	-	0.0	6.08

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

Fuel Efficiency Calculation

	Value	Units
Gasoline consumption by LDA, LDT 1, and LDT 2	5058.97	gallons/day
VMT for LDA, LDT1, and LDT 2	151,077	miles/day
Gasoline fuel efficiency	29.86	miles/gallon
Diesel consumption by T7 tractor construction	7.4	gallons/day
VMT for T7 tractor construction	45	miles/day
Diesel fuel efficiency	6.08	miles/gallon

Appendix C

Noise Data

Construction Source Noise Prediction Model

Construction Type	Receptor	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Pipeline and fire hydrant replacements	Various residences along pipeline route	30	90.8
Construction of pressure reducing station	Residences near intersection of Hot Springs Road and Pleasant Valley Road	65	82.0
Pleasant Valley Tank improvements	Residences near intersection of Pleasant Valley Roadand Lava Cap	280	65.3

Equipment	Reference Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Man Lift	85	0.2
Excavator	85	0.4
Grader	85	0.4

Ground Type	soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Man Lift	78.0
Excavator	81.0
Grader	81.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
85.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Table 4-26 from the Federal Transit Noise and Vibration Impact Assessment, 2018 (pg 86).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2018 (pg 176 and 177).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2018: pg 86); and

D = Distance from source to receiver.