Mokelumne Watershed Routine Maintenance Project

Counties of Amador, Calaveras, and San Joaquin, California

Initial Study / Mitigated Negative Declaration

EAST BAY MUNICIPAL UTILITY DISTRICT

August 2021

EBMUD

August 2021

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION
Mokelumne Watershed Routine Maintenance Project

Project Title: Mokelumne Watershed Routine Maintenance Project

Lead Agency: East Bay Municipal Utility District (EBMUD)

Project Location: EBMUD's Mokelumne Watershed (Watershed) property borders and includes Camanche and Pardee Dams and Reservoirs, extending from less than 50 feet (15 m) to about 3 miles (4.8 km) from the high-water surface elevation of Camanche and Pardee Reservoirs. It also includes the lands adjacent to the lower Mokelumne River for approximately one-half mile (0.8 km) below Camanche Dam. Current and recent land use practices in the Mokelumne Watershed include management for water supply, flood control, grazing, aquaculture, hydroelectric power, wastewater treatment, wildland fire prevention and suppression, facility maintenance, residential use, and recreation.

Project Description: The Mokelumne Watershed Routine Maintenance Project (Project) involves the continuation of routine maintenance of the Mokelumne Watershed facilities, roads, and infrastructure at locations within the Watershed property. Many of these activities were previously authorized under Fish and Game Code Section 1602 Lake and Stream Alteration Agreements (LSAAs) with the California Department of Fish and Wildlife (CDFW). Given the expiration of the prior LSAA, the EBMUD seeks a new LSAA for the continuation of routine maintenance activities critical to Watershed operations in 1600 jurisdictional areas and that comprise the Project. permitting the continuation of routine maintenance activities critical to Watershed operations. To permit ongoing environmental stewardship activities that are part of the Project, EBMUD also seeks a Safe Harbor Agreement with CDFW covering effects to foothill yellow-legged frog (*Rana boylii*), California tiger salamander (*Ambystoma californiense*), as well as other species that may be listed under the California Endangered Species Act in the near future such as western spadefoot (*Spea hammondii*) and tri-colored blackbird (*Agelaius tricolor*). Maintenance activities include sediment and debris removal; vegetation management; facilities maintenance; erosion prevention, control, repair, and protection; and environmental stewardship activities. Routine maintenance activities are critical to operations of the Mokelumne Watershed, providing for safe travel throughout the Project area while ensuring natural flows for drainages, flood control infrastructure, dam seepage monitoring wells and weirs, and other watercourses. The routine maintenance of facilities, roads, and infrastructure is ongoing due to changing conditions resulting from weather events, deterioration of facilities and structures, and normal use.

Project Objective: The Project's objective is to maintain the health of the Mokelumne Watershed and the functional and structural integrity of EBMUD-owned Watershed property (e.g., land) and facilities located in Amador, Calaveras, and San Joaquin counties.

Schedule: Key milestones for project implementation are summarized as follows:

- Complete Environmental Review — October 2021
- Begin Maintenance Work — April 2022

Environmental Determination: Pursuant to the requirements of the California Environmental Quality Act, an Initial Study was prepared for the Project. Based on the results of the Initial Study, it was determined that project-related maintenance work could potentially generate environmental impacts to biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, tribal cultural resources, and wildfire. In the long term, maintenance activities would have a beneficial effect by maintaining the functional and structural integrity of EBMUD-owned facilities and would not generate significant impacts. Adherence to EBMUD standard best management practices and implementation of mitigation measures would ensure that the Project would not generate a significant impact on the environment. Based on this assessment, a "Mitigated Negative Declaration" has been prepared.

Environmental Mitigation: All impacts will be reduced to Less than Significant levels by implementation of mitigation measures.

Public Comment/Review: The Initial Study/Mitigated Negative Declaration is available for review at:

- East Bay Municipal Utility District, 375 11th Street, Oakland, CA 94607
- EBMUD website (https://www.ebmud.com/MokelumneWatershedRMA)

In accordance with Section 15073 of the California Environmental Quality Act Guidelines, this Mitigated Negative Declaration is available for public review from August 11, 2021 through September 10, 2021. Written comments on this proposed Mitigated Negative Declaration must be received no later than 4:30 pm on September 10, 2021. Please address comments to East Bay Municipal Utility District, Attn: Michelle Workman, Manager of Fisheries and Wildlife, One Winemaster Way, Suite K2, Lodi CA 95240, or email to michelle.workman@ebmud.com.

7/26/21 — Date

Michael T. Tognolini, Director of Water and Natural Resources

TABLE OF CONTENTS

APPENDICES

TABLES

FIGURES

ACRONYMS AND ABBREVIATIONS

A	
AAD	Amador Air District
AB	Assembly Bill
amsl	above mean sea level
ATCM	airborne toxic control measures
B	
Basin Plan	Water Quality Control Plan for the Central Valley Region
BDA	beaver dam analogs
BMPs	Best Management Practices
BPS	best performance standards
C	
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CalVTP	California Vegetation Treatment Program
CANS	CANS
CAP	climate action plan
CARB	California Air Resources Board
CASS	Camanche South Shore
CBC	California Building Code
CCAPCD	Calaveras County Air Pollution Control District
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDOC	California Department of Conservation
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CHHP	Camanche Hills Hunting Preserve
CIP	capital improvement project
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CRHR	California Register of Historical Resources
CRLF	California red-legged frog
CTS	California tiger salamander
CWA	Clean Water Act
cy	cubic yards

D

dBA	A-weighted decibel
DBH	diameter at breast height
DO	dissolved oxygen
DPS	Distinct Population Segment
DPS	Need definition (Central Valley DPS)
DTSC	Department of Toxic Substance Control
DWR	California Department of Water Resources

E

EBMUD	East Bay Municipal Utility District
ECS	Environmental Compliance Section
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EMFAC	Emissions Factor Model
EO	Executive Order
ESA	Endangered Species Act
ESU	Evolutionary Significant Unit

F

F&G Code	Fish and Game Code
FHSZ	fire hazard severity zone
FTA	Federal Transit Administration
FYLF	foothill yellow-legged frog

G

GHG	greenhouse gas
GIS	Geographic Information System

H

HCP	habitat conservation plans
HDPE	high-density polyethylene

I

in/sec	inches per second
IS/MND	Initial Study/ Mitigated Negative Declaration

L

Leq	equivalent continuous sound pressure level in dBA
LSAA	Lake and Stream Alteration Agreements
LUST	leaking underground storage tank

M

MOU	Memorandum of Understanding
Mountain Counties	Amador, Calaveras, El Dorado, Mariposa, Nevada, Placer, Plumas, Sierra, Tuolumne counties

$MTCO_2e/yr$	metric tons of carbon dioxide equivalent per year
MWMP	Mokelumne Watershed Management Plan

N

NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	natural community conservation plan
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
NOA	naturally-occurring asbestos
NOx	nitrogen oxides
NRHP	National Register of Historic Places
NWI	National Wetland Inventory

P

PACT	Powdered Activated Carbon Treatment
PARA	Pardee Recreation Area
PEIR	Programmatic Environmental Impact Report
PM	particulate matter
PM10	particulate matter less than 10 microns in diameter
PM2.5	particulate matter less than 2.5 microns in diameter
PPV	peak particle velocity
Project	Mokelumne Watershed Routine Maintenance Project
Pub. Res. Code	Public Resource Code
PVC	polyvinyl chloride

R

RMA	Routine Maintenance Agreement
ROG	reactive organic gases
ROW	right-of-way
RWQCB	Regional Water Quality Control Board

S

SB	Senate Bill
SGMA	2014 Sustainable Groundwater Management Act
SHA	Safe Harbor Agreement
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_2	sulfur dioxide
SOx	sulfur dioxide
sqft	square feet
SSC	Species of Special Concern
SWPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board

T

TCR	Tribal Cultural Resource

U

UAIC	United Auburn Indian Community of the Auburn Rancheria
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UTV	utility terrain vehicle

V

VdB	velocity in decibels
VELB	Valley Elderberry Longhorn Beetle
Watershed	Mokelumne Watershed

W

WDR	Waste Discharge Requirement
WPT	western pond turtle
WSF	western spadefoot
WTP	Water Treatment Plant

ºC	degrees Celsius
ºF	degrees Fahrenheit

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CHAPTER 1
SUMMARY

East Bay Municipal Utility District (EBMUD) owns and manages 28,744 acres of land for water supply along the Mokelumne River and around the Pardee and Camanche reservoirs in Amador, Calaveras, and San Joaquin counties, California. This area includes Camanche and Pardee Dams and Reservoirs, extending from less than 50 feet (15 meters) to about three miles (4.8 kilometers) from the high-water surface elevation of Camanche and Pardee reservoirs. It also includes the lands adjacent to the lower Mokelumne River for approximately one-half mile (0.8 kilometers) below Camanche Dam.

1.1 Project Objective

Maintaining and operating the Mokelumne Watershed system is an essential public service to supply drinking water to approximately 1.4 million people in EBMUD's service area. The Mokelumne Watershed Routine Maintenance Project (Project) involves the continuation of routine maintenance of the Mokelumne Watershed facilities, roads, and infrastructure at locations within the Watershed property previously authorized under Fish and Game Code Section 1602 Lake and Stream Alteration Agreements (LSAAs) with the California Department of Fish and Wildlife (CDFW). Given the expiration of the prior LSAA, EBMUD seeks a new LSAA for the continuation of routine maintenance activities critical to Watershed operations in 1600 jurisdictional areas and that comprise the Project. To permit ongoing environmental stewardship activities that are part of the Project, EBMUD also seeks a Safe Harbor Agreement with CDFW covering effects to foothill yellow-legged frog (*Rana boylii*), California tiger salamander (*Ambystoma californiense*), as well as other species that may be listed under the California Endangered Species Act in the near future such as western spadefoot (*Spea hammondii*) and tri-colored blackbird (*Agelaius tricolor*).

Maintenance activities include sediment and debris removal; vegetation management; facilities maintenance; erosion prevention, control, repair, and protection; and environmental stewardship activities. These activities provide for safe travel throughout the Project area while ensuring natural flows for drainages, flood control infrastructure, and other watercourses. The routine maintenance of facilities, roads and infrastructure is ongoing due to changing conditions resulting from weather events, deterioration of facilities and structures, and normal use.

EBMUD performs routine maintenance activities to both maintain the health of the Mokelumne Watershed and the functional and structural integrity of its infrastructure. EBMUD's watershed stewardship and facilities maintenance approach is based on having a comprehensive understanding of site-specific functions and processes, and the natural and aquatic resources at the location where maintenance is required. Understanding these resources, their locations, and how they interact guides EBMUD on where, when and how routine maintenance activities should occur. As such, habitat and ground disturbance associated with maintenance activities is limited and small in scale.

The Project includes the following categories of routine maintenance activities:

- *Sediment and Debris Removal* - Removal of debris, sediment, vegetation, rubbish, downed trees, beaver dams, and other material that could obstruct the natural flow in reservoirs, ponds, channels, culverts, or obstruct use of roads, trails, utility lines, rights-of-way (ROW), walkways, or access to EBMUD's facilities.

- *Vegetation Management* - Control of aquatic and bankside weeds, grasses, woody vegetation, nuisance and invasive species in reservoirs, ponds, channels, banks, fence lines, roads, trails, walkways, utility lines, and ROW. Vegetation management also includes the manual and mechanical removal of vegetation within established fire breaks, shaded fuel breaks, and upland habitats. Habitat restoration and enhancement activities fall under this category, including replanting, new planting, hydroseeding, hand broadcast seeding, mechanical seeding, and maintenance of plantings.

- *Facilities Maintenance* - Maintenance, repair and placement of culverts, low water crossings drainage and erosion control structures (e.g., gates, barricades, bridges), fish barriers, boat ramps, trails, walkways, utility lines, and roads. Other EBMUD facilities that may require routine maintenance include water treatment and distribution facilities, wastewater treatment/disposal facilities, dams, and drainage systems. Activities also include washing and painting of weirs, outlet structures, drains, bridges, pipeline crossings, and spring boxes, as well as occasional spring box repair and replacement utilizing wildlife-friendly designs.

- *Erosion Prevention, Control, Repair, and Protection* – Erosion prevention, control, repairs, stabilization of levees, streambanks, roads, trails, utility lines, ROW, and infrastructure.

- *Environmental Stewardship* – Removal of aquatic and bankside plant and animal species that are invasive (e.g., American bullfrog) and noxious (i.e., ecologically detrimental or harmful, with potential to cause short or long-term environmental degradation) by means of physical capture, livestock, removal by hand, or mechanical treatments. Construction, repair, or enhancement of sensitive species habitat, such as ponds and debris piles, that will benefit native species. This may include planting native plant species to enhance the vegetation community in ponds, waterways, and upland habitat, increasing sensitive species numbers on EBMUD lands by habitat enhancement, and/or augmentation of the number of individuals or reintroduction to improve local population resilience.

1.2 Purpose of Initial Study/ Mitigated Negative Declaration

This Initial Study/ Mitigated Negative Declaration (IS/MND) has been prepared in accordance with the California Environmental Quality Act (CEQA), under which the Mokelumne Watershed Routine Maintenance Project constitutes a “Project”. EBMUD, as the lead agency under CEQA, will consider the potential environmental impacts of Project activities when it considers whether to approve the Project. Mitigation measures have been incorporated into the Project to mitigate potentially significant impacts identified in the IS/MND such that no significant impacts will occur.

1.3 Summary of Environmental Considerations

As discussed in this IS/MND, project-related maintenance work could potentially generate environmental impacts to biological resources, cultural resources, hazards and hazardous materials, hydrology and water quality, noise, tribal cultural resources, and wildfire. Mitigation measures incorporated into the Project that will reduce impacts to less than significant levels are discussed in Chapter 3 of this IS/MND. In the long term, maintenance activities would have a beneficial effect by maintaining the functional and structural integrity of EBMUD-owned facilities, preventing the degradation of surrounding habitats within the watershed, and would not generate significant impacts. Adherence to EBMUD Standard Practices and Procedures, best management practices and guidelines, and implementation of mitigation

measures would ensure that the Project would not generate a significant impact on the environment. EBMUD determined that an MND is the appropriate level of CEQA review for this Project.

1.4 Circulation of the IS/MND

In accordance with CEQA, a good faith effort has been made by EBMUD during the preparation of the IS/MND to contact affected agencies, organizations and persons who may have an interest in the Project. In reviewing the IS/MND, affected persons and public agencies should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and the ways in which the significant impacts of the Project were avoided or mitigated.

Comments on the IS/MND may be made in writing before the end of the comment period. A 30-day review and comment period has been established in accordance with Section 15205(d) of the CEQA Guidelines. Following the close of the public comment period, which ends on September 10, 2021, EBMUD will consider this IS/MND and comments in determining whether to approve the Project.

The IS/MND is available online on EBMUD's webpage (https://www.ebmud.com/MokelumneWatershedRMA). Written comments should be sent to EBMUD's street address or email address as follows:

East Bay Municipal Utility District
Michelle Workman,
Manager of Fisheries and Wildlife
One Winemaster Way, Suite K2
Lodi, CA 95240

or

michelle.workman@ebmud.com

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CHAPTER 2
PROJECT DESCRIPTION

2.1 Project Overview

East Bay Municipal Utility District (EBMUD) owns and manages 28,744 acres of land for water supply along the Mokelumne River and around the Pardee and Camanche reservoirs in Amador, Calaveras, and San Joaquin counties, California, herein referred to as the Mokelumne Watershed. The Mokelumne Watershed Routine Maintenance Project (Project) involves the continuation of routine maintenance of the Mokelumne Watershed facilities, roads, and infrastructure at locations within the Watershed previously authorized under Lake and Streambed Alteration Agreements (LSAAs) by the California Department of Fish and Wildlife (CDFW). Given the expiration of prior LSAAs, EBMUD seeks a new LSAA for the continuation of routine maintenance activities critical to Watershed operations in 1600 jurisdictional areas and that comprise the Project. To permit ongoing environmental stewardship activities that are part of the Project, EBMUD also seeks a Safe Harbor Agreement with CDFW covering effects to foothill yellow-legged frog (*Rana boylii*), California tiger salamander (*Ambystoma californiense*), as well as other species that may be listed under the California Endangered Species Act in the near future such as western spadefoot (*Spea hammondii*) and tri-colored blackbird (*Agelaius tricolor*).

Pardee and Camanche reservoirs total 9,034 acres and the surrounding uplands total 19,710 acres (**Figure 2-1**). Most of the Watershed's land is undeveloped open space, left vacant, or leased for grazing livestock; however, the Mokelumne Watershed is managed for multiple beneficial uses. Located within the Watershed is various water and wastewater infrastructure maintained to provide services to EBMUD as well as public use facilities within the Watershed boundary. This includes the Pardee Center (EBMUD's operations center), the Mokelumne Watershed Headquarters, electric generation and transmission facilities, and water transmission and treatment facilities.

Additionally, within the Watershed boundary are several recreation facilities[1] (the Mokelumne River Day Use Area, Middle Bar Boat Take-out, Campo Seco Staging Area, Camanche South Shore Recreation Area, Camanche North Shore Recreation Area, Pardee Recreation Area, and the Camanche Hills Hunting Preserve) that provide public recreation including day use, hiking, overnight camping, boating, fishing, hunting, and trap and sporting clay activities. There are also over 17 miles of managed trails for public access.

A network of roads within the Mokelumne Watershed – including approximately 35 miles of access roads, 14 miles of county roads, and 137 miles of unpaved fire roads – provide access for ongoing routine maintenance activities, including vegetation and fuel management projects, invasive species management, grazing management, as well as access to various facilities that require preventative maintenance and monitoring.

The Watershed is currently covered under a Federal Safe Harbor Agreement (SHA) between the United States Fish and Wildlife Service (USFWS) and EBMUD. The purposes of the SHA are (1) to promote the enhancement and management of habitat for California red-legged frog *(Rana draytonii),* California tiger salamander *(Ambystoma californiense),* and valley elderberry longhorn beetle *(Desmocerus californicus*

[1] EBMUD maintains the Middle Bar Take-out and Mokelumne Day Use areas. Concessionaires hold multi-year contracts to operate the remaining recreation areas on EBMUD property.

dimorphus) on EBMUD Watershed lands in San Joaquin, Amador and Calaveras counties; and (2) to provide certain regulatory assurances to EBMUD. This SHA follows the USFWS's Safe Harbor Agreement policy (64 FR 32717) and regulations (64 FR 32706), both of which implement Section 10(a)(l)(A) of the Endangered Species Act (ESA). All actions required under the Federal SHA must also obtain Fish and Game Code (F&G Code) Section 1602 LSAA coverage.

The Project also seeks an SHA with CDFW for environmental stewardship activities within the watershed associated with foothill yellow-legged frog (*Rana boylii*), California tiger salamander (*Ambystoma californiense*), and other species that may be listed under the California Endangered Species Act in the near future such as western spadefoot (*Spea hammondii*) and tri-colored blackbird (*Agelaius tricolor*). As such, EBMUD's approach to routine maintenance in the Watershed includes an environmental stewardship component involving special-status species habitat management and enhancement actions to benefit such species. This may involve restoration of native vegetation and habitat, invasive species removal, and introduction of native species, among other activities.

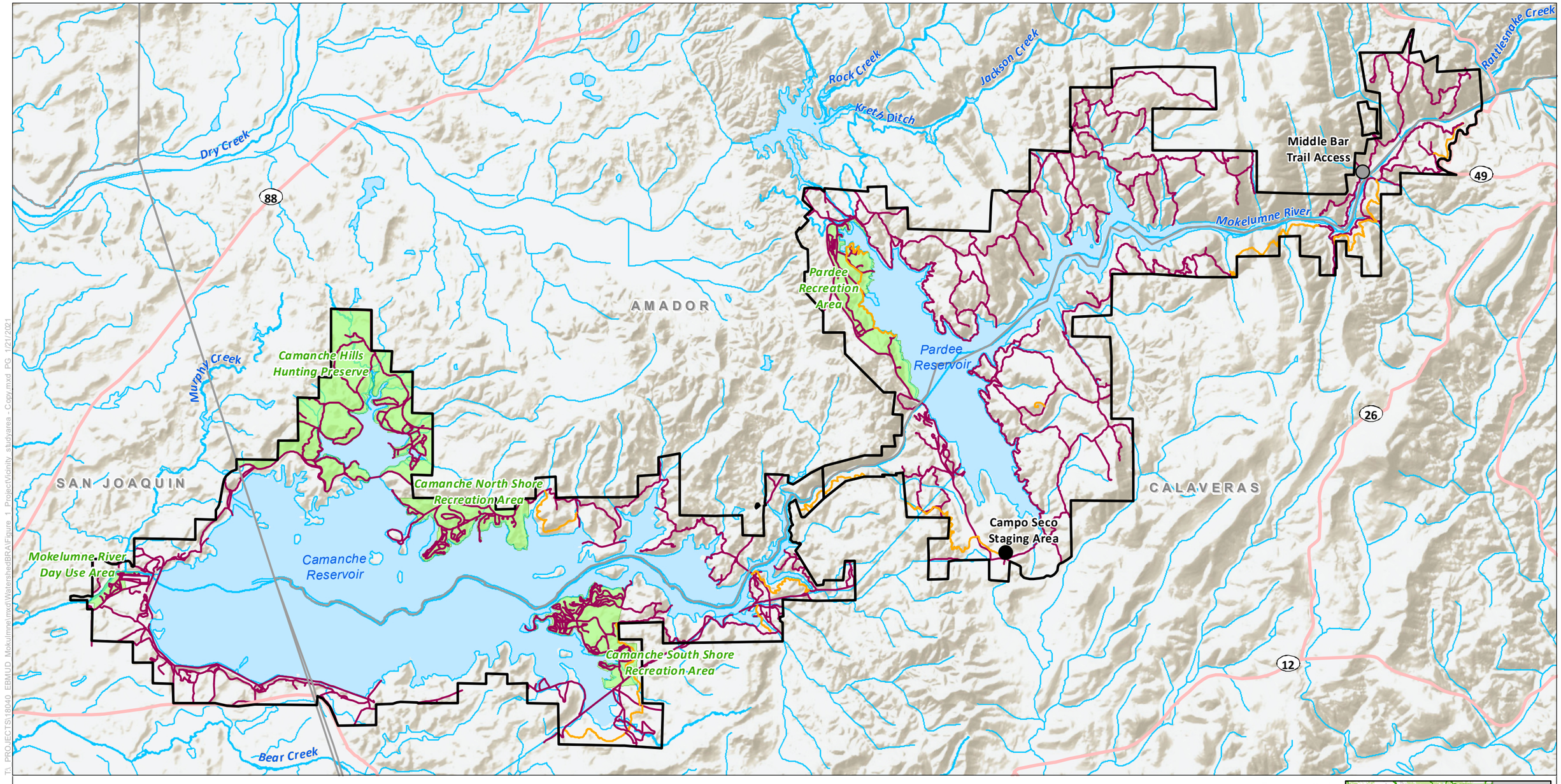
Maintaining and operating the Mokelumne Watershed and associated infrastructure is an essential public service to supply drinking water to approximately 1.4 million people in EBMUD's service area. The Project involves continued routine maintenance of the Mokelumne Watershed facilities, roads, and infrastructure at locations within the Watershed property subject to CDFW jurisdiction and regulatory authorization via a new LSAA. Routine maintenance activities are critical to operations of the Mokelumne Watershed, providing for safe travel throughout the Project area while ensuring natural flows for drainages, flood control infrastructure, dam seepage monitoring wells and weirs, and other watercourses. The routine maintenance of facilities, roads, and infrastructure is ongoing due to changing conditions resulting from weather events, deterioration of facilities and structures, and normal use.

For over a decade, EBMUD performed routine maintenance within the Mokelumne Watershed under now-expired LSAA with CDFW Region 2 (North Central Region) covering the entire approximately 28,000 acres. Agreement number 1600-2009-0232-R2 was originally signed in 2009, extended in 2015, and expired on April 20, 2020. Subsequent to Project approval, it is EBMUD's intent to obtain a new CDFW LSAA covering routine maintenance activities in 1600 jurisdictional areas and a CDFW SHA covering select special-status species effects, primarily related to environmental stewardship (e.g., grazing, habitat enhancement) within adjacent uplands, both of which comprise the Project.

For the purposes of compliance with the California Environmental Quality Act (CEQA), this Initial Study evaluates all of the Mokelumne Watershed routine maintenance activities performed in CDFW jurisdictional areas as the proposed Project under CEQA.

2.1.1 Project Area

EBMUD's Mokelumne Watershed property borders and includes Camanche and Pardee dams and reservoirs, extending from less than 50 feet (15 meters) to about 3 miles (4.8 kilometers) from the high-water surface elevation of Camanche and Pardee reservoirs. It also includes the lands adjacent to the lower Mokelumne River for approximately one-half mile (0.8 kilometers) below Camanche Dam. Current and recent land use practices in the Mokelumne Watershed include management for water supply, flood control, grazing, aquaculture, hydroelectric power, wastewater treatment, wildland fire prevention and suppression, facility maintenance, residential use, and recreation. **Figure 2-1** illustrates the EBMUD's Mokelumne Watershed area, including Pardee and Camanche reservoirs.



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Prepared by: Horizon WATER and ENVIRONMENT

Prepared for: EBMUD

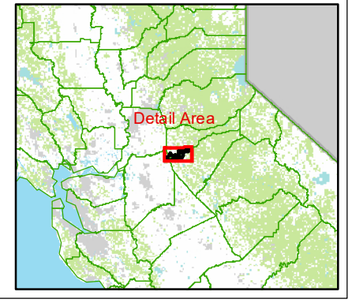
Source: ESRI 2018, EBMUD 2021

Project Features

- EBMUD Mokelumne Watershed Boundary
- County Boundary
- Stream/Tributary
- District Road
- District Trail
- Major Road
- Recreation Area
- Staging Area
- Trail Access Point

Figure 2-1
Project Vicinity and Study Area

Mokulmne Watershed Routine Maintenance Project, *Initial Study/Mitigated Negative Declaration*



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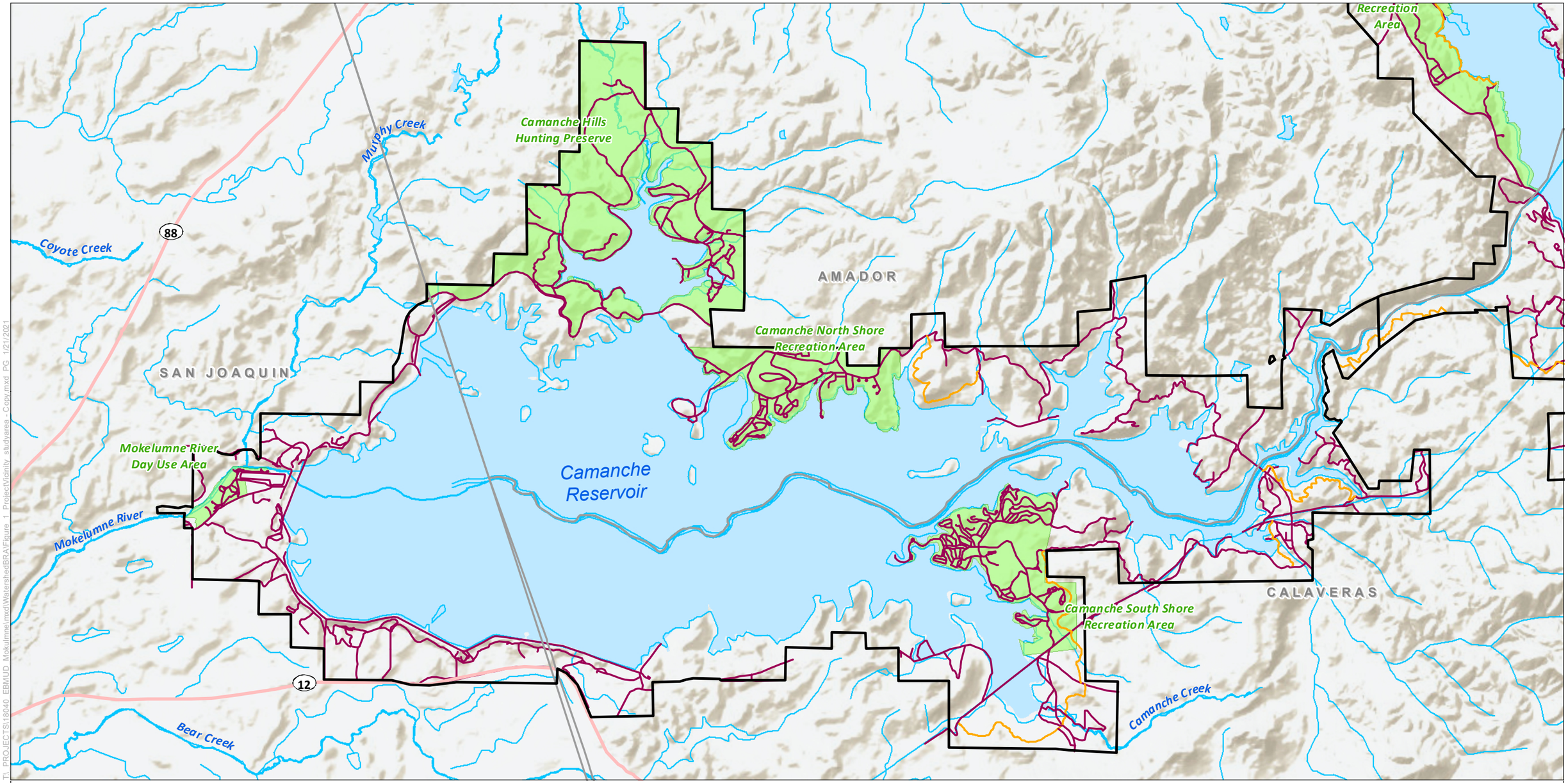

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Prepared by:
Horizon WATER and ENVIRONMENT
Prepared for:
EBMUD

Source: ESRI 2018, EBMUD 2021

Project Features

- EBMUD Mokelumne Watershed Boundary
- County Boundary
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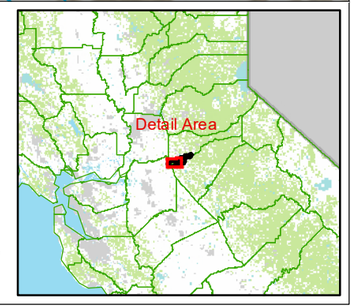
Figure 2-1
Project Vicinity and Study Area

Mokulmne Watershed Routine Maintenance Project, *Initial Study/Mitigated Negative Declaration*



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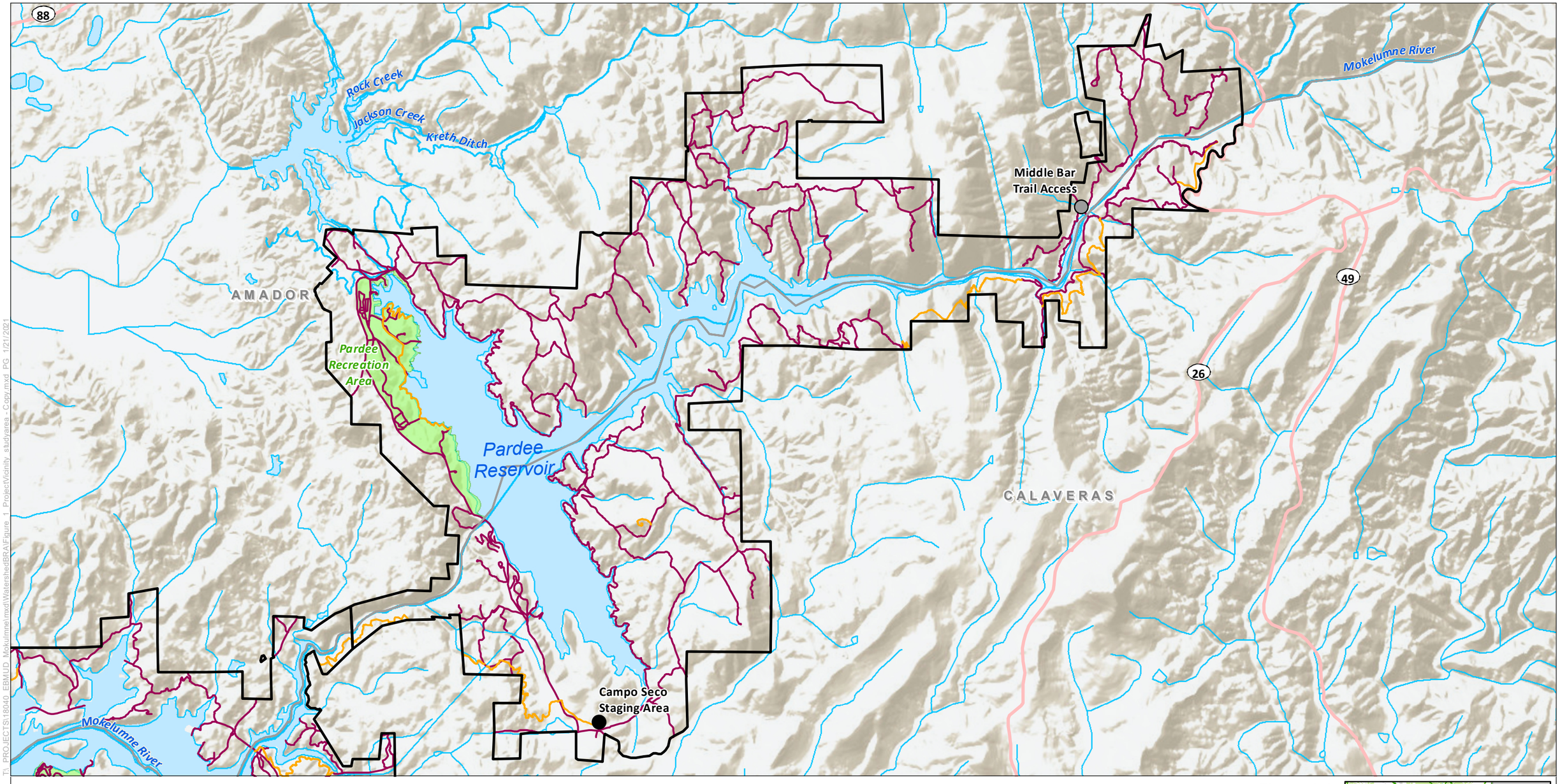

Project Features

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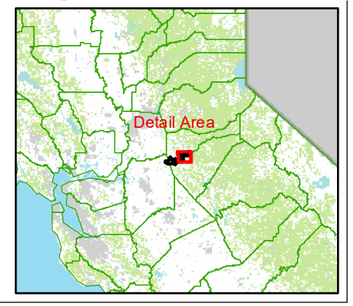
Figure 2-1
Project Vicinity and Study Area

Mokulmne Watershed Routine Maintenance Project, *Initial Study/Mitigated Negative Declaration*



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2.1.2 Overview of Maintenance Approach

EBMUD performs routine maintenance activities to both maintain the health of the Mokelumne Watershed and the functional and structural integrity of its infrastructure. EBMUD's watershed stewardship and facilities maintenance approach is based on having a comprehensive understanding of site-specific functions and processes, and the natural and aquatic resources at the location where maintenance is required. Understanding these resources, their locations, and how they interact guides EBMUD on where, when, and how routine maintenance activities should occur. As such, habitat and ground disturbance associated with maintenance activities is limited and small in scale at each individual maintenance site.

EBMUD's routine maintenance includes the following categories of activities:

- *Sediment and Debris Removal* - Removal of debris, sediment, vegetation, rubbish, downed trees, beaver dams, and other material that could obstruct the natural flow in reservoirs, ponds, channels, culverts, or obstruct use of roads, trails, utility lines, rights-of-way (ROWs), walkways or access to EBMUD's facilities.

- *Vegetation Management* - Control of aquatic and bankside weeds, grasses, woody vegetation, nuisance and invasive species in reservoirs, ponds, channels, banks, fence lines, roads, trails, walkways, utility lines, and ROW. Vegetation management also includes the manual and mechanical removal of vegetation within established fire breaks, shaded fuel breaks, and upland habitats. Habitat restoration and enhancement activities fall under this category, including replanting, new planting, hydroseeding, hand broadcast seeding, mechanical seeding, and maintenance of plantings.

- *Facilities Maintenance* - Maintenance, repair and placement of culverts, low water crossings drainage and erosion control structures (e.g., gates, barricades, bridges), fish barriers, boat ramps, trails, walkways, utility lines, and roads. Other EBMUD facilities that may require routine maintenance include water treatment and distribution facilities, wastewater treatment/disposal facilities, dams, and drainage systems. Activities also include washing and painting of weirs, outlet structures, drains, bridges, pipeline crossings, and spring boxes, as well as occasional spring box repair and replacement utilizing wildlife-friendly designs.

- *Erosion Prevention, Control, Repair, and Protection* – Erosion prevention, control, repairs, stabilization of levees, streambanks, roads, trails, utility lines, ROW, and infrastructure.

- *Environmental Stewardship* – Removal of aquatic and bankside plant and animal species that are invasive (e.g., American bullfrog) and noxious (i.e., ecologically detrimental or harmful, with potential to cause short or long-term environmental degradation) by means of physical capture, livestock, removal by hand, or mechanical treatments. Construction, repair, or enhancement of sensitive species habitat, such as ponds and debris piles, that will benefit native species. This may include planting native plant species to enhance the vegetation community in ponds, waterways, and upland habitat, increasing sensitive species numbers on EBMUD lands by habitat enhancement, and/or augmentation of the number of individuals or reintroduction to improve local population resilience.

2.2 Maintenance Activities

Routine maintenance activities at locations within the Watershed would range in scale but would involve limited environmental disturbance, typically less than one acre. While select activities may occur in multiple locations throughout the watershed (e.g., chaparral removal focusing on reduction of excessively accumulated brush, vegetation succession management, ecosystem complexity (mosaic), and roadside brush removal), disturbance would still be minimal and performed using methods to enhance habitat value to native species. Routine maintenance activities are discussed in more detail below within the following five primary categories: (1) sediment and debris removal; (2) vegetation management; (3) facilities maintenance; (4) erosion prevention, control, repair, and protection; and (5) environmental stewardship.

2.2.1 Sediment and Debris Removal

Deposited and accumulated excess sediment, vegetation, debris, and trash in the vicinity of EBMUD facilities, including culverts, bridges, and low water crossings (i.e., within 50 feet of the stream), can obstruct water flow, reduce channel capacity, accelerate erosion, damage facilities, affect dam safety, and increase the potential for flooding. In addition, debris from landslides, wildland fires, and fallen trees and vegetation intrusion can impede access to EBMUD facilities, roads, and trails. Typical annual maintenance sizes of sediment and debris removal activities would include no more than 100 linear feet in natural channels, 16,000 linear feet in modified channels, and 2,000 linear feet in engineered channels. In general, staging areas would be approximately 0.03 acre in size. The average channel width would be approximately 12 feet. The number of sediment and debris removal projects undertaken annually varies (typically between six and ten per year) and the quantity of sediment and vegetation removed in a given year depends on recent weather, hydrologic conditions, and local sedimentation conditions, as well as the frequency and extent of past maintenance activities. Approximately 105,485 linear feet of artificial earthen channels (e.g., French drains for Camanche dikes) are cleared annually, resulting in approximately 70 cubic yards (cy) of removed material. Approximately 50 cy of material are annually removed from pond facilities. Removed material primarily consists of aquatic vegetation (90%) with a small portion of sediment and/or non-vegetative debris (10%).

Equipment used for in-stream activities ranges from hand tools for digging out small accumulations of sediment or for use at sensitive locations, to mechanized equipment for larger sediment removal needs. When using mechanized equipment for in-stream work, EBMUD performs the work using either a backhoe or long-reach excavator located outside the channel on access roads. For maintenance areas where use of equipment from the top-of-bank is not feasible, in-stream sediment removal may be conducted by equipment operating directly from a non-wetted portion of the channel. If temporary access ramps are required to get equipment into the channel, the channel would be regraded and replanted following the sediment removal activities. In-channel equipment typically includes a small skid-steer or walk-behind power-shovel. Vehicles required at maintenance sites for in-stream activities typically include a pickup truck and trailer. In-stream work typically occurs three times annually and may last between two and five days.

A vacuum truck may also be used outside the channel to remove sediment from smaller culverts and pipes. Removed sediment is placed in 10 cy dump trucks (typically parked on the access road adjacent to the channel or on the stream crossing) and prepared for off-site hauling and disposal. Sediment removal from culverts and pipes typically occurs twice annually and may last up to three days. Overall disturbance associated with each project would be approximately 0.2 acre (including associated staging area).

Sediment and Debris Disposal

Removed sediment and debris would be disposed of in a location within the Watershed where it cannot enter State waters (i.e., at least 100 feet away from State waters). Fine to medium sized woody debris would be removed from the sites, chipped, or placed in brush piles at least 100 feet away from State waters to be burned when atmospheric conditions are appropriate. Brush piles may also be left in place to function as wildlife cover. Chipped material would be scattered locally in surrounding uplands, or transferred to a suitable location within the Watershed. Larger woody debris would be moved to a more suitable location (e.g., storage yard), placed as wildlife habitat, or placed in piles to be burned when the atmospheric conditions are appropriate. If material is found to be hazardous, it is moved to an Environmental Protection Agency (EPA)-approved disposal site. EBMUD would perform the work using mechanized equipment such as backhoes, long-reach excavators, graders, loaders (tracked and wheeled), tracked dozers, skid steers, walk-behind power-shovels, sweepers, dump trucks (10 cy capacity), and wood chippers. Vehicles required at maintenance sites for upland activities typically include a pickup truck and trailer.

Beaver Dam Removal

Beaver dam removal or modification would occur infrequently on an as-needed basis (up to twice annually) and at a limited number of locations within the watershed. Beavers create several maintenance concerns. Beaver dams block channels, which affects the accuracy of seepage monitoring, and introduce woody and organic material into channels. In addition, as an area becomes backwatered by the beaver dam, sediment may begin to accumulate in the ponded area, further reducing flood carrying capacity and degrading in-channel habitat. At times, the water backed up from beaver dams can damage EBMUD and county roads. Maintenance activities would remove woody and organic debris associated with beaver dams, which would be placed in upland areas in the vicinity of the removal location so that it cannot re-enter the waterway. Woody debris would be placed by hand into piles approximately 100 feet from ponds and would be transported by truck and trailer to designated upland area sites. Earthen mounds would be formed using a dump truck (10 cy), front-end loader, and a backhoe or excavator. Additional vehicles required at maintenance sites would include a utility terrain vehicle (UTV) and two pickup trucks with trailers.

If necessary, dams would be incrementally removed under the direction of a biologist and in a manner that avoids pupping season (when young are dependent on parental care) and minimizes exposure of beavers to injury, allowing the animals to abandon the dam of their own volition. Initial dam material removal would be limited to a shallow breach in the center section up to one foot below the water surface elevation. If required, excavation would involve minimal disturbance of the natural bottom of the channel, which would be restored to its original capacity once excavation is complete. Excavated materials may also be taken to the nearest landfill for disposal, as needed. If EBMUD deems it feasible, a water-controlling device (such as a “Pond Leveling Device”) may be installed to maintain lower water levels. Beaver dam removal or modification activities would only occur on waterways that are inaccessible to Central Valley steelhead due to lack of connectivity to navigable waters. Therefore, beaver dam removal would be limited to drainage ditches below Dikes 1-6 of Camanche dam and at Murphy Creek, and drainages above Camanche Dam that are inaccessible to anadromous fish, when necessary. The average size of the beaver dams removed is approximately 12 by 3 feet (or 36 square feet), resulting in an impact area of approximately 0.75 acre per site.

2.2.2 Vegetation Management

The type of vegetation management and removal activities would be relatively consistent from year to year, though locations and quantity of material removed may change depending on rainfall, foliage growth, plant mortality, and debris flows.

Riparian Habitat

Vegetation management activities within riparian habitat zones would include the targeted trimming, mowing, pruning, and removal of weeds and grasses, woody and herbaceous plants, fallen trees, dead trees (in danger of falling in or across an access point), trees deemed a potential public safety hazard, and trunks or limbs immediately adjacent to walkways, roads, and shoulders. Tree removal typically occurs when there is a public safety hazard. The average number of trees removed from riparian zones would be approximately five per year; however, this number may increase during prolonged drought periods. Vegetation management activities would be conducted to maintain flow conveyance capacity and facility access, prevent loss of habitat and erosion, control invasive vegetation, and improve habitat for native species. Fallen trees and woody debris would also be removed from within streambeds, ponds, and reservoirs to both maintain flow conveyance capacity and reduce boating hazards. On average, vegetation removal in riparian areas impacts approximately 0.5 acre per year. Overall, targeted vegetation management activities would occur up to twice annually and last one to two days.

In general, both hand tools and heavy equipment would be used for riparian vegetation management activities. While heavy equipment would not normally be operated below the ordinary high water mark, such equipment may occasionally be needed to remove in-stream vegetation and sediment. Equipment typically utilized for these activities would include a flail mower, backhoe/excavator, man-lift, skid-steer loader, or rubber-tracked excavator. Vehicles required at maintenance sites would include UTVs, utility trucks, and pickup trucks with trailers.

Targeted livestock grazing may be used for riparian vegetation management if sensitive species are not present. Livestock grazing would be conducted to control growth of herbaceous weeds, brush, and non-native plants, remove excessive accumulation of brush to achieve a mosaic pattern and enhance habitat diversity and value for native species, and for fuel management and fire risk reduction purposes. Grazing entails the use of livestock to provide non-targeted weed control in a particular area. Typically, herds of around 20 cattle (and at times sheep or goats) graze up to 80 acres at a time. Grazing animals would be excluded from channels and other water sources to prevent erosion and protective fencing is installed prior to any grazing activities. This activity is typically performed in late spring or early summer when vegetation is palatable to the grazing animals. Two pickup trucks and two stock trailers would be required to transport livestock to and within the Project area.

EBMUD has found that selective grazing is beneficial in areas that are hard to reach or have fragile soils. Livestock would be closely monitored and removed once the desired results are obtained; fragile areas and desirable vegetation would also be protected using temporary exclusion fencing (e.g., electric fencing). Targeted grazing in riparian areas (i.e., done with the intent of removing invasive or noxious plant species) would occur up to two times per year, lasting one to two weeks, and impacting approximately 0.5 acre per grazing area. Existing target residual dry matter (i.e., thatch) guidelines according to slope are listed below.

- Flat Slopes (0-10%) 300 Pounds/Acre
- Medium Slopes (10-20%) 400 Pounds/Acre

- Moderate Slopes (20-40%) 500 Pounds/Acre
- Steep Slopes (>40%) 600 Pounds/Acre

Upland Habitat

Vegetation management activities in the upland habitat areas would be conducted to reduce wildfire fuel loads, reduce noxious species, improve grazing habitat, reduce woody plant density, and enhance habitat for special-status species. Management may involve mowing, discing, trimming, or removal (complete or partial) of bankside grasses, shrubs, trees deemed a public health hazard, nuisance and invasive species in banks, roads, trails, walkways, utility lines, ROW, and recreation areas. The average number of trees removed from upland habitat areas would be approximately five per year; however, this number may increase during prolonged drought periods.

Targeted livestock grazing may be used for upland vegetation management and habitat improvement to benefit native species (e.g., burrowing owl and California tiger salamander), if sensitive species are not present or are unlikely to be directly affected by grazing animals at the time. On average, these activities would occur one to two times annually and would last up to four weeks, impacting approximately 0.5 acre per grazing site.

In order to establish or maintain fuel breaks and remove ladder fuels along trails, around facilities, or along Watershed boundaries where adjacent private properties could be at risk, a defensible space buffer up to 100-foot wide would be maintained. Where dead, decaying, or fallen trees present a hazard to trails and park facilities, removal would occur within 200 feet of Watershed facilities. Mowing would occur when overgrown weeds and other grasses encroach on trails or other recreational facility. Tree removal would be necessary if a particular tree has created a public safety hazard along or near EBMUD maintained facilities and the situation cannot be remedied by limbing or pruning of the tree.

EBMUD typically uses seasonally timed mowing, discing, and hand removal to reduce large areas of herbaceous noxious weeds such as barbed goatgrass (*Aegilops triuncialis*), medusahead (*Taeniatherum caput-medusae*) and yellow star-thistle (*Centaurea solstitialis*). Discing for maintenance of existing fire breaks would cover approximately 29.6 acres of annual grassland habitat per year. Maintenance mowing activities in the Camanche Hills Hunting Preserve, primarily consisting of blue oak woodland habitat, would amount to approximately 170 acres annually. Additionally, maintenance mowing along roads and trails would cover approximately 108 miles, and would occur in the following habitat types: annual grassland (43 miles), blue oak woodland (25 miles), blue oak-foothill pine woodland (14.75 miles), chemise red shank chaparral (9 miles), mixed chaparral (6.25 miles), interior live oak (9 miles), and ponderosa pine forest (0.5 mile). Controlled burns also have been employed during the summer and fall periods to control noxious weeds, annually averaging approximately 15 acres total; however, this fuel management activity is separately reviewed and permitting as part of EBMUD's Integrated Pest Management program, which is not a part of the Proposed Project.

For the removal of large stands of shrubs, hand tools, livestock, or mechanical masticators would be used. Chainsaws would be used to remove or trim trees, branches, and snags when deemed to be a risk to public safety or facilities and infrastructure. Standing trees and snags would typically be felled while smaller, more flammable material would be removed. Larger woody debris would be left in place to function as wildlife habitat unless it would interfere with operation of EBMUD facilities and infrastructure, or pose a hazard to people and wildlife. In such cases, the large woody debris would be cut into manageable pieces and removed by hand, chipped, and either used on site as mulch or taken to a green waste recycling

center. In the latter case, debris would be removed using backhoes or rubber-tracked excavators, which would require additional trucks and equipment trailers.

On average, vegetation management activities in upland areas would occur once annually and would last 2-3 weeks. Typical equipment used for trimming, mowing, discing, fuel break activities would include hand tools, a backhoe/loader, flail mower, excavator, man-lift, skid-steer, masticator, and bulldozer with a disc attachment. Vehicles required at maintenance sites would include UTVs, pickup trucks and equipment trailers.

Chaparral - Vegetation management within chaparral habitat would include similar maintenance activities (e.g., trimming, mowing, pruning, and removal of weeds and grasses, woody and herbaceous plants, fallen trees, dead trees, etc.), equipment, and vehicles as would occur in riparian zones. The average number of trees removed from the chaparral would be approximately five per year; however, these activities would be more expansive in scope, covering approximately 15 acres annually, including brush removal and mowing activities along EBMUD roads and trails. Typically, activities in chaparral occur twice annually, lasting one to two weeks. Known locations of the federally listed Ione manzanita and suitable soils would be excluded from vegetation management activities.

Enhancement and Restoration

Vegetation enhancement associated with habitat restoration includes removal of previously mentioned vegetation types (e.g., barbed goat grass, yellow star-thistle, medusahead, cattails, and bulrush) and replanting with native vegetation plugs or container stock, hydroseeding, hand broadcast seeding, or mechanical seeding. Native vegetation would come from native plant materials collected within 100 miles of the Project site, within similar habitat, excluding any plant materials from counties known to have Phytophthora occurrences. Nurseries from counties known to have Phytophthora must document that they employ Phytophthora-specific best management practices (BMPs) (Phytophthoras and Native Habitats Work Group 2020) and implement strict practices (per the Department of Agriculture's "Nursery Industry Best Management Practices for *Phytophthora ramorum*") to prevent the spread of this pathogen. On average, approximately 1.5 acres of annual grassland habitat and 1.5 acres of riparian zone are restored annually.

2.2.3 Facilities Maintenance

EBMUD maintains, repairs, or replaces in-kind various Watershed facilities and critical infrastructure, including existing, but deficient, drainage and erosion control structures, access roads, recreational facilities, and water and wastewater facilities.

Low water crossings and culverts within the Watershed would require routine repair or in-kind replacement due to accumulation of sediment, material deterioration, damaged headwalls, erosion during heavy flows, or incidental damage. Typically, culverts range in size from 6 to 48 inches in diameter, though may be up to 60 inches. Old culverts are usually made of corrugated steel, which would be replaced with high-density polyethylene (HDPE) pipe utilizing open-cut installation. Damaged culverts would be repaired through the use of sleeves, if feasible, in lieu of complete replacement.

As part of the routine maintenance activities, sediment would be removed from crossings and culverts, clean gravel would be placed at low water crossings, and rip-rap at the inlet and outlet points of culverts would be replaced. The extent of rip-rap placed at each end of the culvert would generally be less than 500 square feet. On average, three culverts are replaced annually. The typical culvert size is 24 inches in diameter and 11 feet in length. Equipment on site generally would include hand tools, a

backhoe/excavator, dump truck (5 cy) with trailer, vacuum truck, and two pickup trucks. Culvert replacement typically takes one day and the average size of the impacted area, including staging areas, is approximately 0.02 acre. Maintenance at low water crossings typically occur once annually and consists of apron repair or replacement. These activities generally take one day and the average size of the impacted area, including staging areas, is also 0.02 acre. Equipment on site would include a backhoe/excavator, dump truck (10 cy) with trailer, front-end loader, concrete truck, and two pickup trucks.

Additional infrastructure requiring routine maintenance would include, but would not be limited to: storm drain outfalls, slide gates, revetments, energy dissipaters, grade structures, spring boxes, sediment basins, weirs, trash racks, stream gauge structures, fish ladders, fish screens, fish barrier fences, utility line crossings, bridges (including support structures), road embankments, boat ramps, low water access points, and access ramps. Minor concrete work may be performed as a routine activity for the repair and in-kind replacement of low water crossings, small retaining structures, bridge abutments, and boat/access ramps. Routine work on road embankments and access ramps could also include placement of compacted back fill and loose, clean, native rock rip-rap around support structures. Routine work near mobile home parks within the Watershed may include repair or replacement of water/wastewater lines or valves; auger, jet or vacuum of wastewater lines, cutting and replacement of asphalt, miscellaneous maintenance at wastewater ponds adjacent to homeowners, mowing, and landscape maintenance. Other routine work may include ditch cleaning, clearing of backwash discharge outlets, and maintaining manhole access areas.

Other EBMUD facilities that may require routine maintenance include water treatment and distribution facilities (e.g., water distribution lines, gravity sewers, and force mains), backwash ponds/watercourses, wastewater treatment/disposal facilities, wastewater ponds, spray fields, skimmer and evaporation ponds, dams, dikes and spillways, drainage systems and associated infrastructure (e.g., piezometers, measuring weirs, and canals), hydropower facilities, and the Mokelumne River Fish Hatchery.

Maintenance and repair of the aforementioned facilities and infrastructure would occur at a maximum of 8 sites annually. In total, these activities may take up to two weeks to complete, with an average impact area of approximately 1 acre annually. The range of equipment on site for facilities maintenance may include hand tools, a vacuum truck, backhoe/excavator, front-end loader, bulldozer, skid-steer, sweeper, grader, gas-powered pump, dump truck (10 cy) with trailer, concrete truck, and pickup trucks. For maintenance involving maintenance work and/or utility repairs near residences and mobile home parks, equipment on site would typically include a backhoe, excavator, or concrete saw used for concrete removal, chainsaws, string trimmers, wood chippers, and mowers (push and ride-on).

Finally, EBMUD may also clean, wash, and paint structures, provided containment measures are used to prevent deleterious material from entering state waters and avoid adverse impacts to fish and wildlife resources. Containment measures could include check dams, catch basins, inlet screen/filter, sediment traps/bags, soil stabilization using hydro seeding, mulch, and jute netting and wattles. Lead reclamation may also be associated with these activities. Typically, cleaning, painting and reclamation would occur at a maximum of one site annually, with maintenance activities lasting approximately 2-3 days.

2.2.4 Erosion Prevention, Control, Repair, and Protection

The repair and stabilization of banks is undertaken when a bank is weakened, unstable, or failing. If left untreated, eroding or failing banks can cause damage to adjacent properties; increase the flood hazard and threaten public safety; threaten and impair roads, transportation, and access; generate erosion and increase downstream fine sediment yields that impact channel integrity and water quality; and impact other natural resources. Banks would be repaired and stabilized by reshaping and placing rip-rap or other energy

dissipating material to address these issues and prevent further degradation of stream conditions. Bank repair activities would occur in both natural and engineered channels and in reservoirs.

The placement of earthen fill, installation of rocks, replacement and repair of existing eroded rip-rap would be conducted to control erosion on channel, levee, historical sites, and reservoir banks. Stabilization of the channel would occur using vegetation (willow wattles and native perennial grasses), biodegradable erosion blankets, and native shrubs and other grasses. In areas that experience annual high erosion, rip-rap may be placed with willows and native perennial grasses to further provide stabilization. If the bank needs to be rebuilt, clean fill would be used, either sourced on-site or imported from nearby local sources. Bank stabilization areas are typically less than 100 feet along channels, levees and reservoirs, and are approximately 10 feet wide. On average, bank stabilization would occur at one site per year, with a maximum of five sites annually. Channel bank stabilization repairs typically require 3-5 days to complete.

Bank stabilization repairs would be confined to an area that would not exceed 20 feet beyond (landward of) the failed or failing bank or structure, and care would be taken to disturb the least amount of vegetation feasible, including mature trees. Bank stabilization activities primarily involve the use of biotechnical methods to stabilize eroding banks. Bioengineering techniques, such as brush walls, would be used to provide structural stability to channel banks. If bioengineering techniques are not feasible due to site conditions (e.g., poor soils, excessive percolation of water, limited space, or steepness of slopes) other methods would be used such as interlocking polyvinyl chloride (PVC) pilings. Rip-rap would be used if no other method is determined to be feasible or effective in repairing bank and preventing erosion. Additionally, if temporary drawdown of pond water is necessary to conduct bank repairs, such activities would be timed to avoid sensitive periods (egg and larval stages) of native salmonids (for sites below the dam), amphibians, and reptiles.

Equipment used for bank stabilization activities typically includes a backhoe/excavator, dump truck (10 cy) with trailer, two pickup trucks, and a front-end loader (as needed). In general, this equipment would be used outside the channel; however, depending upon the location and extent of the repair a skid-steer loader or rubber-tracked excavator could be needed in non-wetted portions of the channel. Staging for repair activities would occur on adjacent access roads. Soil and rip-rap would be staged in areas that have been previously disturbed (i.e., access service road, turn-outs, etc.). Overgrown vegetation at bank failure sites would only be removed to the extent necessary to repair the bank.

2.2.5 Environmental Stewardship

Among the key priorities for Watershed management is the enhancement of historically occurring native special-status species, which is conducted in cooperation with both USFWS and CDFW. Special-status species habitat enhancement may involve the restoration or maintenance of associated native vegetation, re-establishment or enhancement of breeding habitat and/or structures, construction of earthen mounds or debris piles, introduction of native species to bolster the genetic diversity and numbers of occurring special-status species, or reintroduction of historically occurring special-status species. Habitat enhancement within the Watershed would also include the temporary draining of ponds to discourage invasive species (e.g., removal of bullfrogs and predatory fish), physical management of vegetative habitat to return water features to the historical seasonal dry periods, installation of beaver dam analogs (BDAs) to improve habitat for native amphibians and reptiles, and fish habitat enhancement and replenishment of substrate to maintain spawning habitat.

Pond draining for invasive species removal would occur approximately 5 times annually and would involve the use of hand tools and a gas-powered pump (with 1/8-inch screened intake) and 3 siphons (at a

maximum). Vehicles required at maintenance sites would include a UTV and pickup truck and equipment trailer. Placement of BDAs and fish spawning structures would occur approximately twice annually and would involve the use of hand tools, a rubber-tired front-end loader, backhoe/excavator, and dump truck (10 cy), and would occur outside of the spawning season of native fish and amphibians (typically summer and early fall). Vehicles required at maintenance sites would include a UTV and pickup truck and equipment trailer. On average, these activities would disturb up to 0.5 acre annually.

2.3 Activities Not Covered Under the Proposed Routine Maintenance

Activities not covered under EBMUD's proposed routine maintenance include:

- Major Capital improvement projects (CIPs),
- Maintenance activities that would alter the designed flood conveyance capacity of a channel;
- Controlled burns (beyond pile burning);
- Application of pesticides and herbicides; and
- Emergency activities and procedures.

A situation is considered an "emergency" if it is a sudden, unexpected occurrence involving a clear and imminent danger that demands immediate action to prevent or mitigate loss of or damage to life, health, property, or essential public services (Public Resource Code [PRC] Section 21060.3). Emergency work would be conducted in accordance with F&G Code Section 1610.

2.4 Project Implementation

2.4.1 Work Cycle

Proposed maintenance activities would be conducted throughout the year as required to maintain the functional, structural and biotic integrity of Watershed property and facilities. The timing for implementing activities would vary based on the type of activity, as described in Section 2.2 above. Routine maintenance activities would be conducted in accordance with the CDFW permitting and reporting requirements of Region 2, and EBMUD Standard Best Management Practices (see Section 2.5 below).

2.4.2 Timing of Work

Work within watercourses, culverts and/or banks (e.g., sediment and debris removal, culvert repair and replacement, or bank repairs) typically would be conducted between April 15 and October 15 when watercourses are their driest. All non-ground disturbing maintenance activities (e.g., targeted goat grazing, vegetation management, and facilities maintenance) occurring outside of any creek or drainage also would typically take place between April 15 and October 15. Removal of debris necessary to prevent an imminent flooding threat may occur year-round.

Hand removal activities (i.e., pruning and vegetation removal) may be conducted year-round. Removal of large wood, such as downed or dead trees or branches within watercourses would generally be conducted during the dry season (June 1 to October 15).

Work Hours and Crew Size

Maintenance activities would typically occur between 7:00 a.m. and 5:00 p.m., Monday through Friday, with an exception for emergencies. Trucks and personnel may arrive at individual sites for minor coordination and preparation tasks after 7:00 a.m., but maintenance activity that generates loud noise would not commence until 8:00 a.m. when in the vicinity of residences or other sensitive receptors. A typical eight-hour workday between Monday and Friday serves as the basis of estimated maintenance activity durations in this Initial Study/ Mitigated Negative Declaration (IS/MND). Crew size for maintenance activities would typically consist of three to four staff, but could be up to 20 staff members for vegetation management activities in upland habitat areas.

2.4.3 Equipment

The specific pieces of equipment used for the Project maintenance activities would vary depending on the facility and type of maintenance activity required, but may include the following:

- Hand tools (i.e., shovels, rakes, loppers, and hand saws)
- Chainsaws
- Wood chipper
- Excavator
- Bulldozer
- Dump trucks and trailers
- Backhoe
- Skid-steer
- Walk-behind power-shovel
- Grader
- Loader
- Tracked dozer
- Sweeper
- Vacuum truck
- Flail mowers
- Front-end loader
- Mechanical masticator
- Man-lift

Equipment would be stored at maintenance yards when not in use and following the completion of maintenance activities.

2.4.4 Maintenance Site Access

Access roads parallel or occur near most of the infrastructure in Mokelumne Watershed and provide access to locations and facilities that routinely require maintenance. Access roads are mainly graded dirt roads, some of which may have a layer of road base (e.g., compactable structural fill material) underlying the dirt. Creek crossings are primarily culverted but may also include bridges and concrete low water crossings.

2.4.5 Construction Staging and Work Area Limits

Equipment and vehicle staging areas would vary by maintenance activity type and location, but would be consistent with the limited scale of existing maintenance practices. In general, equipment and materials staging would occur within 100 feet of each maintenance site, alongside Watershed roads or access roads. Typically, construction equipment and vehicles would be staged for no more than 5 days at a time as most maintenance activities would be completed within one to five workdays. The work space needed for construction staging would typically be 20 feet by 75 feet in size.

Work area limits within jurisdictional drainages and other waterbodies would vary depending on the maintenance activity, as described in Section 2.2 above, but in all cases would be small in scale at each individual maintenance site.

2.4.6 Temporary Water Diversions

Temporary water diversions, including pumping associated with dewatering ponds, may be required for in-channel maintenance activities described above, such as sediment and debris removal (e.g., vegetation) as well as non-native predator removal. When necessary, temporary water diversions would either use cofferdams, typically less than three feet in height, or sumps, with or without pumps, to divert water away from the work area. All water would be directed to a clear water diversion, silt control structure, or adjacent uplands as appropriate, prior to entering back into the channel or waterbody. After the maintenance activity is complete, the channel or waterbody would be restored to its original configuration.

2.4.7 Site Restoration

Following sediment removal activities, maintenance sites would be restored through regrading to re-establish the site's original grade, and then replanting. However, at times the removal of thick stands of cattails and bull rushes are included in sediment removal activities to facilitate the movement of water. Replanting would not occur in these instances. Restoration of bank stabilization sites would primarily involve the use of bio-engineering methods (e.g., installation of brush walls) to stabilize eroding streambanks through planting and seeding. Additional restoration actions would include grading/sloping pond banks to manage invasive species, enhancing hydroperiod to benefit native species, as well as placing control structures (e.g., weirs and beaver dam analogues [BDA]) to maintain water levels, deflection devices to protect pond and stream banks, and measuring devices to monitor flows, temperature, and dissolved oxygen levels.

2.5 EBMUD Practices and Procedures, BMPs, and Guidelines

EBMUD has incorporated into the Project various BMPs for its routine maintenance activities in the Watershed, including Mokelumne Watershed Routine Maintenance Standard Practices related to emissions control and noise control practices, General Site Operation BMPs, and guidelines from the Mokelumne Watershed Management Plan (MWMP) Specific Project Environmental Review Guide (EBMUD 2008). Practices and guidelines that pertain to the proposed Project are discussed below and listed in Table 2-1. These standard BMPs are not project-specific or tailored to the Project, and are instead designed to address typical characteristics of EBMUD projects and are applicable to all projects implemented in the Mokelumne Watershed. The General Site Operation BMPs originated in a prior LSAA and are consistently implemented by EBMUD.

2.5.1 Mokelumne Watershed Routine Maintenance Standard Practices

EBMUD has incorporated into the Project certain standard practices and procedures (i.e., Environmental Requirements) that are designed to address typical characteristics of Mokelumne Watershed routine maintenance projects and are not project-specific or tailored to the unique characteristics of the Project. These standard practices, which are applicable to all EBMUD projects, reflect generally applicable EBMUD standard operating procedures. Table 2-1 contains the relevant practices and procedures that pertain to the proposed Project by resource topic.

2.5.2 General Site Operation Best Management Practices

Under its now-expired LSAA with CDFW Region 2, EBMUD required the implementation of General Site Operation BMPs for all maintenance activities performed within the Mokelumne Watershed to reduce potential adverse effects on biological resources. EBMUD would continue to implement these BMPs (See Table 2-1) under the new LSAA EBMUD seeks to obtain for the Project.

2.5.3 Mokelumne Watershed Management Plan Specific Project Environmental Review Guide

EBMUD's Programmatic Environmental Impact Report (PEIR) for the MWMP includes a Specific Project Environmental Review Guide to address potential impacts from projects that may not have fully been addressed in the PEIR, and to determine whether specifications or standard practices incorporated into a project will ensure that impacts remain less than significant. Relevant guidelines from the Review Guide that pertain to the proposed Project are included in Table 2-1 by resource topic.

Table 2-1: EBMUD Practices and Procedures, BMPs, and Guidelines

Environmental Resource Topic	Mokelumne Watershed Routine Maintenance Standard Practices
Air Quality, Energy, & Greenhouse Gas Emissions	
Mokelumne Watershed Emissions Control Standard Practices	1. Ensure that line power is used instead of diesel generators at all construction sites where line power is available. 2. Ensure that for operation of any stationary, compression-ignition engines as part of construction, comply with Section 93115, Title 17, California Code of Regulations, Airborne Toxic Control Measure for Stationary Compression Ignition Engines, which specifies fuel and fuel additive requirements as well as emission standards. (Applies to Air Quality only). 3. Fixed temporary sources of air emissions (such as portable pumps, compressors, generators, etc.) shall be electrically powered unless the Engineer determines that the use of such equipment is not practical, feasible, or available. All portable engines and equipment units used as part of construction shall be properly registered with the California Air Resources Board or otherwise permitted by the appropriate local air district, as required. 4. Implement standard air emissions controls such as: a. Minimize the use of diesel generators where possible. b. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes as required by the California Airborne Toxics Control Measure (ATCM) Title 13, Section 2485 of California Code of Regulations. Clear signage shall be provided for construction workers at all access points. c. Follow applicable regulations for fuel, fuel additives, and emission standards for stationary, diesel-fueled engines. (Applies to Air Quality and Energy only). d. Locate generators at least 100 feet away from adjacent homes and ball fields to the maximum extent practicable. (Applies to Air Quality and Energy only). e. Perform regular low-emission tune-ups on all construction equipment, particularly haul trucks and earthwork equipment. (Applies to Air Quality only). 5. Implement the following measures to reduce greenhouse gas emissions from fuel combustion: a. On road and off-road vehicle tire pressures shall be maintained to manufacturer specifications. Tires shall be checked and re-inflated at regular intervals. b. Construction equipment engines shall be maintained to manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

	c. All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of Oxide of Nitrogen (NOx) and Particulate Matter (PM), consistent with EBMUD's 2021 Climate Change Action Plan. (Applies to Air Quality only). d. Demolition debris shall be recycled for reuse to the extent feasible. (Applies to Air Quality only).
Hazards and Hazardous Materials	
Hazardous Waste Removal (EBMUD Procedure 711)	The purpose of this procedure is to define hazardous waste and establish responsibilities for removal of hazardous wastes from District facilities. Responsibilities are delineated as follows: <u>The Unit Supervisor or Project Manager (or his/her designee)</u> • Determines if the Waste is a Hazardous Waste, either with assistance from the Environmental Compliance Section (ECS) or based on knowledge. • Contacts ECS staff to coordinate Waste disposal, reuse, or recycling issues. • Provides all known information about the Waste asked for by the ECS. • Assists in the determination of the analyses to be performed by the District Laboratory or other certified laboratory based on his/her knowledge of the Waste. • Labels, stores, inspects, and maintains inventory records for the Waste in an appropriate manner as directed by ECS. • Ensures that Waste is available for transportation when notified by the ECS that Waste collection is scheduled. • Helps the ECS coordinate interim storage of non-routine Hazardous Waste while it is being characterized for disposal. • Reviews Hazardous Waste manifests prepared by haulers, to confirm the accuracy of information. • Signs the Hazardous Waste manifest indicating approval if authorized and trained by ECS. • Sends the signed Generator copy of the manifest to the ECS within seven (7) days of the off-haul date, unless previous agreement has been made with ECS and the hauler to send Generator copy directly to ECS. • Provides the ECS with a budget unit number and a job number. <u>Environmental Compliance Section</u> • Coordinates the appropriate steps to characterize the Waste. • Determines, with the help of the requesting department, what analyses are needed to classify the Waste. • Works with the District Laboratory and/or the Hazardous Waste contract hauler to analyze the Hazardous Waste or to assist in identifying other labs certified to perform the analysis.

	• Obtains Hazardous Waste acceptance documents (e.g., waste profile) from disposal facility and provides to generating department to be included with Hazardous Waste shipment, as needed. • Identifies and approves disposal, reuse or recycling method and disposal, reuse, or recycling facility. • Obtains and provides EPA generator identification number. • Identifies and/or manages companies providing Hazardous Waste management services (for sampling, hauling, and disposal) depending on District departmental needs. • Provides training and guidance to unit or project staff on Hazardous Waste handling and disposal requirements and Hazardous Waste manifest completion requirements. • Reviews completed and signed Hazardous Waste manifests prior to submittal to Department of Toxic Substances Control. • Tracks manifest in a database and generates reports and summaries as needed. • Provides other information as needed.
Noise	
Noise Control	A. Comply with sound control and noise level rules, regulations and ordinances as required herein and in the CEQA documents which apply to any work performed pursuant to the contract. B. Take appropriate measures, including muffling of equipment, selecting quieter equipment, erecting noise barriers, modifying work operations, and other measures as needed to bring construction noise into compliance. C. Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated on the project without said muffler. D. Best available noise control techniques (including mufflers, intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) shall be used for all equipment and trucks, as necessary. E. Truck operations (haul trucks and concrete delivery trucks) will be limited to the daytime hours. F. Stationary noise sources (e.g., chippers, grinders, compressors) shall be located as far from sensitive receptors as possible. If they must be located near receptors, adequate muffling (with enclosures) shall be used. Enclosure opening or venting shall face away from sensitive receptors. Enclosures shall be designed by a registered engineer regularly involved in noise control analysis and design. G. Material stockpiles as well as maintenance/equipment staging and parking areas (all on-site) shall be located as far as practicable from residential receptors. H. If impact equipment (e.g., jack hammers, pavement breakers, rock drills etc.) is used during project construction, take appropriate measures, including but not limited to the following: 1. Hydraulically or electric-powered equipment shall be used wherever feasible to avoid the noise associated with compressed-air exhaust from pneumatically powered tools. However, where use of pneumatically powered tools is

	unavoidable, an exhaust muffler on the compressed-air exhaust shall be used (a muffler can lower noise levels from the exhaust by up to about 10 dB). External jackets on the tools themselves shall be used, where feasible, which could achieve a reduction of 5 dB. Quieter procedures, such as drilling rather than impact equipment, will be used whenever feasible. Implement any mitigations necessary to meet applicable noise requirements. 2. Impact construction shall be limited to the daytime hours. 3. Erect temporary noise barriers around the construction site, particularly along areas adjacent to residential buildings. 4. Limit the noisiest phases of construction to 10 work days at a time, where feasible. 5. Notify neighbors/occupants within 300 feet of project construction in advance of extreme noise generating activities about the estimated duration of the activity.
Environmental Resource Topic	**General Site Operation Best Management Practices**
Biological Resources	
	• The project site will be surveyed by a qualified botanist or biologist for the presence of Species of Special Concern (SSC) within 14 days of the project start date. • Prior to working within the District watershed, all equipment will be checked and maintained daily, to prevent leaks of materials that if introduced to water could be deleterious to aquatic life. Petroleum products, or any other substances which could be hazardous to aquatic life, resulting from project related activities, will be prevented from contaminating the soil and/or entering the waters of the state. • Care will be taken not to introduce invasive species during the project. Equipment will be free of seeds and any erosion control material used will be certified weed free. • Staging and equipment storage areas will be established away from waterways. All equipment, maintenance materials and other items considered to be pollutants will be stored away from water systems. All spills of hazardous materials, petroleum products or other pollutant materials will be reported immediately to the appropriate agency without delay. • Care will be taken not to disturb or remove the non-targeted terrestrial and aquatic vegetation and sediment necessary to complete operations. • All exposed/disturbed terrestrial areas and access points left barren of vegetation, as a result of the activities, shall be restored to its natural state by seeding with a blend of native and non-native erosion control grass seeds approved by the District biologist. Re-vegetation shall be completed as soon as possible after construction activities cease in those areas. If needed, the seeded areas may be covered with a wildlife friendly erosion resistant covering. Product with plastic monofilament or cross joints in the netting that are bound/stitched (such as found in straw wattles/fiber rolls and some erosion control blankets), which may cause entrapment of wildlife, shall not be used.

	• Prior to the start of the project, all personnel will be briefed on how to avoid harm to special status species and their habitat. • All food and food-related trash will be enclosed in sealed trash containers at the end of each workday and removed completely from the construction site once every three days to avoid attracting wildlife. • A speed limit of 15 mph will be maintained on dirt roads. • Hazardous materials such as fuels, oils, solvents, etc. will be stored in sealable containers in a designated location that is at least 100 feet from wetlands or drainages. If it is not feasible to store hazardous materials 100 feet from wetlands and the river channel, then spill containment measures will be implemented to prevent the possibility of accidental discharges to wetlands and waters. • Fueling, application of hydraulic oils and lubrication of equipment will occur at least 100 feet from wetlands or drainages. • Project staff is to have read the project biological assessment and associated BMPs and have them on site during all project activities. • All sections of pipe and similar construction materials stored overnight shall be visually checked for the presence of wildlife sheltering within them prior to being moved or shall have the ends capped while stored onsite so as to prevent wildlife from entering. • At the end of the daily work all excavations shall have a wildlife friendly exit ramp, with a slope of 45 degrees or less, located every 100 feet or be sealed to prevent wildlife from entering the site.
Environmental Resource Topic	**Mokelumne Watershed Master Plan (MWMP) Specific Project Environmental Review Guide**
Aesthetics	
	• **Guideline Vis-1: Evaluate possible visual impacts.** *Prior to project planning and design*, identify and evaluate aspects of the proposed project that could substantially affect the view from a scenic vista. Adverse visual impacts will be minimized to the extent feasible, consistent with the site vicinity and the purposes of the facility or action. • **Guideline Vis-2: Use materials compatible with surrounding conditions.** *During project design and development,* materials for new or replacement facilities will be selected to harmonize with surrounding facilities and the site. Facilities should be compatible with existing structures in height, bulk, surface treatments, and color. However, if a long-term replacement or upgrade program is developed, new structures should be consistent with the design guide developed for that long-term program.

Cultural Resources	
	• **Guideline Cul-1: Prepare an inventory of known or suspected historical, archaeological, or paleontological resources.** *During project planning and design*, consult the Cultural Resource Inventory, if has been completed as part of the Geographic Information System (GIS) database.[2] If not completed, survey the area of potential effect to determine if cultural resources do or may exist. Where feasible, avoid these resources and protect them from disturbance. • **Guideline Cul-2: Consult the cultural resources inventory to determine resource location and plan the project to avoid resource impacts.** *During project planning and design*, consult the Watershed database, if available, or the project-specific survey to determine if the project would affect resources identified on the inventory. For trails or facilities that would be in close proximity to suspected or known historic or archaeological resources, implement appropriate avoidance procedures to prevent destruction of, or substantial adverse changes to, the resource. This may involve pre-construction site surveys and/or qualified construction monitors. Refer to District Best Management Practices. Develop alternatives that will avoid the resource and any associated impact. If avoidance is infeasible, consult with a qualified professional on how to proceed. • **Guideline Cul-4: If human remains are discovered, stop work and notify the coroner.** *During construction*, if human or suspected human remains are discovered all work at the location and in the vicinity will stop immediately and the County Coroner will be notified. This is standard District practice and is included as part of project specifications.
Geology and Soils	
	• **Guideline Geo-1: Evaluate the potential for landslides to affect a facility.** *During project planning and design*, if a facility is proposed to be developed on or near a slope that is sufficiently steep to create a potential landslide, have a competent geologist or geotechnical professional evaluate this risk. • **Guideline Geo-2: Control dust and runoff at temporarily disturbed sites and protect against future erosion**. *During specification development and construction*, applicable District standard practices will made applicable to the project to suppress dust and prevent erosion at disturbed sites. The potential for dust to be mobilized by wind will be controlled using water spray or other acceptable means of suppression or control on the exposed earth. Spoil or storage piles will be covered to prevent blowing dust or erosion. Effective runoff controls will be installed prior the beginning of the rainy season to prevent soil from migrating off site. Disturbed areas will be seeded with an approved seed mix of native species appropriate to the Watershed. The seed will be covered with sterile straw or other material that will hold

[2] A cultural resources resource inventory should be prepared for Mokelumne Watershed property, with priority given to areas of likely disturbance due to implementing the MWMP or subsequent program management plans. This database must be kept confidential with access restricted, in order to protect these resources from theft, disturbance, or damage.

	the seed, reduce the chance of it being eaten by wildlife, and that will not introduce non-native seed. If used, netting or mesh will be removed once the reseeded area is well established. The area of disturbance associated with a project will be minimized, consistent with the needs for project completion.
Hazards and Hazardous Materials	
	• **Guideline Haz-1: Transport, store, use, and dispose of hazardous materials according to established procedures.** *When contemplating the importation of a hazardous material* such as an herbicide or poison onto District property, District procedures will be followed strictly. The manufacturer's recommendations and applicable state and federal regulations will be followed. If procedures for transporting, storing, handling, using, and disposing of the material and its containers are not in effect, they will be established and followed with regard to the materials to be imported. The potential for upset or accident that would release hazardous materials used by or stored in any new facilities will be evaluated during project planning. • **Guideline Haz-2: Evaluate the risks of a proposed project to elevate wildfire risk or to be at risk from wildfire.** *During project planning and design*, including its use, location, and construction materials, consideration will be given to how the facility may affect wildfire risk or be affected by wildfire. Appropriate measures will be implemented to reduce this risk to acceptable levels, including relocating the facility if appropriate.
Hydrology and Water Quality	
	• **Guideline Hyd-1: Evaluate the potential for a new drainage way crossing to be damaged or to cause damage to nearby areas.** *During project planning and design*, crossings of creeks and drainage ways will be designed to allow the safe passage of water through or over the structure during larger storm events. The crossing will be designed and installed so as not to create backwater or flow diversions that would adversely affect other structures or facilities.

2.6 Permits and Approvals

Table 2-2 lists anticipated permitting and regulatory compliance requirements that are potentially applicable for the project. Potential permitting agencies include the U.S. Army Corps of Engineers (USACE), USFWS, CDFW, the Regional Water Quality Control Board (Central Valley Region), and the State Historic Preservation Office.

Table 2-2: Permits and Regulatory Requirements Potentially Applicable to the Project

Regulatory Agency	Law/Regulation	Purpose	Permit/Authorization Type
United States Army Corps of Engineers (USACE) – Sacramento District	Clean Water Act (CWA) Section 404	Regulates placement of dredged and fill materials into waters of the United States.	Nationwide or Individual Permit for project areas subject to jurisdiction
	Rivers and Harbors Act Section 10	Regulates work in navigable waters of the U.S.	Section 10 Compliance for project areas subject to jurisdiction
U.S. Fish and Wildlife Service (USFWS)/ National Marine Fisheries Service (NMFS)	Endangered Species Act (ESA)	USACE must consult with USFWS and NMFS if threatened or endangered species may be affected by the Project.	Biological Opinions issued in conjunction with USACE Section 404 compliance
USFWS	ESA	30-year agreement to provide maintenance and enhancement of ESA listed species on EBMUD Property	Safe Harbor Agreement; Incidental Take Permit
Regional Water Quality Control Board –Central Valley Region	CWA Section 401	Water quality certification for placement of materials into waters of the United States.	401 Water Quality Certification is required for federal permits
	Porter-Cologne Water Quality Control Act	Regulates discharges of materials to land and protection of beneficial uses of waters of the State.	Waste Discharge Requirements (WDRs)
CDFW –North Central Region	Fish and Game Code (F&G Code) Section 1600	Applies to activities that will substantially modify a river, stream or lake. The Agreement includes reasonable conditions necessary to protect those resources.	Notification of Streambed Alteration Agreement (1602 permit)
	California Endangered Species Act (CESA)	Applies to species legally protected as California threatened, endangered or candidate threatened or endangered.	Safe Harbor Agreement

Regulatory Agency	Law/Regulation	Purpose	Permit/Authorization Type
State Historic Preservation Officer	National Historic Preservation Act (NHPA) Section 106	USACE must consult with State Historic Preservation Officer and Native American Tribes if historic properties or prehistoric archaeological sites may be affected by the Project.	Consultation in conjunction with USACE Section 404 compliance

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CHAPTER 3
ENVIRONMENTAL ANALYSIS

1.	Project Title:	Mokelumne Watershed Routine Maintenance Project
2.	Lead Agency Name and Address:	East Bay Municipal Utility District 375 11th Street Oakland, CA 94607
3.	Contact Person:	Michelle Workman, Manager of Fisheries and Wildlife (209) 263-6350
4.	Project Location:	East Bay Municipal Utility District's Mokelumne Watershed property borders and includes Camanche and Pardee dams and reservoirs, extending from less than 50 feet (15 meters) to about three miles (4.8 kilometers) from the high-water surface elevation of Camanche and Pardee Reservoirs. It also includes the lands adjacent to the lower Mokelumne River for approximately 0.5 mile (0.8 kilometers) below Camanche Dam.
5.	Project Sponsor's Name and Address:	East Bay Municipal Utility District 375 11th Street Oakland, CA 94607
6.	General Plan Designation:	Varies by local jurisdiction
7.	Zoning:	Varies by local jurisdiction
8.	Description of Project:	Refer to Chapter 2 of this Initial Study/ Mitigated Negative Declaration
9.	Surrounding Land Uses and Setting:	Current and recent land use practices in the Mokelumne Watershed include management for water supply, flood control, grazing, aquaculture, hydroelectric power, wastewater treatment, wildland fire prevention and suppression, facility maintenance, residential use, and recreation.
10.	Other Public Agencies Whose Approval is Potentially Required:	• United States Army Corps of Engineers (Sacramento District) • United States Fish and Wildlife Service / National Marine Fisheries Service / Central Valley Regional Water Quality Control Board (Region 5) • California Department of Fish and Wildlife (North Central Region 2) • State Historic Preservation Officer

3.1 Environmental Factors Potentially Affected

The environmental factors checked below could potentially be affected by this Project, but impacts would be mitigated to a less than significant level as indicated by the checklists on the following pages.

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

3.2 Environmental Determination

On the basis of this initial evaluation:

☐ I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that, although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case, because revisions in the Project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that, although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier Environmental Impact Report pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier Environmental Impact Report, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

Michael Tognolini, Director of Water and Natural Resources

7/29/21
Date

3.3 Evaluation of Environmental Impacts and Initial Study Checklist

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an Environmental Impact Report (EIR) is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other California Environmental Quality Act (CEQA) process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D) (2017 CEQA Guidelines). In this case, a brief discussion should identify the following:

    a. Earlier Analysis Used. Identify and state where they are available for review.

    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards and state whether such effects were addressed by mitigation measures based on the earlier analysis.

    c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

   a. The significance criteria or threshold, if any, used to evaluate each question.

   b. The mitigation measure identified, if any, to reduce the impact to less than significant.

3.4 Environmental Impact Checklist

I Aesthetics

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

Discussion

a. Less than Significant Impact. A scenic vista is generally considered a view of an area that has remarkable scenery or a natural resource that is indigenous to the area. Scenic views in the vicinity of the Mokelumne watershed include views of the Sierra Nevada range, Sierra foothills, scenic ridges, rolling hillsides, and Camanche and Pardee Reservoirs.

Routine maintenance activities would be conducted within East Bay Municipal Utility District (EBMUD's) Mokelumne Watershed property, which includes the Camanche and Pardee dams and reservoirs, and the lands adjacent to the lower Mokelumne River for approximately one-half mile (0.8 kilometer) below Camanche Dam. These activities would involve the use of equipment ranging from hand tools to mechanized equipment, and would take place during daylight hours on weekdays. Routine maintenance would be temporary in nature, small in scale and duration, and would occur from within or alongside reservoirs, ponds, channels, and culverts; along roads, trails, utility lines, and EBMUD rights-of-way (ROWs); or at EBMUD recreation and infrastructure facilities within the Watershed. Accordingly, these activities would not reduce the quality of views from nearby adjacent lands. In addition, the proposed Mokelumne Watershed Routine Maintenance Project (Project) would not result in the construction of any new structures or facilities that would block surrounding scenic views. Finally, as described in Table 2-1 of Chapter 2, *Project Description*, Guidelines Vis-1 and Vis-2 from the Mokelumne Watershed Master Plan (MWMP) Specific Project Environmental Review Guide have been incorporated into the Project and will be implemented by EBMUD. These guidelines require that potential visual impacts be minimized to the extent possible, such as through the use of building materials that are compatible with surrounding conditions for any replacement facilities.

Therefore, based on the limited size, scope, and duration of maintenance activities and adherence to Guidelines Vis-1 and Vis-2, impacts to scenic vistas would be less than significant, and no mitigation is required.

> **Guideline Vis-1: Evaluate possible visual impacts**. *Prior to project planning and design*, identify and evaluate aspects of the proposed project that could substantially affect the view from a scenic vista. Adverse visual impacts will be minimized to the extent feasible, consistent with the site vicinity and the purposes of the facility or action.
>
> **Guideline Vis-2: Use materials compatible with surrounding conditions**. *During project design and development*, materials for new or replacement facilities will be selected to harmonize with surrounding facilities and the site. Facilities should be compatible with existing structures in height, bulk, surface treatments, and color. However, if a long-term replacement or upgrade program is developed, new structures should be consistent with the design guide developed for that long-term program.

b. No Impact. Maintenance activities would occur within the boundaries of the Mokelumne Watershed and would not be located within the viewshed of a State scenic highway. State Route 49 in Amador County, which is an eligible State scenic highway, runs along the northeastern boundary of the watershed crossing the Mokelumne River, but is not officially designated (California Department of Transportation [Caltrans] 2018). Therefore, no impact would occur related to substantially damaging scenic resources within a State scenic highway.

c. Less than Significant Impact. The Camanche and Pardee Reservoirs and upland habitat areas are visible from some public roadways as well as from recreation areas and trails. Public recreation is provided in the form of watershed trails, recreation areas and facilities including day use, hiking, overnight camping, boating, fishing, hunting and trap and sporting clay activities. Viewer groups in the vicinity of the Project area include recreational users along trails and at recreation areas, boaters on the reservoir, and motorists on nearby roadways. Additionally, numerous residences lie either just within or outside the Watershed boundary. These primarily include three mobile home parks on Camanche Reservoir, consisting of approximately 200 year-round residential units (EBMUD 2008), and scattered residences just outside the Camanche Hills Hunting Preserve (CHHP). Several residences are also located immediately west and south of Camanche Reservoir in San Joaquin County, as well as south and east of the Camanche Reservoir in Calaveras County. Additionally, cabins are rented out seasonally at Pardee Center.

During maintenance activities, temporary visual impacts would occur from the presence of equipment, staging, earthwork, and other maintenance-related activities when in locations visible from public vantage points. Visual changes at maintenance sites would result from thinning or removal of vegetation along channels, trails, and access roads; removal of sediment and debris, downed trees and beaver dams in channels; alterations from repair or replacement of culverts, drainage and erosion control structures, and other facilities; or the presence of newly stabilized bank and levee areas. Additionally, visual changes could also result from restoration and enhancement activities for sensitive species habitat in upland areas. However, maintenance would be intermittent and temporary at each maintenance site, not lasting any more than five days at each site. Furthermore, all maintenance work would be implemented to maintain the functional and structural integrity of the Watershed and associated facilities, and often would occur in locations where maintenance has previously been performed. To the extent that the maintenance sites can be seen by the public, views

of maintenance activities would either be fleeting or of a short duration and the overall visual quality of the maintained facilities would not change.

Finally, as described in Table 2-1 of Chapter 2, *Project Description*, Guidelines Vis-1 and Vis-2 from the MWMP Specific Project Environmental Review Guide have been incorporated into the Project and will be implemented by EBMUD. These guidelines require that potential visual impacts be minimized to the extent possible, such as through the use of materials that are compatible with surrounding conditions for any replacement facilities. Therefore, given the temporary nature of maintenance activities at any given site along with adherence to Guidelines Vis-1 and Vis-2, impacts to public views would be less than significant, and no mitigation is required.

d. No Impact. Routine maintenance activities would be conducted during daylight hours; thus, no nighttime lighting would be needed. The Project would not involve construction of new facilities or modifications to existing facilities that would result in new reflective surfaces or installation of lighting. Therefore, implementation of the Project would not introduce any new sources of substantial light or glare within the Project area. No impacts would occur.

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II Agriculture and Forestry Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the State's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. -- Would the project:	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220[g]) or timberland (as defined in Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51140 (g))	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion

a through e. No Impact. Agricultural land in the Mokelumne Watershed is considered grazing land, and grazing is the only agricultural activity on EBMUD land (EBMUD 2008). Routine maintenance activities would occur along access roads, trails, utility lines and EBMUD ROWs that may traverse areas designated for grazing; however, these activities would not alter the agricultural use of the land. None of these areas would be converted into non-agricultural use. Furthermore, none of the land within the Watershed boundary is designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (California Department of Conservation [CDOC] 2016). Therefore, there would be no impact to these designated farmlands.

The Project area is adjacent to areas zoned as Agriculture (see Section XI, Land Use); however, it does not include lands under a Williamson Act Contract. As such, there would be no conflict with areas zoned as Agriculture or to lands under a Williamson Act Contract.

None of the areas within the Project area are currently zoned for forest land, timberland, or timberland zoned Timberland Production. There would be no conflicts or rezoning of forest lands, timberlands or timberland zoned Timberland Productions. Additionally, while routine maintenance activities would involve habitat enhancement and restoration activities, such activities would not result in the loss of forest land or conversion of forest land to non-forest use.

III Air Quality

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

Discussion

The Clean Air Act is implemented by the United States (U.S.) Environmental Protection Agency (USEPA) and sets ambient air quality limits, the National Ambient Air Quality Standards (NAAQS), for six criteria pollutants: particulate matter (PM), carbon monoxide, nitrogen oxides (NOx), sulfur dioxide (SOx), ground-level ozone, and lead. Of these criteria pollutants, PM and ground-level ozone pose the greatest threat to human health. The California Air Resources Board (CARB) sets California's ambient air quality standards for criteria pollutants that are more stringent than the NAAQS.

The proposed Project is within two air basins (i.e., San Joaquin Valley and the Mountain Counties[1] air basins) and the jurisdictions of three air districts. The regional agencies responsible for air quality regulation within the proposed Project area include the Amador Air District (AAD), the Calaveras County Air Pollution Control District (CCAPCD), and the San Joaquin Valley Air Pollution Control District (SJVAPCD). These agencies regulate air quality through their planning, review, and permitting activities, and some have established thresholds of significance for project emissions of criteria pollutants (**Table 3-1**, SJVAPCD 2015, CCAPCD 2016, Calaveras County 2018). Table 3-1 provides recommended significance criteria for analysis of air quality impacts, including cumulative impacts. Although the proposed Project is a maintenance-related project (more commonly associated with operational activities), the type of work and equipment used for the proposed Project is more construction-like in nature. For this reason, both construction and operational thresholds are included in Table 3-1 below and considered in the Project's air quality analysis. EBMUD considers these districts' adopted thresholds of significance adequate to provide a conservative evaluation of a project's potential air quality impacts.

[1] Mountain Counties include: Amador, Calaveras, El Dorado, Mariposa, Nevada, Placer, Plumas, Sierra, Tuolumne counties

Table 3-1: Thresholds of Significance for Air Districts in the Project Area

Air Basin	San Joaquin Valley		Mountain Counties
Air District*	San Joaquin Valley Air Pollution Control District		Calaveras County Air Pollution Control District
Construction Emissions			
	(tpy)		(lbs/day)
CO	100		
NOx	10		150
ROG	10		150
SOx	27		
PM10	15		150
PM2.5	15		
Operational Emissions			
	Permitted Equipment & Activities (tpy)	Non-Permitted Equipment & Activities (tpy)	(lbs/day)
CO	100	100	
NOx	10	10	150
ROG	10	10	150
SOx	27	27	
PM10	15	15	150
PM2.5	15	15	

[1] *Responsible for section of air basin proposed Project passes through. Amador Air District has not established thresholds of significance.

Source: SJVAPCD 2015, CCAPCD 2016, Calaveras County 2018.

a. Less than Significant Impact. The proposed Project would have a significant impact if it would conflict with or impair implementation of applicable air quality plans established by the AAD, SJVAPCD, CCAPCD, or local general plans.

The San Joaquin Valley Air Basin (SJVAB) is currently in State and federal non-attainment for ozone and particulate matter less than 2.5 microns in diameter (PM2.5) air quality standards, and in State non-attainment for particulate matter less than 10 microns in diameter (PM10) air quality standards (CARB 2019, USEPA 2020, SJVAPCD 2020). Calaveras County, which is part of the Mountain Counties air basin, is in State and federal non-attainment for ozone air quality standards, and State non-attainment for PM10 (CARB 2019, USEPA 2020). Amador County, which is also part of the Mountain Counties air basin, is in State and federal non-attainment for ozone air quality standards (eight-hour ozone standards) (CARB 2019, USEPA 2020).

To address these existing ambient air quality impairments, some local air districts have prepared air quality plans. The SJVAPCD has separate plans for addressing particulate matter and ozone and is included in the California State Implementation Plan for Carbon Monoxide (SJVAPCD 2021). The SJVAPCD's *2018 Plan for the 1997, 2006, and 2012 PM2.5 Standards* describes an attainment strategy for PM2.5 that outlines emission reduction measures by the SJVAPCD and CARB, a comprehensive incentive-based strategy, and a comprehensive existing regulatory control strategy (SJVAPCD 2018). Other SJVAPCD air quality plans include the *2007 PM10 Maintenance Plan* and

the *2016 Plan for the 2008 8-hour Ozone Standard*. Neither the CCAPCD nor the AAD has prepared air quality plans; however, the AAD Rule Book, includes both construction and operation regulations.

As described in more detail in Impact 3.b below and **Appendix A**, Air Quality, Energy, and Greenhouse Gas Emission Modeling and Calculations, the proposed Project would involve ground disturbing activities, and the use of fossil fuel-powered vehicles and equipment that would emit criteria pollutants. Emissions from these activities would not exceed the applicable annual or daily thresholds as shown in **Table 3-2** below. The proposed maintenance activities are similar in scale to what has taken place historically and would occur for a short duration of time at any given location (i.e., generally no longer than five days); therefore, the proposed maintenance activities would not result in any permanent increases in employment or population in the Project area. In addition, the proposed Project would follow all federal, State, and local regulations related to sources of air pollutants. Finally, as described in Table 2-1 of Chapter 2, *Project Description*, a number of EBMUD's Mokelumne Watershed Routine Maintenance Standard Practices have been incorporated into the Project. Emissions Control Standard Practices would minimize the exposure of sensitive receptors to short-term construction exhaust emissions by requiring equipment idling time restrictions (i.e., restricting diesel fueled equipment idling to five minutes or less) and compliance with manufacturer's specifications of equipment. Therefore, given that proposed maintenance activity emissions would not exceed applicable annual or daily thresholds and with adherence to EBMUD's Emissions Control Standard Practices, the Project would not conflict with applicable air quality plans or local general plans and this impact would be less than significant. No mitigation is required.

b. Less than Significant Impact. During the proposed Project's maintenance activities, burn piles and fuel combustion involved with vehicle/truck use and operating off-road equipment would release particulate matter (PM2.5 and PM10) and other contaminants including carbon monoxide and ozone precursors (reactive organic gases [ROG] and NOx). Vehicle and equipment emissions were estimated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 using information from Chapter 2, *Project Description*. Further details on the specific equipment size, hours of use, and vehicle miles traveled are found in Appendix A. Types and quantities of off-road equipment would be used as described in Chapter 2. The air districts in the Project area have established guidelines for determining significance for air quality analyses, which are shown in Table 3-1. Projects below these mass emission thresholds would not have a significant impact on air quality and would not result in a cumulatively considerable increase in emissions. While Project emissions could potentially contribute to the existing air basins' statuses of non-attainment for ozone, PM2.5, and/or PM10 as detailed above, CalEEMod modeling results show that emissions associated with the proposed Project's maintenance activities would not exceed any of the applicable annual or daily thresholds (Table 3-2). The CalEEMod modeling results and assumptions are provided in Appendix A.

With regard to burn piles, EBMUD would follow all applicable burn regulations in the respective air districts. Detailed information needed to estimate these emissions is not readily available as the amount of material in piles and number of piles to be burned is not known; therefore, it would be speculative to estimate emissions from this activity. Air districts consider this type of burning in their air quality plans and account for emissions from burns by implementing their air regulations. Since this Project would be consistent with those regulations it would not result in a cumulatively considerable increase in emissions. Thus, the impact of the proposed Project would be less than significant. No mitigation is required.

Table 3-2: Criteria Pollutant Emissions during Maintenance Activities

Emission Type or Applicable Threshold	Annual Emissions (tons/year (tpy)) and Thresholds					
	ROG	**NOx**	**CO**	**SO_2**	**PM10**	**PM2.5**
2022 Annual Emissions (tpy)	0.095	0.551	0.505	0.001	0.117	0.063
SJVAPCD Annual (tpy)	10	10	100	27	15	15
Above Annual Threshold?	No	No	No	No	No	No
	Daily Emissions (pounds/day) and Thresholds					
2022 Daily Emissions (lb/day)	19.63	30.50	27.9	0.07	9.98	4.87
CCAPCD (lbs/day)	150	150			150	
Above Daily Threshold?	No	No			No	

Notes:
ROG = reactive organic gases
CO = carbon monoxide
NO_X = oxides of nitrogen
PM10 = particulate matter 10 microns or less in diameter
PM2.5 = fine particulate matter 2.5 microns or less in diameter
SO_2 = sulfur dioxide

Source: CalEEMod modeling results are provided in Appendix A.

c. Less than Significant Impact with Mitigation. There are residential areas inside the EBMUD Watershed boundary (e.g., mobile home communities at Camanche North Shore and Camanche South Shore). Additionally, the Watershed boundary comes within 50 feet of multiple residences just outside the boundary; however, any exposure of these sensitive receptors to pollutant emissions from equipment involved in maintenance activities would be infrequent, temporary, and short in duration.

Asbestos prospects and occurrences and ultramafic rock are found in the project vicinity near the Pardee Reservoir, with the Neugebauer mine located just outside of the Watershed boundary (United States Geological Survey [USGS] 2011). An ultramafic rock outcrop occurs inside the Watershed along the east side of the Pardee Reservoir. As such, there is a potential for exposure to naturally-occurring asbestos (NOA) given the proximity of maintenance sites to ultramafic rock occurrences and mining sites, which would be considered a significant impact.

EBMUD would implement Mitigation Measure AQ-1: Control Dust and Comply with Asbestos Airborne Toxic Control Measure. Mitigation Measure AQ-1 would minimize dust and NOA-related impacts to less than significant levels by controlling dust emissions from maintenance activities and implementing an asbestos dust mitigation plan that has been approved by applicable air districts. Therefore, with implementation of Mitigation Measure AQ-1, impacts related to the exposure of sensitive receptors to substantial pollutant concentrations, including from dust and NOA exposure, would be less than significant with mitigation.

Mitigation Measure AQ-1: Control Dust and Comply with Asbestos Airborne Toxic Control Measure

During all maintenance activities, EBMUD and/or its contractors will implement the following dust control measures:

- Plan projects that involve soil disturbance by equipment or projects that leave areas of exposed soil (bare of vegetation) vulnerable to wind erosion or dust generation from vehicles/equipment in seasons when soil moisture content is at a level that keeps soils bonded or does not produce dust.
- Provide wetting (apply/spray water) on project sites or roads periodically to prevent dust when activities are occurring on soil that is dry or has low moisture content.
- Apply water (or stabilizers, as appropriate) prior to, during, and after earth-moving operations when soil moisture content is low.
- Soil cover such as certified weed free rice straw or hydro mulch can be applied to prevent soil displacement from wind (wind erosion) on sites that are lacking vegetation or protection.
- The application of environmentally friendly soil binders or stabilizers may be considered for unpaved roads that experience a high volume of traffic or comprised of known health hazards such as naturally occurring asbestos. Qualified personnel should be consulted to determine what soil binding products are appropriate for the sight. Consideration for potential impacts to water quality or sensitive species must be considered when choosing a binding product.

- Application of desirable seed with appropriate vegetation during post construction activities may reduce wind erosion if a successful vegetative cover is achieved.

- Cap roads and trails that have documented NOA with road base/gravel to reduce impacts that create dust from vehicles or trail users.

- Application of a soil binder/dust suppressant on roads with known NOA.

- Equipment operating in areas with known NOA must have a closed cab with air filtration.

Maintenance-related ground-disturbing activities within potential NOA-containing areas (specifically areas in the vicinity of the ultramafic rock outcropping located approximately 0.4 – 1.5 miles east of the North Arm and South Arm of Pardee Reservoir) will be required to comply with CARB's airborne toxic control measures (ATCM) for NOA. For areas of one acre or less EBMUD or its contractors will implement the following dust mitigation measures:

- Construction vehicle speed at the work site must be limited to fifteen (15) miles per hour or less;

- Prior to any ground disturbance, sufficient water must be applied to the area to be disturbed to prevent visible emissions from crossing the property line;

- Areas to be graded or excavated must be kept adequately wetted to prevent visible emissions from crossing the property line;

- Storage piles must be kept adequately wetted, treated with a chemical dust suppressant, or covered when material is not being added to or removed from the pile;

- Equipment must be washed down before moving from the property onto a paved public road; and

- Visible track-out on the paved public road must be cleaned using wet sweeping or a HEPA filter equipped vacuum device within twenty-four (24) hours.

For areas greater than one acre, EBMUD and its contractors will prepare and implement an asbestos dust mitigation plan in compliance with the State Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations. The plan will specify actions to be taken during maintenance activities to minimize NOA emissions. The plan will also address specific emission sources as identified by the ATCM to be: track-out onto the paved public road; active storage piles; inactive disturbed surface areas and storage piles; traffic on unpaved on-site roads; earthmoving activities; off-site transport of materials; and post-project stabilization of disturbed soil surfaces. Specific measures to be implemented will include but not be limited to removing visible track out, keeping active storage piles covered or wet, controlling inactive areas or storage piles, maintain trucks and wet loads to prevent spillage, and limit vehicle speeds. EBMUD and its contractors will submit the plan to the applicable local air district for approval prior to

implementation, and will not proceed with maintenance activity implementation until the applicable local air district has approved the plan and proposed BMPs or an exemption is received.

d. Less than Significant Impact. Short-term maintenance activities involving sediment removal or requiring the use of construction equipment and trucks that emit diesel- and/or gasoline-powered engine exhaust may be a potential source of objectionable odors. Once maintenance activities have been completed, these odors would cease. The proposed maintenance activities would be short in duration and infrequent, typically lasting no more than five days at each site. Therefore, the proposed Project would not generate long-term objectionable odors affecting a substantial number of people. Objectionable odor related impacts would be less than significant. No mitigation is required.

IV Biological Resources

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

Discussion

This biological resource impact analysis is based on the *Biological Resources Assessment for the Mokelumne Watershed Routine Maintenance Project* (Biological Resources Assessment), prepared by Horizon Water and Environment (April 2021) (**Appendix B**), which describes the existing biological resources within the Mokelumne Watershed (Watershed). The potential for special-status species to occur at or near the Project site locations was evaluated by determining which special-status species occur in the vicinity of the Project sites through a literature and background data review, and biological information database searches. Biologists conducted reconnaissance-level surveys of representative Project sites within the Watershed on December 19, 2018 and December 14 and 15, 2020, to characterize anticipated Project activities, land and aquatic cover within and near the Watershed, and to determine suitability for the Watershed and adjacent surrounding area to support special-status species and/or other protected

biological resources. The Watershed is located within portions of Amador, Calaveras, and San Joaquin counties within the Sierra Nevada foothills. The Watershed includes several land cover types over a 28,744-acre area, including:

- woodland (blue oak [*Q. douglasii*], blue oak-foothill pine [*Pinus sabiniana*], interior live oak [*Q. wislizeni*], and ponderosa pine [*Pinus ponderosa*] forest);
- chaparral (mixed chaparral, chamise [*Adenostoma fasciculatum*]-redshank [*Adenostoma sparsifolium*] chaparral, and Ione manzanita [*Arctostaphylos myrtifolia*] chaparral);
- valley foothill riparian;
- California annual grassland;
- ruderal; and
- developed [includes landscaped vegetation].

Lacustrine (i.e., lake, pond) and riverine (i.e., perennial, intermittent, and ephemeral streams) aquatic features include the Camanche and Pardee reservoirs, the Mokelumne River, and associated tributaries. Wetland features (i.e., freshwater marsh and seasonal wetland) occur primarily in the eastern and southeastern portions of the Watershed, and freshwater marsh vegetation often occurs along the reservoirs and perennial streams.

Vegetation within routine maintenance locations may include freshwater marsh, seasonal wetlands, woodlands (dominated by interior live oak, blue oak, blue oak-foothill pine, or ponderosa pine), valley foothill riparian, chaparral (including mixed chaparral and chamise-redshank chaparral), California annual grassland, or ruderal lands, as described in the Biological Resources Assessment (Appendix B). Upland vegetation within the Watershed consists primarily of woodland, chaparral, and California annual grassland, with ruderal vegetation occurring along developed or previously disturbed areas, and near roads.

While select activities may occur in multiple locations throughout the watershed (e.g., chaparral removal focusing on excessively accumulated brush reduction, vegetation succession management, ecosystem complexity (mosaic), and roadside brush removal) and often near existing infrastructure or in routinely managed areas, disturbance would still be minimal and performed using methods to enhance habitat value to native species. The majority of routine maintenance locations within the Watershed associated with sediment and debris removal; vegetation management; facilities maintenance; erosion prevention, control, repair, and protection; and environmental stewardship range in scale but would involve limited environmental disturbance, in areas typically less than one acre annually. These include discrete portions of upland vegetation, drainages and other waterbodies supporting lacustrine and riverine aquatic features.

SPECIAL-STATUS SPECIES POTENTIAL TO OCCUR AT PROJECT MAINTENANCE SITES

Special-status species include species listed as endangered, threatened, rare, or proposed for listing by U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Wildlife (CDFW). California Native Plant Society (CNPS) plant lists and locally rare plant lists were also reviewed. Database searches for known occurrences of special-status species focused on a five-mile area around the overall Watershed, which is more expansive than the individual routine maintenance sites themselves. When spatial data queries were not possible, USGS 7.5-minute quads in which the Watershed is located

were searched for special-status species records. The following sources were reviewed to determine which special-status plant, wildlife, and fish species have been documented to occur in the vicinity of the Watershed:

- California Natural Diversity Database (CNDDB) records (Appendix B) (CDFW 2020)
- USFWS Official Species List (Sacramento regional offices) (Appendix B) (USFWS 2020a)
- USFWS Critical Habitat Portal (USFWS 2020b)
- National Wetland Inventory (NWI) (USFWS 2020c)
- National Oceanic and Atmospheric Administration Essential Fish Habitat (NOAA 2019)
- CNPS Inventory of Rare and Endangered Plants (Appendix B) (CNPS 2020)
- EBMUD special-status species observation records (EBMUD 2020)
- eBird records (Cornell Lab of Ornithology 2019)

Table 3-4 below describes the special-status species with potential to occur in or near the Watershed that could be affected by Project activities. The complete lists of special-status plant, wildlife, and fish species considered can be found in Appendix B.

One special-status species, bald eagle (*Haliaeetus leucocephalus*), was observed by EBMUD and Horizon biologists on December 15, 2020, but no other special-status species were observed within the Watershed during the December 19, 2018 or December 14 and 15, 2020 reconnaissance-level surveys. However, several special-status species have been observed by EBMUD biological staff and many special-status species have a moderate or better potential to occur given the land cover and/or presence of suitable habitat features present, field observations and/or the proximity of CNDDB occurrence records.

APPROACH TO IMPACT ANALYSIS

The impact analysis for aquatic and surrounding land covers was based on the maintenance activity descriptions and frequency described in Chapter 2, *Project Description*. Additionally, the General Site BMPs (listed in Table 2-1 of Chapter 2) establish an existing baseline of regulatory commitments for the Project, representing prior permit conditions and negotiations between EBMUD and the agencies. As a result, this analysis and resulting mitigation were structured around these BMPs, which are included as part of the Project.

Aquatic features were categorized by drainage channel type (i.e., natural, modified, and engineered), based on information provided by EBMUD. Surrounding vegetation cover was also assessed based on field surveys, EBMUD vegetation mapping data, and aerial photography, and categorized by vegetation community type (e.g., blue oak-foothill pine woodland, freshwater marsh, valley foothill riparian, California annual grassland). Annual average impact totals were developed through coordination with EBMUD staff based on prior maintenance needs by maintenance activity category and resource.

Average channel widths near EBMUD infrastructure within the Watershed were provided by EBMUD staff familiar with streams within the Watershed and its conditions. Average channel widths were provided by EBMUD, and the average annual impacts of each channel type category (e.g., natural, modified, engineered) were calculated. Since Project activities entail different annual impact maxima, impact calculation methods specific to each proposed Project activity are described separately below:

Sediment and Debris Removal: Since sediment and debris removal typically would not exceed 100 linear feet (1,200 square feet [sqft] or 0.028 acre) in natural channels, 16,000 linear feet (192,000 sqft or 4.408 acres) in modified channels, and 2,000 linear feet (24,000 sqft or 0.551 acre) in engineered earthen channels on an annual basis (as described in the Chapter 2), these areas were used to determine the annual impact maxima to each channel type from this activity. Additionally, sediment and debris removal from culverts is annually estimated to result in a maximum additional 0.4 acre of disturbance at limited locations where such maintenance is necessary. Sediment and debris removed from streams and culverts would be placed in adjacent upland areas, resulting in an estimated annual total disturbance up to a 1.5-acre area. Staging areas associated with sediment and debris removal would affect an annual total of 0.15 acre of adjacent upland areas. Refer to **Table 3-6** for estimated annual impacts from sediment and debris removal within streams and drainages.

Vegetation Management: Vegetation management would occur within upland areas (woodland, chaparral, and grassland) and riparian areas. **Table 3-3** below describes estimated annual impacts associated with vegetation management activities.

Table 3-3: Annual Average Vegetation Management Area by Vegetation Community

Activity	Vegetation Community	Annual Average Management Area
Trimming and pruning	Valley foothill riparian	1.06 acre
Targeted grazing	Valley foothill riparian	0.53 to 1.06 acre
Trimming and pruning	Chaparral	15 acres
Mowing	California annual grassland	815.05 acres*
Fire-break discing	California annual grassland	29.6 acres
Targeted grazing	California annual grassland	0.5 to 1 acre

* Mowing for existing roads and trails occurs along an approximate total distance of 108 miles.

Facilities Maintenance: Facilities maintenance includes specific activities, such as culvert replacement and low water crossing maintenance, as well as general infrastructure maintenance (refer to Chapter 2 for a full description of facilities maintenance activities). Annual average estimates would total 0.06 acre of disturbance to streams for culvert replacement, 0.02 acre to streams for low water crossings, and up to eight acres of disturbance to stream and reservoir for general facilities maintenance activities. Such impacts would occur in locations where facilities already exist and maintenance is routinely conducted; therefore, the same areas are is continually affected by routine maintenance as opposed to impacts occurring in new locations each year.

Erosion Prevention, Control, and Protection: Erosion prevention, control, and protection is estimated to annually total a maximum distance of 500 linear feet, approximately equivalent to 6,000 sqft (0.13 acre) along streams, plus 0.15 acre of adjacent upland disturbance for staging activities.

Environmental Stewardship: Pond draining for invasive species management (e.g., American bullfrog [*Lithobates catesbeianus*] removal) and native species habitat enhancement would occur over a total maximum area of 0.5 acre annually, with 0.15 acre of adjacent upland disturbance for staging activities. Beaver dam removal and/or analogue installation would affect a total maximum area of 1.5 acres annually, with 0.06 acre of adjacent upland disturbance for staging activities. Restoration activities would include California annual grassland and riparian habitat throughout the Watershed.

a. Less than Significant Impact with Mitigation. The biological inventory database searches and field surveys identified several special-status plant, invertebrate, amphibian, reptile, bird, mammal, and fish species that have a moderate or greater potential to occur at the Project sites (refer to Table 3-4 below).

Table 3-4: Special-Status Species with Potential to Occur in the Project Sites

Common Name	Scientific Name	Status FED/CA/CRPR[1]	Range & Habitat	Occurrence Potential[2]
PLANTS				
Ione manzanita	*Arctostaphylos myrtifolia*	FT/-/1B.2	Known from records in Amador, Calaveras, and Sacramento counties. Chaparral, cismontane woodland. On lone clay with chaparral associates. Often comprises 50-80% cover. 75-560 meters above mean sea level (amsl). Blooms November-March.	**Possible**. Suitable habitat (chaparral and woodland on Ione clay) is present along the eastern portion of Camanche Reservoir and area between Camanche and Pardee reservoirs. There are five CNDDB occurrence records within five miles of the Watershed. Additionally, multiple EBMUD observations within the Watershed that are presumed extant.
Big-scale balsamroot	*Balsamorhiza macrolepis*	-/-/1B.2	Known from records in Alameda, Amador, Butte, Colusa, El Dorado, Lake, Modoc, Mariposa, Napa, Nevada, Placer, Plumas, Santa Clara, Shasta, Sierra, Solano, Sonoma, Sutter, Tehama, and Tuolumne counties. Chaparral, valley and foothill grassland, cismontane woodland. Sometimes on serpentine. 35-1,465 meters amsl. Blooms March-June.	**Possible**. Suitable chaparral, grassland, and woodland habitat is present within the Watershed. There is 1 CNDDB occurrence record within five miles of the Watershed.
Hoover's calycadenia	*Calycadenia hooveri*	-/-/1B.3	Known from records in Calaveras, Madera, Merced, Mariposa, Stanislaus, and Tuolumne counties. Cismontane woodland, valley and foothill grassland. On exposed, rocky, barren soil. 60-260 meters amsl. Blooms July-September.	**Possible**. Marginal habitat (mowed grassland) occurs within the Watershed in the Sierra Nevada foothills. There are 2 CNDDB occurrence records within five miles of the Watershed.

Common Name	Scientific Name	Status FED/CA/CRPR[1]	Range & Habitat	Occurrence Potential[2]
Ione buckwheat	*Eriogonum apricum* var. *apricum*	FE/SE, 1B.1	Known from records in Sacramento, San Joaquin, and Amador counties. Chaparral (openings, Ione soil). 60-145 meters amsl. Blooms July-October.	**Possible.** There are five CNDDB occurrence records within five miles of the Watershed, four of which are presumed extant. Chaparral habitat is located on hills along the northeastern extent of the Camanche Reservoir.
Boggs Lake hedge-hyssop	*Gratiola heterosepala*	-/SE, 1B.2	Known from records in Modoc, Siskiyou, Shasta, Lassen, Tehama, Placer, Sacramento, Lake, Solano, Amador, Stanislaus, Madera, and Fresno counties. Marshes and swamps (freshwater), vernal pools. Clay soils; usually in vernal pools, sometimes on lake margins. 4-2,410 meters amsl. Blooms April to August.	**Possible.** There are three CNDDB occurrence record within five miles of the Watershed. All occurrences are from 1990, but are presumed extant. Species occurrences are located in vernal pools west of and at lower elevations than the Watershed, but could potentially occur along marshes and lake margins in the Watershed.
Parry's horkelia	*Horkelia parryi*	-/1B.2	Known from records in Sacramento, El Dorado, Amador, Calaveras, San Joaquin, Tuolumne, and Mariposa counties. Chaparral, Cismontane woodland. 80-1,070 meters amsl. Blooms April-September.	**Possible.** Suitable chaparral habitat is located on hills along the northeastern extent of Camanche Reservoir. There are seven CNDDB occurrence records within five miles of the Watershed, only one of which is within three miles of the Watershed.
Patterson's navarretia	*Navarretia paradoxiclara*	-/-/1B.3	Known from records in Alameda, Placer, Sacramento, San Joaquin, Amador, Calaveras, and Tuolumne counties. Meadows and seeps. Serpentinite, openings, vernally mesic, often drainages. 150-435 meters amsl. Blooms May-June (July).	**Possible**. Marginal habitat (vernally mesic openings) occurs within limited portions of the Watershed in the Sierra Nevada foothills. There are four CNDDB occurrence records within five miles but south of the Watershed.

Common Name	Scientific Name	Status FED/CA/CRPR[1]	Range & Habitat	Occurrence Potential[2]
prairie wedge grass	*Sphenopholis obtusata*	-/2B.2	Known from records in Amador, Calaveras, Stanislaus, Mono, Fresno, Inyo, Tulare, San Bernardino, and San Diego counties. Cismontane woodland, meadows and seeps. 300-2,000 meters amsl. Blooms April-July.	**Possible**. Suitable cismontane woodland, meadow, and seep habitat is present within the Watershed. There are three CNDDB occurrence records within five miles of the Watershed. These are located at significantly higher elevations north of the Pardee watershed.
INVERTEBRATES				
Rudolph's cave harvestman	*Banksula rudolphi*	-/-/- (locally significant)	California Central Valley known locally only from Chrome Cave, Pardee Reservoir in Amador County. Chrome Cave, a small limestone cave surrounded by serpentine. This species would be unable to survive outside of cave environments. Found on the undersides of rocks in the upper Cave.	**Present.** There is 1 CNDDB occurrence record of the species from Chrome Cave within the Watershed, north of Pardee Reservoir. Chrome Cave is located within the Watershed but no maintenance activities would affect the Cave or occur inside the Cave. Therefore, the species is not discussed further.
Crotch bumble bee	*Bombus crotchii*	-/SC/-	Currently the southern 2/3 of California including the Central Valley to the Coast and adjacent Sierra Nevada foothills. Nests in rodent burrows and occasionally brush piles. Requires wildflowers for nectar sources. Sensitive to herbicides and pesticides.	**Possible.** The Watershed is within the species' current range (Xerces Society 2018) and there is one CNDDB occurrence record within five miles of the Watershed, near Highway 26. Suitable nesting habitat and nectar sources are present within the Watershed.
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT/-/-	Occurs only in the California Central Valley below 3,000 feet above mean sea level in association with blue elderberry (*Sambucus nigra* ssp. *caerulea*) shrubs with stems one inch or greater basal diameter.	**Present.** Suitable elderberry shrubs occur within the Watershed and occur within the species' range. There are five CNDDB occurrence records within five miles of the Watershed, and approximately 806 elderberry shrubs have been documented by EBMUD biological staff within the Watershed.

Common Name	Scientific Name	Status FED/CA/CRPR[1]	Range & Habitat	Occurrence Potential[2]
Grady's Cave amphipod	*Stygobromus gradyi*	-/-/- (locally significant)	Known only from Central California. Known only from springs and caves in the Mother Lode karst region. A stygobite located in five caves within Amador and Tuolumne counties including Fern Frond, Lulu Bell, and Masonic Caves within freshwater pools.	**Present.** The cave system where the species is located is outside of the Watershed but within five miles. No maintenance activities would affect the cave system or occur inside this or other caves. There is one CNDDB occurrence record within five miles northeast of the Watershed. Therefore, the species is not discussed further.
AMPHIBIANS				
California tiger salamander	*Ambystoma californiense*	FT/ST/-	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet amsl, and from Sonoma County south to Santa Barbara County along coast. Need underground refuges, especially ground squirrel burrows & vernal pools or other seasonal water sources for breeding.	**Present.** The species is known to occur within grassland and oak woodland near vernal pools, ponds, and seasonal wetlands (observed by EBMUD biological staff) in the western to central portion of the Watershed. There are 47 CNDDB occurrence records within five miles of the Watershed and EBMUD biological staff have observed several individuals on numerous occasions.
Foothill yellow-legged frog	*Rana boylii*	-/SE, SSC/-	Coast and coastal mountain ranges from Oregon border south to Ventura County, Sierra Nevada foothills south to Tulare County. Disjunct populations in eastern Los Angeles County and northern Sutter County. Lowlands & foothills in or near permanent streams with gravel or cobble substrate and dense, shrubby or emergent riparian vegetation	**Possible.** Suitable habitat (freshwater streams) is present within the Watershed. There are two CNDDB occurrences within five miles northeast and upstream of the Watershed, but the most recent occurrence record dates from 1950s.

Common Name	Scientific Name	Status FED/CA/CRPR[1]	Range & Habitat	Occurrence Potential[2]
California red-legged frog	*Rana draytonii*	FT/SSC/-	Coast and coastal mountain ranges from Mendocino County to San Diego County, and in the Sierra Nevada Mountains from Butte County south to Stanislaus County. Streams, freshwater pools, and ponds with emergent vegetation.	**Possible.** Suitable habitat (freshwater streams and ponds) is present within Watershed. There is one CNDDB occurrence record within five miles south of the Watershed.
Western spadefoot	*Spea hammondii*	-/SSC/-	Sierra Nevada foothills, Central Valley, Coast Ranges, coastal counties in southern California. Occurs primarily in grassland habitats, but can be found in oak woodlands. Vernal pools, seasonal wetlands, and shallow streams are essential for breeding and egg-laying.	**Present.** Species known to occur in suitable grassland and oak woodland near marshes, seasonal wetlands, and shallow stream habitat within the western (south of the Mokelumne River) and central portions of the Watershed (observed by EBMUD biological staff). There are 17 CNDDB occurrence records within five miles of the Watershed.
REPTILES				
Western pond turtle	*Actinemys* (=*Emys*) *marmorata*	-/SSC/-	Oregon border of Del Norte and Siskiyou counties south along coast to San Francisco Bay, inland through Sacrament Valley, and on the western slope of the Sierra Nevada Mountains. Found in ponds, marshes, rivers, streams & irrigation ditches, usually with aquatic vegetation. Needs basking sites.	**Present.** Species known to occur in suitable aquatic and upland habitat (observed by EBMUD biological staff) in the Watershed. There are six CNDDB occurrence records known from within five miles of the Watershed.
BIRDS				
Tricolored blackbird	*Agelaius tricolor*	-/ST, SSC/-	Year-round in California primarily along the Coast from Marin County south to Baja California, and throughout Central Valley and adjacent Coast Range.	**Present.** Species has been observed (by EBMUD biological staff) in suitable freshwater marsh habitat within the Watershed. Suitable habitat (freshwater marsh). There are six CNDDB occurrence records of the species within five miles of the Watershed.

Common Name	Scientific Name	Status FED/CA/CRPR[1]	Range & Habitat	Occurrence Potential[2]
			Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony. Nests in dense thickets of cattails (*Typha* spp.), bulrush (*Schoenoplectus* spp.), willow (*Salix* spp.), blackberry (*Rubus* spp.), wild rose (*Rosa californica*), and other tall vegetation near fresh water.	
Cooper's hawk	*Accipiter cooperii*	-/-/- (MBTA)	Year-round resident of California. Breeds throughout the State. Woodland, primarily open, interrupted or marginal quality. Primarily nests in live oak and riparian deciduous woodland, often in canyon bottoms on river floodplains.	**Possible.** Suitable woodland habitat occurs in the forested portions of the Watershed. No CNDDB occurrence records occur within five miles of the Watershed.
golden eagle	*Aquila chrysaetos*	-/FP/-	Year-round resident throughout much of California except in Central Valley and deserts, where they are visitors during winter. Forages over open habitats (grasslands, grazed fields) and nests in isolated locations, typically cliff ledges, tall trees on ridges, and electronic transmission towers.	**Possible.** Suitable foraging habitat occurs in the open portions of the Watershed, and nesting habitat occurs in the far eastern portion of the Watershed. No CNDDB occurrence records occur within five miles of the Watershed, but EBMUD documents a historic nest location southeast of Pardee Reservoir. Routine maintenance activities are not expected to occur in or near suitable nesting habitat.

Common Name	Scientific Name	Status FED/CA/CRPR[1]	Range & Habitat	Occurrence Potential[2]
Great blue heron	*Ardea herodias*	-/-/- (MBTA)	Year-round resident throughout Central Valley, San Francisco Bay, from Marin County to Yolo County, the Salton Sea, and Colorado River. Nonbreeding resident elsewhere in California. Freshwater, brackish, and marine wetlands, as well forage in flooded agricultural fields. Nests in colonies in trees located adjacent to waterbodies, rivers, estuaries, and marshes.	**Present.** Suitable nesting habitat (trees near aquatic foraging habitat) occurs within the Watershed and they have been observed nesting at and near the Camanche Reservoir's south shore.
Burrowing owl	*Athene cunicularia*	-/SSC/-	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast. Yearlong resident of open, dry grassland and desert habitats, as well as in grass, forb and open shrub stages of pinyon-juniper and ponderosa pine habitats. Open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel (*Spermophilus beecheyi*).	**Present.** Species known to occur (observed by EBMUD biological staff only in winter) in suitable habitat (treeless grassland with burrows) in the western to central portions of the Watershed. There are no CNDDB occurrence records within five miles of the Watershed. However, seven EBMUD observation records of the species are known from the five-mile Watershed buffer.

Common Name	Scientific Name	Status FED/CA/CRPR[1]	Range & Habitat	Occurrence Potential[2]
Swainson's hawk	*Buteo swainsoni*	-/ST/-	Lower Sacramento and San Joaquin valleys, Klamath Basin, and Butte Valley. Recent breeding in Santa Clara County and expected elsewhere in greater San Francisco Bay Area. Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**Possible.** Suitable nesting habitat (riparian woodland and tree groves) and foraging habitat (grassland and agricultural fields) exists within the western portion of the Watershed. There are 13 CNDDB occurrence records within five miles of the Watershed. Known to nest near the Camanche spillway.
Prairie falcon	*Falco mexicanus*	-/-/- (MBTA)	Permanent resident in the south Coast, Transverse, Peninsular, and northern Cascade ranges; southern deserts; Inyo-White Mountains; foothills surrounding the Central Valley; and in the Sierra Nevada Mountains in Modoc, Lassen, and Plumas counties. Winters in the Central Valley, in Marin County, and along the Coast from Santa Barbara County to San Diego County. Nests on cliffs or escarpments, typically overlooking dry, open terrain or uplands.	**Present.** Suitable nesting substrate (cliffs or escarpments) is present within the eastern portion of the Watershed. One CNDDB occurrence record occurs within five miles of the Watershed. The species has been observed and two nest locations have been documented by EBMUD biological staff in the Watershed.

Common Name	Scientific Name	Status FED/CA/CRPR[1]	Range & Habitat	Occurrence Potential[2]
American peregrine falcon	*Falco peregrinus anatum*	FD/SFP/-	Year-round throughout most of California, except for northern Sierra Nevada, Central Valley, and interior Southern California. Forages 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, elevated site (cliffs, tall isolated trees, high bridges, and power transmission towers).	**Present.** Species known to occur (observed by EBMUD biological staff) in suitable foraging habitat (open areas) throughout the Watershed, and suitable nesting substrate is present within the eastern portion of the Watershed. No CNDDB occurrence records occur within five miles of the Watershed, and one EBMUD observation record of the species is known from north end of Pardee Reservoir. Only observed in the winter months.
Bald eagle	*Haliaeetus leucocephalus*	FD/SE, SFP/-	Non-breeding resident throughout most of California. Within California, breeds in northern portion of the State near Cascades and adjacent plains. Occurs mainly along coasts, rivers, and lakes; nests in tall trees or in cliffs, usually within one mile of water. Nests in large, old-growth, or trees with open branches, especially ponderosa pine. Roosts communally in winter. Feeds mostly on fish.	**Present.** Suitable foraging habitat is present within Camanche and Pardee reservoirs, and suitable nesting substrate is present within the Watershed. One CNDDB occurrence record is known from New Hogan Reservoir within five miles of the Watershed. The species has been observed (by both EBMUD and Horizon biological staff) and regularly nests in at least five locations near the reservoirs, as documented by EBMUD biological staff.
yellow-breasted chat	*Icteria virens*	-/SSC/-	Breeds throughout California, except for northern Sierra Nevada and Cascades. Inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 feet of the ground.	**Possible.** Suitable habitat (riparian thickets) exists in the Watershed. One CNDDB occurrence record is known from the Mokelumne River within five miles of the Watershed.

Common Name	Scientific Name	Status FED/CA/CRPR[1]	Range & Habitat	Occurrence Potential[2]
Loggerhead shrike	*Lanius ludovicianus*	-/SSC/-	Year-round resident throughout California, except for North Coast, northern Sierra Nevada and Cascades. Broken woodlands, savannah, pinyon-juniper, Joshua tree, riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	**Possible.** Suitable foraging habitat (open areas) and nesting substrate (trees and shrubs) are present in the Watershed. No CNDDB occurrence records are known from within five miles of the Watershed, but two EBMUD observation records occur within five miles of the Watershed.
Osprey	*Pandion haliaetus*	-/-/(MBTA)	Nests in northern Sierra Nevada, southern Cascades, and plains east of Cascades. Year-round in northern half of California to San Mateo Peninsula. Winters in San Joaquin Valley and central to southern California coast and along Colorado River. Migrates through deserts to southern Mono Basin. Nests in tall trees, cliffs, or human-derived platforms near water. Forages for fish over a variety of water bodies (rivers, lakes, sea, and marshes).	**Present.** Suitable foraging habitat (reservoirs) and nesting habitat (large trees) near and over water are present within the Watershed maintenance areas. No CNDDB occurrence records are known from within five miles of the Watershed, but the species has been observed, with at least nine nests seen annually, by EBMUD biological staff.

Common Name	Scientific Name	Status FED/CA/CRPR[1]	Range & Habitat	Occurrence Potential[2]
Bank swallow	*Riparia Laodiceans*	-/ST/-	Migrates throughout all of California. Year-round resident on the San Mateo Peninsula, Sacramento River, and northern Sierra Nevada to plains east of the Cascades. Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, or ocean to dig nesting hole.	**Possible**. Suitable habitat (vertical sandy river banks) is present in the western portion of the Watershed along the Mokelumne River. One CNDDB occurrence record is located within five miles of the Watershed.
MAMMALS				
Townsend's big-eared bat	*Corynorhinus townsendii*	-/SSC, WBWG: High Priority/-	Coastal regions from Del Norte County south to Santa Barbara County. Found throughout California in a wide variety of habitats, including woodlands, forests, chaparral, scrubs, and grasslands. Most common in mesic sites. Roosts on open surfaces in caves, abandoned mines, and buildings. Also uses bridges, rock crevices and hollow trees as roost sites. Roosting sites are limiting. This species is extremely sensitive to human disturbance.	**Possible.** Trees isolated from human development within the Watershed provide suitable roosting habitat. Lacustrine, riparian, and marsh areas and, to some extent, the adjacent open (grassland and ruderal) cover, provide foraging habitat. There is one CNDDB occurrence record within five miles of the Watershed.
American badger	*Taxidea taxus*	-/SSC/-	Majority of northern, western, and central United States south to Baja California. 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.	**Possible.** Suitable habitat is present in portions of the Watershed that lack dense vegetation and tree cover in Central Valley, and Sierra Nevada foothills. No CNDDB occurrence has been recorded within five miles of the Watershed.

Common Name	Scientific Name	Status FED/CA/CRPR[1]	Range & Habitat	Occurrence Potential[2]
FISH				
Steelhead: Central Valley Distinct Population Segment (DPS) (population 11)	*Oncorhynchus mykiss*	FT/-/-	Sacramento and San Joaquin river systems and tributaries, excluding San Francisco and San Pablo bays. Also, excludes individuals from the Coleman National Fish Hatchery and Feather River Hatchery programs. Requires clean, cold water with near dissolved oxygen (DO) saturation levels over loose silt-free gravel beds with water temperatures between 15 and 24 degrees Celsius (ºC) for spawning.	**Present.** Species documented in the Mokelumne River system, below Camanche Reservoir. This species is defined as "[n]aturally spawned anadromous *O. mykiss* … originating below natural and manmade impassable barriers from the Sacramento and San Joaquin River and their tributaries" (U.S. Department of Commerce 2013); therefore, the species does not occur within the Camanche or Pardee reservoirs. Suitable habitat exists in the Mokelumne River immediately downstream of the Camanche Reservoir outlet and nearby tributary. Approximately 1.12 linear miles (35.68 acres) of the Mokelumne River and a tributary in the western portion of the Watershed is identified as Critical Habitat for the species (U.S. Department of Commerce 2005).
Chinook Salmon: Central Valley fall/late fall-run Evolutionary Significant Unit (ESU) (population 13)	*Oncorhynchus tshawytscha*	-/SSC/-	Sacramento and San Joaquin Rivers and their tributaries. Requires clean, cold water over loose silt-free gravel beds with water temperatures between 5 and 19 ºC for spawning.	**Present.** Central Valley fall/late fall-run ESU salmon are known to occur within the Mokelumne River and associated tributary, but the Camanche Reservoir Dam represents an impassible barrier to the species. Therefore, the species occurs within the Watershed within the Mokelumne River and its tributary.

[1] **Regulatory Status Legend:**

Federal
FE = federally endangered
FT = federally threatened
FPE = federally proposed endangered
FPT = federally proposed threatened
FC = federal candidate for listing as threatened or endangered
FD = federally delisted
MBTA = Migratory Bird Treaty Act

State
SR = State rare
SE = State endangered
ST = State threatened
SFP = State fully protected
SSC = species of special concern
SC = State candidate

WBWG (Western Bat Working Group) Priority
(available: http://wbwg.org/matrices/species-matrix/)
High = species "considered the highest priority for funding, planning, and conservation actions. Information about status and threats to most species could result in effective conservation actions being implemented should a commitment to management exist. Species is imperiled or are at high risk of imperilment."
Moderate = species warrants "evaluation, more research, and conservation actions of both the specie and possible threats. The lack of meaningful information is a major obstacle in adequately assessing species' status and should be considered a threat."

CRPR (California Rare Plant Rank)
1A = Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
1B = Plants Rare, Threatened, or Endangered in California and Elsewhere
2A = Plants Presumed Extirpated in California, But More Common Elsewhere
2B = Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

Special-Status Plants (*Less than Significant with Mitigation*)

Eight special-status plants have potential to occur within the Watershed. These species include:

- Ione manzanita – Federally Threatened and California Rare Plant Rank (CRPR) 1B.2
- Big-scale balsamroot – CRPR 1B.2;
- Hoover's calycadenia – CRPR 1B.3;
- Ione buckwheat – Federally and State Endangered and CRPR 1B.1;
- Boggs Lake hedge-hyssop – State Endangered and CRPR 1B.2;
- Parry's horkelia – State Endangered and CRPR 1B.2;
- Patterson's navarretia – CRPR 1B.3; and
- prairie wedge grass – CRPR 2B.2.

Direct Effects to Special-Status Plant Species

Clearing, grubbing, ground-disturbance (e.g., grading), and the movement of equipment could directly damage or destroy special-status plant species at Project maintenance sites where special-status plant species occur. Though potentially significant, the likelihood for direct impacts to special-status plant species is low as the footprint for routine maintenance activities is relatively small and often repeated in the same focused locations over time. Potential direct impacts to special-status plant species would only occur in situations where maintenance activities would take place in previously undisturbed native vegetation, or in vegetation that hasn't been disturbed for at least three years and where the locale is known to support rare plant species.

Indirect Effects to Special-Status Plant Species

Special-status plant species could be indirectly impacted through the degradation of their habitats as a result of hydrologic alteration associated with grading, or the introduction of pathogens or invasive plant species via transferred soil or plant materials from a contaminated or infested site to a newly disturbed maintenance site. While no Phytophthora (*Phytophthora ramorum*) (also known as sudden oak death)-free certification exists, EBMUD sources restoration plantings from nurseries that are under compliance for Phytophthora where quarantined (i.e., tracked) or, in locations outside of quarantined counties, actively implement current best management practices and test for Phytophthora (pers. comm. Workman 2020).

To mitigate potential direct and indirect impacts on special-status plant species to less than significant levels, EBMUD would implement Mitigation Measures BIO-1 BIO-2, and BIO-3, described below.

> **Mitigation Measure BIO-1:** A qualified biologist shall hold an annual training session for maintenance staff responsible for performing routine maintenance activities. The training will include a description of special-status species with potential to occur and their habitats and protective measures to ensure that such species are not adversely impacted by routine maintenance activities (e.g., pre-activity surveys, installation of exclusion fencing when special-

status species are identified in an area). If special-status species are known or suspected to occur at the work site, a biologist or trained maintenance staff person shall be formally appointed as a biological monitor to ensure that appropriate protective measures are implemented. Each morning prior to commencement of project work, the biological monitor shall inspect the work site, including holes and depressions, to ensure that special-status species identified as potentially present are not within the project work area.

Mitigation Measure BIO-2: Equipment and materials staging areas shall be located wholly within upland areas and, if feasible, within paved or gravel areas. Vegetation disturbance shall be limited to the immediate maintenance footprint necessary. Imported soils should be similar in pH to native soils and be cleansed of pathogens and weed seeds prior to use through heating, solarization, or other appropriate methods.

Mitigation Measure BIO-3: If there is potential for special-status plants to occur at a maintenance work site (i.e., the site supports either previously undisturbed native vegetation or vegetation disturbance has not occurred for at least three years in a location that is also suitable for rare plants known to occur in the region), a qualified biologist shall conduct pre-activity special-status plant surveys during the appropriate blooming period, prior to initiation of routine maintenance activities. Any observed sensitive plants species shall be mapped and flagged for avoidance where feasible. EBMUD shall notify CDFW or CNPS upon discovery of any sensitive plant species. If sensitive plant species are discovered, the following measures shall be implemented:

- Special-status plant species shall be avoided or minimized by limiting ground disturbance where special-status plants occur.

- If plant species that are listed on the federal or California Endangered Species Lists or plants ranked with 1B.1 or 1B.2 CNPS ranking cannot be avoided, EBMUD will salvage the affected plants and transplant them to a similar habitat in the Project vicinity. The re-established population should achieve a 1:1 ratio (transplanted: re-established) after two years. If this performance criterion cannot be met, the appropriate agencies (e.g., USFWS, CDFW) will be consulted for additional options, such as payment of an in-lieu fee to the State CNPS program.

- If any additional special-status plant species are discovered on-site that cannot be avoided, the appropriate agencies (e.g., USFWS, CDFW) shall be consulted by EBMUD to determine the appropriate species-specific mitigation measures.

- Species-specific mitigation may include repairing, rehabilitating, or restoring the impacted area; preserving in-situ populations on-site; or by providing off-site compensation. Off-site compensation may include the permanent protection of an off-site population through a conservation easement or the purchase of mitigation banking credits at a 2:1 ratio (mitigation: impacted population).

EBMUD actively excludes maintenance activities from known Ione manzanita individuals and suitable habitat near known populations. Similarly, EBMUD excludes maintenance activities from Ione soils, which offer suitable habitat for Ione buckwheat. Mitigation Measures BIO-1 through BIO-3 require EBMUD to provide worker awareness training and when needed, a biological monitor, to restrict staging areas from special-status species, use similar fill as native soils, conduct

preconstruction surveys for special-status plants, notify appropriate agencies if any special-status plant species are found, coordinate with regulatory agencies if endangered or threatened plant species are found that cannot be avoided, and compensate for unavoidable impacts to special-status plant species. Therefore, the potential for significant Project-related impacts on special-status plants would be less than significant with mitigation.

Special-Status Invertebrates (*Less Than Significant with Mitigation*)

Crotch bumble bee is a State candidate species that has potential to occur within the Watershed where ground squirrel burrow complexes are present. Valley elderberry longhorn beetle (VELB) is federally threatened and has potential to occur at numerous locations within the Watershed where elderberry (*Sambucus nigra* ssp. *caerulea*) shrubs with a basal stem diameter of one inch or greater are present.

Direct Effects to Crotch Bumble Bee and Valley Elderberry Longhorn Beetle

Crotch bumble bee could be directly impacted through ground-disturbance that physically crushes or injures individuals. VELB could be directly impacted through clearing, grubbing, and ground-disturbance that physically crushes or injures individuals, or removes occupied elderberry shrubs that provide habitat for VELB.

Indirect Effects to Crotch Bumble Bee and Valley Elderberry Longhorn Beetle

Crotch bumble bee could be indirectly impacted by activities that eliminate suitable subterranean nest burrows and diminish native nectar sources, including erosion, filling of burrows, significantly reducing the ground squirrel population, or habitat conversion from native wildflowers. VELB could be indirectly impacted by activities that degrade the health of suitable elderberry shrubs, including erosion that undermines roots, soil placement near an elderberry shrub that substantially alters the local hydrology and water available to the shrub, generation of dust that settles on leaves of the host plant, and the introduction of invasive plants or diseases that respectively outcompete or infect elderberry shrubs.

Potential direct and indirect impacts to an occupied Crotch bumble bee nest and/or VELB would be significant. The implementation of Mitigation Measure BIO-1 (annual staff training and monitoring) and Mitigation Measures BIO-4 (Crotch bumble bee nest avoidance), BIO-5 (Safe Harbor Agreement [SHA] compliance and no disturbance buffers around shrubs), and BIO-6 (preconstruction surveys and avoidance or compensation for unavoidable impacts), as described below, would avoid and minimize potential impacts to Crotch bumble bee, VELB, and suitable VELB habitat.

> **Mitigation Measure BIO-4:** If ground squirrel burrows occur within a maintenance site location, a biologist will visually assess each burrow to be impacted for the presence of Crotch bumble bees or an active nest prior to construction. Visual investigation may include observing the burrow during suitable bee flight times and weather conditions, and employing the use of a burrow scope to confirm presence or absence of a nest. If the species or an active nest are not observed, the burrow investigated shall be covered or collapsed until the maintenance activity occurs. If the species or an active nest is found within a burrow, the burrow will be avoided through marking a 10-foot buffer around the opening with flagging or fencing. EBMUD shall coordinate with CDFW to obtain necessary approval to encourage passive bee nest eviction (e.g., placement of non-lethal deterrents around the burrow entrance) in February or March (when bee colonies are most likely to relocate), after which ground-disturbance may commence in April or May. If passive bee nest eviction is not successful, EBMUD will consult with CDFW and follow all recommendations.

Mitigation Measure BIO-5: Within 10 days prior to commencement of maintenance work, the maintenance site shall be surveyed for the presence of elderberry bushes. Within the boundaries of the EBMUD's SHA (SHA# 81420-2009-F-0106) with the USFWS, EBMUD shall work around identified elderberry bushes and all requirements set forth by the SHA agreement shall be followed (refer to **Appendix E**). If an elderberry bush is discovered outside of the SHA boundaries, the US Fish and Wildlife Service *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (USFWS 2017) shall be followed. To protect any elderberry bush (naturally occurring or enhanced), no heavy equipment operations shall occur within 20 feet of the dripline of any elderberry bush. No equipment fueling shall occur within 165 feet of the elderberry bush.

Mitigation Measure BIO-6: EBMUD shall retain a biologist to complete habitat assessments to determine the occupancy of Crotch bumble bee, VELB, California tiger salamander, foothill yellow-legged frog, California red-legged frog, western spadefoot toad, western pond turtle, tricolored blackbird, golden eagle, burrowing owl, Swainson's hawk, American peregrine falcon, Bald eagle, yellow-breasted chat, loggerhead shrike, bank swallow, Townsend's big-eared bat, American badger, Central Valley Distinct Population Segment steelhead, and Central Valley fall/late run Evolutionary Significant Unit Chinook salmon habitat within and immediately adjacent to maintenance work sites prior to the commencement of maintenance activity at the work site. Habitat assessments shall include a desktop review site vegetation characteristics and review of current extant occurrence records (CNDDB, USFWS Official Species Lists) followed by field review to determine if suitable habitat conditions exist.

When habitat assessments confirm the presence or potential presence of special-status species, or that habitat for special-status species to exist at a work site and such species are known to exist within reasonable dispersal distance of the work area, a qualified biologist shall conduct a reconnaissance-level survey within 14 days prior to the commencement of routine maintenance activities, including all areas where heavy equipment will be operated, such as adjacent upland access routes and staging areas. If special-status species are found, work shall be halted until the individual leaves the work area under its own volition, or pending coordination with the appropriate agencies (i.e., CDFW, USFWS, NMFS) for State or federally listed species. Species that are not State or federally listed as endangered or threatened or State candidate species may be relocated by the qualified biologist if unable to leave on their own or found to be in danger. If the observation is of an active bird nest/burrow or bat roost, then work shall be delayed until outside period when young are dependent on parental care and are capable of flight. EBMUD shall not take or disturb any State or federally listed endangered or threatened species or State candidate species without applicable permission from the appropriate wildlife agency.

When habitat assessments confirm the presence or potential presence of State or federally listed species or State candidate species and maintenance activities will impact occupied or potentially occupied habitat, and EBMUD determines those impacts cannot be avoided, EBMUD shall consult with a qualified biologist to identify appropriate mitigation actions to ensure that impacts to habitat are less than significant. EBMUD shall consider the following mitigation strategies for permanent and temporary impacts:

- habitat restoration,
- habitat enhancement,

- habitat preservation, and/or
- mitigation credit purchase from an agency-approved bank with suitable credits and service area coverage of the impact location at a 2:1 ratio.

Habitat restoration, preservation and enhancement areas will require the development and implementation of a habitat management plan with the following success criteria to ensure the preserved and/or enhanced area is managed as suitable habitat for the target species in perpetuity.

- Conduct biological monitoring surveys to confirm suitable habitat conditions for the target species and document habitat performance metrics (e.g., vegetation presence, cover, and maturity) for a period of 10 years.
- Perform routine eradication of invasive vegetation species to maintain the intended vegetation diversity and structural components consistent with the target species' habitat requirements.
- Restrict deeds to maintain and manage the preserve for the target species in perpetuity, with the ability to grant the preserve to a habitat conservancy, public agency, or other local habitat management entity.
- In perpetuity preserve funding and maintenance reserves.
- Compensatory habitat mitigation is inclusive of other applicable habitat restoration and revegetation.

Implementation of Mitigation Measures BIO-1, BIO-4, and BIO-5 would require staff education and monitoring, conducting preconstruction surveys for Crotch bumble bee and active nest impact minimization through relocation, conducting preconstruction surveys for elderberry shrubs suitable for VELB, avoidance of impacts to elderberry shrubs that could provide habitat for VELB, and notification of the USFWS if impacts to any suitable elderberry shrubs are unavoidable. Additionally, implementation of Mitigation Measure BIO-6 would require EBMUD to provide compensatory mitigation for unavoidable impacts to federally- or State-listed species/candidate species habitat, and Project-related impacts on Crotch bumble bee, and VELB. Therefore, impacts would be reduced to less than significant with mitigation.

Special-Status Amphibians (*Less Than Significant with Mitigation*)

Four special-status amphibian species have potential to occur within Project sites, including California tiger salamander (*Ambystoma californiense*) (CTS), foothill yellow-legged frog (*Rana boylii*) (FYLF), California red-legged frog (*Rana draytonii*) (CRLF), and western spadefoot (*Spea hammondii*) (WSF). None of these species were observed during reconnaissance-level surveys, but CRLF have potential to occur in perennial and near-perennial ponds, wetlands, and slow streams in the Watershed; and FYLF has the potential to occur in slow to swift perennial streams at or near Project sites in the Watershed. CTS and WSF are both known to occur in wetlands within the western to central portion of the Watershed (refer to Table 3-4). Critical habitat for CTS (units CV-4 and CV-5) and CRLF (Unit CAL-1) occur within five miles of the Watershed but are located outside of the Watershed boundaries.

Direct Effects to Special-Status Amphibians

Special-status amphibians could be directly affected by Project-related equipment placement, ground-disturbance (including discing), materials placement, or in-water work within occupied drainages or other water bodies that crushes burrows or aquatic habitat. Direct effects could also occur from the introduction of pollutants to aquatic habitat causing mortality or injury to individual frogs, salamanders, or toads.

Indirect Effects to Special-Status Amphibians

Indirect effects to special-status amphibians may include the exposure of soil that erodes and impacts water quality and breeding habitat quality within suitable drainages, introduction of pollutants to aquatic habitat leading to diminished water quality, and substantial changes in the hydroperiod within such drainages. Indirect effects could also occur from the introduction of invasive plants that prevent movement, foraging, and breeding activities within drainages and/or surrounding non-aquatic habitat.

Discing in suitable upland habitat for aestivating (i.e., over-summering) amphibians (primarily CTS and WSF, since CRLF and FYLF generally tend to remain near aquatic habitat) could result in direct mortality of individuals.

It should be noted that in instances where existing culverts are replaced with larger culverts, potential beneficial effects to special-status amphibians would result, including:

- restoring more natural hydraulic patterns (flow velocity, hydroperiod) to affected drainages; thereby allowing up- and downstream vegetative characteristics (resulting from the more natural hydraulic characteristics) to establish, which would increase habitat value for native species and reduce/eliminate habitat for non-native, noxious species (e.g., American bullfrog);

- enhancing aquatic and semi-aquatic amphibian movement and habitat connectivity;

- preventing erosion and scour, as well as subsequent downstream sedimentation, caused from restricted water flow; and

- reducing the need for future culvert maintenance and replacement activities.

As part of environmental stewardship, EBMUD annually restores California annual grassland and valley foothill riparian habitat. EBMUD biological staff routinely drain and enhance ponds to benefit native species and actively capture and remove non-native, noxious species, such as American bullfrog. Both of these ongoing practices collectively reduce the magnitude of other Project maintenance impacts and serve the overall goal of enhancing habitat conditions for native species within the Watershed. Further, maintenance activities that affect aquatic habitat would typically occur at a time of year when native adult and larval amphibians are normally not present in aggregations within waterbodies (i.e., when stream flow and water levels are absent or minimal); however, these activities reduce, but do not eliminate potential direct and indirect effects to special-status amphibians, which could still be potentially significant.

Mitigation Measures BIO-1 (annual staff training and monitoring), BIO-6 (preconstruction surveys and avoidance or compensation for unavoidable impacts), BIO-7 through BIO-10 (described below), HYD-1 (stabilization of exposed soils), HYD-2 (isolation of work areas with instream barriers), and HAZ-1 (establishment of Contingency Plan with procedures and countermeasures for accidental

releases) (refer to full text in Section IX, Hazards and Hazardous Materials, and Section X, Hydrology and Water Quality) would avoid and/or minimize potential negative effects on water quality within features and land cover that could provide suitable habitat for these species. While it is unlikely that these species would be impacted directly by Project activities with implementation of the mitigation measures described above, proposed maintenance activities could affect suitable habitat occupied by federally listed species (i.e., CTS and CRLF), which could result in significant adverse species effects. Mitigation Measure BIO-6 requires compensatory habitat for these species in the event that loss of occupied habitat cannot be avoided.

Mitigation Measure BIO-7: A qualified biologist shall check the maintenance site location for all life stages of special-status amphibians (e.g., California tiger salamander, California red-legged frog, foothill yellow-legged frog, or western spadefoot), 14 days or less prior to the start of maintenance work. In addition, all field crew personnel shall visually check for special-status amphibians under parked vehicles, equipment, or staged materials prior to moving the vehicle, equipment, or materials. Project activities shall be halted if a significant rain event (0.25 inch or greater within a 24-hour period) occurs. In the event of a significant rain event, the site shall be surveyed for special-status amphibians by a qualified biologist and confirmed absent before work activities can resume. If at any time special-status amphibians are detected, all work shall be suspended until the individual leaves the work area under its volition, or the USFWS and/or CDFW shall be notified and consulted with prior to commencing with the maintenance activity.

To avoid potential take of aestivating special-status amphibians during discing, EBMUD will instead mow suitable upland habitat within 500 feet of known special-status amphibian occurrences based on CNDDB and EBMUD records. Further, only mowing methods that do not significantly disturb the soil (defined as no disturbance below two inches) will be used. Such methods include the use of bladed mowers or string trimmers (e.g., weed whackers). Flail mowers may be used, but only if the cutting mechanism is raised such that soil below two inches is not disturbed, including during travel down slopes where topographic changes are present.

Mitigation Measure BIO-8: To minimize adverse impacts to special-status species and their habitats, work within natural and modified streams (including ponds, marshes, and reservoirs) with (earthen or rock-lined) bottoms and/or banks shall be conducted only between June 1 and October 15. Work within engineered channels shall be conducted only between April 15 and October 15. No equipment shall be operated in wetted portions of the stream (including ponded, flowing, or wetland areas) at any time except as necessary to dewater the immediate maintenance work site (surface flows only) or divert water flow around the work site. Pumps used in dewatering shall include a 1/8-inch mesh screened intake to prevent impingement.

Flow diversions shall maintain flows to downstream reaches at all times, and shall be implemented using standard best management practices (e.g., gravel bags, silt fencing, or other filtration devices) to prevent in-stream pollution and/or visible siltation or turbidity at 50 Nephelometric Turbidity Units [NTU]) above the background NTU levels upstream. If the turbidity reading downstream of the Project site is greater than 30 NTUs above turbidity upstream of the site, EBMUD shall modify BMPs or activities (for example, fix siltation devices and continue to monitor every two hours). If turbidity continues to exceed the background for 4 hours, EBMUD shall stop work, modify BMPs and wait to resume work until background turbidity levels are achieved. Flows to downstream reaches shall mimic natural flows necessary to support aquatic life. Said flows shall be of sufficient quality and quantity and appropriate temperature to support fish and other aquatic life both above and below the diversion structure as determined by

the EBMUD biologist. Normal flow shall be restored to the affected stream or waterbody immediately upon completion of work at that location.

Coffer dam and other water diversion designs shall be submitted to CDFW for approval prior to commencement of maintenance activities. Coffer dams shall be constructed with clean river gravel or sand bags, and may be sealed with sheet plastic. Sand bags and any sheet plastic shall be removed from the stream or waterbody upon project completion. Clean river gravel may be left in the stream, but the coffer dams shall be breached to return the water flow to its natural channel or waterbody. The water diversion shall be constructed with the least amount of disruption to the channel or shoreline.

In-water maintenance activities shall not be initiated if maintenance work cannot be completed prior to the onset of a storm event predicted by 72-hour weather forecasts from the National Weather Service. All equipment shall be removed from the channel or waterbody at least 12 hours before such an event occurs. If an unanticipated storm event occurs, EBMUD shall inspect active maintenance work sites for indications of bank erosion and/or channel sedimentation; if noticeable erosion or sedimentation has occurred, EBMUD shall implement appropriate erosion control BMPs. Erosion control BMPs shall consist of wildlife-friendly plastic-free (including bio-degradable plastic) materials such as jute netting, coconut fiber blanket, or similar erosion control blanket.

Non-living vegetation and debris not anchored to a bank or the channel bed by sediment may be removed at any time, if necessary, to prevent imminent flooding. Restorative maintenance activities such as revegetation above the ordinary high-water level may be completed outside of the specified work period if appropriate erosion control BMPs are implemented.

Mitigation Measure BIO-9: Staging and storage areas for equipment, materials, fuels, lubricants and solvents shall be located outside of the stream channel and waterbody banks. Stationary equipment such as motors, pumps, generators, compressors and welders, located adjacent to the stream or waterbody, shall be positioned over drip-pans. Vehicles shall be moved away from the stream or waterbody prior to refueling and lubrication. Any equipment or vehicles driven and/or operated in proximity to the stream or waterbody shall be checked and maintained daily to prevent the release of contaminants.

Any hazardous or toxic materials that could be deleterious to aquatic life shall be contained in watertight containers, kept isolated (e.g., covered with impervious material and/or surrounded by a berm) from contact with water, or removed from the project site. Such materials include, but are not limited to, debris soil, silt, bark, rubbish, creosote treated wood, raw cement/concrete or washings thereof, asphalt, paint or other coating material, and oil or other petroleum products. These materials shall be prevented from contaminating the soil and/or entering State or federal waters, including wetlands.

Mitigation Measure BIO-10: Water that has come in contact with uncured concrete shall not be allowed to enter the stream channel or waterbody until the pH is between 6.5 and 8.0 pH units. Containment of leachate shall adhere to the following BMPs:

- Concrete structures shall be allowed to cure (dry) for at least 28 days before coming into contact with channel flows or waterbodies. Water contaminated with leachate shall be

separated from the main stream or waterbody via an impervious barrier or diversion structure until the pH falls within the range specified above.

- If the 28-day curing period is infeasible, EBMUD shall institute a minimum 7-day curing period and apply a sealant designed for use in aquatic environments, such as Deep Seal™ or Elasto Deck™. The sealant shall be allowed to cure for a minimum of 72 hours prior to the reintroduction of water to the treated surface.

- Wash-down water from concrete delivery trucks, concrete pumping equipment, and other tools and equipment containing concrete shall not be allowed to enter the stream channel or waterbody and should be removed from the site for cleaning following construction. No dry concrete shall be placed on the banks or in a location where it could be carried into the channel or waterbody by wind or runoff.

Mitigation Measures BIO-1, BIO-6, BIO-7 through BIO-10, HYD-1, HYD-2, and HAZ-1 require EBMUD to conduct preconstruction surveys for special-status species, avoid impacts to suitable habitat, apply species-specific avoidance and minimization measures, and provide compensatory mitigation for unavoidable impacts to occupied CRLF and/or CTS habitat; therefore, potential Project-related impacts on special-status amphibians (including CTS, FYLF, CRLF, and WSF) would be reduced to less than significant with mitigation.

Special-Status Reptiles (*Less than Significant with Mitigation*)

There is one special-status reptile species that has potential to occur within the Watershed, which is western pond turtle (*Actinemys* (*=Emys*) *marmorata*) (WPT). WPT was not observed during the reconnaissance-level surveys, but WPT is known to occur within perennial aquatic habitat throughout much of the Watershed (refer to Table 3-4).

Direct Effects to Western Pond Turtle

Western pond turtles and their nests could be directly affected by being crushed or injured through equipment placement, ground-disturbance, streambed work, or materials placement. WPT could be directly impacted through the introduction of pollutants into suitable aquatic habitat that results in immediate toxicity of individuals or direct mortality.

Indirect Effects to Western Pond Turtle

Indirect effects on western pond turtle may include compaction of soil that removes suitable nest habitat, the introduction of invasive plants that prevents the species' use of otherwise suitable habitat, or reduced or polluted water quality from the introduction of pollutants.

It should be noted that in instances where existing culverts are replaced with larger culverts, potential beneficial effects to western pond turtle would result, including:

- restoring more natural hydraulic patterns (flow velocity, hydroperiod) to affected drainages; thereby allowing up- and downstream vegetative characteristics (resulting from the more natural hydraulic characteristics) to establish, which would increase habitat value for native species and reduce/eliminate habitat for non-native, noxious species (e.g., American bullfrog);

- enhancing WPT movement and habitat connectivity;

- preventing erosion and scour, as well as subsequent downstream sedimentation, caused from restricted water flow; and

- reducing the need for future culvert maintenance and replacement activities.

Potential direct and indirect impacts to western pond turtle would be significant. Mitigation Measures BIO-1 (annual staff training and monitoring), BIO-6 (preconstruction surveys and avoidance), BIO-8 (in-water work BMPs), BIO-9 (proper containment of hazardous or toxic construction materials), BIO-10 (containment of concrete leachate), HYD-1 (stabilization of exposed soils), HYD-2 (isolation of work areas with instream barriers), and HAZ-1 (establishment of Contingency Plan with procedures and countermeasures for accidental releases) (refer to full text in Section IX, Hazards and Hazardous Materials and Section X, Hydrology and Water Quality) would avoid and/or minimize potential negative effects on water quality within features and land cover that could provide suitable habitat for western pond turtle. Mitigation Measures BIO-1, BIO-6, BIO-8, BIO-9, BIO-10, HYD-1, HYD-2, and HAZ-1 require EBMUD to conduct preconstruction surveys for special-status species, avoid impacts to suitable habitat, and apply species-specific avoidance and minimization measures; therefore, potential Project-related impacts on WPT would be less than significant with mitigation.

Special-Status Birds (*Less than Significant with Mitigation*)

Special-status bird species with potential to occur on or near Watershed maintenance sites include Cooper's hawk (*Accipiter cooperii*), tricolored blackbird (*Agelaius tricolor*), golden eagle (*Aquila chrysaetos*), great blue heron (*Ardea alba*), burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsonii*), prairie falcon (*Falco mexicanus*), American peregrine falcon (*Falco peregrinus anatum*), bald eagle (*Haliaeetus leucocephalus*), yellow-breasted chat (*Icteria virens*), loggerhead shrike (*Lanius ludovicianus*), osprey (*Pandion haliaetus*), and bank swallow (*Riparia riparia*). One bald eagle was observed within the Watershed on December 15, 2020; however, none of the other aforementioned species were observed during the reconnaissance-level surveys. Burrowing owl is known to occur (only in winter) in grassland habitat within the western to central portions of the Watershed, and bald eagle and osprey are known by EBMUD biological staff to occur near the Camanche and Pardee reservoirs, and nest at those locations within the Watershed regularly (five locations near Camanche Reservoir and nine locations near Pardee Reservoir). Species other than burrowing owl have broad ranges and generally occur throughout much of the Watershed (refer to Table 3-4). American peregrine falcon has only been observed as a visiting species and is not known to nest within the Watershed; therefore, nests of this species would not be impacted by routine maintenance activities. Prairie falcon and golden eagle typically nest on cliff escarpments or isolated tall trees, habitat features which are located in the far eastern portion of the Watershed. Routine maintenance activities would largely not occur near suitable nesting substrate; however, road maintenance at Camanche Bluffs and trail maintenance south of Tule Gulch would occur near suitable nesting habitat for these species. Loggerhead shrike could occur within grassland throughout the Watershed and Cooper's hawk could occur within woodlands within the Watershed. Yellow-breasted chat could occur within riparian thickets throughout the Watershed. Swainson's hawk could nest in riparian trees and forage over open areas in the western to central portions of the Watershed. Finally, species that could occur at Project sites within the Watershed in or near freshwater marshes include tricolored blackbird and great blue heron.

Direct Effects to Special-Status Birds

Special-status birds could be directly affected by impacts to their active nests, including destruction of eggs or occupied nests, direct mortality of young, and the abandonment of nests with eggs or young birds prior to fledging as a result of ground disturbance by equipment or vegetation removal.

Indirect Effects to Special-Status Birds

Indirect effects to special-status species may include the loss or degradation of nests (i.e., reduced nest fitness) from Project-related noise and vibration, and the loss or degradation of future nesting or foraging habitat, or reduced prey abundance through vegetation removal, soil compaction, or the introduction of invasive plants.

Special-status birds could be affected by Project-related noise and vibration, ground disturbance, vegetation removal, or experience deleterious effects stemming from reduced nest fitness loss. However, Mitigation Measures BIO-1 (annual staff training and monitoring), BIO-6 (pre-construction surveys and avoidance or compensation for unavoidable impacts), BIO-11 (nesting bird surveys during the nesting season), BIO-12 (avoidance of work within 0.5 mile of Swainson's hawk active nests), and BIO-13 (burrowing owl surveys and mitigation plan implementation) would avoid and/or minimize potential impacts on these species.

Mitigation Measure BIO-11: Maintenance work or tree removal shall be conducted between September 16 and January 31, outside of the nesting bird season, where feasible. However, if maintenance work or tree removal is scheduled to occur during the nesting bird season, between February 1 and September 15, a qualified biologist shall conduct reconnaissance-level surveys for nesting birds no more than 14 days prior to routine maintenance activities. Surveys shall include upland access routes and equipment and materials staging areas in addition to each work site.

If this survey finds evidence of nesting birds, an avoidance buffer shall be implemented to avoid nest disturbance and work in the immediate area shall be postponed until the biologist determines the nest is no longer active. The avoidance buffer shall be based on the nest location, topography, cover and species' tolerance to disturbance and shall be determined by a qualified biologist through coordination with CDFW (for State-listed species) or USFWS (for federally-listed species). If an avoidance buffer is not achievable, a qualified biologist shall monitor the nest(s) to document that no take of the nest (nest failure) occurs. If it is determined that construction activity is resulting in nest disturbance, work should cease immediately and CDFW or USFWS should be contacted. EBMUD will coordinate with CDFW and/ or USFWS appropriately to obtain approvals and guidance in rare situations where nest removal cannot be avoided. If a lapse in project-related work of 14 days or longer occurs, another focused survey shall be required before project work is reinitiated.

If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the maintenance work period, no further action is required. Trees and shrubs within the footprint that are determined to be unoccupied by special-status birds or that are located outside the no-disturbance buffer for active nests may be removed. Nests initiated during work (while significant disturbance from maintenance activities persist) may be presumed to be unaffected, and only a minimal buffer is required (as determined by a qualified biologist).

Any tree with an active or historical eagle nest shall not be removed without consultation with USFWS under the Bald and Golden Eagle Project Act.

Mitigation Measure BIO-12: Between February 15 and August 15, Project activities shall not occur within 0.5 miles of an active Swainson's hawk nest. If Project activities must occur within 0.5 mile of a nest, EBMUD will consult with CDFW, and if necessary, obtain all necessary permits under the California Endangered Species Act (CESA).

Mitigation Measure BIO-13: A qualified biologist shall conduct a pre-construction take avoidance survey for burrowing owl prior to initiating maintenance-related ground disturbance activities in or near grassland habitats. In areas where owl presence is not found, construction may proceed without further action. If western burrowing owl occupancy within a project site is confirmed, EBMUD shall develop and implement a CDFW-approved Burrowing Owl Monitoring and Mitigation Plan in coordination with CDFW. If a prior plan was developed and approved by CDFW, then that plan shall be implemented.

Since Swainson's hawk and burrowing owl forage over open areas of low to no vegetation, Project activities would not remove suitable foraging habitat for these species. Suitable freshwater marsh vegetation nesting habitat of tricolored blackbird and other marsh associated birds could be temporarily removed from small areas within the Project sites, but this vegetation is abundant within the greater Watershed. Maintenance activities that affect freshwater marsh would locally remove this vegetation from a smaller number of sites, leaving larger patches of freshwater marsh vegetation elsewhere in the Watershed and region. Further, the amount of freshwater marsh vegetation removed would be less than one third of the total pond vegetation at any given site. This vegetation is expected to regenerate in slightly over one year, but the regional abundance of it offers suitable nesting substrate for marsh nesting bird species. Similarly, grassland temporarily removed from small areas in Project sites is expected to regenerate within one year and effects to the habitat of grassland-associated birds would be temporary. Suitable nest trees of bald eagle could be removed if they are within a Project site, but other suitable nest trees near water are expected to provide alternative nesting options. A bank swallow colonial nest site is not likely to occur within a routine maintenance area, but its loss while inactive would be significant. Mitigation Measure BIO-6 would require coordination with CDFW and compensatory habitat to mitigate the loss of a bank swallow nesting site. Implementation of Mitigation Measures BIO-1, BIO-6, BIO-11, BIO-12 and BIO-13 require training, preconstruction surveys for special-status birds, avoid impacts to active nests (including nesting colonies) and suitable occupied habitat, and apply species-specific avoidance and minimization measures. Therefore, potential Project-related impacts on special-status birds would be less than significant with mitigation.

Other Nesting Birds (*Less than Significant Impact with Mitigation*)

Avian species that are protected under the Migratory Bird Treaty Act and California Fish and Game Code have potential to nest within and/or near numerous Project sites throughout the Watershed, including Cooper's hawk, great blue heron, yellow-breasted chat, and loggerhead shrike. Suitable nesting habitat for various raptors, as well as other migratory bird species, is present on or near the Project sites. Disruption of nesting birds could occur as a result of increased human activity (e.g., due to the use of heavy equipment and human traffic) during the breeding season (approximately February 1 through August 31). Bird species may use trees, shrubs, man-made structures or the ground for nesting habitat. Potential direct and indirect effects to other nesting birds and potential nesting habitat would be the same as those effects described under "Special-status Bird Species" above.

Suitable nest trees of other bird species (e.g., Cooper's hawk) could be removed if they are within a Project site, but other suitable nest trees in the vicinity and greater region are expected provide other suitable nesting options.

As described above, Mitigation Measure BIO-11 requires preconstruction nesting bird surveys if work is scheduled to occur during the nesting bird season (February 1 and August 31) and delineation of species-specific avoidance buffer zones; thus, impacts to migratory birds (including destruction of potential nesting habitat, eggs or occupied nests, direct mortalities of young, and the abandonment of nests with eggs or young birds prior to fledging) would be avoided. Therefore, potential Project-related impacts on nesting birds (not listed above under *Special-Status Birds*) would be less than significant with mitigation.

Special-Status Mammals (*Less than Significant with Mitigation*)

Special-status mammal species with potential to occur near and/or within portions of the Watershed include Townsend's big-eared bat (*Corynorhinus townsendii)* and American badger (*Taxidea taxus*). Bat species have potential to roost within trees and structures within the Watershed. American badger has potential to occur within open treeless areas throughout the Watershed, particular areas that support large rodent burrow complexes. Neither of these species were observed during the reconnaissance-level surveys, but they are known from previous observations and CNDDB records.

Direct Effects to Special-Status Mammals

Special-status mammal species could be directly affected through individual mortality or injury caused by heavy equipment, materials placement, vegetation removal, and ground disturbance; or through reduced roost or den disturbance from Project-related noise and vibration generated by heavy equipment.

Indirect Effects to Special-Status Mammals

Special-status mammal species could be indirectly affected by the loss of suitable habitat stemming from soil compaction or the introduction of invasive plant species, habitat alteration or degradation that reduces prey abundance, or persistent pollutant bioaccumulation.

Potential direct and indirect effects to special-status mammals would be significant. Mitigation Measures BIO-1 (annual staff training and monitoring) and BIO-6 (pre-construction surveys and avoidance or compensation for unavoidable impacts) would avoid and/or minimize potential negative effects on these species and on suitable habitat for these species. Mitigation Measure BIO-14 requires roosting bat surveys and avoidance (if found), ultimately avoiding impacts to active roosts. In addition, the implementation of Mitigation Measure BIO-15 would avoid potential impacts to American badger, if present.

> **Mitigation Measure BIO-14:** Maintenance work shall be conducted between August 1 and February 28 to avoid the bat maternity period, where feasible. However, if maintenance work cannot be conducted during this timeframe, a preconstruction survey for roosting bats shall be conducted by a qualified biologist within two weeks prior to construction to ensure that no roosting bats are disturbed during maintenance activities.
>
> If roosting surveys are inconclusive, indicate potential occupation by a special-status bat species, and/or identify a large day roosting population or maternity roost by any bat species within 200

feet of an active work area, a qualified biologist shall conduct focused day- and/or night-emergence surveys as appropriate.

If active maternity roosts or day roosts are found in areas that would be removed or modified as part of maintenance work, activities shall commence before maternity colonies form (before March 1) or after young are flying (after July 31). Disturbance-free buffer zones (determined by a qualified biologist in coordination with CDFW) shall be observed during the maternity roost season (March 1 through July 31) for any active maternity colony identified during the surveys to protect maternity roosts.

If a non-breeding bat roost is found in a structure anticipated for modification or removal, the individual(s) shall be safety evicted, under the direction of a qualified biologist in such a way that ensures individuals are not injured.

If preconstruction surveys indicate that no roosting is present or potential roosting habitat is unoccupied during the construction period, no further action is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by roosting bats or that are located outside the no-disturbance buffer for active roosting sites may be removed. Roosting initiated during construction is presumed to be unaffected, and no buffer would be necessary.

Mitigation Measure BIO-15: If a possible American badger den is found during implementation of pre-activity surveys, EBMUD shall implement the following avoidance or minimization measures for American badger:

- If the den with evidence of badger occupancy (e.g., scat, tracks) is within a Project site, then a one-way door will be installed for a period of three days to evict the badger outside of the badger pupping season (August to October).

- Project activities shall not occur within 200 feet of a confirmed badger den or pupping den during the pupping season, which is August to October.

Mitigation Measures BIO-1, BIO-6, BIO-14, and BIO-15 require pre-activity surveys, avoidance measures and buffer zones for active roosts/dens, and avoidance of bat roosts and potential badger dens during the maternal/pupping period, so potential impacts would be avoided and/or reduced to these species to less than significant levels. While Project activities could affect suitable maternal roost habitat for Townsend's big-eared bat, such activities are not anticipated to result in the permanent removal of habitat for such species. If the permanent loss of a maternal bat roost is unavoidable, the implementation of Mitigation Measure BIO-6 would require compensatory habitat for such an affect.

Special-Status Fish Species (*Less than Significant with Mitigation*)

Two special-status fish species have potential to occur within drainages in the Watershed, including steelhead (*Oncorhynchus mykiss*) (Central Valley Distinct Population Segment [DPS]) and Chinook salmon (*Oncorhynchus tshawytscha*) (Central Valley fall/late fall-run Evolutionary Significant Unit [ESU]). These species have potential to occur within the Sacramento and San Joaquin rivers and associated tributaries, including the Mokelumne River up to the Camanche Dam. None of these species were observed during the reconnaissance-level surveys, but they are known from previous observations and CNDDB records within and near the Watershed.

Critical Habitat for Special-Status Fish

The Mokelumne River and adjacent tributary downstream of the Camanche Reservoir Dam are listed as Critical Habitat for the Central Valley DPS steelhead. Project maintenance activities in this portion of the Watershed may affect steelhead or associated Critical Habitat, either of which would be a significant impact.

Essential Fish Habitat for Special-Status Fish

Approximately 35.68 acres of Essential Fish Habitat (EFH) in the Project area is designated for the steelhead Central Valley DPS and Chinook salmon Central Valley fall/late fall-run ESU within the Mokelumne River and adjacent tributary upstream to the Camanche Reservoir Dam. Project maintenance activities that affect these drainages could impact EFH for both species and would be a significant impact.

Direct Effects to Special-Status Fish

Special-status fish species could be directly affected by Project-related noise and vibration and streambed work altering migration patterns, eliminating or degrading occupied habitat, stranding during dewatering activities, crushing individuals or eggs, or the introduction of pollutants resulting in individual mortality.

Indirect Effects to Special-Status Fish

Indirect effects to special-status fish species may include vegetation removal resulting in less shaded aquatic habitat and increased water temperatures, the introduction of pollutants or invasive plants into aquatic habitat that results in degradation water quality reducing habitat quality or prey abundance.

It should be noted that in instances where existing culverts are replaced with larger culverts, potential beneficial effects to special-status fish would result, including:

- restoring more natural hydraulic patterns (flow velocity, hydroperiod) to affected drainages;
- enhancing fish movement and habitat connectivity;
- preventing erosion and scour, as well as subsequent downstream sedimentation, caused from restricted water flow; and
- reducing the need for future culvert maintenance and replacement activities.

Potential direct and indirect effects to special-status fish would be significant. Mitigation Measures BIO-1 (annual staff training and monitoring), BIO-6 (preconstruction surveys and avoidance or compensation for unavoidable impacts), BIO-8 (dewatering and flow diversion requirements), BIO-9 (proper containment of hazardous or toxic construction materials), BIO-10 (containment of concrete leachate), BIO-16 (fish relocation during dewatering), HYD-1 (stabilization of exposed soils), HYD-2 (isolation of work areas with instream barriers), and HAZ-1 (establishment of Contingency Plan with procedures and countermeasures for accidental releases) (refer to full text in Section IX, Hazards and Hazardous Materials and Section X, Hydrology and Water Quality) would avoid and/or minimize potential negative effects these species and on suitable habitat for these species.

Mitigation Measure BIO-16: In areas subject to dewatering, EBMUD shall check daily for stranded aquatic life as the water level drops. All reasonable efforts shall be made to capture and move all stranded aquatic life observed in the dewatered areas. Capture methods may include fish landing nets, dip nets, buckets and by hand. Captured aquatic life shall be released immediately in the body of water closest to the work site.

Implementation of Mitigation Measures BIO-1, BIO-6, BIO-8 through BIO-10, BIO-16, HYD-1, HYD-2, and HAZ-1 would avoid and/or minimize potential disturbance to special-status fish through staff training and monitoring, preconstruction surveys and special-status species avoidance, and compensation for unavoidable impacts; potential negative effects on water quality within suitable habitat for special-status fish habitat would be avoided and/or minimized through work area isolation, prevention of pollutant introduction, and erosion prevention. While it is unlikely that these species would be impacted directly by Project activities with implementation of the mitigation measures described above, Project maintenance activities could potentially result in significant adverse effects on suitable habitat for federally listed species (i.e., Central Valley DPS steelhead). Mitigation Measure BIO-6 requires compensatory habitat for these species in the event that loss of occupied habitat is unavoidable. Through the implementation of the mitigation measures listed above, potential Project-related impacts on special-status fish would be less than significant with mitigation.

b. Less than Significant with Mitigation. The majority of maintenance sites are located adjacent to existing infrastructure that routinely undergoes disturbance and generally supports vegetation indicative of this disturbance that regenerates quickly (e.g., ruderal, grassland, marsh). Due to ongoing regular maintenance, only small patches of freshwater marsh, valley foothill riparian, and seasonal wetland occur within the Project areas, mostly within natural channels. These three vegetation communities are considered sensitive natural communities in undisturbed situations by CDFW. Upland habitat types that are considered sensitive natural communities in undisturbed situations by CDFW include chamise-redshank chaparral, Ione manzanita chaparral, and Ponderosa pine forest (CDFW 2019). Routine maintenance activities are actively excluded from Ione manzanita chaparral, so no Project impacts would occur within this chaparral subtype. Project maintenance activities could potentially impact freshwater marsh, valley foothill riparian, chamise redshank chaparral, and Ponderosa pine woodland as shown in Table 3-5 below.

Table 3-5: Annual Impacts to Sensitive Natural Communities within the Watershed by Maintenance Activity

Channel Type	Freshwater Marsh (acres)	Valley Foothill Riparian (acres)	Chaparral (acres)	Ponderosa Pine Woodland (acres)
Sediment and Debris Removal	5.0	0.67	---	---
Vegetation Trimming/Pruning	---	0.53-1.06	12.45	<1.0
Targeted Livestock Grazing	---	0.53	---	---
Culvert Replacement	0.02	-	---	<1.0
General Facilities Maintenance	2.64	1.2	---	---
Erosion Prevention, Control, Repair, and Protection	---	0.02	---	---

Channel Type	Freshwater Marsh (acres)	Valley Foothill Riparian (acres)	Chaparral (acres)	Ponderosa Pine Woodland (acres)
Pond Draining	0.15	0.07	---	---
Beaver Dam Removal/ Analogue	0.5	0.23	---	---
Total (acres)	**8.31**	**3.25-3.78**	**12.45**	**<2.0**
Note: Values provided for sensitive natural communities are approximate based on desktop review and field verification. Actual values may vary.				

As quantified in Table 3-5, potential impacts to these sensitive natural communities would be small in extent, minor in nature, and consist largely of repairs aimed at maintaining or improving the status quo within each routine maintenance area (i.e., no substantial changes in amount/quality of habitat would occur within the Watershed). For example, chaparral vegetation management would be selectively conducted with the goal improving the habitat for native species and thinning out overcrowded underbrush to encourage chaparral development. While chaparral would temporarily become less dense, there would not be an overall loss or conversion of the vegetation community. EBMUD also routinely restores riparian habitat annually, which lessens the impact of riparian habitat removed by routine maintenance activities. Impacts to sensitive natural communities would still be potentially significant due to the indirect effects that can occur from maintenance activities (e.g., erosion and sedimentation, incidental spills of hazardous materials). Impacts would be avoided and/or minimized through the implementation of Mitigation Measures BIO-1 (annual staff training and monitoring), BIO-2 (limiting vegetation disturbance and condition of import soils), BIO-8 (dewatering and flow diversion requirements), BIO-9 (proper containment of hazardous or toxic construction materials), BIO-10 (containment of concrete leachate), BIO-17 through BIO-20 (described below), HYD-1 (stabilization of exposed soils), HYD-2 (isolation of work areas with instream barriers), and HAZ-1 (establishment of Contingency Plan with procedures and countermeasures for accidental releases) (refer to full text in Section IX, Hazards and Hazardous Materials and Section X, Hydrology and Water Quality).

Mitigation Measure BIO-17: Any trees which must be cut shall be cut at ground level, leaving the root mass in place to maintain bank stability. Any live native trees greater than four inches diameter at breast height (DBH) removed shall be replaced at a 3:1 ratio, and exposed/disturbed areas shall be revegetated per Mitigation Measures BIO-18, and BIO-19 below. Replacement trees may include use of cuttings, acorns, or potted saplings (e.g., D-pots, five-gallon containers), and shall be native species adapted to the lighting, soil and hydrological conditions at the replanting site. If replanting within the work area is infeasible due to slope steepness or other physical constraints, replacement trees may be planted at an alternate location along the stream corridor.

Mitigation Measure BIO-18: All exposed/ disturbed areas and access points within the stream zone or waterbody left barren of vegetation following maintenance activities shall be revegetated with a blend of habitat-appropriate erosion control seeds using only fast growing, native species. The seed mix shall be certified weed-free and seeded areas shall be mulched. All other areas of disturbed soil which drain towards the stream channel or waterbody shall be seeded with native erosion control grass seeds. Revegetation shall be completed immediately (within two weeks)

after maintenance activities cease or before a significant rain event. Seeding placed after October 15 must be covered with broadcast straw, jute netting, coconut fiber blanket or similar erosion control blanket. Erosion control blankets with plastic monofilament or woven plastic strands, including biodegradable plastics, shall not be used.

Mitigation Measure BIO-19: To ensure a successful revegetation effort, all plants shall be monitored and maintained as necessary for five years. The following success criteria shall apply:

- All plantings shall have a minimum of 75% survival at the end of five years.
- Plants shall attain 70% cover after three years and 75% coverage after five years.
- If the survival and/or cover requirements are not meeting these goals, EBMUD is responsible for replacement planting, additional watering, weeding, invasive exotic eradication, or any other practice, to achieve these requirements. Replacement plants shall be monitored with the same survival and growth requirements for five years after planting.

Revegetation monitoring shall be conducted annually for a period of five (5) years to determine whether these goals have been met, and an annual report shall be provided to CDFW regarding revegetation status.

Mitigation Measure BIO-20: When riprap is placed for bank slope protection on a previously vegetated bank, it shall not be grouted or mortared. Interstitial spaces between rocks shall be backfilled with clean native soils or imported fill and planted with trees, shrubs, or other vegetation to minimize habitat loss. Only rocks and boulders free of organic material and soil that could carry weeds or pathogens from other areas shall be used for the project. Riprap shall be properly keyed into the bank and be of sufficient size to remain in place and withstand the highest velocity of water anticipated within the stream channel.

Implementation of Mitigation Measures BIO-1, BIO-2, BIO-8 through BIO-10, BIO-17 through BIO-20, HYD-1, HYD-2, and HAZ-1 would avoid and/or minimize potential impacts to sensitive natural communities through staff training and monitoring, preconstruction surveys and special-status species avoidance, minimizing vegetation disturbance associated with work and staging areas, monitoring and managing erosion and turbidity, properly containing hazardous materials and concrete leachate, replanting and restoring impacted habitats, and covering/planting newly placed rip-rap; potential negative effects on water quality within sensitive natural communities would be avoided and/or minimized through work area isolation, prevention of pollutant introduction, and erosion prevention.Through the implementation of the mitigation measures listed above, potential Project-related impacts to sensitive natural communities would be less than significant with mitigation.

c. Less Than Significant with Mitigation. Federally-protected wetlands and waters of the U.S. occur within the Watershed at many of the Project maintenance sites. Proposed maintenance activities could impact natural, modified, and engineered stream channels and portions of the Camanche and Pardee reservoirs. These features are generally considered waters of the U.S. and/or State. Potential impacts would be limited in scale and duration, and are expected to only temporarily affect waters of the U.S. and/or State. Impacts would be avoided to the extent possible and typically limited to infrequent situations where bank stabilization was necessary. **Table 3-6** below details the anticipated average

annual impacts to natural, engineered-earthen, and concrete-lined channels affected by proposed Project maintenance activities.

Table 3-6: Average Annual Impacts Anticipated from Project Maintenance Activities

Channel Type	Sediment & Debris Removal [1] (square feet/acres)	Erosion Protection, Control, and Protection[1] (linear feet/acres)	Facilities Maintenance[2] (linear feet/acres)	Environmental Stewardship (acres)
Natural Channels	1,200 / 0.028	100 / 0.028	170 / 0.047	-
Modified Channels	192,000 / 4.408	300 / 0.083	15,000 / 4.125	-
Engineered Channels	24,000 / 0.551	100 / 0.028	3,401 / 0.937	-
Pond/Reservoir	-	-	-	2
Uncategorized (culvert clearing/replacement and low-water crossings)	0.4	-	0.8	-
Total	**217,200 / 5.387**	**500 / 0.139**	**18,571 / 5.909**	**2**

[1] Impact values based on respective linear maxima for each channel type (i.e., 100 feet in natural channels, 16,000 feet in modified channels, and 2,000 feet in engineered earthen channels).

[2] Impact based on distribution of work by channel type in sediment and debris removal.

Mitigation Measure BIO-8 establishes authorized work windows that limit work to occur between June 1 and October 15 in natural and modified streams, ponds, and reservoirs with (earthen or rock-lined) bottoms and/or banks, and between April 15 and October 15 in engineered channels, when streams are dry or flow is at its lowest. Mitigation Measure BIO-8 also prohibits EBMUD from operating equipment in wetted portions of streams and requires EBMUD to install flow diversions (e.g., clear water diversions) and coffer dams to maintain water quality and flow around the affected portion of a Project site to minimize disruption to the channel. Most activities at Project sites would have a less than significant effect, as fill would not be added to waters of the U.S and/or State. However, Project activities may result in a significant impact in situations where bank/levee repair is necessary to maintain EBMUD infrastructure and the ultimate addition of fill in the form of riprap or clean soil is necessary. In such situations, EBMUD may need to seek applicable regulatory permits through coordination with the U.S. Army Corps of Engineers and/or the Regional Water Quality Control Board, consistent with Mitigation Measure BIO-21 below.

Mitigation Measure BIO-21: Prior to the implementation of any project that shall result in a net "loss" of waters of the U.S. and/or State, EBMUD shall coordinate with and obtain permits from the U.S. Army Corps of Engineers and the Regional Water Quality Control Board as appropriate. Compensatory mitigation for the loss of waters of the U.S. and/or State shall occur at a minimum 1:1 ratio for permanent impacts. Compensatory mitigation options may include restoration, enhancement, and preservation on- or off-site, or the purchase of mitigation credits at an approved mitigation bank.

As described above, the majority of Project activities would avoid substantial impacts on waters of the U.S. and/or waters of the State. With the implementation of Mitigation Measure BIO-21 in applicable situations where the addition of fill to waters of the U.S. and/or State is unavoidable, this impact would be less than significant with mitigation because compensation for permanent impacts would be provided in consultation with the appropriate regulatory agencies.

d. Less than Significant Impact with Mitigation. The Watershed is approximately 28,744 acres of numerous habitat types that occur in relatively large patches. The zones around streams and other waterbodies represent important wildlife migration corridors as various species utilize these areas for connections to uplands, cover, and water. Additionally, wildlife frequently utilize corridors around streams and waterbodies for prey opportunities that generally migrate along streams and other waterways. Elevation decreases across the Watershed in a general east to west direction, and wildlife are expected to move to higher elevations in summer and lower elevations during winter. No nursery sites are known from specific locations in the Watershed. Numerous streams and waterways occur throughout the Watershed including the Mokelumne River, Pardee and Camanche reservoirs, Kreth Ditch, Jackson Creek, Rock Creek, Carson Creek, Bear Creek, Camanche Creek, Rabbit Creek, Murphy Creek, and other minor drainages. However, varying degrees of human development (e.g., residential, agricultural) and transportation infrastructure (e.g., roads and highways) somewhat interrupt and fragment the natural land cover within and adjacent to the Watershed. The perennial streams, ponds, and reservoirs provide reliable sources of water for wildlife.

Wildlife that prefers open habitat may use the vast grasslands within the Watershed. This land cover is expansive and offers numerous locations and connections throughout the Watershed. Woodlands are located in several patches of the Watershed and in adjacent areas. Riparian vegetation in the Watershed is limited to streams, ponds, and reservoir shorelines; however, the broad area of the Watershed provides ample options for migrating wildlife. Wildlife is generally expected to cross the Watershed between large contiguous areas of riparian vegetation, which are relatively more limited than other land cover types but are still abundant. Given the scale and short duration of maintenance activities within the Watershed, wildlife species are not expected to be confined to any one location as there are numerous alternative habitats throughout the Watershed.

Fish are known to routinely migrate through several of the larger perennial streams (Mokelumne River) up to the Camanche Dam, which is a significant barrier. Activities in the Watershed immediately below the Dam could affect fish present, but the implementation of Mitigation Measure BIO-16 would avoid and/or minimize impacts on Central Valley DPS steelhead and Central Valley fall/late run ESU Chinook salmon, as well as other common fish species.

Project activities would occur infrequently at any one stream or waterbody location within the Watershed; therefore, Project activities would not substantially interfere with the movement of wildlife species or the use of established wildlife corridors. The Project would not interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites. With implementation of Mitigation Measure BIO-16, this impact would be less than significant with mitigation.

e. Less than Significant Impact. Although EBMUD is not subject to building and land use zoning ordinances (such as tree ordinances) for projects involving the transmission of water (Government Code Section 53091), EBMUD strives to consider and work with host jurisdictions and neighboring

communities during project planning and to conform to local environmental protection policies, where feasible and not contrary to its public purpose and responsibilities.

Amador, Calaveras, and San Joaquin counties have general plans with ordinances and policies for the protection of biological resources. Examples include ordinances that specify setbacks for wetlands, streams, and lakes; water quality; and regulate the removal of trees. The Project would not conflict with any of the applicable guiding principles in these counties as maintenance activities would consist of low-intensity work completed over short durations. For this reason, any potential impacts related to potential conflicts with local policies or ordinances regarding biological resources would be less than significant. No mitigation is required.

f. No Impact. There are no habitat conservation plans (HCP) or natural community conservation plans (NCCP) that occur within the Watershed. Further, EBMUD is subject to the federal and State laws and regulations governing endangered species impacts and obtains its own species "take" authorizations when necessary, as illustrated by the federal SHA. As such, the Project would not conflict with an approved or adopted HCP, NCCP, or other local regulation pertaining to biological resources. There would be no impact.

V Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of a unique archaeological resource as defined in Section 15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Discussion

The cultural resources impact analysis is based upon information provided in *Cultural Resources Assessment for the Mokelumne Watershed Routine Maintenance Project*, prepared by Horizon Water and Environment (April 2021) (see **Appendix C**). This section presents data on the previously recorded cultural resources within the Project area, and discusses mitigation approaches to reduce or eliminate significant impacts to cultural resources.

Cultural resources include prehistoric archaeological sites; historic-era archaeological sites; tribal cultural resources (TCRs); and historic buildings, structures, landscapes, districts, and linear features. Prehistoric archaeological sites are places where Native Americans lived or carried out activities during the prehistoric period, which is generally defined as before the early 1800s in the Project area. Historic-era archaeological sites reflect the activities of people after initial exploration and settlement in the region, and largely reflect Anglo-American colonization during the mid-1800s with the advent of the Gold Rush. Native American sites can also reflect the historic era. Prehistoric and historic-era sites contain artifacts, cultural features, subsistence remains, and human burials. TCRs are addressed in Section XVIII., Tribal Cultural Resources.

APPROACH TO IMPACT ANALYSIS

Architectural Resources

Due to the nature of the routine maintenance activities proposed, such as sediment and debris removal, vegetation management, and routine maintenance of existing infrastructure, no potential adverse change is expected to any historical architectural resource because no material alteration of the existing built environment is proposed for the purposes of the routine maintenance, nor are any changes in the physical setting proposed. As a result, the proposed Project would not cause a substantial adverse change to an architectural or built environment resource and, therefore, impacts to built environment resources are not considered in this impact analysis.

Archaeological Resources

Previously recorded archaeological sites occur within the EBMUD Watershed and some sites likely intersect with future maintenance locations. Few of these sites have been revisited since their initial

recordation, nor have many been evaluated for the California Register of Historic Resources (CRHR)[2] in accordance with Section 15064.5(a)(2-3) of the CEQA Guidelines, using the criteria outlined in the Section 5024.1 of the California Public Resources Code (Pub. Res. Code).

Furthermore, given the geographic scale of the Project area and the fact that the entire EBMUD Watershed has not been entirely subject to pedestrian survey, a number of previously unrecorded archaeological resources undoubtedly exist. This impact analysis provides an assessment of the potential for effects on important cultural resources that could result from routine maintenance activities.

Mitigation measures are identified to ensure maintenance activity impacts to archaeological resources are reduced to less than significant levels.

ARCHIVAL SEARCH

Given the extent of the Watershed and that it crosses the boundaries of three counties—Amador, San Joaquin, and Calaveras—a records search was requested from two offices of the California Historical Resource Information System: the North Central Information Center (Records Search Number AMA-19-26; Amador County) and the Central California Information Center (Records Search Number 11122JL; San Joaquin and Calaveras counties). In addition to requesting geospatial data of previously recorded cultural resources and previously surveyed areas within the Watershed, the archival research included review of the California Inventory of Historical Resources, local historical inventories, historical literature, and historical maps, including USGS topographic maps, General Land Office maps, and Rancho Plat Maps.

The California Native American Heritage Commission (NAHC) also conducted a search of their files for the presence of recorded significant tribal resources within the Watershed. In their response letter, dated September 19, 2019, the NAHC reported that no previously recorded sacred sites are known to exist within the Watershed boundary. The two record searches identified 154 previously recorded cultural resources within the EBMUD Watershed, as summarized in **Table 3-7**. Two-thirds of the resources are prehistoric Native American sites, while most of the remainder are resources of the historic era; only seven of the total resources contain both prehistoric and historic period elements. Prehistoric Native American resources are dominated by bedrock milling station sites, but also include a number of rock shelters/caves, in addition to habitation sites, lithic scatters, and petroglyph/pictograph sites. Historic era sites overwhelmingly reflect the mining and ranching history of the area.

[2] Cultural resources that are eligible for or listed in the CRHR are referred to as *historical resources*. Cultural resources that are eligible for or listed in the NRHP are referred to as *historic properties*.

Table 3-7: Cultural Resource Types Recorded within Mokelumne Watershed

Site Type	Site Age			
	Historic Era	Prehistoric	Prehistoric, Historic Era	Grand Total
Building, Structure, Site	—	—	1	1
Element of District	14	—	—	14
Object	—	4	—	4
Other	—	1	—	1
Site	20	94	6	118
Site, Other	1	—	—	1
Structure	4	—	—	4
Structure, Site	3	6	—	9
Grand Total	**42**	**105**	**7**	**154**

A vast majority of the previously recorded sites have not been evaluated for NRHP or CRHR eligibility. However, one resource, the Penn Mine Historic Mining District (site P-05-001963), has been determined eligible for inclusion in the NRHP (Nilsson et al. 1998). This large, complex site covers over 300 acres on the south side of the Mokelumne River and is now largely inundated by Camanche Reservoir. Although only 40 acres of the historic district have been studied intensively, 39 features that reflect copper mining dating back to 1861 have been recorded. The remainder of the district likely contains hundreds more related features. The Penn Mine Historic Mining District was recommended eligible for the NRHP under Criteria A) associated with events that have made a significant contribution to the broad patterns of our history, C) embodies the distinctive characteristics of a type, period, or method of construction, and D) have yielded, or may be likely to yield, information important in prehistory or history, per 36 Code of Federal Regulations (CFR) part 60.4. The historic district is eligible for the CRHR pursuant to Pub. Res. Code 5024.1(d)(1) under Criteria 1, 3, and 4, which mirror the eligibility criteria of the NRHP.

The Project area also includes California Historical Landmark number 254, recorded as site P-05-002243. The landmark plaque commemorates the town of Camanche, which was once located along Camanche Creek, approximately one mile west of the Camanche South Shore Recreation Area, where the plaque is located.

The record searches, furthermore, revealed that 62 cultural resources studies have been conducted in the Project area. As the result of these studies, 96 percent of the Project area around Camanche Reservoir has been subject to pedestrian archaeological survey, but only 29 percent of the Pardee Reservoir Project area has been studied.

IMPACT ANALYSIS

Various maintenance activities under the proposed Project that include ground disturbance have the potential to disturb archaeological sites. These activities could disturb both previously recorded archaeological resources as well as those that are within the Project area that have yet to be recorded. This also includes sites that are buried without any surface manifestation. Ground disturbing maintenance activities identified in Chapter 2, *Project Description*, that have the potential to disturb archaeological resources, are discussed below.

Sediment and Debris Removal

Activities that restore the original capacity of channels through the removal of sediment and debris, or otherwise do not require excavation into original ground, are assumed to not have the potential to disturb archaeological resources. However, grading of temporary access ramps and excavation into natural ground during the removal of beaver dams could damage archaeological sites.

Vegetation Management

Mowing, discing and grazing all have the potential to disturb surface archaeological materials; however, the recurrence of these activities, under the proposed Project, in areas where such activities have previously occurred would not be expected to cause new impacts to sites, should resources be present. Mechanical removal of root balls, particularly of trees, could also disturb surface and buried archaeological resources.

Facilities Maintenance

Routine maintenance and repair of facilities within the Project area is not anticipated to damage archaeological resources. The replacement of some facilities, such as culverts, however, could require ground disturbance outside of the original prism of construction and potentially damage sites.

Erosion Prevention, Control, Repair, and Protection

Bank stabilization activities that involve excavation into original ground have the potential to disturb archaeological remains. Such activities include the grading and reshaping of natural banks for the installation of earthen fill or rocks, or replacement and repair of existing eroded rip-rap. Bank stabilization repairs on engineered levees or natural banks, up to 20 feet on the landward of the feature, could also disturb archaeological sites.

Environmental Stewardship

Activities related to habitat enhancement, such as the restoration of native vegetation or construction of earthen mounds or debris piles, could cause disturbance to archaeological remains. Similarly, installation of beaver dam analogues and fish spawning structures have the potential to damage archeological resources if excavation is required.

EBMUD prepared a Programmatic Environmental Impact Report (PEIR) for the MWMP in 2008 (EBMUD 2008), as discussed in Chapter 2. The PEIR includes a Specific Project Environmental Review Guide, which provides a series of guidelines developed to address potential impacts from projects that may not have fully been addressed in the PEIR (see Section 2.6.2). Three guidelines in the MWMP's Review Guide pertain to cultural resources, as follows:

Guideline Cul-1: Prepare an inventory of known or suspected historical, archaeological, or paleontological resources[3]. *During project planning and design*, consult the Cultural Resource Inventory, if [it] has been completed as part of the GIS database. If not completed, survey the area of potential effect to determine if cultural resources do or may exist. Where feasible, avoid these resources and protect them from disturbance.

[3] Note that paleontological resources were moved from Section V., Cultural Resources, to Section VII., Geology and Soils, in 2018 and, therefore, are not included as part of this impact analysis.

Guideline Cul-2: Consult the cultural resources inventory to determine resource location and plan the project to avoid resource impacts. *During project planning and design*, consult the Watershed database, if available, or the project-specific survey to determine if the project would affect resources identified on the inventory. For trails or facilities that would be in close proximity to suspected or known historic or archaeological resources, implement appropriate avoidance procedures to prevent destruction of, or substantial adverse changes to, the resource. This may involve pre-construction site surveys and/or qualified construction monitors. Develop alternatives that will avoid the resource and any associated impact. If avoidance is infeasible, consult with a qualified professional on how to proceed.

Guideline Cul-4: If human remains are discovered, stop work and notify the coroner. *During construction*, if human or suspected human remains are discovered all work at the location and in the vicinity will stop immediately and the County Coroner will be notified.

These guidelines are included as part of project specifications and are standard practice for EBMUD. Mitigation measures presented below build on these guidelines.

a. Less than Significant with Mitigation. The Penn Mine Historic District has been determined eligible for listing in the NRHP, and is, therefore, eligible for the CRHR pursuant to Pub. Res. Code 5024.1(d)(1). Maintenance activities implemented under the proposed Project that cause ground disturbance in the vicinity of the Penn Mine Historic District have the potential to damage the resource. To avoid known resources during ground disturbing activities, as described above, Guidelines Cul-1 and Cul-2 from the MWMP Specific Project Environmental Review Guide have been incorporated into the Project and will be implemented by EBMUD. These guidelines would involve consulting the cultural resources inventory to determine if an area had previously been surveyed as well as resource locations. If a known resource is within a project location, EBMUD would plan the project to avoid resource impacts. While these guidelines would identify the presence of the Penn Mine Historic District, they do not provide specific measures for avoiding significant impacts to the historic resource, which covers a large area. To reduce impacts to levels that are less than significant, EBMUD would implement Mitigation Measures CR-3 and CR-4, listed below under Consideration of Maintenance Activity Work Cycle, which would reduce impacts when working in the area of the Penn Mine Historic District to a level that is less than significant. Mitigation Measure CR-3 would require projects within the Penn Mine Historic District be reviewed by a qualified archaeologist, which would ensure that elements of the historic district are accurately identified. Should features of the historic district be located within a project area where avoidance is not possible, under Mitigation Measure CR-3, the feature would be evaluated to determine if it is a contributing element of the historic district. Should the element be determined to be a contributor to the eligibility of the Penn Mine Historic District, implementation of Mitigation Measure CR-4 would ensure that appropriate mitigation measures, specific to the feature, would be applied and, thus, reduce impacts to a level that is less than significant.

As mentioned above, most of the previously recorded archaeological sites within the Project area have not been evaluated for CRHR or NRHP eligibility; therefore, many of those sites may meet the eligibility criteria found in Pub. Res. Code 5024.1 or 36 CFR 60.4. Prior to implementing any routine maintenance activities, EBMUD would consult its Cultural Resource Inventory database per Guideline Cul-2, which would identify locations sensitive for archaeological sites and the locations of previously recorded resources; however, this guideline would not provide specific directions for avoiding significant impacts to historical resources. Following the requirements of Mitigation Measures CR-3 and CR-4 would ensure that areas of sensitivity and previously recorded resources would be examined by a qualified archaeologist. If a historical resource is found within a project

footprint, and the resource cannot be avoided, appropriate management actions would be developed and implemented by a qualified archaeologist to reduce impacts to known sites determined to be historical resources to a level that is less than significant.

Therefore, with the implementation of Mitigation Measures CR-3 and CR-4 the Project's impacts related to cultural and historical resources would be reduced to levels that are less than significant with mitigation.

Finally, historical resources that are archaeological in nature may be accidentally discovered during Project maintenance activities. Addressing archaeological resources under these circumstances is discussed further below.

b. and c. Less than Significant with Mitigation. Archaeological remains may be buried with no surface manifestation. If archaeological remains are accidentally discovered that are determined eligible for listing in the CRHR/NRHP, or determined to be a unique archaeological resource or a TCR, and Project activities would affect them in a way that would render them ineligible for such listing or determination, a significant impact would result. Should previously undiscovered archaeological resources be found, implementation of Mitigation Measure CR-1 would ensure that impacts on eligible archaeological sites, unique archaeological sites, or TCRs accidentally uncovered during maintenance activities are reduced to a less-than-significant level by immediately halting work if materials are discovered, evaluating the finds for CRHR/NRHP eligibility, and implementing appropriate mitigation actions, as necessary. Implementation of Mitigation Measure CR-1 would reduce impacts related to accidental discovery of archaeological resources to a level that is less than significant.

Mitigation Measure CR-1: All EBMUD maintenance personnel shall attend a cultural resources training course. The training program will be completed in person or by watching a video conducted by a qualified archaeologist. The program will discuss cultural resources awareness within the project work limits, including the responsibilities of maintenance personnel, applicable mitigation measures, confidentiality, and notification requirements. Prior to accessing or performing maintenance work, all EBMUD personnel shall sign an attendance sheet by the qualified archaeologist verifying that they have attended the appropriate level of training; have read and understood the contents of the training; have read and understood the contents of the "Confidentiality of Information on Archaeological Resources;" and shall comply with all project environmental requirements.

In the event that potential cultural resources are discovered at a maintenance site, all maintenance activities shall immediately cease at the location of discovery and within 100 feet of the discovery. EBMUD will retain a qualified archaeologist to inspect the findings within 24 hours of discovery. If it is determined that maintenance activities could damage a historical resource as defined by CEQA, or a historic property as defined by the National Historic Preservation Act of 1966, as amended, maintenance activities shall cease in an area determined by the archaeologist until a mitigation plan has been prepared, approved by EBMUD, and implemented to the satisfaction of the archaeologist (and Native American representative if the resource is prehistoric, who shall be identified by the NAHC). In consultation with EBMUD, the archaeologist (and Native American representative) will determine when construction can resume.

Record search data identified one previously recorded Native American site with human remains within the Watershed area. Although this site is currently under Camanche Reservoir, it serves as an indicator that human remains may be found in other parts of the Project area. Should any such remains be discovered during routine maintenance activities, the California Health and Safety Code Section 7050.5 requires that work immediately stop within the vicinity of the finds and that the county coroner of where the remains are found be notified to assess the finds. As described above and in Chapter 2, *Project Description*, Guideline Cul-4 Guideline Cul-4 from the MWMP Specific Project Environmental Review Guide has been incorporated into the Project and will be implemented by EBMUD. This guideline would require that all work stop in the even that human remains are found. Because this guideline does not specify the area in which work must stop (i.e., buffer zone) or outline requirements for contacting the NAHC, potential impacts to human remains could still occur. EBMUD would implement Mitigation Measure CR-2, which would ensure that the Project would not result in any substantial adverse impacts on human remains uncovered during the course of maintenance activities by requiring that all work stop within 100 feet of the discovery, and that the applicable county coroner be contacted if human remains are uncovered, including contact with the NAHC to identify likely descendants. Adherence to these procedures and provisions of the California Health and Safety Code would reduce potential impacts on human remains to a level that is less than significant.

> **Mitigation Measure CR-2:** In the event that human remains are discovered, all maintenance activities shall immediately cease at the location of discovery and within 100 feet of the discovery. EBMUD will contact the County Coroner pursuant to Health and Human Safety Code Section 7050.5 to determine whether or not the remains are Native American. If the remains are determined to be Native American, the Coroner will contact the NAHC. The NAHC will then implement the requirements of Pub. Res. Code 5097.98 and identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn would make recommendations to EBMUD for the appropriate means of treating the human remains and any associated funerary objects.

Therefore, with the implementation Mitigation Measures CR-1 and CR-2, which require implementation of archaeological resources procedures that address the inadvertent discovery of cultural resources and human remains and follow statutory law, the Project's impacts related to cultural resources would be reduced to levels that are less than significant.

CONSIDERATION OF MAINTENANCE ACTIVITY WORK CYCLE

As described in Chapter 2, maintenance activities would be conducted throughout the year as required to both maintain the health of the Mokelumne Watershed and the functional and structural integrity of its infrastructure and facilities. Maintenance site locations would vary from year to year. It is possible that additional archaeological resources, not currently known at the time of this analysis, could be recorded in future years that would overlap with proposed maintenance locations in a given year. Review of the EBMUD Geographic Information System (GIS) database, which is annually updated, would reveal potential overlaps. All overlapping recorded archaeological resources would need to be reevaluated in accordance with Section 15064.5(a)(2-3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Pub. Res. Code, in order to determine resources eligible for listing on the CRHR or the NRHP and the significance of any impacts that could result from the identified maintenance activity on those resources. Implementation of Mitigation Measures CR-3 and CR-4 would ensure that future maintenance-related impacts would be less than significant.

Mitigation Measure CR-3: Prior to initiating maintenance activities in a given year, EBMUD shall review the Archaeological Resources GIS database, including mapping developed to identify areas sensitive for surface and buried archaeological resources, for all locations where ground-disturbing maintenance activities within previously undisturbed soils (excluding sediment removal areas in drainages) are anticipated. A qualified archaeologist shall conduct a review and assessment of those maintenance sites that overlap with newly recorded resources within the last year or within areas defined as sensitive to determine the potential for affecting significant cultural resources. If a location identified for maintenance activities that require ground disturbance has not previously been surveyed for archaeological resources and is within an area identified as sensitive for resources, a qualified archaeologist shall conduct a field review to determine if surficial evidence of a resource is present. Further archival record search and literature review (including a review of the Sacred Lands Inventory of the NAHC) shall be conducted, as appropriate.

Identified cultural resources that may be impacted by a proposed maintenance activity shall be evaluated for eligibility for listing on the CRHR, or as a unique archaeological site or tribal cultural resource, if they cannot be avoided by maintenance activities. Cultural resources that are eligible for the CRHR are considered to be significant cultural resources, as are unique archaeological sites and TCRs. Cultural resources that are identified within Project areas subject to federal approval, permits, or funding shall also be evaluated for eligibility for listing on the NRHP. Cultural resources determined to be eligible for listing on the NRHP are automatically eligible for listing on the CRHR and are considered to be significant cultural resources.

A cultural resources report summarizing the results of the assessment and indicating appropriate management actions for individual maintenance sites (e.g., no action, monitoring during construction, presence/absence testing for subsurface resources; data recovery, etc.) shall be developed by a qualified archaeologist. The management actions shall be implemented to avoid significant effects to cultural resources.

Mitigation Measure CR-4: Archaeological Data Recovery. If it is infeasible to avoid impacts on archaeological sites that have been determined to be eligible for listing on the CRHR or the NRHP, additional research including, but not necessarily limited to, archaeological excavation shall be conducted (California Code of Regulations [CCR] Section 15126.4 (b)(3)(C)). This work shall be conducted by a qualified archaeologist and shall include preparation of a research design; additional archival and historical research; archaeological excavation; analysis of artifacts, features, and other attributes of the resource; and preparation of a technical report documenting the methods and results of the investigation in accordance with the California Office of Historic Preservation *Guidelines for Archaeological Research Design* (1991). The purpose of this work is to recover a sufficient quantity of data to compensate for damage to or destruction of the resource. The procedures to be employed in this data recovery program shall be determined in consultation with responsible agencies and interested parties, as appropriate. Where necessary, EBMUD would seek Native American input and consultation.

VI Energy

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Discussion

Energy resources are regulated through a variety of federal, State, and local regulations. At the federal level, the USEPA and the National Highway Traffic Safety Administration (NHTSA) have developed regulations to improve the efficiency of cars, and light-, medium-, and heavy-duty vehicles. Energy resource-related regulations, policies, and plans at the State level require the regular analysis of energy data, the development of recommendations to reduce statewide energy use, and the establishment of requirements on the use of renewable energy sources. In addition, California's 2017 Climate Change Scoping Plan, which details California's strategy for achieving its greenhouse gas (GHG) targets, includes energy-related goals and policies. It contains measures and actions that may pertain to the proposed Project relating to vehicle efficiency and transitioning to alternatively-powered vehicles (CARB 2017). Many of the general plans for counties that overlap the proposed Project area contain goals, policies, and strategies related to energy resources. In addition, as discussed in Section VIII, Greenhouse Gas Emissions, some counties in the Project area have adopted or drafted climate action plans (CAPs), Energy Action Plans, or GHG emission reduction plans which involve energy-related measures.

EBMUD has adopted a Sustainability Policy (Policy 7.05 Sustainability and Resilience) with the goal of providing drinking water and wastewater services through sustainable operations and construction activities that avoid, minimize or mitigate adverse effects to the economy, environment, employees, and the public (EBMUD 2019). As part of the implementation of this policy, EBMUD minimizes its energy use and annually generates over 200,000 megawatt hours of energy through hydropower, solar power, and biogas production (EBMUD 2012). EBMUD has hydroelectric plants at Pardee and Camanche reservoirs and in 2019 completed installation of a solar project near Camanche Dam (EBMUD 2020). In addition, EBMUD has a carpool program and a vehicle fleet with hybrid cars and trucks powered by renewable diesel (EBMUD 2012, EBMUD 2019). EBMUD also has an established District-wide engine idling procedure (EBMUD 2010), which is also detailed in the Emissions Control Practices of EBMUD's Mokelumne Watershed Routine Maintenance Standard Practices (See Table 2-1 in Chapter 2). EBMUD maintains its equipment in accordance with the manufacturer's specifications, and continues to investigate opportunities to develop other renewable energy sources (EBMUD 2019).

a, b. Less than Significant Impact. The proposed Project's maintenance activities would require the consumption of energy (fossil fuels) for construction equipment, worker vehicles, and hauling trucks. **Table 3-8** shows the estimated annual fuel use from construction equipment, worker vehicles, and truck trips (the calculations used to develop these estimates are presented in Appendix A). These maintenance activities would generally be a continuation of existing activities, with a similar level of energy use by construction equipment and vehicles consistent with EBMUD's sustainability policy

implementation to reduce fossil fuel use from its fleet of vehicles. These activities are necessary to protect critical drinking water infrastructure. The proposed Project would be implemented in compliance with EBMUD's Sustainability Policy and Environmental Compliance Manual. Additionally, as described in Table 2-1 of Chapter 2, *Project Description*, a number of EBMUD Mokelumne Watershed Routine Maintenance Standard Practices have been incorporated into the Project. Emissions Control Standard Practices would minimize energy consumption during maintenance activities by prioritizing electric power over diesel when possible, limiting vehicle idling, and ensuring proper maintenance of vehicles and equipment.

Table 3-8: Project Fossil Fuel Use

Source Type	Diesel Fuel Use (gallons)	Gasoline Fuel Use (gallons)
Off-road Construction Equipment[1]	26,556	
Worker Vehicles[2]		739
Vendor Vehicles[3]	318	
Hauling Vehicles[4]	46	

[1] Fuel use for off-road construction equipment was estimated using a fuel use factor from CARB's off-road in-use engine emissions model of 0.347 pound of diesel per horsepower-hour and diesel fuel density of 7.37 pounds per gallon.

[2] Fuel use for construction worker vehicles was estimated using fuel use estimates from the Emission Factor model (EMFAC) with an estimated rate of 27.6 miles per gallon.

[3] Fuel use for vendor vehicles was estimated using fuel use estimates from EMFAC with an estimated rate of 8.1 miles per gallon.

[4] Fuel use for hauling vehicles was estimated using fuel use estimates from EMFAC with an estimated rate of 6.6 miles per gallon.

Since the proposed Project is necessary to protect critical water infrastructure and surrounding habitat, and would implement practices to ensure energy is used efficiently, the Project would not result in the wasteful, inefficient, or unnecessary consumption of energy or conflict with a State or local plan for renewable energy or energy efficiency. Therefore, with adherence to EBMUD's Emissions Control Standard Practices, this impact would be less than significant. No mitigation is required.

VII Geology and Soils

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on strata or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil as defined in Table 18-1-B of the Uniform Building Code 1994, creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Discussion

a. (i. and ii.). Less than Significant Impact. The Project lies between the eastern San Joaquin Valley the western Sierra Nevada foothills, which is not considered a seismically active region. There are no faults in the region of the Mokelumne Watershed listed on the Alquist-Priolo Earthquake Fault Zoning Map, and the Upper Mokelumne Watershed has little recent history of fault movement and few earthquakes larger than Richter magnitude 3.5 over the past century (EBMUD 2008). While the Bear Mountains zone of the Foothills fault system passes through western Amador and Calaveras counties, there has been no movement on the fault for over 10,000 years (EBMUD 2008). Therefore, the potential for seismic shaking to occur within the Project area is very low. As such, the Project

would not directly or indirectly expose people to substantial adverse effects associated with fault rupture and strong seismic ground shaking beyond the existing conditions. Impacts would be less than significant, and no mitigation is required.

a. (iii.) Less than Significant Impact. The factors known to influence liquefaction potential include soil type, relative density, grain size, confining pressure, depth to groundwater, and the intensity and duration of seismic ground shaking. The Watershed is not located within an area susceptible to liquefaction (CDOC 2018). Because the Project involves conducting routine maintenance activities at existing facilities and does not involve the construction of new structures that would directly or indirectly expose people to substantial adverse effects including liquefaction, impacts would be less than significant, and no mitigation is required.

a. (iv.) Less than Significant Impact. Seismically induced landslides and other slope failures are common occurrences during or soon after earthquakes in areas with significant ground slopes. The Watershed is not located within any identified seismic landslide zones (CDOC 2018). However, the slopes and hillside areas along the reservoirs and upland areas are potentially susceptible to small, localized landslides (CDOC 2018). In addition, the Project involves conducting routine maintenance activities from within or alongside reservoirs, ponds, channels and culverts, and on levee and streambanks that may also be susceptible to slides. However, should routine maintenance occur near a slope that is sufficiently steep to create a potential landslide, as described in Table 2-1 of Chapter 2, *Project Description*, Guideline Geo-1 from the MWMP Specific Project Environmental Review Guide has been incorporated into the Project and will be implemented by EBMUD. Guideline Geo-1 would require a geologist or geotechnical professional to evaluate the potential risk to EBMUD facilities prior to construction activities. Furthermore, routine maintenance activities would reduce the potential for landslides and bank failures to occur through the repair, replacement and/or removal of sediment and debris from drainage facilities, including culverts and low water crossings, which are designed to convey water and reduce the potential for erosion, flooding, and ultimately landslides. Additionally, bank stabilization efforts would involve the placement of earthen fill, installation of rocks, and the replacement and repair of existing eroded rip-rap to control erosion on channel, levee, historical sites, and reservoir banks.

The Project would also adhere to applicable Title 24 of the California Building Code (CBC), which sets minimum requirements for building design and construction. Relevant provisions of the CBC require the preparation of foundation and soils reports and other geotechnical reports that address site-specific conditions, potential hazards, and required methods and design parameters for remediating and protecting against potential seismic hazards to reduce the potential for damage associated with landslides and ensure protection of public health and property. Therefore, with adherence to Title 24 of the CBC and with incorporation of Guideline Geo-1, impacts would be less than significant, and no mitigation is required.

> **Guideline Geo-1: Evaluate the potential for landslides to affect a facility.** *During project planning and design*, if a facility is proposed to be developed on or near a slope that is sufficiently steep to create a potential landslide, have a competent geologist or geotechnical professional evaluate this risk.

b. Less than Significant. The Project would involve ground-disturbing activities such as sediment and debris removal; repair and replacement of culverts, drainage and erosion control structures; and bank and levee repairs. These ground-disturbing activities may result in increased risk of erosion and sedimentation due to sediment loading or sediment-laden water entering watercourses, or disturbance

of new areas during maintenance activities. Erosion or sediment loading into watercourses also could occur if maintenance activities do not revegetate exposed soils or restore low-flow channels as closely as possible to their original location and form.

As described in Chapter 2, *Project Description*, EBMUD restores site grades and replants areas where sediment removal activities have occurred. Bio-engineering methods (e.g., brush walls, or other plantings and seeding) are used at bank stabilization sites to stabilize eroding streambanks. Nonetheless, erosion and sediment loading could occur during routine maintenance activities if adequate controls are not in place. As such, and as described in Table 2-1 of Chapter 2, Biological Resources Standard Practices from EBMUD's Mokelumne Watershed Routine Maintenance Standard Practices and Guideline Geo-2 from the MWMP Specific Project Environmental Review Guide have been incorporated into the Project and will be implemented by EBMUD. Guideline Geo-2 would require installation of runoff controls prior to the beginning of the rainy season to prevent soil from migrating off site and protect against erosion. Biological Resources Standard Practices include the use of wildlife friendly erosion resistant coverings to avoid the use of materials that may cause entrapment of wildlife. Therefore, with incorporation of Biological Resources Standard Practices and Guideline Geo-2, impacts would be less than significant. Although not necessary to ensure impacts are less-than-significant, the addition of Mitigation Measure BIO-2 would further reduce impacts by limiting vegetation disturbance to the immediate maintenance footprint necessary, which prevents short-term erosion and loss of topsoil by maintaining vegetation that stabilizes soils. In the long term, proposed maintenance activities would result in beneficial effects by stabilizing and reducing erosion or slumping of channel and streambanks.

c. Less than Significant Impact. Proposed maintenance activities would be conducted in some areas that are considered unstable. However, the Project includes removing sediment and debris; managing vegetation; maintaining facilities such as culverts, low water crossings, and erosion and drainage control structures; and stabilizing streambanks and levees to improve conveyance, control runoff along roads and within channels, and minimize erosion. Thus, implementation of the Project would protect EBMUD facilities from becoming unstable and reduce the risk of landslides, erosion, subsidence, or road collapse due to misdirected runoff. Further, implementation of Guideline Geo-1 from the MWMP Specific Project Environmental Review Guide would require a geologist or geotechnical professional to evaluate the potential landslide risk to EBMUD facilities. Finally, maintenance activities would adhere to Title 24 of the CBC, which sets minimum requirements for building design and construction. to maintain public health and safety. Therefore, impacts associated with unstable geologic units would be less than significant, and no mitigation is required.

d. Less than Significant Impact. Expansive soils contain types of clay minerals that occupy considerably more volume when they are wet or hydrated than when they are dry or dehydrated. Volume changes associated with changes in the moisture content of near-surface expansive soils can cause uplift or heave of the ground when they become wet or, less commonly, cause settlement when they dry out. The soils in developed portions of the Project area located in Amador and San Joaquin counties do not have limitations with regard to shrink-swell potential and are not considered to be expansive soils; while soil surveys are not available for the portion of the Project area within Calaveras County, issues with building foundations that could result from expansive soils have not been reported (EBMUD 2008). Further, because the Project would adhere to Title 24 of the CBC, which sets minimum requirements for building design and construction, and does not involve the construction of new structures that would increase risk to life and property due to expansive soils within the Project area, impacts would be less than significant, and no mitigation is required.

e. No Impact. A limited number of septic systems are located at some of EBMUD's operating facilities on Watershed lands (EBMUD 2008). However, the Project does not include construction of or connections to septic tanks or alternative wastewater disposal systems. Therefore, no impacts would occur related to the soil's capability to adequately support the use of septic tanks or alternative wastewater disposal systems.

f. Less than Significant with Mitigation. Paleontological discovery is possible given that some maintenance activities could occur in areas that have not been modified from their natural condition. Based on past finds and the age of various geological formations in Calaveras County, it is likely that paleontological resources would be encountered, especially in association with caves, limestone formations, and the Mehrten geological formation (Calaveras County 2019a), located in the Sierra foothills. Ground-disturbing activities, such as sediment and debris removal; repair and replacement of culverts, drainage and erosion control structures; and bank and levee repairs would not require significant excavation; however, the Project could accidentally impact unknown paleontological resources during ground-disturbing activities. Unknown and accidental paleontological discoveries during maintenance-related activities have the potential to result in significant impacts to paleontological resources. Should previously undiscovered paleontological resources be found, implementation of Mitigation Measure GEO-1 would reduce impacts to a less-than-significant level by immediately halting work if materials are discovered, evaluating the significance of the find, and implementing appropriate mitigation measures, as necessary. Therefore, implementation of Mitigation Measure GEO-1 would reduce this impact to a level that is less than significant with mitigation.

> **Mitigation Measure GEO-1**: If items of paleontological interest are accidentally discovered during maintenance, work shall be immediately suspended at, and within 100 feet of the discovery site. EBMUD will retain a qualified paleontologist to inspect the findings within 24 hours of discovery. The qualified paleontologist, in accordance with Society of Vertebrate Paleontology guidelines (Society of Vertebrate Paleontology 2010), will assess the nature and importance of the find and recommend appropriate salvage, treatment, and future monitoring and management. If it is determined that maintenance activities could damage a paleontological resource as defined by the Society of Vertebrate Paleontology guidelines, maintenance activities shall cease in an area determined by the paleontologist until a salvage, treatment, and future monitoring and management plan has been prepared, approved by EBMUD, and implemented to the satisfaction of the paleontologist. In consultation with EBMUD, the paleontologist will determine when maintenance activity can resume.

VIII Greenhouse Gas Emissions

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

Discussion

a. Less than Significant Impact. The proposed Project would directly generate GHG emissions during maintenance activities from burn piles and the combustion of fossil-fuels by construction equipment, trucks hauling materials, and worker vehicles.

As discussed in Section III, Air Quality, the proposed Project spans two air basins and would fall under the jurisdiction of the SJVAPCD, the AAD, and the CCAPCD. These air districts have not identified quantitative thresholds of significance for GHGs. The SJVAPCD has adopted a best performance standards (BPS) threshold for GHG emissions based on an achievable in-practice analysis of improvement over a business-as-usual scenario (determined by use of established specifications or project design elements) (SJVAPCD 2020). However, at this time there is not an approved BPS for this type of project. Furthermore, the SJVAPCD threshold has also not been updated to reflect the Senate Bill (SB) 32 2030 goal. Therefore, the published California air district mass emissions thresholds were reviewed and considered in developing an appropriate threshold. The applicable threshold for the proposed Project was determined to be the Sacramento Metro Air Quality Management District's (SMAQMD) 1,100 $MTCO_2e/yr$.

Maintenance-related emissions were estimated using CalEEMod version 2016.3.2, which uses estimates from CARB's models for off-road vehicles and the Emissions Factor Model 2014 (EMFAC2014). Project construction assumptions, including equipment usage and schedule, used for this analysis are based on input from EBMUD maintenance staff and Chapter 2, *Project Description*. Further details on the specific equipment size, hours of use, and vehicle miles traveled are found in Appendix A. GHG emissions from livestock grazing were estimated based on California Department of Forestry and Fire Protection's (CAL FIRE's) method developed for the California Vegetation Treatment Program (CalVTP). Burn pile emissions were not included in this analysis since detailed information needed to estimate these emissions is not readily available as the amount of material in piles and number of piles to be burned is not known; therefore, it would be speculative to estimate emissions from this activity. Additionally, as vegetation regrows in these areas, a similar amount of carbon dioxide would be removed from the atmosphere and sequestered in biomass and the surrounding soil and would not result in a cumulatively considerable increase in emissions. This is the scenario modeled for greenhouse gas emissions discussed below.

Estimated emissions associated with the Project's maintenance activities would be 119 $MTCO_2e/yr$ in 2022 and are expected to decrease in future years as fleets introduce more efficient and/or alternatively-powered vehicles in line with State regulations and EBMUD goals. As discussed in

Section VI, Energy, EBMUD has a carpool program and a vehicle fleet with an increasing number of hybrid or electric cars, trucks, and equipment powered by renewable diesel (EBMUD 2019). Additionally, as described in Table 2-1 of Chapter 2, *Project Description*, a number of EBMUD Mokelumne Watershed Routine Maintenance Standard Practices have been incorporated into the Project. Emissions Control Standard Practices would minimize energy consumption during maintenance activities by prioritizing electric power over diesel when possible, limiting vehicle idling (per District-wide engine idling procedure, EBMUD 2010), and ensuring proper maintenance of vehicles and equipment.

Therefore, since the proposed Project's GHG emissions would be below the applicable thresholds, and with adherence to EBMUD's Emissions Control Standard Practices, this impact would be less than significant. No mitigation is required.

b. Less than Significant Impact. The State of California implemented Assembly Bill (AB) 32 to reduce GHG emissions to 1990 levels by 2020. SB 32 codified an overall goal for reducing California's GHG emissions to 40 percent below 1990 levels by 2030. Executive Orders (EOs) S-3-05 and B-16-2012 further extend this goal to 80 percent below 1990 levels by 2050. In 2018, EO B-55-18 signed by California Governor Edmund G. Brown set a goal of statewide carbon neutrality by 2045 and net negative emissions thereafter.

To meet these statewide goals, CARB prepared a plan (the *Scoping Plan for Achieving California's 2030 Greenhouse Gas Target* (2017 Scoping Plan)) that identifies how the State can achieve the 2030 climate target (40 percent GHG reduction from 1990 levels), and make substantial progress toward the additional future goals. The 2017 Scoping Plan (CARB 2017) mentions water as a key focus area and calls for effective regional integrated planning that maximizes efficiency and conservation efforts in the water sector. In addition, the 2017 Scoping Plan calls for measures that reduce GHG emissions and maintain water supply reliability. The proposed Project is consistent with the 2017 Scoping Plan's water focus area in that this Project would maintain the structural and functional integrity of the Mokelumne Watershed and associated EBMUD facilities and infrastructure. The proposed Project is not of a type or size that would be required to report GHG emissions to CARB.

In addition to the statewide GHG policies and plans, there are plans prepared by the applicable air districts and/or local municipalities that would be applicable to the proposed Project. Applicable plans to the proposed Project would include the SJVAPCD Climate Change Action Plan and the Amador County Energy Action Plan. These action plans establish GHG/energy reduction goals, and policies, programs, and actions to achieve those goals, including water use efficiency and conservation. The proposed Project's maintenance activities would not conflict with any of the identified goals or policies in the applicable local climate action plans, and would be considered consistent with these plans because the Project is an essential public service and protects the efficient use of water.

Furthermore, in 2008, EBMUD incorporated a climate change strategy into its Strategic Plan focusing on climate change monitoring, mitigation of emissions, and guiding investment decisions with climate change in mind. EBMUD prepared a Climate Change Monitoring and Response Plan in 2010 and updated it in 2014 to identify potential climate change threats, prepare adaptation strategies, and guide mitigation of EBMUD GHG emissions. Most recently, EBMUD prepared it's 2021 Climate Action Plan, which aims to eliminate direct and indirect GHG emissions by 2030 from its Water System, and eliminate indirect GHG emissions by 2040 and reduce direct GHG emissions by 50 percent over 2000 levels from its Wastewater System. In 2017, GHG emissions generated by EBMUD were 20,884 $MTCO_2e$, which were 54 percent below GHG emission levels in year 2000; in

2018, GHG emissions were 18,817 $MTCO_2e$ (EBMUD 2019, EBMUD 2018). The proposed Project does not interfere with any of EBMUD's policies or action items contained in their Climate Change and Sustainability Plans.

In summary, the proposed Project consists of necessary and established maintenance activities that protect critical water infrastructure and would not generate an increase in EBMUD's GHG emissions. As discussed above, GHG emissions from the proposed Project would decline in future years as vehicle and equipment fleets are updated with alternatively fueled or more efficient models. Thus, emissions generated by the proposed Project would not be expected to have a substantial contribution to the ongoing impact on global climate change. Therefore, the proposed Project would not conflict with a plan, policy or regulation adopted for the purpose of reducing the emission of GHGs. This impact would be less than significant. No mitigation is required.

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IX Hazards and Hazardous Materials

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

Discussion

a. and b. Less than Significant with Mitigation. Proposed maintenance activities would be temporary in any one location and would generally occur from within or alongside reservoirs, ponds, channels, and culverts; along roads, trails, utility lines, and EBMUD ROWs; or at EBMUD recreation and infrastructure facilities. Maintenance activities would be conducted with hand-held tools (e.g., shovels, rakes, loppers, hand saws, etc.) or mechanical equipment (e.g., chainsaws, backhoes, graders, loaders, etc.), dependent upon the maintenance needs. Larger sediment and debris removal, bank stabilization repairs, and vegetation management activities may require the use of heavy equipment, such as excavators or bulldozers.

Hazardous materials, including fuels and lubricants used in excavation and transportation equipment and vehicles, would be present during maintenance activities. Hazardous materials would be

transported to and from the maintenance sites; however, they would be removed once maintenance activities are complete. Hazardous materials would not be stored permanently at any of the maintenance sites. Additionally, as described in Table 2-1 of Chapter 2, *Project Description*, Guideline Haz-1 from the MWMP Specific Project Environmental Review Guide has been incorporated into the Project and will be implemented by EBMUD. Guideline Haz-1 would require that applicable State and federal regulations be followed with regard to the transport, storage, use, and disposal of hazardous materials.

> **Guideline Haz-1: Transport, store, use, and dispose of hazardous materials according to established procedures.** *When contemplating the importation of a hazardous material* such as an herbicide or poison onto District property, District procedures will be followed strictly. The manufacturer's recommendations and applicable state and federal regulations will be followed. If procedures for transporting, storing, handling, using, and disposing of the material and its containers are not in effect, they will be established and followed with regard to the materials to be imported. The potential for upset or accident that would release hazardous materials used by or stored in any new facilities will be evaluated during project planning.

Nonetheless, even with implementation of Guideline Haz-1, a significant impact on humans or the environment could result if hazardous materials were accidentally released during use or transport. To reduce potential impacts associated with accidental spills to a less-than-significant level, EBMUD would implement Mitigation Measures BIO-8, which would require flow diversions to contain potentially polluted waters; BIO-9, which would specifically require fuels, lubricants, and solvents to be stored outside the stream channel, as well as the proper positioning and maintenance of equipment and vehicles in the vicinity of streams; BIO-10, which would include specific measures for containment of concrete leachate (i.e., uncured concrete); and HAZ-1, which would require the establishment of a contingency plan in the case of an accidental release of hazardous materials.

> **Mitigation Measure HAZ-1:** Prior to the start of maintenance activities, EBMUD shall establish a Contingency Plan detailing the procedures and countermeasures that will be implemented when an accidental release of hazardous materials occurs in order to prevent the release from entering navigable waters, or otherwise create a hazard to the public or the environment. The Contingency Plan shall include a list of the hazardous substances typically used for maintenance activities, including petroleum products, and countermeasures that shall be taken to prevent spills, monitor hazardous substances, and provide immediate response to spills. Spill response measures shall address notification of the appropriate agencies including phone numbers; spill-related worker, public health, and safety issues; spill control, and spill cleanup. All EBMUD maintenance staff shall be familiar with Contingency Plan procedures and countermeasures for preventing and controlling the spilling of known hazardous substances used on the jobsite or staging areas.

In addition, ground-disturbing maintenance activities and debris removal activities may encounter existing hazardous materials. Hazardous debris can be found in stream channels, particularly those next to roadways. If not removed from the streams in a proper manner, the hazardous materials would continue to degrade the quality of water and surrounding environment. EBMUD Procedure 711, included in Chapter 2, *Project Description*, comprises standard EBMUD procedures for removing found hazardous waste from EBMUD facilities to ensure material is properly characterized, handled, and disposed.

Therefore, with adherence to EBMUD Procedure 711 and incorporation of Guideline Haz-1, Mitigation Measures BIO-8, BIO-9, BIO-10, and HAZ-1, impacts related to the use, transport,

disposal, or accidental release of hazardous materials would be a reduced to a level that is less than significant with mitigation.

c. No Impact. Proposed maintenance activities may involve the use and transport of hazardous materials (fuel and lubricants) to and from maintenance sites. Fuels and lubricants are considered hazardous materials that may adversely affect children at schools if the materials are handled improperly or accidentally released or children are inadvertently exposed to hazardous emissions. However, no schools are located within 0.25 mile of the Project. The closest schools are the Mokelumne Hill Elementary School, located 1.7 miles east of the Watershed boundary, and Firefly Family Daycare, located 1.6 miles north of the boundary. Therefore, no impacts would occur related to hazardous emissions or the use of hazardous materials within one-quarter mile of a school.

d. Less Than Significant Impact. The Project area was checked against regulatory databases including the Department of Toxic Substances Control (DTSC) online EnviroStor Database (DTSC 2021) and the State Water Resources Control Board's (SWRCB) online GeoTracker Database (SWRCB 2021), which are compiled pursuant to Government Code Section 65962.5, for known hazardous material sites. Three leaking underground storage tank (LUST) cleanup sites, including a gasoline leak at the Pardee Marina on the northern shore of the Pardee Reservoir, a gasoline leak at the Camanche North Shore Maintenance site, and a diesel leak at the South Camanche Shore site were identified within the Project area. However, remedial actions have been completed at these sites and the cases have been closed since 2005, 2010, and 1997, respectively (SWRCB 2005, 2010, 1997).

In the event that maintenance activities occur in areas within the Watershed where hazardous materials are discovered, EMBUD Procedure 711, which includes standard procedures for removing hazardous waste from EBMUD facilities (see Chapter 2, Table 2-1), would ensure the material is properly characterized, handled and disposed. Therefore, by adhering to EMBUD Procedure 711, impacts associated with hazardous materials sites creating a significant hazard to the public or the environment would be less than significant. No mitigation is required.

e. Less than Significant Impact. The proposed Project is not located within an airport land use plan or within two miles of a public airport. The closest public airport is the Amador County Airport, located approximately 3.7 miles north of the Project area. The closest airports to the Project area include the Howard Private Airport and the Camanche Skypark Airport, located approximately 0.9 mile and 1.3 miles north of the Project area, respectively, near the City of Ione in Amador County. Additionally, according to the MWMP, a private airstrip is located approximately 4,000 feet east of the developed area at Camanche South Shore and 2,500 feet southeast of the mobile home park adjacent to the Camanche South Shore recreation area (EBMUD 2008). Although routine maintenance could occur within one mile of the Howard Private Airport and the private airstrip, these activities would be intermittent and temporary at each maintenance site. Thus, maintenance crews would only temporarily be exposed to noise from that airport, and noise levels would not be considered excessive given the size of the airport. Further, as a routine maintenance project, the Project would not construct any structures that would result in an airport safety hazard. Therefore, this impact would be less than significant. No mitigation is required.

f. Less than Significant Impact. Emergency response and evacuation plans are generally the responsibility of counties and evacuation routes are located along designated public roads. Hindrance of access on public roads would cause significant impacts. Proposed maintenance activities would generally occur from within or alongside reservoirs, ponds, channels, and culverts; along Watershed roads, trails, utility lines, and EBMUD ROWs; or at EBMUD recreation and infrastructure facilities.

In some locations, maintenance activities, particularly road and culvert maintenance and repair or replacement work, could temporarily impede access on Watershed roads adjacent to maintenance sites. However, maintenance activities would be short in duration, generally lasting no more than a day at a particular site, with work limited to daylight hours. Any disruptions would be temporary and full closures of roadways would not be required. Therefore, the Project would not significantly impair implementation of or physically interfere with an adopted emergency response plan or evacuation plan. This impact would be less than significant. No mitigation is required.

g. Less than Significant with Mitigation. The Mokelumne Watershed is situated within grazing and forested areas in the Sierra foothills. CAL FIRE identifies fire hazard severity zones for local and State responsibility areas. The fire hazard model considers wildland fuels, topography, weather, frequency of fires, and production of embers. The westernmost portion of the Project area, in San Joaquin County, is located within a moderate fire hazard severity zone (FHSZ). The northern portion of the Project area, in Amador County, is also primarily located within a moderate FHSZ; however, the eastern portion of the Project area in Amador County includes a mix of both high and very high FHSZs. Similarly, the majority of the southern portion of the Project area, in Calaveras County, is within high and very high FHSZs, with moderate areas near the border of San Joaquin County to the west. Thus, wildland fire is a potential risk throughout the Mokelumne Watershed, particularly in the southern and eastern areas. (CAL FIRE 2020)

The use of maintenance equipment could pose a wildland fire risk in the Project area. The time of greatest fire risk would be during vegetation management activities when maintenance crews and equipment are close to vegetative fuels that could be highly flammable. All work would comply with applicable federal, local, and State fire-prevention regulations, including the California Fire Code. In addition, as described in Table 2-1 of Chapter 2, *Project Description,* Guideline Haz-2 from the MWMP Specific Project Environmental Review Guide has been incorporated into the Project and will be implemented by EBMUD. Guideline Haz-2 would require an evaluation of how maintenance activities might elevate wildfire risk or be affected by wildfire, including adoption of measures to reduce the risk to acceptable levels (refer to Section XX, Wildfire). However, because Guideline Haz-2 does not specifically identify measures to reduce fire risk, there would still be the potential for impacts to occur related to wildfire. To reduce impacts to levels that are less than significant, EBMUD would implement Mitigation Measure WILD-1 (refer to Section XX, Wildfire), which requires that maintenance sites be supplied and maintained with adequate firefighting equipment, and that access for firefighting at sites is maintained. Therefore, with implementation of Mitigation Measure WILD-1, impacts related to hazards resulting from wildland fires would be reduced to a level that is less than significant with mitigation.

X Hydrology and Water Quality

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

Discussion

a. Less than Significant with Mitigation. Proposed routine maintenance activities, including sediment and debris removal; vegetation management; facilities maintenance; erosion prevention, control, repair, and protection; and environmental stewardship activities have the potential to violate water quality standards or degrade water quality. Specific aspects of maintenance work that would pose a water quality threat are discussed below.

Ground-disturbing Activities. Proposed maintenance activities involving ground disturbance, such as sediment and debris removal, repair and replacement of culverts, drainage and erosion control structures, and bank and levee repairs, could expose soils and increase the potential for soil erosion and transport of sediment downstream. During a storm event, soil erosion could occur at an

accelerated rate. Sediment releases may increase turbidity, which could cause an increase in water temperature and a corresponding decrease in dissolved oxygen levels. Though ground-disturbing activities would be short-term and temporary, discharge of sediment to surface waters could adversely impact water quality, endanger aquatic life, and/or result in a violation of water quality standards. As described in Table 2-1 of Chapter 2, *Project Description*, Biological Resources Standard Practices from EBMUD's Mokelumne Watershed Routine Maintenance Standard Practices and Guideline Geo-2 from the MWMP Specific Project Environmental Review Guide have been incorporated into the Project and will be implemented by EBMUD. Biological Resources Standard Practices include the use of wildlife friendly erosion resistant coverings to avoid the use of materials that may cause entrapment of wildlife. Guideline Geo-2 would require installation of runoff controls prior to the beginning of the rainy season to prevent soil from migrating off site and protect against erosion. However, because Guideline Geo-2 does not require monitoring or include specific measures for in-stream activities, there would still be potential for water quality impacts associated with erosion and sedimentation to occur. To reduce impacts to levels that are less than significant, EBMUD would implement Mitigation Measures HYD-1 and HYD-2, which require continuous monitoring of erosion control BMPs and include protocols for stabilizing exposed soils and restrictions for in-channel maintenance activities. Erosion control BMPs would stabilize exposed soils in the work area and prevent sediment from entering downstream waterbodies.

Mitigation Measure HYD-1: All exposed soils within the work area shall be stabilized immediately following the completion of earthmoving activities to prevent erosion into the stream channel. Erosion control BMPs, such as silt fences, straw hay bales, gravel or rock-lined ditches, water check bars, and broadcasted straw will be used. Plastic monofilament or bound/stitched cross-joint based erosion control blankets will not be used within the stream zone or riparian areas. Erosion control BMPs shall be monitored during and after each storm event for effectiveness. Modifications, repairs, and improvements to erosion control BMPs shall be made as needed to protect water quality. Silt laden runoff will not be allowed to enter the stream or be directed to an area that may enter the stream at any point.

All non-biodegradable silt barriers (e.g., plastic silt fencing, netting surrounding coil logs or rolls) shall be removed after areas have stabilized with erosion control vegetation (usually after the first growing season).

Mitigation Measure HYD-2: When work in streams with water is unavoidable, streamflow shall be diverted around the work area by construction of temporary instream fences or other barriers. The following measures shall be implemented to minimize impacts to water quality associated with dewatering activities:

- The area to be dewatered shall encompass the minimum area necessary to perform the maintenance activity.
- Construction of instream barriers shall begin in the upstream area and continue in a downstream direction, and the flow shall be diverted only when construction of instream barriers is complete.
- Instream barriers shall be installed both upstream and downstream, not more than 100 feet from the extent of the work areas.
- Streamflows shall be allowed to travel by gravity flow around or through the work site through pipes.

- A qualified biologist shall be present to ensure that fish and other aquatic vertebrates are not stranded during construction and implementation of channel dewatering.
- Downstream flows adequate to prevent fish or vertebrate stranding shall be maintained at all time during dewatering activities.
- Diverted and stored water shall be protected from maintenance activity-related pollutants, such as soils, equipment lubricants, and fuels.
- If necessary, discharged water shall pass over some form of energy dissipater to prevent erosion of the downstream channel. Silt bags will be attached to the end of discharge hoses and pipes to remove sediment from discharged water.
- When maintenance is completed, the temporary instream barrier shall be removed as soon as possible but no later than 48 hours after work is completed. Impounded water shall be released at a reduced velocity to minimize erosion, turbidity, and harm to downstream habitat.
- When diversion structures are removed, to the extent practicable, the ponded flows shall be directed into the low-flow channel within the work site to minimize downstream water quality impacts.
- The area disturbed by installation of instream structures shall be restored at the completion of the maintenance activity.

Dewatering Activities. Temporary water diversions, including pumping associated with dewatering ponds, may be required for in-channel maintenance activities, such as sediment and debris removal (e.g., vegetation) as well as non-native predator removal. When necessary, temporary water diversions would either use cofferdams, typically less than three feet in height, or sumps, with or without pumps, to divert water away from the work area. All water would be directed to a clear water diversion, silt control structure, or adjacent uplands as appropriate, prior to entering back into the channel or waterbody. After the maintenance activity is complete, the channel or waterbody would be restored to its original configuration. If not monitored and maintained, temporary cofferdams and sumps could fail or release sediment, sand, gravel, and sediment-laden water into the work site and downstream, increasing turbidity. These issues could exceed water quality standards during in-water maintenance work. Implementation of Mitigation Measure HYD-2 would minimize impacts on water quality to less-than-significant levels by prescribing measures to ensure that sediment is not transported unnecessarily during dewatering activities.

Hazardous Materials. Proposed maintenance activities would primarily be conducted by hand or with small gas-powered tools such as weed cutters and chainsaws. However, larger sediment and debris removal, bank stabilization repairs, vegetation management and habitat restoration activities may require the use of larger mechanized equipment such as excavators and bulldozers. Hazardous materials, including fuel and lubricants, are used in excavation and transportation equipment, and vehicles and would be present during maintenance activities. Additionally, facilities maintenance activities would involve cleaning or painting of drainage and erosion control structures and other infrastructure, as well as lead reclamation, which would involve the use of hazardous materials.

In addition, any onsite trash and debris observed by maintenance crews would be removed from the site following the completion of activities. Maintenance and debris removal activities could encounter hazardous materials or debris, which can be discarded in stream channels, particularly within channels next to roadways. If not removed from the streams in a proper manner, the hazardous

materials would continue to degrade the quality of water and surrounding environment. EBMUD Procedure 711, as described in Chapter 2, is comprised of standard EBMUD procedures for removing found hazardous waste from EBMUD facilities to ensure material is properly characterized, handled, and disposed to avoid impacts to water quality.

Accidental releases either directly or indirectly into the stream channel could occur and significantly degrade sediment and water in and around the work site. Fine sediments contained within stream channels are particularly prone to absorbing pollutants such as petroleum products. Water in channels can transport pollutants downstream, which can also percolate into soil and into underlying groundwater. Thus, accidental release of maintenance-related hazardous materials would potentially result in a significant impact on surface and groundwater quality. To reduce potential impacts to water quality associated with the use of hazardous materials to a less-than-significant level, EBMUD would implement Mitigation Measures HYD-2, which would require flow diversions to contain potentially polluted waters; BIO-9, which would require fuels, lubricants, and solvents to be stored outside the stream channel, as well as the proper positioning and maintenance of equipment and vehicles in the vicinity of streams; BIO-10, which would include specific measures for containment of concrete leachate (i.e., uncured concrete), and HAZ-1, which would require the establishment of a contingency plan in the case of an accidental release of hazardous materials.

Vegetation Management Effects on Water Temperature. Proposed vegetation maintenance activities would involve trimming, mowing, pruning, and removal of weeds and grasses, woody and herbaceous plants within the bed and banks of drainages and other waterbodies. Activities would also include removal of fallen trees, dead trees in danger of falling in or across channels, or trunks or limbs in the bed or bank of channels or on immediately adjacent access roads and shoulders. Where vegetation management is implemented alongside waterbodies, the canopy shading the water may be diminished, increasing channel exposure to sunlight. If shading is completely removed from a channel, for example, increased exposure to sunlight may cause water temperatures to increase and exceed the Water Quality Control Plan for the Central Valley Region (Basin Plan) water quality objectives (e.g., increase of five degrees Fahrenheit (ºF) above background conditions) (Regional Water Quality Control Board [RWQCB] 2018). However, vegetation management activities would be selective and targeted and would only be conducted where necessary to maintain flow conveyance capacity, facility access, prevent loss of habitat and erosion, control invasive vegetation, and improve habitat for native species. Therefore, vegetation management activities would not permanently affect water quality or exceed water quality objectives, and impacts would be less than significant.

Conclusion. Maintenance activities would improve the natural flow in channels, stabilize actively eroding streambanks and levees, thus reducing bank erosion and sediment loading effects and resulting in long-term improvements to water quality. Additionally, as described above implementation Mitigation Measures HYD-1, HYD-2, BIO-9, BIO-10, and HAZ-1would minimize the potential for proposed maintenance activities to substantially degrade surface water and groundwater quality, or violate water quality standards or waste discharge requirements, and impacts would be less than significant with mitigation.

b. No Impact. Proposed maintenance activities would not affect existing groundwater wells and pumping facilities, and no new wells or pumps would be installed as part of the Project. The proposed maintenance activities would not involve any actions that would substantially deplete groundwater supplies or affect the aquifer volume or groundwater table level. Further, because channel bottoms are effective groundwater recharge locations in a groundwater basin, maintenance activities may improve

groundwater recharge functioning by removing sediment and debris from channel bottoms. Therefore, no impact related to groundwater supply or recharge would occur.

c.(i) Less than Significant with Mitigation. Proposed maintenance activities include sediment and debris removal, vegetation management, facilities maintenance, erosion prevention, control, repair and protection, and environmental stewardship activities. Without maintenance, sediment accumulation and erosion would increase and degrade site conditions such that flooding could occur, particularly along access roads. Additionally, erosive forces could redirect runoff such that new drainage pathways could be created and cause further damage to access roads, EBMUD facilities, and water quality. Implementation of these routine maintenance activities would prevent runoff flows from causing erosion and siltation and would direct runoff to culverts and drainages to protect water quality.

During ground disturbing activities, soil would be exposed, and there would be an increased potential for soil erosion and transport of sediment downstream. As described in Table 2-1 of Chapter 2, *Project Description*, Guideline Geo-2 from the MWMP Specific Project Environmental Review Guide has been incorporated into the Project and will be implemented by EBMUD. Guideline Geo-2 would require installation of runoff controls prior to the beginning of the rainy season to prevent soil from migrating off site and protect against erosion. However, because it does not include specific exposure protocols or restrictions on equipment for in-channel maintenance, there would still be the potential for impacts to occur related to erosion and sediment transport. To reduce impacts to levels that are less than significant, EBMUD would implement Mitigation Measures HYD-1 and HYD-2, which would require protocols for stabilizing exposed soils and restrictions for in-channel maintenance activities, including restriction of equipment operations in wetted portions of streams and within 12 hours of predicted storm events. Erosion control BMPs would stabilize exposed soils in the work area and prevent sediment from entering downstream waterbodies. Therefore, with implementation of Mitigation Measures HYD-1 and HYD-2, impacts related to erosion or siltation on- or off-site would be less than significant with mitigation.

c. (ii)(iii). Less than Significant Impact. The Project would involve sediment and debris removal, vegetation management, facilities maintenance, erosion prevention, control, repair and protection, and environmental stewardship activities. Without maintenance, sediment accumulation and erosion would increase and degrade site conditions such that flooding could occur, particularly along access roads. Additionally, erosive forces could redirect runoff such that new drainage pathways could be created and cause further damage to access roads, EBMUD facilities, and water quality. The Project would implement routine maintenance activities to prevent runoff flows from causing flooding or exceeding the capacity EBMUD stormwater drainage facilities. Maintenance activities would ensure that runoff is properly directed to culverts and drainages, and that culverts are properly sized to convey storm flows, which would protect water quality. As described in Table 2-1 of Chapter 2, Guideline Hyd-1 from the MWMP Specific Project Environmental Review Guide has been incorporated into the Project and will be implemented by EBMUD. Guideline Hyd-1 would require creek crossings and drainage ways to allow the safe passage of water through or over the structure during larger storm events such that flow diversions would not adversely affect other structures or facilities. Therefore, with incorporation of Guideline Hyd-1, the Project would not create or contribute runoff that would exceed the capacity of existing EBMUD facilities, and this impact would be less than significant. No mitigation is required.

c. (iv) No Impact. The Project would not involve the construction of new structures that would impede or redirect flood flows. To the contrary, the Project would reduce the potential for flooding through

sediment and debris removal, vegetation management, facilities maintenance (e.g., culvert repair or replacement), erosion prevention (e.g., bank and levee repair), and environmental stewardship activities. Therefore, implementation of the Project would not result in any impacts related to placing structures that would impede or redirect flood flows.

d. No Impact. The historic 100-year floodplain of the Mokelumne River is within the area permanently flooded by Pardee and Camanche reservoirs (EBMUD 2008); however, the Project would not involve the construction of new structures that would increase the risk of inundation by flooding. To the contrary, the Project would reduce the risk of flooding and impacts to water quality through sediment and debris removal, vegetation management, facilities maintenance (e.g., culvert repair or replacement), and erosion prevention (e.g., bank and levee repair), and environmental stewardship activities. Therefore, implementation of the Project would result in a beneficial effect by ensuring that EBMUD facilities are operating properly, thus reducing the risk of flooding.

Tsunamis are generated ocean wave trains generally caused by tectonic displacement of the sea floor associated with shallow earthquakes, sea floor landslides, rock falls, and exploding volcanic islands. The Project area is located outside of the tsunami inundation zone (CDOC 2018). The Project would not be at risk of inundation by a tsunami.

Seiching is a phenomenon that occurs when seismic ground shaking induces standing waves (seiches) inside water retention facilities (e.g., reservoirs and lakes). Such waves can cause retention structures to fail and flood downstream properties. There is a potential for seiches to occur in the Pardee and Camanche reservoirs; however, conducting routine maintenance activities would not increase the risk of inundation by seiches. Project implementation would not result in impacts related to releasing pollutants due to Project inundation within a flood hazard, tsunami, or seiche zone. Therefore, no impacts would occur.

e. No Impact. The Mokelumne Watershed is within the jurisdiction of the Central Valley (Region 5) RWQCB, which has developed a Basin Plan that designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. Basin plans also include implementation programs to achieve water quality objectives. As described above, implementation of mitigation measures would ensure that proposed maintenance activities would not permanently affect water quality or exceed water quality objectives or affect designated beneficial uses. On the contrary, proposed maintenance activities would improve water quality and flow conveyance through sediment and debris removal, vegetation management, facilities maintenance, erosion prevention, control, repair and protection, and environmental stewardship activities.

The 2014 Sustainable Groundwater Management Act (SGMA) requires governments and water agencies in high and medium priority basins to stop overdraft and balance groundwater basin pumping and recharge. The State's groundwater basins were classified into priorities based on components identified in the California Water Code. Development of Sustainable Groundwater Management Plans are only required for basins classified as medium or high priority (California Department of Water Resources [DWR] 2020a). The western portion of the Project area (i.e., the area encompassing the Camanche Reservoir and upland areas) includes two underlying groundwater basins, the San Joaquin Valley-Consumnes (5-022.16) and Eastern San Joaquin (5-022.01), which are prioritized as medium and high, respectively (DWR 2020b). However, as discussed above in X(b), proposed maintenance activities would not require pumping or extraction of groundwater.

In conclusion, proposed maintenance activities would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. No impacts would occur.

XI Land Use and Planning

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Discussion

a. No Impact. Current land use designations surrounding the Project area within Calaveras County are Resource Management, Resource Production, and Rural Transition with zoning of General Agriculture, Agricultural Preserve, Rural Residential, Residential Agricultural, Recreation, and Unclassified (Calaveras County 2019b). In Amador County, surrounding land use designations are primarily Agricultural General, Open Recreation, and Mineral Resource Zone with zoning of Agriculture, Exclusive Agriculture, Single Family Residential and Special Use (Amador County 2021). Finally, in San Joaquin County, land use designations surrounding the Project area are primarily General Agricultural, Open Space/Resource Conservation, and Open Space/Parks and Recreation, with zoning of General Agriculture (San Joaquin County 2017).

The Project consists of routine maintenance activities that would be temporary in any one location, and generally occur from within or alongside reservoirs, ponds, channels, and culverts; along roads, trails, utility lines, EBMUD ROWs; or at EBMUD recreation and infrastructure facilities within the Watershed boundaries. The Project would not permanently affect access to any of the surrounding land uses, or physically divide an established community; therefore, no impacts would occur.

b. No Impact. Pursuant to Government Code Sections 53091(d) and (e), EBMUD is not subject to the building and zoning ordinances of local jurisdictions for projects involving the production, generation, storage, treatment, or transmission of water. Nonetheless, EBMUD strives to consider the regulations and ordinances of local jurisdictions during construction where feasible and not contrary to its public purpose and responsibilities.

Although there are temporary impacts associated with the routine maintenance activities, these impacts would occur from within or alongside reservoirs, ponds, channels, and culverts; along roads, trails, utility lines, and EBMUD ROWs; or at EBMUD recreation and infrastructure facilities. Routine maintenance activities would be conducted to both maintain the health of the Mokelumne Watershed and the functional and structural integrity of its infrastructure. Maintaining and operating the Watershed and associated infrastructure would not result in new development, and there would be no significant changes to the existing land use.

Furthermore, the routine maintenance activities would not conflict with any of the goals and policies set forth in any of the county general plans applicable to the Project. As such, there would be no impact.

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XII Mineral Resources

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Discussion

a & b. No Impact. The Project involves conducting routine maintenance activities at existing sites within the Mokelumne Watershed. There are no known economically viable mineral resources on Watershed lands (EBMUD 2008). Further, no active mines are located within the Project area where maintenance activities would occur (CDOC 2016). The closest active mines to the Project area, the Berry Mine, located approximately two miles west of Pardee Reservoir in Amador County, and Hertzig Sand and Gravel, located approximately 1.5 miles southeast of the North Fork of the Mokelumne River at Highway 49 in Calaveras County, both lie outside the Project area (CDOC 2016). Mineral resource areas in Calaveras county are located adjacent to the Project area south and east of the Camanche Reservoir, east of the Pardee Reservoir, and south of the North Fork of the Mokelumne River near Highway 49 (Calaveras County 2018). Other mineral resource areas may be located in proximity to maintenance sites; however, the Project would not involve any activities or acquire land that could directly affect the availability of a mineral resource. Therefore, no impact would occur.

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XIII Noise

Would the project result in:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

Discussion

The proposed Project would generate temporary noise associated with equipment and vehicle use during maintenance activities (e.g., vegetation clearing, excavation, and material transportation), which would cease once maintenance work is complete.

Noise from the operation of construction equipment could potentially affect sensitive receptors (e.g., residents, recreational users, schools, daycares, religious facilities) in the Project vicinity. The nearest sensitive receptors to known maintenance locations are residents and recreational users. The nearest sensitive receptors to maintenance locations and their approximate distances from the proposed Project's locations are summarized here. The nearest residences, located in Camanche North Shore, Camanche South Shore, and in multiple locations near the Watershed boundary) are located adjacent to areas where maintenance activities could take place. Multiple recreational areas, including campgrounds and trails, are located inside of, or adjacent to, the Watershed boundary. Grace Fellowship and Tri-Lakes Church Wallace are located 0.2 and 0.28 miles from the boundary, respectively. The Mokelumne Hill Elementary School is located 1.7 miles east of the Watershed boundary and Firefly Family Daycare is 1.6 miles to the north of the boundary. Howard Private Airport, Camanche Skypark, and Amador County Airport are located 0.9, 1.3, and 3.7 miles north of the Watershed boundary, respectively.

LAWS, REGULATIONS, AND POLICIES

Maintenance activities would occur within Amador County, Calaveras County, and San Joaquin County. **Table 3-9** below provides information on specific noise criteria from general plans and noise ordinance of jurisdictions containing maintenance sites. EBMUD is exempt from building and land use zoning ordinances for projects involving the transmission of water (Government Code Section 53091). Although ordinances do not strictly apply to EBMUD projects, it is the practice of EBMUD to work with host jurisdictions and neighboring communities during project planning and to conform to local environmental protection policies to the extent possible. For this project, noise regulations and standards of San Joaquin County, Calaveras County, and Amador County may be considered when maintenance activities occur within these jurisdictions.

In addition to these local criteria, EBMUD considered the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* that recommends noise and vibration criteria for evaluating daytime construction equipment-related noise impacts in outdoor areas. The FTA (2018) recommends noise thresholds of 90 A-weighted decibel (dBA) Leq (equivalent continuous sound pressure level in dBA) and 100 dBA Leq for residential and commercial/industrial areas, respectively (FTA 2018). For construction vibration impacts, the FTA guidelines use an annoyance threshold of 80 velocity in decibels (VdB) for infrequent events (fewer than 30 vibration events per day) and a damage threshold of 0.5 inches per second (in/sec) peak particle velocity (PPV) for reinforced-concrete, steel or timber buildings (FTA 2018).

Table 3-9: General Plan and Noise Ordinance Standards

	Specific Noise Criteria
Amador County	The Amador County Noise Element lists maximum non-transportation/stationary noise level performance standards for noise-sensitive uses of 75 dBA during the daytime and 65 dBA during nighttime hours; however, the Amador County General Plan and Amador County Municipal Code do not have specific thresholds for construction noise.
Calaveras County	The Calaveras County Noise Ordinance limits exterior noise levels in residential areas to 60 dBA during the daytime and 50 dBA at night. Construction activities between 7:00 a.m. and 6:00 p.m. are exempt. The Calaveras County Noise Element lists a maximum of 60 Ldn at single-family residential land uses.
San Joaquin County	The San Joaquin County Noise Element lists maximum non-transportation noise level performance standards for noise-sensitive uses of 70 dB during the daytime and 65 dB during nighttime hours. Noise sources associated with construction are exempt as long as activities do not take place before 6:00 am or after 9:00 pm on any day.

Sources: Amador County 2016, San Joaquin County 2016, Calaveras County 2020.

Upon consideration of local jurisdictions and FTA noise significance criteria, the Project noise analysis uses the FTA standard since EBMUD is exempt from local building and zoning ordinances and the local ordinances vary greatly.

a. Less than Significant with Mitigation. The FTA has established guidance on noise and vibration impact assessments for construction equipment (FTA 2018). To roughly estimate anticipated construction noise levels at nearby sensitive receptor locations, the FTA recommends that the noisiest two pieces of equipment be used in these noise estimations along with the following assumptions:

- full power operation for a full one hour,
- there are no obstructions to the noise travel paths,
- typical noise levels from construction equipment are used, and
- all pieces of equipment operate at the center of the project site.

Using these simplifying assumptions, the noise levels at specific distances can be obtained using the following equation:

$$L_{eq}(equip) = EL_{50ft} - 20log_{10}(D/50)$$

Where:

L_{eq} (equip) = the noise emission level at the receiver at distance D over one hour.

EL_{50ft} = noise emission level of a particular piece of equipment at reference distance of 50 feet.

D = the distance from the receiver to the piece of equipment in feet.

In order to add the two noisiest pieces of equipment together, the following equation applies:

$$L_{total} = 10\ log_{10}(10^{\frac{L1}{10}} + 10^{\frac{L2}{10}})$$

Where:

L_{total} = The noise emission level of two pieces of equipment combined

L_1 = The noise emission level of equipment type 1

L_2 = The noise emission level of equipment type 2

Based on reference guides, typical noise levels for two of the proposed Project's noisiest types of construction equipment were used to estimate the distance to multiple noise thresholds and noise levels at the nearest known sensitive receptors (FTA 2018, FHWA 2019). The values used for the reference noise level at 50 feet and distance to the 90 dBA threshold are shown in **Table 3-10**, below. Chainsaws, vac-trucks, excavators, dozers, and graders may each produce noise levels of 85 dBA at a distance of 50 feet (FHWA 2017).

Table 3-10: Predicted Noise Levels for Construction Equipment

Equipment Type	Noise Level at 50 feet (dBA)	Distance to 90 dBA (feet)
Multiple	85	28
Multiple	85	28
Combined	**88**	**40**

Source: FTA 2018, FHWA 2017

In the absence of any additional noise controls, operation of these two pieces of equipment together would generate noise levels above the FTA 90 dBA threshold at distances below 40 feet, which would be a potentially significant impact for receptors within these distances. Based on this analysis, maintenance-related noise impacts may exceed the FTA threshold when such activities are in close proximity to sensitive residential receptors. It should be noted that maintenance-related noise impacts at individual sites would be temporary and of a short duration (one to two days typically and up to five days maximum) with limited exposure to any nearby sensitive receptors. Maintenance work done closest to residences on EBMUD property is often performed for the benefit of those residences in the form of maintaining critical water, wastewater, and fire-protection services. Estimated noise levels are also conservative and represent the noisiest potential combination of equipment operating in tandem, which would not be a frequent occurrence. As described in Table 2-1 of Chapter 2, *Project Description*, a number of EBMUD Mokelumne Watershed Routine Maintenance Standard Practices have been incorporated into the Project. Noise Control Standard Practices would limit construction

activities to daylight hours, require best available noise control techniques for equipment and vehicles, and impose controls for impact equipment. However, because these measures may not be sufficient to eliminate the potential for significant noise impacts near sensitive receptors due to the use of powered equipment, adherence to these requirements would not reduce impacts to less-than-significant levels. In the event that maintenance equipment would exceed local noise thresholds, Mitigation Measure NOI-1 would require advanced notification prior to the start of activities and adequate muffling for equipment near sensitive receptors.

Mitigation Measure NOI-1: EBMUD shall implement the following noise and vibration-reducing practices to minimize disturbances to residential areas surrounding work sites:

- Work or activity of any kind shall be limited to the hours from 7:00 a.m. to 5:00 p.m. Monday through Friday. Activities in residential areas shall not occur on Saturdays, Sundays, or EBMUD observed holidays except during emergencies, or with advance notification of surrounding residents.

- Advanced notification about the estimated duration of the activity shall be provided prior to the start of maintenance adjacent properties within 43 feet of the proposed Project's sites where powered equipment shall be used.

- Powered equipment (vehicles, heavy equipment, and hand equipment such as chainsaws) shall be equipped with adequate mufflers. Best available noise control techniques (e.g., mufflers, intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) shall be used for all equipment and trucks, as necessary.

- Stationary noise sources (e.g., pumps, chippers) shall be located as far from sensitive receptors as possible. If they must be located near receptors, adequate muffling (with enclosures when feasible) shall be used. Enclosure opening or venting shall face away from sensitive receptors.

Maintenance activities under the proposed Project would be similar in scale and frequency to those that have taken place historically in the Watershed. Work at each maintenance site would be temporary, infrequent, and short in duration. Further, with implementation of Mitigation Measure NOI-1, the proposed Project would comply with the established hours allowed under the relevant county standards. Therefore, noise impacts resulting in a substantial temporary or permanent periodic increase in ambient noise levels would be less than significant with mitigation.

b. Less than Significant Impact with Mitigation. The vibration threshold for buildings occurs at a PPV of 0.5 (inch/second) for reinforced concrete, steel, or timber buildings. The human annoyance threshold is 80 VdB. Vibration and ground-borne noise levels were estimated following methods described in the FTA *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018) to determine the PPV that would potentially impact buildings and the vibration VdB for human annoyance. For the purposes of this analysis, it was assumed that some of the Project's construction equipment would have vibration sound levels similar to those of a large bulldozer or dump truck. **Table 3-11** below shows relevant parameters for the construction equipment that would be used for the proposed Project and the distance to sensitive receptors necessary to be below vibration thresholds.

Table 3-11: Construction Equipment and Vibration Distance

Equipment	PPV at 25 (feet)	Distance to 0.5 in/sec PPV Threshold	Noise Vibration Level at 25 (feet)	Distance to 80VdB Noise Vibration Threshold
Dump trucks / Loaded Trucks	0.076 in/sec	7.1 feet	86 VdB	39.6 feet
Bulldozer (Large)	0.089	7.9 feet	87 VdB	42.8 feet

Some residences and other sensitive receptors are located within, or adjacent to, the Watershed boundary and could therefore potentially be exposed to vibration levels exceeding the vibration thresholds for buildings or annoyance. Maintenance work conducted closest to residences on EBMUD property is often performed to maintain or provide critical water, wastewater, and fire protection services to those residences. Work near individual receptors would be infrequent and short in duration. Vibration generating equipment such as dump trucks and bulldozers would not be operated within 8 feet of residences. Additionally, Mitigation Measure NOI-1 includes practices that would minimize the noise and vibration disturbances to sensitive receptors, such as ensuring that notice is given prior to the performance of work with the potential to exceed the annoyance threshold at sensitive receptors, and keeping stationary sources of noise and vibration as far away as possible. Therefore, with implementation of Mitigation Measure NOI-1, Project impacts from exposure to or generation of excessive ground-borne vibration or ground-borne noise levels would be less than significant with mitigation.

c) Less than Significant Impact. Two small private airports, Howard Private Airport and Camanche Skypark are located 0.9 and 1.3 miles north of the Watershed boundary, respectively. The Amador County Airport is located 3.7 miles north of the boundary and there is no overlap between the Project area and the airport's noise contours or airport influence area (Amador County 2017). At any given sensitive receptor, any overlap in noise impacts from these airports and from maintenance activities associated with the proposed Project would be infrequent, temporary, and very short in duration. Therefore, this impact would be less than significant, and no mitigation is required.

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XIV Population and Housing

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

a. No Impact. The Project involves routine maintenance of existing facilities, roads, and infrastructure within the Watershed and does not include any new development or infrastructure components. The Project also does not include construction of any new residences or create a need for new housing or businesses. Additionally, the routine maintenance activities would not require staff to relocate permanently to the Project area. Therefore, the Project would not directly or indirectly induce unplanned substantial growth in the area, and there would be no impact on population growth.

b. No Impact. Routine maintenance activities for the Project would be temporary in nature (i.e., no more than five days at a particular site) and would generally occur from within or alongside reservoirs, ponds, channels, and culverts; along roads, trails, utility lines, and EBMUD ROWs; or at EBMUD recreation and infrastructure facilities. These activities would not displace existing people or housing and there would not be a need for construction of replacement housing elsewhere. Thus, no impact would occur.

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XV Public Services

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☒
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Discussion

a.(i.-v.) No Impact. The Project involves conducting routine maintenance of existing facilities, roads, and infrastructure within the Mokelumne Watershed and would not result in the construction of new structures that would induce population or employment growth. Thus, the Project would not generate additional needs for fire protection, police protection, schools, parks, or other public facilities. Maintenance workers are likely to commute from within the region and would likely be part of the existing labor supply. Therefore, implementation of the Project would not generate a need for any new public services; no impact would occur.

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XVI Recreation

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

Discussion

a. No Impact. As described in Section XIV, Population and Housing, the Project would not induce population growth in the region. As such, the Project would have no impact on the demand for neighborhood parks, regional parks, or other recreational facilities.

b. Less than Significant Impact. While the Project would not create any new recreational facilities, activities such as mowing and facilities maintenance could temporarily disturb use of existing multi-use trails (e.g., hiking, bicycling and walking), recreation areas, and campgrounds. Hiking trails, recreation areas (including roads leading to recreation areas), and campgrounds are generally located around the perimeter of the Camanche and Pardee reservoirs and the Mokelumne River. Disturbances to trails would be temporary and would be limited to the period during which maintenance would be conducted (e.g., typically one to two days but a maximum of five days at any one site).

Maintenance activities that may result in secondary nuisance effects were addressed in other sections of this document and were found to be less than significant for aesthetics and transportation, and less than significant with mitigation for air quality and noise. In addition to secondary effects, trail users could experience temporary disruptions during the period of active maintenance due to trail closures. However, these closures would be temporary and would be localized to a specific maintenance site. In addition, trail users and other recreational users could access other trails, roads, and recreation areas within the Watershed to avoid the active maintenance areas. Therefore, maintenance activities would not result in significant alterations in the availability of public trails, and would not require the construction or expansion of recreational facilities. Thus, potential effects on recreational facilities would be less than significant, and no mitigation is required.

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XVII Transportation

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

Discussion

a. Less than Significant Impact. The Project may result in temporary traffic impacts by adding vehicle traffic to area roadways during maintenance activities. Maintenance-related traffic would primarily consist of daily commute trips by maintenance workers and periodic delivery and removal of materials to and from the maintenance sites. The number of workers and vehicles would vary by maintenance activity, phase, and material needs, but would typically range from 1-4 workers for most activities, and up to a maximum of 20 workers for vegetation management in upland areas (e.g., trimming, mowing, and discing). However, the number of additional vehicles on local roadways generated by maintenance crews at any given location would be small, intermittent, and limited in duration. Once maintenance activities are complete, the Project would not generate any additional vehicle trips or cause long-term effects, and would thus not conflict with any county transportation plans, ordinances or policies.

In general, equipment and materials staging would occur within 100 feet of each maintenance site. The temporary closure of public roadways or traffic lanes would not occur as part of routine maintenance activities.

As described in Section XVI, Recreation, maintenance activities may result in temporary disruptions to pedestrians (i.e., hikers and other recreational users) and bicyclists due to trail closures. However, these closures would be short in duration, lasting no more than five days, and would be localized to a specific maintenance site. In addition, recreational users would still be able to access other trails, roads and recreation areas within the Watershed to avoid the active maintenance areas. Therefore, impacts to pedestrian and bicycle facilities would be less than significant.

Overall, Project impacts on the Watershed's circulation system, including any public roadways in the vicinity of the Project area, as a result of maintenance activity mobilization would be less than significant, and no mitigation is required.

b. Less than Significant Impact. Vehicle miles traveled associated with implementation of the Project would be limited to maintenance-related vehicle trips from crews traveling to each maintenance site

along the existing EBMUD ROW from existing EBMUD facilities, and would be similar to vehicle miles traveled in the past as part of ongoing Watershed maintenance activities. In addition, vehicle trips generated during maintenance activities would be intermittent and limited in duration; thus, the Project would not result in a significant increase in vehicle miles traveled over the existing condition. Therefore, the Project would be consistent with CEQA Guidelines Section 15064.3, subdivision (b). This impact would be less than significant, and no mitigation is required.

c. No Impact. As a routine maintenance project, the Project would not introduce any new roadways or introduce a land use that would conflict with existing uses surrounding the Project area. Maintenance activities would be temporary and intermittent, lasting no more than five days at each maintenance site. Activities would generally occur from within or alongside reservoirs, ponds, channels, and culverts; along roads, trails, utility lines, and EBMUD ROWs; or at EBMUD recreation and infrastructure facilities. Therefore, no impact would occur related to substantially increasing hazards from a geometric design feature or incompatible use.

d. Less than Significant Impact. Proposed maintenance activities would generally occur from within or alongside reservoirs, ponds, channels, and culverts; along roads, trails, utility lines, and EBMUD ROWs; or at EBMUD recreation and infrastructure facilities. In some locations, maintenance sites are accessed by and adjacent to public roads. Maintenance activities, particularly road and culvert maintenance and repair or replacement work, would temporarily impede access on the roads being maintained. However, these activities would be intermittent, lasting approximately one day at a given maintenance site, and would be limited to daylight hours; full roadway closures would not be required. Because no full closures are required and disruptions would be temporary, the Project would not significantly interfere with emergency access. Project impacts related to emergency access would be less than significant, and no mitigation is required.

XVIII Tribal Cultural Resources

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

Discussion

The TCR impact analysis is based upon consultations with tribes who have a traditional and cultural affiliation with the Project area, as discussed below, as well as information provided in the *Draft Cultural Resources Assessment for the Mokelumne Watershed Routine Maintenance Agreement*, prepared by Horizon Water and Environment, LLC (December 2020).

Section 21074(a) of the PRC defines TCRs as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe.

APPROACH TO IMPACT ANALYSIS

The Project area includes the ancestral lands of the Northern Sierra Miwok and Plains Miwok. Southwest of the Project area were ancestral lands of the Northern Valley Yokuts, the Nisenan to the north, and the Washoe to the east. If Native American tribes with a traditional and cultural affiliation with a given geographic area have requested notice from EBMUD regarding projects in that geographic area, pursuant to PRC Section 21080.3.1, EBMUD must provide notice. EBMUD has not received any requests from tribes for project notifications under PRC Section 21080.3.1(b)(1). However, EBMUD contacted the NAHC on August 27, 2019, for a search of the Sacred Lands files for significant Native American resources within the Project area and a list of tribes with a traditional and cultural affiliation with the

Project area. The NAHC responded on September 19, 2019, noting that no significant resources had been recorded in the Sacred Lands files. EBMUD subsequently sent letters regarding the Project to all of the tribes in the NAHC list on October 5, 2020 (**Table 3-12**). All correspondence between EBMUD, the NAHC, and notified tribes is presented in Appendix C.

Table 3-12:Native American Correspondence

Tribe	Name	Project Letter Mailing Date	Comments
Buena Vista Rancheria of Me-Wuk Indians	Rhonda Morningstar Pope, Chairperson	October 5, 2020	No response from tribe to date
Calaveras Band of Mi-Wuk Indians	Charles Wilson, Chairperson	October 5, 2020	No response from tribe to date
Calaveras Band of Mi-Wuk Indians	Gloria Grimes, Chairperson	October 5, 2020	No response from tribe to date
Ione Band of Miwok Indians	Sara Dutschke Setchwaelo, Chairperson	October 5, 2020	No response from tribe to date
Jackson Rancheria of Miwok Indians	Adam Dalton, Chairman	October 5, 2020	No response from tribe to date
North Valley Yokuts Tribe	Katherine Erolinda Perez, Chairperson	October 5, 2020	No response from tribe to date
The Confederated Villages of Lisjan	Corrina Gould, Chairperson	October 5, 2020	No response from tribe to date
United Auburn Indian Community of the Auburn Rancheria (UAIC)	Gene Whitehouse, Chairperson	October 5, 2020	Requested additional information and to review the technical report, as well as to be kept informed about individual projects under the RMA
Washoe Tribe of Nevada and California	Darrel Cruz, THPO	October 5, 2020	No response from tribe to date
Wilton Rancheria	Raymond Hitchcock, Chairperson	October 5, 2020	Requested consultation and monitoring during ground disturbance and to review mitigation measures

To date, two tribes, the United Auburn Indian Community of the Auburn Rancheria (UAIC) and Wilton Rancheria, have responded to EBMUD. UAIC asked for additional information, which was supplied by EBMUD. The tribe followed up by requesting *Cultural Resources Assessment for the Mokelumne Watershed Routine Maintenance Agreement*, when it is completed, and being kept up to date on the Project. UAIC did not specifically request consultation under AB 52. The Wilton Rancheria requested consultation, but limited comments to requesting monitoring during ground disturbance, as well as the opportunity to review the mitigation measures developed to protect cultural resources. EBMUD will continue to work with both tribes throughout the CEQA process.

The tribes identified by the NAHC as being affiliated with the Project area did not identify any TCRs, nor has EBMUD otherwise identified any TCRs in the Project area.

a.(i.) Less than Significant with Mitigation. No TCRs that are listed, or eligible for listing in the CRHR are known within the Project area, and none were identified by the tribes EBMUD contacted (see above). As a result, there would be no impact to previously identified TCRs under this category. However, the record searches from the North Central and Central California Information Centers of the California Historical Resource Information System (see Section V, Cultural Resources) indicated that one Native American site within the EBMUD Watershed contains human remains. The site is currently inundated by Camanche Reservoir. Although the site has neither formally been evaluated for CRHR eligibility nor specifically identified as a TCR by local Native American tribes, sites with burials are important ancestral resources and are considered TCRs. Furthermore, during preparation for maintenance activities, it may come to light that other previously recorded sites in the Watershed contain human remains. Implementation of Mitigation Measure TCR-1 would ensure that, if archaeological sites known to contain human remains are at risk of disturbance by a proposed maintenance activity, the TCR would be avoided or treated in a culturally appropriate manner. Therefore, impacts to TCRs would be less than significant with mitigation.

Tribal Cultural Resources that are eligible for listing in the CRHR may be identified as unanticipated archaeological discoveries during implementation of maintenance activities and would be addressed under Mitigation Measure TCR-1.

> **Mitigation Measure TCR-1:** EBMUD retains a database of all previously recorded cultural resources within the EBMUD Watershed. Prior to implementation of any individual maintenance activity that requires ground disturbance, EBMUD will review its cultural resources database for the presence of archaeological sites. Should any known sites with human remains be recorded within 100 feet of the proposed action, EBMUD shall retain a professional archaeologist to conduct a pedestrian survey of the Project area to determine whether the project would impact the resource. If the site is outside of the proposed Project footprint, the site shall be avoided and protected with fencing, if appropriate. Unnecessary attention should not be drawn to the site.
>
> If the site cannot be avoided by Project implementation, EBMUD will work with the tribe(s) identified by the NAHC as having a traditional and cultural affiliation with the site to develop a culturally appropriate treatment plan.

a.(ii.) Less than Significant with Mitigation. Although no TCRs have been specifically identified in the Project area, it is possible that Native American archaeological remains or Native American human remains that could be determined to be TCRs could be discovered during the implementation of maintenance activities, as such resources are not always visible on the ground surface. If archaeological or human remains are identified, work would be halted and they would be treated according to Mitigation Measure CR-1 or Mitigation Measure CR-2, respectively, as described in Section V, Cultural Resources. According to those measures, if archaeological materials are discovered, the materials would be evaluated and treated by archaeological professionals before work would be allowed to resume. The County coroner would immediately be contacted if human remains are uncovered, and the requirements of California Health and Safety Code Section 7050.5 would be followed, including the involvement of Native American representatives, if appropriate. As a result, this impact would be less than significant with mitigation.

As described in Chapter 2, *Project Description*, maintenance activities would be conducted throughout the year as required to both maintain the health of the Mokelumne Watershed and the functional and structural integrity of its infrastructure and facilities. Maintenance site locations would vary from year to year. It is possible that additional TCRs, not currently known at the time of this analysis, could be recorded in future years that would overlap with proposed maintenance locations in a given year. Review of EBMUDs Archaeological Resources GIS database, which is annually updated, would reveal potential overlaps with archaeological resources that might also be considered TCRs. Implementation of Mitigation Measures CR-3 and CR-4 would be in place to reduce the potential for future maintenance-related impacts on TCRs that are archaeological resources. These measures would require an archaeological survey of maintenance locations not previously surveyed, which would allow for the identification of previously undocumented cultural resources that could be TCRs. Additionally, if such resources were determined to be significant through CRHR evaluation or consultations with tribes with a traditional and cultural affiliation with the location, the TCRs could potentially be treated through data recovery. Therefore, impacts would be less than significant with mitigation.

XIX Utilities and Service Systems

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

Discussion

a. No Impact. The Project includes sediment and debris removal; vegetation management; facilities maintenance; erosion prevention, control, repair, and protection; and environmental stewardship activities. These maintenance activities involve repairing and replacing existing facilities that are not functioning properly in order to maintain flow conveyance. This reduces the risk of flooding and minimizes the potential for erosion and sedimentation to occur, ultimately reducing impacts to water quality. In the long term, the Project would result in a beneficial effect by maintaining the health of the Mokelumne Watershed and the functional and structural integrity of EBMUD-owned facilities and infrastructure. The Project does not include any uses, features, or facilities that would increase the need or demand for water or wastewater treatment, or generate additional storm water flows. Further, the Project would not relocate or construct new electric power, natural gas, or telecommunication facilities. Therefore, the Project would not result in any impacts to water, wastewater treatment, storm water drainage, electric power, natural gas, or telecommunications facilities.

b. No Impact. As a routine maintenance project, the Project does not propose any uses that would require the need for additional water. Therefore, implementation of the Project would not result in impacts to water supplies.

c. No Impact. The Project would not generate wastewater and, thus, would not result in the need for additional wastewater treatment capacity. Therefore, implementation of the Project would result in no impacts to wastewater treatment capacity.

d. Less than Significant Impact. The proposed maintenance activities involve removal of accumulated sediment, vegetation, debris, and trash in the vicinity of EBMUD facilities, including culverts, bridges, and low water crossings. As described in Chapter 2, *Project Description*, in most instances, sediment, vegetation, and debris would be disposed of within the Watershed, at least 100 feet from State waters. Woody debris would be removed from the sites and, depending on the size, chipped, placed in brush piles to function as wildlife cover, used as wildlife habitat, or gathered in piles to be burned when conditions are appropriate. Approximately 100-120 cubic yards of sediment would be removed annually as result of in-stream maintenance work (e.g., from natural, modified, and engineered channels), most of which would be hauled off site. Additionally, any trash or other materials recovered as a result of facilities maintenance activities would be recycled or taken to a local landfill. Thus, because most material would be re-used onsite, maintenance activities would not create substantial amounts waste requiring disposal at a local landfill. Therefore, impacts from solid waste disposal would be less than significant, and no mitigation is required.

e. Less than Significant Impact. As described in above in XIX(d), the Project would re-use most material on-site, with the exception of sediment removed from streams and any trash collected through facilities maintenance activities, which would be disposed at local landfill. As such, the Project would not conflict with federal, State, or local statutes and regulations related to solid waste, and impacts would be less than significant.

XX Wildfire

If located in or near State responsibility areas or lands classified as very high fire severity zones, would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b) Due to slope, prevailing winds, or other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from wildfire or the uncontrolled spread of a wildfire?	☐	☒	☐	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power line or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☒	☐	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

Discussion

The Project is located in State responsibility areas identified by CAL FIRE as very high, high, and moderate FHSZs (CAL FIRE 2020). The western portion of the Project area in San Joaquin County is located within a moderate FHSZ. The northern portion of the Project area in Amador County is also primarily located within a moderate FHSZ; however, the eastern portion in Amador County also includes a mix of both high and very high FHSZs. The majority of the southern portion of the Project area in Calaveras County is within high and very high FHSZs, with moderate areas near the border of San Joaquin County to the west.

a. Less than Significant Impact. Emergency response and evacuation plans are generally the responsibility of the counties and evacuation routes are located along designated public roads. Several routine maintenance activities would be accessed via EBMUD access roads, although certain maintenance sites could be accessed via public roads. Proposed maintenance activities, particularly culvert, low water crossing, and bridge repair or replacement work, as well as vegetation trimming and mowing, may temporarily impede access along the roads being maintained. However, these activities would be temporary, lasting approximately one to two days at a given site, and limited to daylight hours; thus, no full road closures would be required. As a result, the Project would not impair implementation of, or physically interfere with, an adopted emergency response plan or evacuation plan. Impacts would be less than significant, and no mitigation is required.

b. Less than Significant with Mitigation. Due to the presence of very high FHSZs within the Watershed, wildfire risks could be exacerbated due to the Project's maintenance activities. Routine maintenance activities could increase the risk of starting fires due to the increased presence of vehicles, equipment, and human activity in or adjacent to very high FHSZs. In particular, heat or sparks from construction vehicles or equipment have the potential to ignite dry wildland fuels.

Routine maintenance activities occurring in or near wildland fuels pose a fire risk, and could thereby expose EBMUD staff to wildfires pollutants and associated pollutants. Additionally, activities occurring in or near wildland fuels pose a fire risk that could result in the uncontrolled spread of wildfire.

EBMUD is required to comply with all federal, local, and State fire-prevention regulations, including the California Fire Code (CBSC 2019). The California Fire Code includes wildfire protection requirements for wildland-urban interface areas[4]. Chapter 49 of the California Fire Code discusses provisions for hazardous vegetation and fuel management, and defensible space. The California Fire Code also includes the minimum requirements for fire protection equipment, and access for firefighting for construction and demolition projects. As described in Table 2-1 of Chapter 2, *Project Description*, Guideline Haz-2 from the MWMP Specific Project Environmental Review Guide has been incorporated into the Project and will be implemented by EBMUD. Guideline Haz-2 would require an evaluation of the risks of a proposed project to elevate wildfire risk or to be at risk from wildfire, which would include consideration of its use, location, and construction materials, and implementing appropriate measures to reduce this risk.

> **Guideline Haz-2: Evaluate the risks of a proposed project to elevate wildfire risk or to be at risk from wildfire.** *During project planning and design*, including its use, location, and construction materials, consideration will be given to how the facility may affect wildfire risk or be affected by wildfire. Appropriate measures will be implemented to reduce this risk to acceptable levels, including relocating the facility if appropriate.

However, because Guideline Haz-2 does not identify specific measures to reduce fire risk, there would still be potential for impacts to occur from the spread of wildfire. EBMUD would implement Mitigation Measure WILD-1, which requires that maintenance sites be supplied and maintained with adequate firefighting equipment, and that access for firefighting at sites is maintained. With implementation of Mitigation Measure WILD-1, impacts related to the uncontrolled spread of wildland fires would be reduced to a level that is less than significant with mitigation.

> **Mitigation Measure WILD-1:** The following measures shall be implemented to reduce the potential for and spread of a wildfire:
>
> - All maintenance sites shall be supplied and maintained with adequate fire-fighting equipment capable of extinguishing incipient fires.
> - All earthmoving and portable equipment with internal combustion engines shall be equipped with a spark arrestor to reduce the potential for igniting a wildfire. Such equipment shall be maintained to ensure proper functioning of spark arrestor.
> - Combustible materials shall be removed from the maintenance site once maintenance is complete.

[4] A wildland-urban interface fire area is defined as a geographical area identified by the State as a "Fire Hazard Severity Zone" in accordance with the Pub. Res. Code, Sections 4201 through 4204, and Government Code, Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires (California Fire Code 2016, page 402).

- Approved access for firefighting shall be maintained during maintenance work.

c. Less than Significant with Mitigation. The Project would not require the installation of new infrastructure but would, by design, involve the maintenance of existing roads, facilities and infrastructure, including fire breaks and shaded fuel breaks. Specifically, vegetation management activities in riparian zones and the chaparral, including trimming, mowing, pruning, and removal of weeds, grasses, woody and herbaceous plants, fallen trees, trunks or limbs, would occur adjacent to roads, shoulders and walkways, and from within streambeds, ponds, and reservoirs (e.g., fallen trees and woody debris). Targeted livestock grazing may also be used in riparian zones. Vegetation management activities in upland areas to reduce wildfire fuel loads may involve mowing, discing, trimming, or removal of bankside grasses, shrubs, trees deemed a public health hazard, nuisance and invasive species in banks, roads, trails, walkways, utility lines, ROW, and recreation areas. Targeted livestock grazing may also be used in upland habitat areas. Finally, EBMUD would maintain fuel breaks and remove ladder fuels along trails, around facilities, or along park boundaries where adjacent private properties could be at risk, with defensible space maintained to a 100-foot-wide buffer.

The purpose of a number of vegetation management activities associated with the proposed Project is to reduce overall fire risk through the removal of fuel loads and maintenance of defensible space. These activities would be conducted by using hand tools and hand-held equipment, and by mechanical removal using heavier equipment, and would comply with applicable federal, local, and State fire-prevention regulations, including the California Fire Code. Vegetation management activities could temporarily exacerbate fire risk through the use of heavier equipment (e.g., excavator with mowing attachments) that could cause a fire in adjacent wildland fuels. As described in Table 2-1 of Chapter 2, *Project Description*, Guideline Haz-2 from the MWMP Specific Project Environmental Review Guide has been incorporated into the Project and will be implemented by EBMUD. Guideline Haz-2 would require an evaluation of the risks of a proposed project to elevate wildfire risk or to be at risk from wildfire, which would include consideration of its use, location, and construction materials, and implementing appropriate measures to reduce this risk.

However, because Guideline Haz-2 does not identify specific measures to reduce fire risk, there would still be potential for impacts to occur from the maintenance of Watershed infrastructure that could exacerbate fire risk. To reduce impacts to levels that are less than significant, EBMUD would implement Mitigation Measure WILD-1, which requires that maintenance sites be supplied and maintained with adequate firefighting equipment, and that access for firefighting at sites is maintained. Therefore, with implementation of Mitigation Measure WILD-1, impacts related fire risk associated with the installation or maintenance of associated infrastructure would be reduced to a level that is less than significant with mitigation.

d. Less than Significant Impact. Because the Watershed is located within and near State responsibility areas and lands classified as very high FHSZs, vegetation management activities that occur as part of the routine maintenance activities could expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability and drainage changes. However, the extent of vegetation management in and around drainage crossings or other watercourses abutting steep slopes or banks would be limited in size (on average, 10 feet by 100 feet) as would the frequency and duration of activity (typically once annually lasting 3-5 days); therefore, managed areas would be less likely to be prone to slope instability or landslides due to fire exposure. Furthermore, the purpose of vegetation management activities, and routine maintenance in general, is to protect water quality and associated infrastructure by ensuring that runoff is properly

directed to culverts and drainages, thereby preventing erosion, slope instability and flooding from occurring. Impacts as a result of routine maintenance activities would be less than significant, and no mitigation is required.

XXI Mandatory Findings of Significance

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion

a. Less than Significant with Mitigation. As discussed through this Initial Study checklist, significant but mitigable impacts were identified for air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, tribal cultural resources, and wildfire. With implementation of mitigation measures identified in this IS/MND, the Project would not have the potential to substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. With implementation of the above-described mitigation measures, this impact would be less than significant with mitigation.

b. Less than Significant Impact. The CEQA Guidelines (Section 15130) require a discussion of the cumulative impacts of a Project. A cumulative impact analysis accounts for the combined impacts associated with two or more projects in a given area. The following cumulative analysis evaluates the potential cumulative impacts from the proposed Project in combination with other past, present, and probable future projects in the area. As detailed in Chapter 2, *Project Description*, a number of EBMUD standard BMPs, applicable to all EBMUD projects, have been incorporated into the Project. Several mitigation measures have also been incorporated, as detailed throughout this section. Based on the cumulative impacts analysis provided below, the Project would not result in any significant cumulative environmental impacts.

CUMULATIVE PROJECTS

The proposed Project is comprised of the Mokelumne Watershed property boundaries and includes Camanche and Pardee dams and reservoirs, extending from less than 50 feet to about three miles from the high-water surface elevation of Camanche and Pardee reservoirs. It also includes the lands adjacent to the lower Mokelumne River for approximately 0.5 mile below Camanche Dam. The Project area spans Amador, Calaveras, and San Joaquin counties, extending from the North Fork of the Mokelumne River and Pardee Reservoir in the east, to the Camanche Reservoir and lower Mokelumne River to the west.

Proposed routine maintenance activities would be temporary in nature and would generally occur from within or alongside reservoirs, ponds, channels, and culverts; along roads, trails, utility lines, and EBMUD ROWs; or at EBMUD recreation and infrastructure facilities. Other regional cumulative projects, such as facilities maintenance activities and infrastructure upgrades undertaken by Amador, Calaveras and San Joaquin counties, could occur near proposed maintenance activities; however, they would not occur within the Mokelumne Watershed boundary itself. Projects occurring in northern Calaveras County in the vicinity of the Project area primarily consist of roadway improvement projects, such as paving, installation of reflective delineators, and preventative bridge maintenance (Calaveras County 2020). Projects occurring in southern Amador County within proximity of the Project area include roadway repair work, asphalt overlays, and bridge replacements (Amador County 2020). Finally, projects that may occur within northeastern San Joaquin County in the vicinity of the Project area would likely be limited to emergency creek maintenance work to remove vegetation or debris from channels (San Joaquin County 2019); the timing and scope of which is speculative at this time. Because Amador and Calaveras county projects would typically occur within the public ROW, and because projects in San Joaquin County would be limited to emergency maintenance, none of which would occur within the Watershed, these projects are not evaluated further.

However, several EBMUD projects have recently occurred or are currently planned within the Watershed boundary, a number of which would occur in close proximity to the proposed Project and may affect similar resources. The following cumulative analysis evaluates the potential cumulative impacts from the proposed Project in combination with other related past, present, and probable future projects in the area, shown in **Table 3-13** below.

Table 3-13:EBMUD Projects with Potential to Affect Resources Similar to the Proposed Project

Project Name	Description	Status
Greenhouse Gas Reduction Fund (GGRF) Fuel Reduction Project	Brushing fire access road segments at four sites in the vicinity of the Pardee Reservoir to allow the roads to serve as fuel breaks.	Work was completed over two weeks during the winter of 2020/2021.
Mokelumne Coast to Crest Trail East Terminus Culvert Installation	Maintenance to an existing portion of the Mokelumne Coast to Crest trail (near Mokelumne Hill) through installation of a culvert under a portion of the trail to alleviate erosion caused by storm water runoff.	Work was completed over two weeks during the winter of 2020/2021.
Pardee Chemical Shaft	Construction of chemical feed shafts.	Construction is ongoing through April 2021.

Project Name	Description	Status
Camanche South Shore (CASS) Wastewater Collection System Improvements	Replace all gravity sewer lines, lift stations, and force mains, as well as pond headworks improvements in the vicinity of Monument RV Park, campgrounds, and cottages.	Construction to occur from fall 2021 to fall 2022.
Camanche North Shore (CANS) Wastewater Collection System Improvements	Replace all gravity sewer lines, lift stations, and force mains in the vicinity of campgrounds, cottages, and mobile home parks.	Construction to occur in 2023-2024.
Pardee Recreation Area (PARA) and Powdered Activated Carbon Treatment (PACT) Water Treatment Plant (WTP) Improvements	Replace treatment equipment at both the PARA and PACT WTP buildings, including relocation of pond habitat and PARA WTP.	Construction to occur from fall 2021 to fall 2022.
Fuel System Improvements (Upcountry)	Replacement of tanks and fuel dispensers, replacement of monitoring systems, electrical upgrades, and canopy construction at: Mokelumne River Fish Hatchery, Camanche Hills Hunting Preserve, CASS Marina & Maintenance Yard, CANS Marina & Maintenance Yard, PARA Marina, PACT; and Mokelumne Watershed Head Quarters.	Construction to occur from June 2021 to Dec 2021
Pardee Chemical Building	Expansion of the Pardee Chemical Plant to include lime building, new operations and maintenance building, and CO_2 area.	Construction to occur from Summer 2022 to December 2023.
Pardee Chemical Sewer and Water Line	New potable water line from Pardee Chemical Plant to elevated water tank, and sewer from Pardee Chemical Plant to Pardee Camp.	Construction to occur from Summer 2022 to December 2023.
CASS Tule Pond Retaining Wall	Construction of a 150-foot rock walkway below high water at the eastern edge of the CASS Tule Pond.	Construction to occur late summer of 2021 and will last approximately one month.
Lower Mokelumne River Spawning and Rearing Habitat Improvement Project Routine Maintenance Agreement (RMA)	Placement of spawning gravel to support anadromous fish populations in Lower Mokelumne River and improve rearing habitat through creation of floodplains.	Construction to occur late summer 2021 and will last two to four weeks.
Mokelumne Aqueduct System RMA	Routine maintenance of Mokelumne Aqueduct System (i.e., within the Aqueduct right-of-way), which originates at Pardee Reservoir.	Routine maintenance is ongoing.

Project Name	Description	Status
Mokelumne Aqueduct No. 1 Phase 13 Recoat Project	Recoating of the Mokelumne Aqueduct System.	Construction to occur from June 2023 to October 2023.
Wiedemann Gulch crossing	Removal and replacement of failing concrete low water crossing with a culvert type bridge or precast concrete box culverts at Wiedemann Gulch.	Routine maintenance of current structure is ongoing until replacement of low water crossing.

IMPACTS AVOIDED

The Project would have no impact on the following resources and would therefore not contribute to potential cumulative impacts on these resources:

- Agriculture and Forestry Resources
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services

CUMULATIVE IMPACTS

Aesthetics (Less than Significant Impact)

The proposed routine maintenance activities would be temporary in nature and would generally occur from within or alongside reservoirs, ponds, channels, and culverts; along roads, trails, utility lines, and EBMUD ROWs; or at EBMUD recreation and infrastructure facilities. Temporary visual impacts would occur from the presence of equipment, staging, earthwork, and other maintenance-related activities. Certain maintenance sites, such as those conducted near reservoirs or recreation areas, may be visible from public roadways as well as from recreation areas and trails. However, many activities would not be visible by the public due to the limited size and scale of maintenance activities in isolated locations in the Watershed. When visible, these activities would either be fleeting or of a short duration, and would not result in significant visual impacts. Given the size of the Watershed property, it is not anticipated that cumulative projects would occur in the same viewshed as the Project. If cumulative projects do occur within proximity of proposed maintenance activities, they are unlikely to occur concurrently and would similarly be temporary and of short duration. Finally, Guidelines Vis-1 and Vis-2 from the MWMP Specific Project Environmental Review Guide have been incorporated into the Project and will be implemented by EBMUD. These guidelines would identify and evaluate potential visual impacts and minimize to the extent possible, and require the use of materials that are compatible with surrounding conditions. The Project's contribution to a cumulative impact would be less than considerable, and thus less than significant.

Air Quality (Less than Significant Impact with Mitigation)

Although the Project would emit criteria pollutants through the use of construction equipment and ground-disturbing activities, air quality emissions would be below the respective air districts' established thresholds. However, there is a potential for exposure to NOA given the proximity of maintenance sites to ultramafic rock occurrences and mining sites. To reduce air quality impacts to a

level that is less than significant, EBMUD would implement Mitigation Measure AQ-1, which includes protocols for controlling dust emissions from maintenance activities and requires implementation of an asbestos dust mitigation plan that has been approved by applicable air districts. If cumulative projects do occur within proximity of these areas (i.e., near Pardee Reservoir), the cumulative air quality impacts would be potentially significant. However, other EBMUD projects would be required to comply with applicable State and local regulations concerning criteria pollutants, dust, and NOA, and implement similar mitigation measures when necessary. Therefore, with implementation of Mitigation Measure AQ-1, the Project's contribution to a potentially significant cumulative air quality impact would be less than considerable with mitigation, and thus less than significant.

Biological Resources (Less than Significant Impact with Mitigation)

The proposed Project would likely occur in similar habitats to some of the cumulative projects. While the many of the potential cumulative projects are anticipated to occur within disturbed or developed areas that may not affect habitat areas, similar impacts could occur to drainages and other waterbodies (e.g., wetlands and riparian habitat). The cumulative impact from habitat loss would be potentially significant due to the loss of habitat for special-status species. Cumulative projects would need to comply with local, State and federal laws and regulations protecting special-status species and sensitive habitats. The majority of the Project's impacts would be temporary and any permanent impacts to habitat would be minimal, as maintenance activities would be limited and small in scale at each individual maintenance site. EBMUD would reduce biological resource impacts to a less-than-significant level with implementation of Mitigation Measure BIO-1 through Mitigation Measure BIO-21 (see Section II, Biological Resources). The Project contribution to a potentially significant cumulative biological resource impact would be less than considerable with mitigation, and thus less than significant.

Cultural Resources (Less than Significant Impact with Mitigation)

Cumulative projects that would occur within the Watershed property involving ground disturbing activities would have the potential to impact the same cultural resources as the proposed Project. As described in Section V, Cultural Resources, 154 previously recorded cultural resources have been identified within the EBMUD Watershed. Additionally, given the geographic scale of the Project area and the fact that the entire EBMUD Watershed has not been entirely subject to pedestrian survey previously unrecorded archaeological resources are likely to exist. Although there is potential for maintenance work to uncover previously undiscovered cultural resources or for activities to impact resources that are not currently known at the time of this IS/MND analysis, Guidelines Cul-1, Cul-2 and Cul-4 have been incorporated into the Project and will be implemented by EBMUD. These guidelines would require preparation and consultation of a cultural resources inventory and require work to stop should human remains be discovered. However, because they do not provide specific measures for avoiding significant impacts to the resources, there would still be potential for impacts related to cultural resources to occur. Implementation of Mitigation Measures CR-1 through CR-4 include specific protocols in the event of discovery that would reduce these impacts to levels that are less than significant. Therefore, with the incorporation of Guidelines Cul-1, Cul-2 and Cul-4, and Mitigation Measures CR-1 through CR-4, the Project contribution to a potentially significant cumulative cultural resources impact would be less than considerable with mitigation, and thus less than significant.

Energy (Less than Significant Impact)

Although the Project would require the consumption of fossil fuels, maintenance activities would generally be a continuation of existing similar activities, with a similar level of energy use. In addition, the Project would be conducted in accordance with energy efficient practices. Similarly, cumulative projects within the Watershed are primarily routine in nature and would also be required to adopt energy efficient practices. Thus, the Project's contribution to a cumulative impact would be less than considerable, and thus less than significant.

Geology and Soils (Less than Significant Impact with Mitigation)

Cumulative projects near the Project area may require grading and earth disturbance, and would be subject to local and State laws, regulations, and ordinances regarding the proper construction of facilities to ensure public safety. The Project involves conducting routine maintenance activities at existing facilities and does not involve new construction of structures that would increase exposure to adverse effects associated with fault rupture, ground shaking, liquefaction, landslides, lateral spreading, subsidence, collapse, or expansive or unstable soils. Guideline Geo-2 from the MWMP Specific Project Environmental Review Guide has been incorporated into the Project and will be implemented by EBMUD. Guideline Geo-2 would require installation of runoff controls prior to the rainy season to prevent soil from migrating off site, which would reduce impacts to less-than-significant levels. Although not necessary to ensure impacts are less-than-significant, Mitigation Measure BIO-2 would further reduce impacts by limiting vegetation disturbance to the immediate maintenance footprint necessary.

Certain maintenance activities would, however, involve excavation and unknown paleontological resources could be discovered during these ground disturbing activities. In the unlikely event of a discovery, implementation of Mitigation Measure GEO-1 would require work to be halted and appropriate mitigation to be implemented if an unknown paleontological resource is found. Therefore, with implementation of Mitigation Measure GEO-1, the Project contribution to a potentially significant cumulative geology and soils impact would be less than considerable with mitigation, and thus less than significant.

Greenhouse Gas Emissions (Less than Significant Impact)

Greenhouse gases are cumulative in nature and the cumulative impact from greenhouse gas production at a global scale is significant. The Project would generate GHG emissions during maintenance activities; however, these activities would be limited in nature and duration, and similar to activities conducted in the existing condition. In addition, estimated GHG emissions would be below the applicable thresholds established by nearby air districts. Thus, the Project's contribution to a cumulative impact would be less than considerable, and thus less than significant.

Hazards and Hazardous Materials (Less than Significant Impact with Mitigation)

Potential cumulative projects within the Watershed would involve the use of hazardous materials during operation of construction equipment, and would be required to comply with standard federal, State, and local requirements to minimize impacts related to hazardous materials. Proposed maintenance activities would be of short duration, not lasting more than five days in any one location, and generally would be confined to small areas (e.g., less than one acre). Guideline Haz-1 from the MWMP Specific Project Environmental Review Guide has been incorporated into the Project and will be implemented by EBMUD, which would require that applicable State and federal regulations be followed with regard to the transport, storage, use, and disposal of hazardous materials. If

maintenance activities occur in areas within the Watershed where hazardous materials are discovered, EMBUD Procedure 711, which includes standard procedures for removing hazardous waste from EBMUD facilities, would ensure the material is properly characterized, handled and disposed. Because a significant impact on humans or the environment could result even if hazardous materials were accidentally released during use or transport, Mitigation Measures HAZ-1, BIO-8, BIO-9, and BIO-10 would require additional measures and safeguards (e.g., flow diversions, protocols for storage/use near streams, containment of concrete leachate, and development of a contingency plan) to ensure that hazardous materials are handled, used, transported, and disposed of properly.

With implementation of Mitigation Measures HAZ-1, BIO-8, BIO-9, and BIO-10, the Project contribution to a potentially significant cumulative hazards and hazardous materials impact would be less than considerable with mitigation, and thus less than significant.

Hydrology and Water Quality (Less than Significant Impact with Mitigation)

Cumulative projects near the Project area may require grading and earth disturbance. Cumulative projects that result in land disturbance of more than one acre would be required to prepare a stormwater pollution prevention plan (SWPPP) and comply with the statewide Construction General Permit. All maintenance-related activities associated with the Project would be of short duration, not lasting more than five days, and confined to small areas (i.e., typically less than one acre).

The purpose of proposed routine maintenance activities within the Watershed is to protect water quality by ensuring that runoff is properly directed to culverts and drainages, thus preventing erosion, sedimentation, and flooding from occurring. Finally, although certain activities would occur along and within channels, ponds, and reservoirs, and could potentially adversely affect water quality, Guideline Geo-2 from the MWMP Specific Project Environmental Review Guide has been incorporated into the Project and will be implemented by EBMUD. Guideline Geo-2 would require installation of runoff controls prior to the beginning of the rainy season to prevent soil from migrating off site and protect against erosion. However, because Guideline Geo-2 does not include specific exposure protocols or restrictions on equipment for in-channel maintenance, there would still be the potential for impacts to occur related to erosion and sediment transport. Mitigation Measures HYD-1 and HYD-2 would reduce impacts through protocols for stabilizing exposed soils and restrictions for in-channel maintenance activities.

EMBUD Procedure 711 has been incorporated into the Project, and it includes standard procedures for removing hazardous waste from EBMUD facilities, would ensure any hazardous materials discovered during routine maintenance activities is properly characterized, handled, and disposed. Additionally, Mitigation Measures BIO-9, BIO-10, and HAZ-1would reduce temporary impacts associated with ground-disturbing, dewatering, vegetation management, and the use of hazardous materials, including protocols for storage/use of hazardous materials near streams, measures for the containment of concrete leachate, and development of a contingency plan Therefore, with implementation Mitigation Measures HYD-1, HYD-2, BIO-9, BIO-10, and HAZ-1, the Project contribution to a potentially significant cumulative hydrology and water quality impact would be less than considerable with mitigation, and thus less than significant.

Noise (Less than Significant Impact with Mitigation)

Cumulative projects may generate construction noise similar to or greater than the proposed Project. The proposed Project would generate temporary construction noise associated with maintenance work; however, noise would be of short duration (one to two days typically and up to five days

maximum) and would immediately cease once maintenance is complete. The scale of noise generation from maintenance activities would be less than that of a typical construction project and would have limited exposure to sensitive receptors; however, activities could occasionally be close enough to sensitive receptors to exceed local noise standards. Project. EBMUD' Mokelumne Watershed Routine Maintenance Standard Practices for noise control would limit construction activities to daylight hours, require best available noise control techniques for equipment and vehicles, and impose controls for impact equipment. However, because these measures may not be sufficient to eliminate the potential for significant noise impacts near sensitive receptors, EBMUD would incorporate Mitigation Measure NOI-1, which would require maintenance work to comply with noise controls (e.g., advance notification, mufflers, etc.) to minimize potential impacts to sensitive receptors. Therefore, with implementation Mitigation Measure NOI-1, the Project would not permanently increase noise levels above the existing condition and the Project contribution to a potentially significant cumulative noise impact would be less than considerable with mitigation, and thus less than significant.

Recreation (Less than Significant Impact)

Potential cumulative projects would occur near existing Watershed roads (e.g., bicycle lanes), trails and recreation areas. Similarly, maintenance activities associated with the proposed Project would occur near recreational facilities and could result in temporary disruptions to such areas throughout the Watershed. However, these activities would be of short duration, typically lasting one to two days and up to a maximum of five days, and localized to a specific maintenance site. Project maintenance activities would not significantly affect the availability of public trails or other recreational facilities. Thus, the Project's contribution to a cumulative recreation impact would be less than considerable, and thus less than significant.

Transportation (Less than Significant Impact)

Potential cumulative projects could result in significant construction and operational transportation impacts along public roadways in the vicinity of the Project area. During maintenance activities, the Project would contribute additional vehicle traffic to local roadways; however, the number of additional vehicles on local roadways generated by maintenance crews at any given location would be small (typically less than four vehicles), intermittent, limited in duration, and similar to ongoing maintenance work conducted in the past. In addition, routine maintenance activities would not occur on public roads and lane closures would not be required. Thus, the Project's contribution to a cumulative transportation impact would be less than considerable, and thus less than significant.

Tribal Cultural Resources (Less than Significant Impact with Mitigation)

Potential cumulative projects would occur within the Watershed and therefore could potentially impact the same TCRs. While no TCRs were identified to occur within the Project area, it is possible that TCRs could be discovered during ground disturbing activities. As such, implementation of Mitigation Measure TCR-1 would ensure that, if archaeological sites known to contain human remains are at risk of disturbance by a proposed maintenance activity, the TCR would be avoided or treated in a culturally appropriate manner. Additionally, Mitigation Measures CR-1 through CR-4 would reduce potential impacts to unknown TCRs or TCRs that have not yet been identified. Therefore, with implementation of Mitigation Measures TCR-1 and Mitigation Measures CR-1 through CR-4, the Project contribution to a potentially significant cumulative tribal cultural resources impact would be less than considerable with mitigation, and thus less than significant.

Wildfire (Less than Significant Impact with Mitigation)

The Project is located within areas that are designated as very high FHSZs for wildfire risk. Potential cumulative projects could exacerbate wildfire risk through the use of construction vehicles and equipment that could ignite fires. Although maintenance activities would similarly introduce maintenance equipment in these areas that could cause a fire, EBMUD would comply with applicable rules of the California Fire Code, including minimum requirements for fire protection equipment. Additionally, Guideline Haz-2 from the MWMP Specific Project Environmental Review Guide has been incorporated into the Project and will be implemented by EBMUD. Guideline Haz-2 would require an evaluation of the risks of a project to elevate wildfire risk or to be at risk from wildfire. However, because Guideline Haz-2 does not identify specific measures to reduce fire risk, there would still be potential for impacts to occur from the spread of wildfire. Mitigation Measure WILD-1 would reduce the potential for wildfire to occur to levels that are less-than-significant by requiring that maintenance sites be supplied and maintained with adequate firefighting equipment, and that access for firefighting at sites is maintained. Finally, maintenance work at any given location would be of short duration, not lasting more than five days in any one location, and generally would be confined to small areas (e.g., less than one acre). Therefore, with implementation of Mitigation Measure Wild-1, the Project contribution to a potentially significant wildfire impact would be less than considerable with mitigation, and thus less than significant.

c. Less than Significant with Mitigation. Based on the analysis provided in the above resource sections, the Project would result in less than significant impacts for the following resources topics: aesthetics, energy, greenhouse gas emissions, recreation, transportation, and utilities and service systems. Mitigation measures pertaining to air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, tribal cultural resources, and wildfire would reduce Project-related impacts to a less-than-significant level. As such, implementation of mitigation measures would ensure that the effects on human beings would be less than significant with mitigation.

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CHAPTER 4
REFERENCES

Chapter 1. Summary

None.

Chapter 2. Project Description

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None.

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None.

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None.

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None.

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None.

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APPENDICES

Appendix A. Air Quality, Energy, and Greenhouse Gas Emission Modeling and Calculations

		Emissions - Annual (tons/year)							Emissions - Maximum Daily (lbs/day)			
		ROG	NOx	CO	SO2	PM10	PM2.5	CO2e	ROG	NOx	PM10	CO2e
Overall Equipment Emissions		0.095	0.551	0.505	0.001	0.117	0.063	117.18	19.6	30.5	9.98	6,887
Livestock Emissions - Grazing Upland								1.45				0.0725
Livestock Emissions - Grazing Riparian								0.725				0.0725
	Total	0.095	0.551	0.505	0.001	0.117	0.063	119.36	19.6	30.5	9.98	6887.15
	SJVAPCD Threshold	10	10	100	27	15	15					
	CCAPCD Threshold								150	150	150	
	Above Threshold?	**N**	**N**	**N**	**N**	**N**	**N**		**N**	**N**	**N**	

For livestock grazing emissions:

Livestock emissions values from CalVTP (CalFIRE 2019)

Cattle related CO2e emissions based on 20 cows, 0.000145 MT methane/cow/day, 25 as GWP of Methane (CalVTP App AQ1)

Worker Trip Length:	16.8
Vendor Trip Length:	6.6
Hauling Trip Length:	20

Model Assumptions

Maintenance Activity	Workers per Crew	Days Per Year	Worker Trips Per Day	Vendor Trips Per Day	Total Trips			VMT
					Worker	Vendor	Hauling	
Sediment and Debris Removal - Culverts, Pipes	3	3	6	2	18	6	0	342
Sediment and Debris Removal - In-stream Work	2	5	4	6	20	30	15	834
Sediment and Debris Removal - Disposal, Piles	3	4	6	16	24	64	0	826
Vegetation Management - Riparian	4	2	8	10	16	20	0	401
Vegetation Management - Chaparral	4	10	8	6	80	60	0	1740
Vegetation Management - Upland	20	15	40	6	600	90	0	10674
Vegetation Management - Livestock Grazing Upland	2	20	4	0	80	0	0	1344
Vegetation Management - Livestock Grazing Riparian	2	10	4	0	40	0	0	672
Facilities Maintenance - Culvert Replacement	4	3	8	2	24	6	0	443
Facilities Maintenance - Low Water Crossings	4	1	8	4	8	4	0	161
Facilities Maintenance - Other	6	14	12	4	168	56	0	3192
Facilities Maintenance - Cleaning, Painting	4	3	8	0	24	0	0	403
Erosion Prevention, Control, Repair, and Protection	4	5	8	6	40	30	0	870
Environmental Stewardship - Invasive Species Removal	4	5	8	2	40	10	0	738
Environmental Stewardship - Beaver Dam Removal	4	4	8	4	32	16	0	643
							Total:	23,282

Maintenance Category	Maintenance Activity	Average Annual Frequency of Activity + Duration (total days per year)	Type/Number of Equipment Used [*assumes transported on flatbed trailer]	Eq. Use Hours per day	Average Maintenance Area Size	Annual Volume of Material Exported	Staging Area Size (Impact Area)	Hours Per Day	Number of Workers in Crew
Sediment and Debris Removal	Culverts/pipes	2	1 vacuum truck	8	0.2 acre (includes staging area)		0.03	8	3
		3 days	1 dump truck	8					
			1 excavator*	8					
Sediment and Debris Removal	In-stream Work	3	1 backhoe*	4	Natural channels: 200 LF; Modified channels: 16,000 LF; Engineered channels: 2,000 LF	120 CY	0.03	8	2
		5 days	1 excavator*	4					
			1 skid-steer*	4					
			1 power shovel	4					
Sediment and Debris Removal	Sediment and Debris Disposal - Piles and Mounds (in uplands)	3	1 backhoe*	2	0.5 acres		0.03	8	3
		4 days	1 excavator*	2					
			1 skid-steer*	2					
			1 power shovel*	2					
			1 grader*	2					
			1 loader*	2					
			1 tracked dozers*	2					
			1 water truck	2					
			1 sweeper	2					
			1 dump truck (10 cy)	2					
			1 chipper*	2					
			1 pickup truck/trailer	2					
Vegetation Management	Trimming, mowing, pruning, and removal (Riparian)	2	2 utility trucks	4			0.03	8	4
		2 days	1 flail mower*	4					
			1 excavator*	4					
			1 skid steer*	4					
			1 backhoe/ excavator*	4					
			1 UTV*	4					
Vegetation Management	Trimming, mowing, pruning, and removal (Chaparral)	2	2 utility trucks	4	15 acres total per year	0	0.03	8	4
		10 days	1 flail mower	4					
			1 skid steer*	4					
			1 backhoe/ excavator*	4					
			1 UTV*	4					
Vegetation Management	Trimming, mowing, discing, removal , fuel breaks (Upland)		1 backhoe/loader*	8	30 acres		0.03	8	20
		15 days	1 man lift	8					
			2 utility trucks	8					
			1 flail mower	8					
			1 skid steer*	8					

			1 UTV*	8					
			1 bulldozer with a disc attachment	8					
			1 masticator	8					
Vegetation Management	Targeted Livestock Grazing (Upland)	1-2 times annually	2 pickup trucks	1	0.5 acres		0.03	24	2
		20 days	2 stock trailers						
Vegetation Management	Targeted Livestock Grazing (Riparian)	1-2 times annually	2 pickup trucks	1	0.5 acres		0.03	8	2
		10 days	2 stock trailers						
Facilities Maintenance	Culvert Replacement	3 times annually	1 vacuum truck	8	0.02-acre (footprint, plus staging area)			8	4
		3 days	1 backhoe/excavator*	8					
			1 dump truck (5 cy) with trailer	8					
Facilities Maintenance	Low Water Crossings	Once annually	1 backhoe/excavator*	8	0.02-acre (footprint, plus staging area)			8	4
		1 day	1 dump truck (<10 cy) with trailer	8					
			1 front-end loader*	8					
			1 concrete truck	8					
Facilities Maintenance	Other existing but deficient drainage and erosion control structures, access roads and recreational facilities (e.g., spring boxes, weirs, piezometers, storm drain outfalls, slide gates, revetments, energy dissipaters, grade structures, sediment basins, weirs, trash racks, stream gauge structures, fish ladders, fish screens, fish barrier fences, utility line crossings, bridges (including support structures), road embankments, boat ramps, low water access points, and access ramps.)	14 days	1 vacuum truck 1 backhoe/excavator* 1 dump truck (<10 yards) with trailer 1 front-end loader* 1 concrete truck 1 bulldozer 1 UTV 1 Skidsteer 1 sweeper 1 grader 1 gas-powered pump	4 each, 8 for pump	1 acre		0.03	8	6
Facilities Maintenance	Cleaning, painting and reclamation	Once annually	1 Backhoe/loader	4 each	0		0.03	8	4
		3 days	1 excavator 1 dump truck (10 cy) with trailer.	5,000 SF of surface painted					
Erosion Prevention, Control, Repair, and Protection	Bank repair, bank stabilization	Once annually (5 sites maximum)	1 backhoe/excavator*	8	<100 ft in length and 10 feet in width (5,000 sq. ft. total)		0.03	8	4
		5 days	1 skid steer*	8					
			1 dump truck (<10 yards) with trail	8					
			1 front-end loader*	8					

Environmental Stewardship	Pond draining, Invasive species (American bullfrog and aquatic plants) removal	5 ponds annually	1 pickup truck/trailer	8	<0.1 acre		0.03	8	4
		5 days	1 UTV*	8					
			1 gas-powered pump with 1/8-inch	8					
Environmental Stewardship	Beaver dam removal/analogue	Twice annually			0.75 acre		0.03	8	4
		2 days	1 UTVs*	4					
			1 front-end loader*	4					
			1 backhoe/ excavator	4					
			1 dump truck (<10 cy)	4					

Source Type	Diesel Fuel Use (gallons)	Gasoline Fuel Use (gallons)
Off-road Construction Equipment[1]	26,556	
Worker Vehicles[2]		739
Vendor Vehicles[3]	318	
Hauling Vehicles[4]	46	

[1] Fuel use for off-road construction equipment was estimated using a fuel use factor from CARB's off-road in-use engine emissions model of 0.347 pound of diesel per horsepower-hour and diesel fuel density of 7.37 pounds per gallon.

[2] Fuel use for construction worker vehicles was estimated using fuel use estimates from EMFAC with an estimated rate of 27.6 miles per gallon.

[3] Fuel use for vendor vehicles was estimated using fuel use estimates from EMFAC with an estimated rate of 8.1 miles per gallon.

[4] Fuel use for hauling vehicles was estimated using fuel use estimates from EMFAC with an estimated rate of 6.6 miles per gallon.

PhaseName	OffRoadEquipmentType	OffRoadEquipr	UsageHou	HorsePower	LoadFactor	Number of Construction Days	Amount of Horsepower Use (gal/hp-hr)	Gallons of Diesel Use
Sediment and Debris Removal - Culverts, Pipes	Dumpers/Tenders	1	8	16	0.38	3	384	18
Sediment and Debris Removal - Culverts, Pipes	Excavators	1	8	158	0.38	3	3792	179
Sediment and Debris Removal - Culverts, Pipes	Off-Highway Trucks	1	8	402	0.38	3	9648	454
Sediment and Debris Removal - In-stream Work	Excavators	1	4	158	0.38	5	3160	149
Sediment and Debris Removal - In-stream Work	Skid Steer Loaders	1	4	65	0.37	5	1300	61
Sediment and Debris Removal - In-stream Work	Tractors/Loaders/Backhoes	1	4	97	0.37	5	1940	91
Sediment and Debris Removal - In-stream Work	Trenchers	1	4	78	0.5	5	1560	73
Sediment and Debris Removal - Disposal, Piles	Dumpers/Tenders	1	2	16	0.38	4	128	6
Sediment and Debris Removal - Disposal, Piles	Excavators	1	2	158	0.38	4	1264	60
Sediment and Debris Removal - Disposal, Piles	Graders	1	2	187	0.41	4	1496	70
Sediment and Debris Removal - Disposal, Piles	Off-Highway Trucks	1	2	402	0.38	4	3216	151
Sediment and Debris Removal - Disposal, Piles	Off-Highway Trucks	1	2	402	0.38	4	3216	151
Sediment and Debris Removal - Disposal, Piles	Other Material Handling Equ	1	2	168	0.4	4	1344	63
Sediment and Debris Removal - Disposal, Piles	Rubber Tired Dozers	1	2	247	0.4	4	1976	93
Sediment and Debris Removal - Disposal, Piles	Skid Steer Loaders	1	2	65	0.37	4	520	24
Sediment and Debris Removal - Disposal, Piles	Sweepers/Scrubbers	1	2	64	0.46	4	512	24
Sediment and Debris Removal - Disposal, Piles	Tractors/Loaders/Backhoes	2	2	97	0.37	4	776	73
Sediment and Debris Removal - Disposal, Piles	Trenchers	1	2	78	0.5	4	624	29
Vegetation Management - Riparian	Excavators	1	4	158	0.38	2	1264	60
Vegetation Management - Riparian	Off-Highway Trucks	2	4	402	0.38	2	3216	303
Vegetation Management - Riparian	Off-Highway Trucks	1	4	402	0.38	2	3216	151
Vegetation Management - Riparian	Skid Steer Loaders	1	4	65	0.37	2	520	24
Vegetation Management - Riparian	Tractors/Loaders/Backhoes	2	4	97	0.37	2	776	73
Vegetation Management - Chaparral	Off-Highway Trucks	2	4	402	0.38	10	16080	1514
Vegetation Management - Chaparral	Off-Highway Trucks	1	4	402	0.38	10	16080	757
Vegetation Management - Chaparral	Skid Steer Loaders	1	4	65	0.37	10	2600	122
Vegetation Management - Chaparral	Tractors/Loaders/Backhoes	2	4	97	0.37	10	3880	365
Vegetation Management - Upland	Aerial Lifts	1	8	63	0.31	15	7560	356
Vegetation Management - Upland	Off-Highway Trucks	2	8	402	0.38	15	48240	4543
Vegetation Management - Upland	Off-Highway Trucks	1	8	402	0.38	15	48240	2271
Vegetation Management - Upland	Other Construction Equipme	1	8	172	0.42	15	20640	972
Vegetation Management - Upland	Rubber Tired Dozers	1	8	247	0.4	15	29640	1396
Vegetation Management - Upland	Skid Steer Loaders	1	8	65	0.37	15	7800	367
Vegetation Management - Upland	Tractors/Loaders/Backhoes	2	8	97	0.37	15	11640	1096
Vegetation Management - Livestock Grazing Upland	Off-Highway Trucks	2	1	402	0.38	20	8040	757
Vegetation Management - Livestock Grazing Riparian	Off-Highway Trucks	2	1	402	0.38	10	4020	379
Facilities Maintenance - Culvert Replacement	Dumpers/Tenders	1	8	16	0.38	3	384	18
Facilities Maintenance - Culvert Replacement	Off-Highway Trucks	1	8	402	0.38	3	9648	454
Facilities Maintenance - Culvert Replacement	Tractors/Loaders/Backhoes	1	8	97	0.37	3	2328	110
Environmental Stewardship - Invasive Species Removal	Off-Highway Trucks	2	8	402	0.38	5	16080	1514
Environmental Stewardship - Invasive Species Removal	Pumps	1	8	84	0.74	5	3360	158
Facilities Maintenance - Other	Dumpers/Tenders	1	4	16	0.38	14	896	42
Facilities Maintenance - Other	Graders	1	4	187	0.41	14	10472	493

Facilities Maintenance - Other	Off-Highway Trucks	3	4	402	0.38	14	22512	3180
Facilities Maintenance - Other	Pumps	1	8	84	0.74	14	9408	443
Facilities Maintenance - Other	Rubber Tired Dozers	1	4	247	0.4	14	13832	651
Facilities Maintenance - Other	Skid Steer Loaders	1	4	65	0.37	14	3640	171
Facilities Maintenance - Other	Sweepers/Scrubbers	1	4	64	0.46	14	3584	169
Facilities Maintenance - Other	Tractors/Loaders/Backhoes	2	4	97	0.37	14	5432	512
Facilities Maintenance - Cleaning, Painting	Dumpers/Tenders	1	4	16	0.38	3	192	9
Facilities Maintenance - Cleaning, Painting	Excavators	1	4	158	0.38	3	1896	89
Facilities Maintenance - Cleaning, Painting	Tractors/Loaders/Backhoes	1	4	97	0.37	3	1164	55
Erosion Prevention, Control, Repair, and Protection	Dumpers/Tenders	1	8	16	0.38	5	640	30
Erosion Prevention, Control, Repair, and Protection	Skid Steer Loaders	1	8	65	0.37	5	2600	122
Erosion Prevention, Control, Repair, and Protection	Tractors/Loaders/Backhoes	2	8	97	0.37	5	3880	365
Environmental Stewardship - Beaver Dam Removal	Dumpers/Tenders	1	4	16	0.38	4	256	12
Environmental Stewardship - Beaver Dam Removal	Off-Highway Trucks	1	4	402	0.38	4	6432	303
Environmental Stewardship - Beaver Dam Removal	Tractors/Loaders/Backhoes	2	4	97	0.37	4	1552	146
Facilities Maintenance - Low Water Crossings	Dumpers/Tenders	1	8	16	0.38	1	128	6
Facilities Maintenance - Low Water Crossings	Off-Highway Trucks	1	8	402	0.38	1	3216	151
Facilities Maintenance - Low Water Crossings	Tractors/Loaders/Backhoes	2	8	97	0.37	1	776	73
							TOTAL:	**26,556**
								gallons of diesel

Fuel Use Calculations

Phase Name	Number Days in Construction	Worker Trip Number (daily, one-way)	Vendor Trip Number	Hauling Trip Number (total for construction phase)	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	Worker Fuel Rate (gallon/mile)	Vendor Fuel Rate (gallon/mile)	Hauling Fuel Rate (gallon/mile)	Worker Fuel Use (gallons)	Vendor Fuel Use (gallons)	Hauling Fuel Rate (gallons)
Sediment and Debris Remova	3	6	2	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	0.0362371	0.1228049	0.1526718	11	5	0
Sediment and Debris Remova	5	4	6	15	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	0.0362371	0.1228049	0.1526718	12	24	46
Sediment and Debris Remova	4	6	16	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	0.0362371	0.1228049	0.1526718	15	52	0
Vegetation Management - Ri	2	8	10	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	0.0362371	0.1228049	0.1526718	10	16	0
Vegetation Management - Ch	10	8	6	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	0.0362371	0.1228049	0.1526718	49	49	0
Vegetation Management - Up	15	40	6	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	0.0362371	0.1228049	0.1526718	365	73	0
Vegetation Management - Liv	20	4	0	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	0.0362371	0.1228049	0.1526718	49	0	0
Vegetation Management - Liv	10	4	0	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	0.0362371	0.1228049	0.1526718	24	0	0
Facilities Maintenance - Culv	3	8	2	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	0.0362371	0.1228049	0.1526718	15	5	0
Environmental Stewardship -	5	8	2	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	0.0362371	0.1228049	0.1526718	24	8	0
Facilities Maintenance - Othe	14	12	4	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	0.0362371	0.1228049	0.1526718	102	45	0
Facilities Maintenance - Clea	3	8	0	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	0.0362371	0.1228049	0.1526718	15	0	0
Erosion Prevention, Control,	5	8	6	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	0.0362371	0.1228049	0.1526718	24	24	0
Environmental Stewardship -	4	8	4	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	0.0362371	0.1228049	0.1526718	19	13	0
Facilities Maintenance - Low	1	8	4	0	16.8	6.6	20	LD_Mix	HDT_Mix	HHDT	0.0362371	0.1228049	0.1526718	5	3	0
													TOTAL:	**739**	**318**	**46**

EBMUD Watershed RMA

Amador County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	0.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	2			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Based on data request and project description.

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

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Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Trips and VMT - Based on Project Description and Data Request

Grading - Based on Project Description and Data Request.

Architectural Coating - Based on Project Description and Data Request

Vehicle Trips - All emissions modeled under construction

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	0.00	5,000.00
tblConstructionPhase	NumDays	0.00	3.00
tblConstructionPhase	NumDays	0.00	3.00

tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	14.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	4.00
tblConstructionPhase	NumDays	0.00	1.00
tblConstructionPhase	NumDays	0.00	5.00
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tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	NumDays	0.00	10.00
tblConstructionPhase	NumDays	0.00	15.00
tblConstructionPhase	NumDays	0.00	20.00
tblConstructionPhase	NumDays	0.00	10.00
tblConstructionPhase	NumDays	0.00	3.00
tblGrading	AcresOfGrading	3.50	0.00
tblGrading	AcresOfGrading	0.50	0.00
tblGrading	AcresOfGrading	0.00	30.00
tblGrading	MaterialExported	0.00	120.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

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tblOffRoadEquipment	PhaseName		Erosion Prevention, Control, Repair, and Protection
tblOffRoadEquipment	PhaseName		Environmental Stewardship - Beaver Dam Removal
tblOffRoadEquipment	PhaseName		Facilities Maintenance - Low Water Crossings
tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - Disposal, Piles
tblOffRoadEquipment	PhaseName		Facilities Maintenance - Culvert Replacement
tblOffRoadEquipment	PhaseName		Facilities Maintenance - Cleaning, Painting
tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - In-stream Work
tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - Disposal, Piles
tblOffRoadEquipment	PhaseName		Vegetation Management - Riparian
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tblOffRoadEquipment	PhaseName		Environmental Stewardship - Invasive Species Removal
tblOffRoadEquipment	PhaseName		Facilities Maintenance - Other
tblOffRoadEquipment	PhaseName		Environmental Stewardship - Beaver Dam Removal
tblOffRoadEquipment	PhaseName		Facilities Maintenance - Low Water Crossings

tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - Disposal, Piles
tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - Disposal, Piles
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tblOffRoadEquipment	PhaseName		Vegetation Management - Riparian
tblOffRoadEquipment	PhaseName		Vegetation Management - Chaparral
tblOffRoadEquipment	PhaseName		Vegetation Management - Chaparral
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tblOffRoadEquipment	PhaseName		Vegetation Management - Livestock Grazing Upland
tblOffRoadEquipment	PhaseName		Vegetation Management - Livestock Grazing Riparian
tblOffRoadEquipment	PhaseName		Facilities Maintenance - Culvert Replacement
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tblOffRoadEquipment	PhaseName		Environmental Stewardship - Invasive Species Removal
tblOffRoadEquipment	PhaseName		Facilities Maintenance - Other
tblOffRoadEquipment	PhaseName		Facilities Maintenance - Other
tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - Disposal, Piles
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tblOffRoadEquipment	PhaseName		Facilities Maintenance - Other
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tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - Disposal, Piles
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tblOffRoadEquipment	PhaseName		Facilities Maintenance - Other
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tblOffRoadEquipment	UsageHours	8.00	4.00
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tblTripsAndVMT	WorkerTripNumber	5.00	4.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CW_TL	14.70	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0951	0.5510	0.5051	1.3200e-003	0.0939	0.0227	0.1166	0.0421	0.0210	0.0632	0.0000	116.3602	116.3602	0.0330	0.0000	117.1841
Maximum	**0.0951**	**0.5510**	**0.5051**	**1.3200e-003**	**0.0939**	**0.0227**	**0.1166**	**0.0421**	**0.0210**	**0.0632**	**0.0000**	**116.3602**	**116.3602**	**0.0330**	**0.0000**	**117.1841**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0951	0.5510	0.5051	1.3200e-003	0.0939	0.0227	0.1166	0.0421	0.0210	0.0632	0.0000	116.3601	116.3601	0.0330	0.0000	117.1840
Maximum	**0.0951**	**0.5510**	**0.5051**	**1.3200e-003**	**0.0939**	**0.0227**	**0.1166**	**0.0421**	**0.0210**	**0.0632**	**0.0000**	**116.3601**	**116.3601**	**0.0330**	**0.0000**	**117.1840**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-3-2022	4-2-2022	0.3800	0.3800
2	4-3-2022	7-2-2022	0.2692	0.2692
		Highest	0.3800	0.3800

2.2 Overall Operational

Unmitigated Operational

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

2.2 Overall Operational

Mitigated Operational

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

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

3.0 Construction Detail

Construction Phase

EBMUD Watershed RMA - Amador County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Sediment and Debris Removal - Culverts, Pipes	Site Preparation	1/3/2022	1/5/2022	5	3	
2	Sediment and Debris Removal - In-stream Work	Site Preparation	1/6/2022	1/12/2022	5	5	
3	Sediment and Debris Removal - Disposal, Piles	Site Preparation	1/13/2022	1/18/2022	5	4	
4	Vegetation Management - Riparian	Site Preparation	1/19/2022	1/20/2022	5	2	
5	Vegetation Management - Chaparral	Site Preparation	1/21/2022	2/3/2022	5	10	
6	Vegetation Management - Upland	Site Preparation	2/4/2022	2/24/2022	5	15	
7	Vegetation Management - Livestock Grazing Upland	Site Preparation	2/25/2022	3/24/2022	5	20	
8	Vegetation Management - Livestock Grazing Riparian	Site Preparation	3/25/2022	4/7/2022	5	10	
9	Facilities Maintenance - Culvert Replacement	Site Preparation	4/8/2022	4/12/2022	5	3	
10	Environmental Stewardship - Invasive Species Removal	Site Preparation	4/8/2022	4/14/2022	5	5	
11	Facilities Maintenance - Other	Site Preparation	4/15/2022	5/4/2022	5	14	
12	Facilities Maintenance - Cleaning, Painting	Architectural Coating	5/5/2022	5/9/2022	5	3	
13	Erosion Prevention, Control, Repair, and Protection	Site Preparation	5/10/2022	5/16/2022	5	5	
14	Environmental Stewardship - Beaver Dam Removal	Site Preparation	5/17/2022	5/20/2022	5	4	
15	Facilities Maintenance - Low Water Crossings	Site Preparation	5/23/2022	5/23/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 5,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

EBMUD Watershed RMA - Amador County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Sediment and Debris Removal - Culverts, Pipes	Dumpers/Tenders	1	8.00	16	0.38
Sediment and Debris Removal - Culverts, Pipes	Excavators	1	8.00	158	0.38
Sediment and Debris Removal - Culverts, Pipes	Graders	0	8.00	187	0.41
Sediment and Debris Removal - Culverts, Pipes	Off-Highway Trucks	1	8.00	402	0.38
Sediment and Debris Removal - Culverts, Pipes	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Sediment and Debris Removal - In-stream Work	Excavators	1	4.00	158	0.38
Sediment and Debris Removal - In-stream Work	Graders	0	8.00	187	0.41
Sediment and Debris Removal - In-stream Work	Skid Steer Loaders	1	4.00	65	0.37
Sediment and Debris Removal - In-stream Work	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Sediment and Debris Removal - In-stream Work	Trenchers	1	4.00	78	0.50
Sediment and Debris Removal - Disposal, Piles	Dumpers/Tenders	1	2.00	16	0.38
Sediment and Debris Removal - Disposal, Piles	Excavators	1	2.00	158	0.38
Sediment and Debris Removal - Disposal, Piles	Graders	1	2.00	187	0.41
Sediment and Debris Removal - Disposal, Piles	Off-Highway Trucks	1	2.00	402	0.38
Sediment and Debris Removal - Disposal, Piles	Off-Highway Trucks	1	2.00	402	0.38
Sediment and Debris Removal - Disposal, Piles	Other Material Handling Equipment	1	2.00	168	0.40
Sediment and Debris Removal - Disposal, Piles	Rubber Tired Dozers	1	2.00	247	0.40
Sediment and Debris Removal - Disposal, Piles	Skid Steer Loaders	1	2.00	65	0.37
Sediment and Debris Removal - Disposal, Piles	Sweepers/Scrubbers	1	2.00	64	0.46
Sediment and Debris Removal - Disposal, Piles	Tractors/Loaders/Backhoes	2	2.00	97	0.37
Sediment and Debris Removal - Disposal, Piles	Trenchers	1	2.00	78	0.50

Vegetation Management - Riparian	Excavators	1	4.00	158	0.38
Vegetation Management - Riparian	Graders	0	8.00	187	0.41
Vegetation Management - Riparian	Off-Highway Trucks	2	4.00	402	0.38
Vegetation Management - Riparian	Off-Highway Trucks	1	4.00	402	0.38
Vegetation Management - Riparian	Skid Steer Loaders	1	4.00	65	0.37
Vegetation Management - Riparian	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Vegetation Management - Chaparral	Excavators	0	4.00	158	0.38
Vegetation Management - Chaparral	Graders	0	8.00	187	0.41
Vegetation Management - Chaparral	Off-Highway Trucks	2	4.00	402	0.38
Vegetation Management - Chaparral	Off-Highway Trucks	1	4.00	402	0.38
Vegetation Management - Chaparral	Skid Steer Loaders	1	4.00	65	0.37
Vegetation Management - Chaparral	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Vegetation Management - Upland	Aerial Lifts	1	8.00	63	0.31
Vegetation Management - Upland	Graders	0	8.00	187	0.41
Vegetation Management - Upland	Off-Highway Trucks	2	8.00	402	0.38
Vegetation Management - Upland	Off-Highway Trucks	1	8.00	402	0.38
Vegetation Management - Upland	Other Construction Equipment	1	8.00	172	0.42
Vegetation Management - Upland	Rubber Tired Dozers	1	8.00	247	0.40
Vegetation Management - Upland	Skid Steer Loaders	1	8.00	65	0.37
Vegetation Management - Upland	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Vegetation Management - Livestock Grazing Upland	Graders	0	8.00	187	0.41
Vegetation Management - Livestock Grazing Upland	Off-Highway Trucks	2	1.00	402	0.38
Vegetation Management - Livestock Grazing Upland	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Vegetation Management - Livestock Grazing Riparian	Graders	0	8.00	187	0.41
Vegetation Management - Livestock Grazing Riparian	Off-Highway Trucks	2	1.00	402	0.38
Vegetation Management - Livestock Grazing Riparian	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Facilities Maintenance - Other	Dumpers/Tenders	1	4.00	16	0.38
Facilities Maintenance - Other	Graders	1	4.00	187	0.41
Facilities Maintenance - Other	Off-Highway Trucks	3	4.00	402	0.38
Facilities Maintenance - Other	Pumps	1	8.00	84	0.74
Facilities Maintenance - Other	Rubber Tired Dozers	1	4.00	247	0.40
Facilities Maintenance - Other	Skid Steer Loaders	1	4.00	65	0.37
Facilities Maintenance - Other	Sweepers/Scrubbers	1	4.00	64	0.46
Facilities Maintenance - Other	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Facilities Maintenance - Culvert Replacement	Dumpers/Tenders	1	8.00	16	0.38
Facilities Maintenance - Culvert Replacement	Graders	0	8.00	187	0.41
Facilities Maintenance - Culvert Replacement	Off-Highway Trucks	1	8.00	402	0.38
Facilities Maintenance - Culvert Replacement	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Environmental Stewardship - Invasive Species Removal	Graders	0	8.00	187	0.41
Environmental Stewardship - Invasive Species Removal	Off-Highway Trucks	2	8.00	402	0.38
Environmental Stewardship - Invasive Species Removal	Pumps	1	8.00	84	0.74
Environmental Stewardship - Invasive Species Removal	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Erosion Prevention, Control, Repair, and Protection	Dumpers/Tenders	1	8.00	16	0.38
Erosion Prevention, Control, Repair, and Protection	Graders	0	8.00	187	0.41
Erosion Prevention, Control, Repair, and Protection	Skid Steer Loaders	1	8.00	65	0.37
Erosion Prevention, Control, Repair, and Protection	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Environmental Stewardship - Beaver Dam Removal	Dumpers/Tenders	1	4.00	16	0.38
Environmental Stewardship - Beaver Dam Removal	Graders	0	8.00	187	0.41
Environmental Stewardship - Beaver Dam Removal	Off-Highway Trucks	1	4.00	402	0.38

Environmental Stewardship - Beaver Dam Removal	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Facilities Maintenance - Low Water Crossings	Dumpers/Tenders	1	8.00	16	0.38
Facilities Maintenance - Low Water Crossings	Graders	0	8.00	187	0.41
Facilities Maintenance - Low Water Crossings	Off-Highway Trucks	1	8.00	402	0.38
Facilities Maintenance - Low Water Crossings	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Facilities Maintenance - Cleaning, Painting	Air Compressors	0	6.00	78	0.48
Facilities Maintenance - Cleaning, Painting	Dumpers/Tenders	1	4.00	16	0.38
Facilities Maintenance - Cleaning, Painting	Excavators	1	4.00	158	0.38
Facilities Maintenance - Cleaning, Painting	Tractors/Loaders/Backhoes	1	4.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Sediment and Debris Removal - Culverts, Pi	3	6.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Sediment and Debris Removal - In-stream	4	4.00	6.00	15.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Sediment and Debris Removal - Disposal, P	12	6.00	16.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Vegetation Management - Riparia	7	8.00	10.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Vegetation Management - Chapar	6	8.00	6.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Vegetation Management - Upland	9	40.00	6.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Vegetation Management - Livesto	2	4.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Vegetation Management - Livesto	2	4.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Facilities Maintenance - Other	11	12.00	4.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Facilities Maintenance - Culvert Replacement	3	8.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Environmental Stewardship - Invasive	3	8.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Erosion Prevention, Control, Repair, and P	4	8.00	6.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Environmental Stewardship - Beaver	4	8.00	4.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Facilities Maintenance - Low Water Crossing	4	8.00	4.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Facilities Maintenance - Cleaning, Painting	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Sediment and Debris Removal - Culverts, Pipes - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	9.3800e-003	0.0103	3.0000e-005		3.7000e-004	3.7000e-004		3.5000e-004	3.5000e-004	0.0000	2.5038	2.5038	7.9000e-004	0.0000	2.5236
Total	**1.2100e-003**	**9.3800e-003**	**0.0103**	**3.0000e-005**	**0.0000**	**3.7000e-004**	**3.7000e-004**	**0.0000**	**3.5000e-004**	**3.5000e-004**	**0.0000**	**2.5038**	**2.5038**	**7.9000e-004**	**0.0000**	**2.5236**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	3.4000e-004	1.0000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0705	0.0705	0.0000	0.0000	0.0705
Worker	1.0000e-004	7.0000e-005	5.9000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0838	0.0838	0.0000	0.0000	0.0840
Total	**1.1000e-004**	**4.1000e-004**	**6.9000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1543**	**0.1543**	**0.0000**	**0.0000**	**0.1545**

3.2 Sediment and Debris Removal - Culverts, Pipes - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	9.3800e-003	0.0103	3.0000e-005		3.7000e-004	3.7000e-004		3.5000e-004	3.5000e-004	0.0000	2.5038	2.5038	7.9000e-004	0.0000	2.5235
Total	**1.2100e-003**	**9.3800e-003**	**0.0103**	**3.0000e-005**	**0.0000**	**3.7000e-004**	**3.7000e-004**	**0.0000**	**3.5000e-004**	**3.5000e-004**	**0.0000**	**2.5038**	**2.5038**	**7.9000e-004**	**0.0000**	**2.5235**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	3.4000e-004	1.0000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0705	0.0705	0.0000	0.0000	0.0705
Worker	1.0000e-004	7.0000e-005	5.9000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0838	0.0838	0.0000	0.0000	0.0840
Total	**1.1000e-004**	**4.1000e-004**	**6.9000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1543**	**0.1543**	**0.0000**	**0.0000**	**0.1545**

3.3 Sediment and Debris Removal - In-stream Work - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0000e-003	9.7000e-003	0.0119	2.0000e-005		5.6000e-004	5.6000e-004		5.2000e-004	5.2000e-004	0.0000	1.5066	1.5066	4.9000e-004	0.0000	1.5188
Total	**1.0000e-003**	**9.7000e-003**	**0.0119**	**2.0000e-005**	**1.0000e-005**	**5.6000e-004**	**5.7000e-004**	**0.0000**	**5.2000e-004**	**5.2000e-004**	**0.0000**	**1.5066**	**1.5066**	**4.9000e-004**	**0.0000**	**1.5188**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	2.4900e-003	6.1000e-004	1.0000e-005	1.2000e-004	1.0000e-005	1.3000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.5910	0.5910	1.0000e-005	0.0000	0.5912
Vendor	5.0000e-005	1.7200e-003	4.8000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3524	0.3524	1.0000e-005	0.0000	0.3526
Worker	1.1000e-004	8.0000e-005	6.6000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0932	0.0932	1.0000e-005	0.0000	0.0933
Total	**2.2000e-004**	**4.2900e-003**	**1.7500e-003**	**1.0000e-005**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**9.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**1.0365**	**1.0365**	**3.0000e-005**	**0.0000**	**1.0371**

3.3 Sediment and Debris Removal - In-stream Work - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0000e-003	9.7000e-003	0.0119	2.0000e-005		5.6000e-004	5.6000e-004		5.2000e-004	5.2000e-004	0.0000	1.5066	1.5066	4.9000e-004	0.0000	1.5188
Total	**1.0000e-003**	**9.7000e-003**	**0.0119**	**2.0000e-005**	**1.0000e-005**	**5.6000e-004**	**5.7000e-004**	**0.0000**	**5.2000e-004**	**5.2000e-004**	**0.0000**	**1.5066**	**1.5066**	**4.9000e-004**	**0.0000**	**1.5188**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	2.4900e-003	6.1000e-004	1.0000e-005	1.2000e-004	1.0000e-005	1.3000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.5910	0.5910	1.0000e-005	0.0000	0.5912
Vendor	5.0000e-005	1.7200e-003	4.8000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3524	0.3524	1.0000e-005	0.0000	0.3526
Worker	1.1000e-004	8.0000e-005	6.6000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0932	0.0932	1.0000e-005	0.0000	0.0933
Total	**2.2000e-004**	**4.2900e-003**	**1.7500e-003**	**1.0000e-005**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**9.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**1.0365**	**1.0365**	**3.0000e-005**	**0.0000**	**1.0371**

3.4 Sediment and Debris Removal - Disposal, Piles - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.0100e-003	0.0000	3.0100e-003	1.6600e-003	0.0000	1.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9000e-003	0.0180	0.0148	3.0000e-005		8.4000e-004	8.4000e-004		7.7000e-004	7.7000e-004	0.0000	2.9587	2.9587	9.5000e-004	0.0000	2.9825
Total	**1.9000e-003**	**0.0180**	**0.0148**	**3.0000e-005**	**3.0100e-003**	**8.4000e-004**	**3.8500e-003**	**1.6600e-003**	**7.7000e-004**	**2.4300e-003**	**0.0000**	**2.9587**	**2.9587**	**9.5000e-004**	**0.0000**	**2.9825**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	3.6600e-003	1.0200e-003	1.0000e-005	1.9000e-004	1.0000e-005	2.0000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.7518	0.7518	2.0000e-005	0.0000	0.7523
Worker	1.3000e-004	9.0000e-005	7.9000e-004	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1118	0.1118	1.0000e-005	0.0000	0.1119
Total	**2.4000e-004**	**3.7500e-003**	**1.8100e-003**	**1.0000e-005**	**3.4000e-004**	**1.0000e-005**	**3.5000e-004**	**9.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**0.8636**	**0.8636**	**3.0000e-005**	**0.0000**	**0.8642**

3.4 Sediment and Debris Removal - Disposal, Piles - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.0100e-003	0.0000	3.0100e-003	1.6600e-003	0.0000	1.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9000e-003	0.0180	0.0148	3.0000e-005		8.4000e-004	8.4000e-004		7.7000e-004	7.7000e-004	0.0000	2.9587	2.9587	9.5000e-004	0.0000	2.9825
Total	**1.9000e-003**	**0.0180**	**0.0148**	**3.0000e-005**	**3.0100e-003**	**8.4000e-004**	**3.8500e-003**	**1.6600e-003**	**7.7000e-004**	**2.4300e-003**	**0.0000**	**2.9587**	**2.9587**	**9.5000e-004**	**0.0000**	**2.9825**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	3.6600e-003	1.0200e-003	1.0000e-005	1.9000e-004	1.0000e-005	2.0000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.7518	0.7518	2.0000e-005	0.0000	0.7523
Worker	1.3000e-004	9.0000e-005	7.9000e-004	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1118	0.1118	1.0000e-005	0.0000	0.1119
Total	**2.4000e-004**	**3.7500e-003**	**1.8100e-003**	**1.0000e-005**	**3.4000e-004**	**1.0000e-005**	**3.5000e-004**	**9.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**0.8636**	**0.8636**	**3.0000e-005**	**0.0000**	**0.8642**

3.5 Vegetation Management - Riparian - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	9.0500e-003	9.6000e-003	3.0000e-005		3.7000e-004	3.7000e-004		3.4000e-004	3.4000e-004	0.0000	2.3314	2.3314	7.5000e-004	0.0000	2.3502
Total	**1.0900e-003**	**9.0500e-003**	**9.6000e-003**	**3.0000e-005**	**0.0000**	**3.7000e-004**	**3.7000e-004**	**0.0000**	**3.4000e-004**	**3.4000e-004**	**0.0000**	**2.3314**	**2.3314**	**7.5000e-004**	**0.0000**	**2.3502**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	1.1500e-003	3.2000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2349	0.2349	1.0000e-005	0.0000	0.2351
Worker	9.0000e-005	6.0000e-005	5.3000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0745	0.0745	0.0000	0.0000	0.0746
Total	**1.2000e-004**	**1.2100e-003**	**8.5000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.3095**	**0.3095**	**1.0000e-005**	**0.0000**	**0.3097**

3.5 Vegetation Management - Riparian - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	9.0500e-003	9.6000e-003	3.0000e-005		3.7000e-004	3.7000e-004		3.4000e-004	3.4000e-004	0.0000	2.3314	2.3314	7.5000e-004	0.0000	2.3502
Total	**1.0900e-003**	**9.0500e-003**	**9.6000e-003**	**3.0000e-005**	**0.0000**	**3.7000e-004**	**3.7000e-004**	**0.0000**	**3.4000e-004**	**3.4000e-004**	**0.0000**	**2.3314**	**2.3314**	**7.5000e-004**	**0.0000**	**2.3502**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	1.1500e-003	3.2000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2349	0.2349	1.0000e-005	0.0000	0.2351
Worker	9.0000e-005	6.0000e-005	5.3000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0745	0.0745	0.0000	0.0000	0.0746
Total	**1.2000e-004**	**1.2100e-003**	**8.5000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.3095**	**0.3095**	**1.0000e-005**	**0.0000**	**0.3097**

3.6 Vegetation Management - Chaparral - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9600e-003	0.0408	0.0399	1.2000e-004		1.6300e-003	1.6300e-003		1.5000e-003	1.5000e-003	0.0000	10.5230	10.5230	3.4000e-003	0.0000	10.6080
Total	**4.9600e-003**	**0.0408**	**0.0399**	**1.2000e-004**	**0.0000**	**1.6300e-003**	**1.6300e-003**	**0.0000**	**1.5000e-003**	**1.5000e-003**	**0.0000**	**10.5230**	**10.5230**	**3.4000e-003**	**0.0000**	**10.6080**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	3.4400e-003	9.5000e-004	1.0000e-005	1.8000e-004	1.0000e-005	1.9000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.7048	0.7048	2.0000e-005	0.0000	0.7053
Worker	4.4000e-004	3.0000e-004	2.6300e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3726	0.3726	2.0000e-005	0.0000	0.3731
Total	**5.4000e-004**	**3.7400e-003**	**3.5800e-003**	**1.0000e-005**	**6.7000e-004**	**1.0000e-005**	**6.9000e-004**	**1.8000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**1.0774**	**1.0774**	**4.0000e-005**	**0.0000**	**1.0784**

3.6 Vegetation Management - Chaparral - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9600e-003	0.0408	0.0399	1.2000e-004		1.6300e-003	1.6300e-003		1.5000e-003	1.5000e-003	0.0000	10.5229	10.5229	3.4000e-003	0.0000	10.6080
Total	**4.9600e-003**	**0.0408**	**0.0399**	**1.2000e-004**	**0.0000**	**1.6300e-003**	**1.6300e-003**	**0.0000**	**1.5000e-003**	**1.5000e-003**	**0.0000**	**10.5229**	**10.5229**	**3.4000e-003**	**0.0000**	**10.6080**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	3.4400e-003	9.5000e-004	1.0000e-005	1.8000e-004	1.0000e-005	1.9000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.7048	0.7048	2.0000e-005	0.0000	0.7053
Worker	4.4000e-004	3.0000e-004	2.6300e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3726	0.3726	2.0000e-005	0.0000	0.3731
Total	**5.4000e-004**	**3.7400e-003**	**3.5800e-003**	**1.0000e-005**	**6.7000e-004**	**1.0000e-005**	**6.9000e-004**	**1.8000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**1.0774**	**1.0774**	**4.0000e-005**	**0.0000**	**1.0784**

3.7 Vegetation Management - Upland - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0611	0.0000	0.0611	0.0265	0.0000	0.0265	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0243	0.2212	0.1848	4.8000e-004		9.6000e-003	9.6000e-003		8.8300e-003	8.8300e-003	0.0000	42.3733	42.3733	0.0137	0.0000	42.7159
Total	**0.0243**	**0.2212**	**0.1848**	**4.8000e-004**	**0.0611**	**9.6000e-003**	**0.0707**	**0.0265**	**8.8300e-003**	**0.0354**	**0.0000**	**42.3733**	**42.3733**	**0.0137**	**0.0000**	**42.7159**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5000e-004	5.1500e-003	1.4300e-003	1.0000e-005	2.6000e-004	1.0000e-005	2.8000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	1.0572	1.0572	3.0000e-005	0.0000	1.0579
Worker	3.3200e-003	2.2500e-003	0.0197	3.0000e-005	3.6900e-003	3.0000e-005	3.7100e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.7946	2.7946	1.5000e-004	0.0000	2.7984
Total	**3.4700e-003**	**7.4000e-003**	**0.0211**	**4.0000e-005**	**3.9500e-003**	**4.0000e-005**	**3.9900e-003**	**1.0600e-003**	**3.0000e-005**	**1.0900e-003**	**0.0000**	**3.8518**	**3.8518**	**1.8000e-004**	**0.0000**	**3.8563**

3.7 Vegetation Management - Upland - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0611	0.0000	0.0611	0.0265	0.0000	0.0265	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0243	0.2212	0.1848	4.8000e-004		9.6000e-003	9.6000e-003		8.8300e-003	8.8300e-003	0.0000	42.3733	42.3733	0.0137	0.0000	42.7159
Total	**0.0243**	**0.2212**	**0.1848**	**4.8000e-004**	**0.0611**	**9.6000e-003**	**0.0707**	**0.0265**	**8.8300e-003**	**0.0354**	**0.0000**	**42.3733**	**42.3733**	**0.0137**	**0.0000**	**42.7159**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5000e-004	5.1500e-003	1.4300e-003	1.0000e-005	2.6000e-004	1.0000e-005	2.8000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	1.0572	1.0572	3.0000e-005	0.0000	1.0579
Worker	3.3200e-003	2.2500e-003	0.0197	3.0000e-005	3.6900e-003	3.0000e-005	3.7100e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.7946	2.7946	1.5000e-004	0.0000	2.7984
Total	**3.4700e-003**	**7.4000e-003**	**0.0211**	**4.0000e-005**	**3.9500e-003**	**4.0000e-005**	**3.9900e-003**	**1.0600e-003**	**3.0000e-005**	**1.0900e-003**	**0.0000**	**3.8518**	**3.8518**	**1.8000e-004**	**0.0000**	**3.8563**

3.8 Vegetation Management - Livestock Grazing Upland - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3200e-003	0.0100	8.4000e-003	3.0000e-005		3.6000e-004	3.6000e-004		3.4000e-004	3.4000e-004	0.0000	2.9007	2.9007	9.4000e-004	0.0000	2.9241
Total	**1.3200e-003**	**0.0100**	**8.4000e-003**	**3.0000e-005**	**0.0000**	**3.6000e-004**	**3.6000e-004**	**0.0000**	**3.4000e-004**	**3.4000e-004**	**0.0000**	**2.9007**	**2.9007**	**9.4000e-004**	**0.0000**	**2.9241**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	3.0000e-004	2.6300e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3726	0.3726	2.0000e-005	0.0000	0.3731
Total	**4.4000e-004**	**3.0000e-004**	**2.6300e-003**	**0.0000**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3726**	**0.3726**	**2.0000e-005**	**0.0000**	**0.3731**

3.8 Vegetation Management - Livestock Grazing Upland - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3200e-003	0.0100	8.4000e-003	3.0000e-005		3.6000e-004	3.6000e-004		3.4000e-004	3.4000e-004	0.0000	2.9007	2.9007	9.4000e-004	0.0000	2.9241
Total	**1.3200e-003**	**0.0100**	**8.4000e-003**	**3.0000e-005**	**0.0000**	**3.6000e-004**	**3.6000e-004**	**0.0000**	**3.4000e-004**	**3.4000e-004**	**0.0000**	**2.9007**	**2.9007**	**9.4000e-004**	**0.0000**	**2.9241**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	3.0000e-004	2.6300e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3726	0.3726	2.0000e-005	0.0000	0.3731
Total	**4.4000e-004**	**3.0000e-004**	**2.6300e-003**	**0.0000**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3726**	**0.3726**	**2.0000e-005**	**0.0000**	**0.3731**

3.9 Vegetation Management - Livestock Grazing Riparian - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6000e-004	5.0200e-003	4.2000e-003	2.0000e-005		1.8000e-004	1.8000e-004		1.7000e-004	1.7000e-004	0.0000	1.4503	1.4503	4.7000e-004	0.0000	1.4621
Total	**6.6000e-004**	**5.0200e-003**	**4.2000e-003**	**2.0000e-005**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**1.7000e-004**	**1.7000e-004**	**0.0000**	**1.4503**	**1.4503**	**4.7000e-004**	**0.0000**	**1.4621**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.5000e-004	1.3100e-003	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.1863	0.1863	1.0000e-005	0.0000	0.1866
Total	**2.2000e-004**	**1.5000e-004**	**1.3100e-003**	**0.0000**	**2.5000e-004**	**0.0000**	**2.5000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.1863**	**0.1863**	**1.0000e-005**	**0.0000**	**0.1866**

3.9 Vegetation Management - Livestock Grazing Riparian - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6000e-004	5.0200e-003	4.2000e-003	2.0000e-005		1.8000e-004	1.8000e-004		1.7000e-004	1.7000e-004	0.0000	1.4503	1.4503	4.7000e-004	0.0000	1.4621
Total	**6.6000e-004**	**5.0200e-003**	**4.2000e-003**	**2.0000e-005**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**1.7000e-004**	**1.7000e-004**	**0.0000**	**1.4503**	**1.4503**	**4.7000e-004**	**0.0000**	**1.4621**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.5000e-004	1.3100e-003	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.1863	0.1863	1.0000e-005	0.0000	0.1866
Total	**2.2000e-004**	**1.5000e-004**	**1.3100e-003**	**0.0000**	**2.5000e-004**	**0.0000**	**2.5000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.1863**	**0.1863**	**1.0000e-005**	**0.0000**	**0.1866**

3.10 Facilities Maintenance - Culvert Replacement - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1500e-003	9.2300e-003	8.7700e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.5000e-004	3.5000e-004	0.0000	2.2333	2.2333	7.0000e-004	0.0000	2.2509
Total	**1.1500e-003**	**9.2300e-003**	**8.7700e-003**	**3.0000e-005**	**0.0000**	**3.8000e-004**	**3.8000e-004**	**0.0000**	**3.5000e-004**	**3.5000e-004**	**0.0000**	**2.2333**	**2.2333**	**7.0000e-004**	**0.0000**	**2.2509**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	3.4000e-004	1.0000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0705	0.0705	0.0000	0.0000	0.0705
Worker	1.3000e-004	9.0000e-005	7.9000e-004	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1118	0.1118	1.0000e-005	0.0000	0.1119
Total	**1.4000e-004**	**4.3000e-004**	**8.9000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1823**	**0.1823**	**1.0000e-005**	**0.0000**	**0.1825**

3.10 Facilities Maintenance - Culvert Replacement - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1500e-003	9.2300e-003	8.7700e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.5000e-004	3.5000e-004	0.0000	2.2333	2.2333	7.0000e-004	0.0000	2.2509
Total	**1.1500e-003**	**9.2300e-003**	**8.7700e-003**	**3.0000e-005**	**0.0000**	**3.8000e-004**	**3.8000e-004**	**0.0000**	**3.5000e-004**	**3.5000e-004**	**0.0000**	**2.2333**	**2.2333**	**7.0000e-004**	**0.0000**	**2.2509**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	3.4000e-004	1.0000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0705	0.0705	0.0000	0.0000	0.0705
Worker	1.3000e-004	9.0000e-005	7.9000e-004	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1118	0.1118	1.0000e-005	0.0000	0.1119
Total	**1.4000e-004**	**4.3000e-004**	**8.9000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1823**	**0.1823**	**1.0000e-005**	**0.0000**	**0.1825**

3.11 Environmental Stewardship - Invasive Species Removal - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.5200e-003	0.0275	0.0261	8.0000e-005		1.1200e-003	1.1200e-003		1.0600e-003	1.0600e-003	0.0000	7.2144	7.2144	1.9500e-003	0.0000	7.2631
Total	**3.5200e-003**	**0.0275**	**0.0261**	**8.0000e-005**	**0.0000**	**1.1200e-003**	**1.1200e-003**	**0.0000**	**1.0600e-003**	**1.0600e-003**	**0.0000**	**7.2144**	**7.2144**	**1.9500e-003**	**0.0000**	**7.2631**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	5.7000e-004	1.6000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1175	0.1175	0.0000	0.0000	0.1175
Worker	2.2000e-004	1.5000e-004	1.3100e-003	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.1863	0.1863	1.0000e-005	0.0000	0.1866
Total	**2.4000e-004**	**7.2000e-004**	**1.4700e-003**	**0.0000**	**2.8000e-004**	**0.0000**	**2.8000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.3038**	**0.3038**	**1.0000e-005**	**0.0000**	**0.3041**

3.11 Environmental Stewardship - Invasive Species Removal - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.5200e-003	0.0275	0.0261	8.0000e-005		1.1200e-003	1.1200e-003		1.0600e-003	1.0600e-003	0.0000	7.2144	7.2144	1.9500e-003	0.0000	7.2631
Total	**3.5200e-003**	**0.0275**	**0.0261**	**8.0000e-005**	**0.0000**	**1.1200e-003**	**1.1200e-003**	**0.0000**	**1.0600e-003**	**1.0600e-003**	**0.0000**	**7.2144**	**7.2144**	**1.9500e-003**	**0.0000**	**7.2631**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	5.7000e-004	1.6000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1175	0.1175	0.0000	0.0000	0.1175
Worker	2.2000e-004	1.5000e-004	1.3100e-003	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.1863	0.1863	1.0000e-005	0.0000	0.1866
Total	**2.4000e-004**	**7.2000e-004**	**1.4700e-003**	**0.0000**	**2.8000e-004**	**0.0000**	**2.8000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.3038**	**0.3038**	**1.0000e-005**	**0.0000**	**0.3041**

3.12 Facilities Maintenance - Other - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0211	0.0000	0.0211	0.0116	0.0000	0.0116	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0147	0.1350	0.1081	2.8000e-004		5.9000e-003	5.9000e-003		5.5200e-003	5.5200e-003	0.0000	24.3258	24.3258	6.7500e-003	0.0000	24.4945
Total	**0.0147**	**0.1350**	**0.1081**	**2.8000e-004**	**0.0211**	**5.9000e-003**	**0.0270**	**0.0116**	**5.5200e-003**	**0.0171**	**0.0000**	**24.3258**	**24.3258**	**6.7500e-003**	**0.0000**	**24.4945**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.0000e-005	3.2100e-003	8.9000e-004	1.0000e-005	1.6000e-004	1.0000e-005	1.7000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.6578	0.6578	2.0000e-005	0.0000	0.6583
Worker	9.3000e-004	6.3000e-004	5.5100e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0400e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.7825	0.7825	4.0000e-005	0.0000	0.7835
Total	**1.0200e-003**	**3.8400e-003**	**6.4000e-003**	**2.0000e-005**	**1.1900e-003**	**2.0000e-005**	**1.2100e-003**	**3.2000e-004**	**2.0000e-005**	**3.4000e-004**	**0.0000**	**1.4403**	**1.4403**	**6.0000e-005**	**0.0000**	**1.4418**

3.12 Facilities Maintenance - Other - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0211	0.0000	0.0211	0.0116	0.0000	0.0116	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0147	0.1350	0.1081	2.8000e-004		5.9000e-003	5.9000e-003		5.5200e-003	5.5200e-003	0.0000	24.3258	24.3258	6.7500e-003	0.0000	24.4945
Total	**0.0147**	**0.1350**	**0.1081**	**2.8000e-004**	**0.0211**	**5.9000e-003**	**0.0270**	**0.0116**	**5.5200e-003**	**0.0171**	**0.0000**	**24.3258**	**24.3258**	**6.7500e-003**	**0.0000**	**24.4945**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.0000e-005	3.2100e-003	8.9000e-004	1.0000e-005	1.6000e-004	1.0000e-005	1.7000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.6578	0.6578	2.0000e-005	0.0000	0.6583
Worker	9.3000e-004	6.3000e-004	5.5100e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0400e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.7825	0.7825	4.0000e-005	0.0000	0.7835
Total	**1.0200e-003**	**3.8400e-003**	**6.4000e-003**	**2.0000e-005**	**1.1900e-003**	**2.0000e-005**	**1.2100e-003**	**3.2000e-004**	**2.0000e-005**	**3.4000e-004**	**0.0000**	**1.4403**	**1.4403**	**6.0000e-005**	**0.0000**	**1.4418**

3.13 Facilities Maintenance - Cleaning, Painting - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0290					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3000e-004	2.9400e-003	4.3100e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.3000e-004	1.3000e-004	0.0000	0.5866	0.5866	1.8000e-004	0.0000	0.5912
Total	**0.0293**	**2.9400e-003**	**4.3100e-003**	**1.0000e-005**		**1.5000e-004**	**1.5000e-004**		**1.3000e-004**	**1.3000e-004**	**0.0000**	**0.5866**	**0.5866**	**1.8000e-004**	**0.0000**	**0.5912**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	9.0000e-005	7.9000e-004	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1118	0.1118	1.0000e-005	0.0000	0.1119
Total	**1.3000e-004**	**9.0000e-005**	**7.9000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1118**	**0.1118**	**1.0000e-005**	**0.0000**	**0.1119**

3.13 Facilities Maintenance - Cleaning, Painting - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0290					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3000e-004	2.9400e-003	4.3100e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.3000e-004	1.3000e-004	0.0000	0.5866	0.5866	1.8000e-004	0.0000	0.5912
Total	**0.0293**	**2.9400e-003**	**4.3100e-003**	**1.0000e-005**		**1.5000e-004**	**1.5000e-004**		**1.3000e-004**	**1.3000e-004**	**0.0000**	**0.5866**	**0.5866**	**1.8000e-004**	**0.0000**	**0.5912**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	9.0000e-005	7.9000e-004	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1118	0.1118	1.0000e-005	0.0000	0.1119
Total	**1.3000e-004**	**9.0000e-005**	**7.9000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1118**	**0.1118**	**1.0000e-005**	**0.0000**	**0.1119**

3.14 Erosion Prevention, Control, Repair, and Protection - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1800e-003	0.0119	0.0153	2.0000e-005		5.8000e-004	5.8000e-004		5.4000e-004	5.4000e-004	0.0000	1.9591	1.9591	6.0000e-004	0.0000	1.9742
Total	**1.1800e-003**	**0.0119**	**0.0153**	**2.0000e-005**	**0.0000**	**5.8000e-004**	**5.8000e-004**	**0.0000**	**5.4000e-004**	**5.4000e-004**	**0.0000**	**1.9591**	**1.9591**	**6.0000e-004**	**0.0000**	**1.9742**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.7200e-003	4.8000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3524	0.3524	1.0000e-005	0.0000	0.3526
Worker	2.2000e-004	1.5000e-004	1.3100e-003	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.1863	0.1863	1.0000e-005	0.0000	0.1866
Total	**2.7000e-004**	**1.8700e-003**	**1.7900e-003**	**0.0000**	**3.4000e-004**	**0.0000**	**3.4000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.5387**	**0.5387**	**2.0000e-005**	**0.0000**	**0.5392**

3.14 Erosion Prevention, Control, Repair, and Protection - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1800e-003	0.0119	0.0153	2.0000e-005		5.8000e-004	5.8000e-004		5.4000e-004	5.4000e-004	0.0000	1.9591	1.9591	6.0000e-004	0.0000	1.9742
Total	**1.1800e-003**	**0.0119**	**0.0153**	**2.0000e-005**	**0.0000**	**5.8000e-004**	**5.8000e-004**	**0.0000**	**5.4000e-004**	**5.4000e-004**	**0.0000**	**1.9591**	**1.9591**	**6.0000e-004**	**0.0000**	**1.9742**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.7200e-003	4.8000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3524	0.3524	1.0000e-005	0.0000	0.3526
Worker	2.2000e-004	1.5000e-004	1.3100e-003	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.1863	0.1863	1.0000e-005	0.0000	0.1866
Total	**2.7000e-004**	**1.8700e-003**	**1.7900e-003**	**0.0000**	**3.4000e-004**	**0.0000**	**3.4000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.5387**	**0.5387**	**2.0000e-005**	**0.0000**	**0.5392**

3.15 Environmental Stewardship - Beaver Dam Removal - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3000e-004	7.8300e-003	8.0900e-003	2.0000e-005		3.4000e-004	3.4000e-004		3.2000e-004	3.2000e-004	0.0000	1.7621	1.7621	5.6000e-004	0.0000	1.7761
Total	**9.3000e-004**	**7.8300e-003**	**8.0900e-003**	**2.0000e-005**	**0.0000**	**3.4000e-004**	**3.4000e-004**	**0.0000**	**3.2000e-004**	**3.2000e-004**	**0.0000**	**1.7621**	**1.7621**	**5.6000e-004**	**0.0000**	**1.7761**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	9.2000e-004	2.5000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1880	0.1880	0.0000	0.0000	0.1881
Worker	1.8000e-004	1.2000e-004	1.0500e-003	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1490	0.1490	1.0000e-005	0.0000	0.1493
Total	**2.1000e-004**	**1.0400e-003**	**1.3000e-003**	**0.0000**	**2.5000e-004**	**0.0000**	**2.5000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.3370**	**0.3370**	**1.0000e-005**	**0.0000**	**0.3373**

3.15 Environmental Stewardship - Beaver Dam Removal - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3000e-004	7.8300e-003	8.0900e-003	2.0000e-005		3.4000e-004	3.4000e-004		3.2000e-004	3.2000e-004	0.0000	1.7621	1.7621	5.6000e-004	0.0000	1.7761
Total	**9.3000e-004**	**7.8300e-003**	**8.0900e-003**	**2.0000e-005**	**0.0000**	**3.4000e-004**	**3.4000e-004**	**0.0000**	**3.2000e-004**	**3.2000e-004**	**0.0000**	**1.7621**	**1.7621**	**5.6000e-004**	**0.0000**	**1.7761**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	9.2000e-004	2.5000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1880	0.1880	0.0000	0.0000	0.1881
Worker	1.8000e-004	1.2000e-004	1.0500e-003	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1490	0.1490	1.0000e-005	0.0000	0.1493
Total	**2.1000e-004**	**1.0400e-003**	**1.3000e-003**	**0.0000**	**2.5000e-004**	**0.0000**	**2.5000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.3370**	**0.3370**	**1.0000e-005**	**0.0000**	**0.3373**

3.16 Facilities Maintenance - Low Water Crossings - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7000e-004	3.9100e-003	4.0400e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.6000e-004	1.6000e-004	0.0000	0.8811	0.8811	2.8000e-004	0.0000	0.8880
Total	**4.7000e-004**	**3.9100e-003**	**4.0400e-003**	**1.0000e-005**	**0.0000**	**1.7000e-004**	**1.7000e-004**	**0.0000**	**1.6000e-004**	**1.6000e-004**	**0.0000**	**0.8811**	**0.8811**	**2.8000e-004**	**0.0000**	**0.8880**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	2.3000e-004	6.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0470	0.0470	0.0000	0.0000	0.0470
Worker	4.0000e-005	3.0000e-005	2.6000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0373	0.0373	0.0000	0.0000	0.0373
Total	**5.0000e-005**	**2.6000e-004**	**3.2000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0843**	**0.0843**	**0.0000**	**0.0000**	**0.0843**

3.16 Facilities Maintenance - Low Water Crossings - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7000e-004	3.9100e-003	4.0400e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.6000e-004	1.6000e-004	0.0000	0.8811	0.8811	2.8000e-004	0.0000	0.8880
Total	**4.7000e-004**	**3.9100e-003**	**4.0400e-003**	**1.0000e-005**	**0.0000**	**1.7000e-004**	**1.7000e-004**	**0.0000**	**1.6000e-004**	**1.6000e-004**	**0.0000**	**0.8811**	**0.8811**	**2.8000e-004**	**0.0000**	**0.8880**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	2.3000e-004	6.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0470	0.0470	0.0000	0.0000	0.0470
Worker	4.0000e-005	3.0000e-005	2.6000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0373	0.0373	0.0000	0.0000	0.0373
Total	**5.0000e-005**	**2.6000e-004**	**3.2000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0843**	**0.0843**	**0.0000**	**0.0000**	**0.0843**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

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

4.3 Trip Type Information

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Recreational	0.543368	0.039458	0.188636	0.127213	0.039750	0.007293	0.027477	0.014011	0.002060	0.000975	0.006673	0.001168	0.001919

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

Mitigated

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

5.3 Energy by Land Use - Electricity

Unmitigated

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

Mitigated

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

6.0 Area Detail

6.1 Mitigation Measures Area

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

6.2 Area by SubCategory

Unmitigated

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

6.2 Area by SubCategory

Mitigated

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

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

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

7.2 Water by Land Use

Mitigated

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

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

Mitigated

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

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EBMUD Watershed RMA

Amador County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	0.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	2			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Based on data request and project description.

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

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Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Trips and VMT - Based on Project Description and Data Request

Grading - Based on Project Description and Data Request.

Architectural Coating - Based on Project Description and Data Request

Vehicle Trips - All emissions modeled under construction

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	0.00	5,000.00
tblConstructionPhase	NumDays	0.00	3.00
tblConstructionPhase	NumDays	0.00	3.00

tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	14.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	4.00
tblConstructionPhase	NumDays	0.00	1.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	4.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	NumDays	0.00	10.00
tblConstructionPhase	NumDays	0.00	15.00
tblConstructionPhase	NumDays	0.00	20.00
tblConstructionPhase	NumDays	0.00	10.00
tblConstructionPhase	NumDays	0.00	3.00
tblGrading	AcresOfGrading	3.50	0.00
tblGrading	AcresOfGrading	0.50	0.00
tblGrading	AcresOfGrading	0.00	30.00
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tblOffRoadEquipment	PhaseName		Facilities Maintenance - Low Water Crossings
tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - Disposal, Piles
tblOffRoadEquipment	PhaseName		Facilities Maintenance - Culvert Replacement
tblOffRoadEquipment	PhaseName		Facilities Maintenance - Cleaning, Painting
tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - In-stream Work
tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - Disposal, Piles
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tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	0.00	15.00
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tblTripsAndVMT	VendorTripNumber	0.00	2.00
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tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00

tblTripsAndVMT	VendorTripNumber	0.00	16.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	28.00	12.00
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tblTripsAndVMT	WorkerTripNumber	10.00	8.00
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tblTripsAndVMT	WorkerTripNumber	30.00	6.00
tblTripsAndVMT	WorkerTripNumber	18.00	8.00
tblTripsAndVMT	WorkerTripNumber	15.00	8.00
tblTripsAndVMT	WorkerTripNumber	23.00	40.00
tblTripsAndVMT	WorkerTripNumber	5.00	4.00
tblTripsAndVMT	WorkerTripNumber	5.00	4.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CW_TL	14.70	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	19.6300	30.4332	27.8659	0.0704	8.6904	1.2847	9.9751	3.6852	1.1820	4.8672	0.0000	6,835.4365	6,835.4365	2.0430	0.0000	6,886.5126
Maximum	**19.6300**	**30.4332**	**27.8659**	**0.0704**	**8.6904**	**1.2847**	**9.9751**	**3.6852**	**1.1820**	**4.8672**	**0.0000**	**6,835.4365**	**6,835.4365**	**2.0430**	**0.0000**	**6,886.5126**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	19.6300	30.4332	27.8659	0.0704	8.6904	1.2847	9.9751	3.6852	1.1820	4.8672	0.0000	6,835.4365	6,835.4365	2.0430	0.0000	6,886.5126
Maximum	**19.6300**	**30.4332**	**27.8659**	**0.0704**	**8.6904**	**1.2847**	**9.9751**	**3.6852**	**1.1820**	**4.8672**	**0.0000**	**6,835.4365**	**6,835.4365**	**2.0430**	**0.0000**	**6,886.5126**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Sediment and Debris Removal - Culverts, Pipes	Site Preparation	1/3/2022	1/5/2022	5	3	
2	Sediment and Debris Removal - In-stream Work	Site Preparation	1/6/2022	1/12/2022	5	5	
3	Sediment and Debris Removal - Disposal, Piles	Site Preparation	1/13/2022	1/18/2022	5	4	
4	Vegetation Management - Riparian	Site Preparation	1/19/2022	1/20/2022	5	2	
5	Vegetation Management - Chaparral	Site Preparation	1/21/2022	2/3/2022	5	10	
6	Vegetation Management - Upland	Site Preparation	2/4/2022	2/24/2022	5	15	
7	Vegetation Management - Livestock Grazing Upland	Site Preparation	2/25/2022	3/24/2022	5	20	
8	Vegetation Management - Livestock Grazing Riparian	Site Preparation	3/25/2022	4/7/2022	5	10	
9	Facilities Maintenance - Culvert Replacement	Site Preparation	4/8/2022	4/12/2022	5	3	
10	Environmental Stewardship - Invasive Species Removal	Site Preparation	4/8/2022	4/14/2022	5	5	
11	Facilities Maintenance - Other	Site Preparation	4/15/2022	5/4/2022	5	14	
12	Facilities Maintenance - Cleaning, Painting	Architectural Coating	5/5/2022	5/9/2022	5	3	
13	Erosion Prevention, Control, Repair, and Protection	Site Preparation	5/10/2022	5/16/2022	5	5	
14	Environmental Stewardship - Beaver Dam Removal	Site Preparation	5/17/2022	5/20/2022	5	4	
15	Facilities Maintenance - Low Water Crossings	Site Preparation	5/23/2022	5/23/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 5,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Sediment and Debris Removal - Culverts, Pipes	Dumpers/Tenders	1	8.00	16	0.38
Sediment and Debris Removal - Culverts, Pipes	Excavators	1	8.00	158	0.38
Sediment and Debris Removal - Culverts, Pipes	Graders	0	8.00	187	0.41
Sediment and Debris Removal - Culverts, Pipes	Off-Highway Trucks	1	8.00	402	0.38
Sediment and Debris Removal - Culverts, Pipes	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Sediment and Debris Removal - In-stream Work	Excavators	1	4.00	158	0.38
Sediment and Debris Removal - In-stream Work	Graders	0	8.00	187	0.41
Sediment and Debris Removal - In-stream Work	Skid Steer Loaders	1	4.00	65	0.37
Sediment and Debris Removal - In-stream Work	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Sediment and Debris Removal - In-stream Work	Trenchers	1	4.00	78	0.50
Sediment and Debris Removal - Disposal, Piles	Dumpers/Tenders	1	2.00	16	0.38
Sediment and Debris Removal - Disposal, Piles	Excavators	1	2.00	158	0.38
Sediment and Debris Removal - Disposal, Piles	Graders	1	2.00	187	0.41
Sediment and Debris Removal - Disposal, Piles	Off-Highway Trucks	1	2.00	402	0.38
Sediment and Debris Removal - Disposal, Piles	Off-Highway Trucks	1	2.00	402	0.38

Sediment and Debris Removal - Disposal, Piles	Other Material Handling Equipment	1	2.00	168	0.40
Sediment and Debris Removal - Disposal, Piles	Rubber Tired Dozers	1	2.00	247	0.40
Sediment and Debris Removal - Disposal, Piles	Skid Steer Loaders	1	2.00	65	0.37
Sediment and Debris Removal - Disposal, Piles	Sweepers/Scrubbers	1	2.00	64	0.46
Sediment and Debris Removal - Disposal, Piles	Tractors/Loaders/Backhoes	2	2.00	97	0.37
Sediment and Debris Removal - Disposal, Piles	Trenchers	1	2.00	78	0.50
Vegetation Management - Riparian	Excavators	1	4.00	158	0.38
Vegetation Management - Riparian	Graders	0	8.00	187	0.41
Vegetation Management - Riparian	Off-Highway Trucks	2	4.00	402	0.38
Vegetation Management - Riparian	Off-Highway Trucks	1	4.00	402	0.38
Vegetation Management - Riparian	Skid Steer Loaders	1	4.00	65	0.37
Vegetation Management - Riparian	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Vegetation Management - Chaparral	Excavators	0	4.00	158	0.38
Vegetation Management - Chaparral	Graders	0	8.00	187	0.41
Vegetation Management - Chaparral	Off-Highway Trucks	2	4.00	402	0.38
Vegetation Management - Chaparral	Off-Highway Trucks	1	4.00	402	0.38
Vegetation Management - Chaparral	Skid Steer Loaders	1	4.00	65	0.37
Vegetation Management - Chaparral	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Vegetation Management - Upland	Aerial Lifts	1	8.00	63	0.31
Vegetation Management - Upland	Graders	0	8.00	187	0.41
Vegetation Management - Upland	Off-Highway Trucks	2	8.00	402	0.38
Vegetation Management - Upland	Off-Highway Trucks	1	8.00	402	0.38
Vegetation Management - Upland	Other Construction Equipment	1	8.00	172	0.42
Vegetation Management - Upland	Rubber Tired Dozers	1	8.00	247	0.40
Vegetation Management - Upland	Skid Steer Loaders	1	8.00	65	0.37
Vegetation Management - Upland	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Vegetation Management - Livestock Grazing Upland	Graders	0	8.00	187	0.41
Vegetation Management - Livestock Grazing Upland	Off-Highway Trucks	2	1.00	402	0.38
Vegetation Management - Livestock Grazing Upland	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Vegetation Management - Livestock Grazing Riparian	Graders	0	8.00	187	0.41
Vegetation Management - Livestock Grazing Riparian	Off-Highway Trucks	2	1.00	402	0.38
Vegetation Management - Livestock Grazing Riparian	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Facilities Maintenance - Other	Dumpers/Tenders	1	4.00	16	0.38
Facilities Maintenance - Other	Graders	1	4.00	187	0.41
Facilities Maintenance - Other	Off-Highway Trucks	3	4.00	402	0.38
Facilities Maintenance - Other	Pumps	1	8.00	84	0.74
Facilities Maintenance - Other	Rubber Tired Dozers	1	4.00	247	0.40
Facilities Maintenance - Other	Skid Steer Loaders	1	4.00	65	0.37
Facilities Maintenance - Other	Sweepers/Scrubbers	1	4.00	64	0.46
Facilities Maintenance - Other	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Facilities Maintenance - Culvert Replacement	Dumpers/Tenders	1	8.00	16	0.38
Facilities Maintenance - Culvert Replacement	Graders	0	8.00	187	0.41
Facilities Maintenance - Culvert Replacement	Off-Highway Trucks	1	8.00	402	0.38
Facilities Maintenance - Culvert Replacement	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Environmental Stewardship - Invasive Species Removal	Graders	0	8.00	187	0.41
Environmental Stewardship - Invasive Species Removal	Off-Highway Trucks	2	8.00	402	0.38
Environmental Stewardship - Invasive Species Removal	Pumps	1	8.00	84	0.74
Environmental Stewardship - Invasive Species Removal	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Erosion Prevention, Control, Repair, and Protection	Dumpers/Tenders	1	8.00	16	0.38

Erosion Prevention, Control, Repair, and Protection	Graders	0	8.00	187	0.41
Erosion Prevention, Control, Repair, and Protection	Skid Steer Loaders	1	8.00	65	0.37
Erosion Prevention, Control, Repair, and Protection	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Environmental Stewardship - Beaver Dam Removal	Dumpers/Tenders	1	4.00	16	0.38
Environmental Stewardship - Beaver Dam Removal	Graders	0	8.00	187	0.41
Environmental Stewardship - Beaver Dam Removal	Off-Highway Trucks	1	4.00	402	0.38
Environmental Stewardship - Beaver Dam Removal	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Facilities Maintenance - Low Water Crossings	Dumpers/Tenders	1	8.00	16	0.38
Facilities Maintenance - Low Water Crossings	Graders	0	8.00	187	0.41
Facilities Maintenance - Low Water Crossings	Off-Highway Trucks	1	8.00	402	0.38
Facilities Maintenance - Low Water Crossings	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Facilities Maintenance - Cleaning, Painting	Air Compressors	0	6.00	78	0.48
Facilities Maintenance - Cleaning, Painting	Dumpers/Tenders	1	4.00	16	0.38
Facilities Maintenance - Cleaning, Painting	Excavators	1	4.00	158	0.38
Facilities Maintenance - Cleaning, Painting	Tractors/Loaders/Backhoes	1	4.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Sediment and Debris Removal - Culverts, Pi	3	6.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Sediment and Debris Removal - In-stream	4	4.00	6.00	15.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Sediment and Debris Removal - Disposal, P	12	6.00	16.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Vegetation Management - Riparia	7	8.00	10.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Vegetation Management - Chapar	6	8.00	6.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Vegetation Management - Upland	9	40.00	6.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Vegetation Management - Livesto	2	4.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Vegetation Management - Livesto	2	4.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Facilities Maintenance - Other	11	12.00	4.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Facilities Maintenance - Culvert Replacement	3	8.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Environmental Stewardship - Invasive	3	8.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Erosion Prevention, Control, Repair, and P	4	8.00	6.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Environmental Stewardship - Beaver	4	8.00	4.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Facilities Maintenance - Low Water Crossing	4	8.00	4.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Facilities Maintenance - Cleaning, Painting	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Sediment and Debris Removal - Culverts, Pipes - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8043	6.2552	6.8647	0.0191		0.2492	0.2492		0.2307	0.2307		1,839.9409	1,839.9409	0.5819		1,854.4885
Total	**0.8043**	**6.2552**	**6.8647**	**0.0191**	**0.0000**	**0.2492**	**0.2492**	**0.0000**	**0.2307**	**0.2307**		**1,839.9409**	**1,839.9409**	**0.5819**		**1,854.4885**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.5300e-003	0.2240	0.0602	5.0000e-004	0.0121	6.5000e-004	0.0128	3.4900e-003	6.2000e-004	4.1100e-003		52.2057	52.2057	1.3000e-003		52.2381
Worker	0.0729	0.0407	0.4575	6.8000e-004	0.0766	5.0000e-004	0.0771	0.0203	4.6000e-004	0.0208		67.6512	67.6512	3.7400e-003		67.7448
Total	**0.0794**	**0.2647**	**0.5177**	**1.1800e-003**	**0.0888**	**1.1500e-003**	**0.0899**	**0.0238**	**1.0800e-003**	**0.0249**		**119.8569**	**119.8569**	**5.0400e-003**		**119.9829**

3.2 Sediment and Debris Removal - Culverts, Pipes - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8043	6.2552	6.8647	0.0191		0.2492	0.2492		0.2307	0.2307	0.0000	1,839.9409	1,839.9409	0.5819		1,854.4885
Total	**0.8043**	**6.2552**	**6.8647**	**0.0191**	**0.0000**	**0.2492**	**0.2492**	**0.0000**	**0.2307**	**0.2307**	**0.0000**	**1,839.9409**	**1,839.9409**	**0.5819**		**1,854.4885**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.5300e-003	0.2240	0.0602	5.0000e-004	0.0121	6.5000e-004	0.0128	3.4900e-003	6.2000e-004	4.1100e-003		52.2057	52.2057	1.3000e-003		52.2381
Worker	0.0729	0.0407	0.4575	6.8000e-004	0.0766	5.0000e-004	0.0771	0.0203	4.6000e-004	0.0208		67.6512	67.6512	3.7400e-003		67.7448
Total	**0.0794**	**0.2647**	**0.5177**	**1.1800e-003**	**0.0888**	**1.1500e-003**	**0.0899**	**0.0238**	**1.0800e-003**	**0.0249**		**119.8569**	**119.8569**	**5.0400e-003**		**119.9829**

3.3 Sediment and Debris Removal - In-stream Work - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7100e-003	0.0000	2.7100e-003	4.1000e-004	0.0000	4.1000e-004			0.0000			0.0000
Off-Road	0.4003	3.8805	4.7396	6.8600e-003		0.2250	0.2250		0.2070	0.2070		664.2975	664.2975	0.2149		669.6686
Total	**0.4003**	**3.8805**	**4.7396**	**6.8600e-003**	**2.7100e-003**	**0.2250**	**0.2277**	**4.1000e-004**	**0.2070**	**0.2074**		**664.2975**	**664.2975**	**0.2149**		**669.6686**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0235	0.9593	0.2404	2.5000e-003	0.0514	3.9100e-003	0.0553	0.0140	3.7400e-003	0.0177		261.7416	261.7416	3.8200e-003		261.8370
Vendor	0.0196	0.6721	0.1806	1.5000e-003	0.0364	1.9500e-003	0.0384	0.0105	1.8600e-003	0.0123		156.6169	156.6169	3.8900e-003		156.7142
Worker	0.0486	0.0271	0.3050	4.6000e-004	0.0511	3.3000e-004	0.0514	0.0136	3.1000e-004	0.0139		45.1008	45.1008	2.5000e-003		45.1632
Total	**0.0917**	**1.6585**	**0.7259**	**4.4600e-003**	**0.1389**	**6.1900e-003**	**0.1451**	**0.0380**	**5.9100e-003**	**0.0439**		**463.4593**	**463.4593**	**0.0102**		**463.7144**

3.3 Sediment and Debris Removal - In-stream Work - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7100e-003	0.0000	2.7100e-003	4.1000e-004	0.0000	4.1000e-004			0.0000			0.0000
Off-Road	0.4003	3.8805	4.7396	6.8600e-003		0.2250	0.2250		0.2070	0.2070	0.0000	664.2975	664.2975	0.2149		669.6686
Total	**0.4003**	**3.8805**	**4.7396**	**6.8600e-003**	**2.7100e-003**	**0.2250**	**0.2277**	**4.1000e-004**	**0.2070**	**0.2074**	**0.0000**	**664.2975**	**664.2975**	**0.2149**		**669.6686**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0235	0.9593	0.2404	2.5000e-003	0.0514	3.9100e-003	0.0553	0.0140	3.7400e-003	0.0177		261.7416	261.7416	3.8200e-003		261.8370
Vendor	0.0196	0.6721	0.1806	1.5000e-003	0.0364	1.9500e-003	0.0384	0.0105	1.8600e-003	0.0123		156.6169	156.6169	3.8900e-003		156.7142
Worker	0.0486	0.0271	0.3050	4.6000e-004	0.0511	3.3000e-004	0.0514	0.0136	3.1000e-004	0.0139		45.1008	45.1008	2.5000e-003		45.1632
Total	**0.0917**	**1.6585**	**0.7259**	**4.4600e-003**	**0.1389**	**6.1900e-003**	**0.1451**	**0.0380**	**5.9100e-003**	**0.0439**		**463.4593**	**463.4593**	**0.0102**		**463.7144**

3.4 Sediment and Debris Removal - Disposal, Piles - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5055	0.0000	1.5055	0.8276	0.0000	0.8276			0.0000			0.0000
Off-Road	0.9521	9.0068	7.4176	0.0169		0.4191	0.4191		0.3859	0.3859		1,630.7281	1,630.7281	0.5241		1,643.8310
Total	**0.9521**	**9.0068**	**7.4176**	**0.0169**	**1.5055**	**0.4191**	**1.9246**	**0.8276**	**0.3859**	**1.2135**		**1,630.7281**	**1,630.7281**	**0.5241**		**1,643.8310**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0523	1.7923	0.4815	4.0000e-003	0.0971	5.2000e-003	0.1023	0.0279	4.9700e-003	0.0329		417.6452	417.6452	0.0104		417.9046
Worker	0.0729	0.0407	0.4575	6.8000e-004	0.0766	5.0000e-004	0.0771	0.0203	4.6000e-004	0.0208		67.6512	67.6512	3.7400e-003		67.7448
Total	**0.1251**	**1.8330**	**0.9390**	**4.6800e-003**	**0.1737**	**5.7000e-003**	**0.1794**	**0.0482**	**5.4300e-003**	**0.0537**		**485.2964**	**485.2964**	**0.0141**		**485.6493**

3.4 Sediment and Debris Removal - Disposal, Piles - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5055	0.0000	1.5055	0.8276	0.0000	0.8276			0.0000			0.0000
Off-Road	0.9521	9.0068	7.4176	0.0169		0.4191	0.4191		0.3859	0.3859	0.0000	1,630.7281	1,630.7281	0.5241		1,643.8310
Total	**0.9521**	**9.0068**	**7.4176**	**0.0169**	**1.5055**	**0.4191**	**1.9246**	**0.8276**	**0.3859**	**1.2135**	**0.0000**	**1,630.7281**	**1,630.7281**	**0.5241**		**1,643.8310**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0523	1.7923	0.4815	4.0000e-003	0.0971	5.2000e-003	0.1023	0.0279	4.9700e-003	0.0329		417.6452	417.6452	0.0104		417.9046
Worker	0.0729	0.0407	0.4575	6.8000e-004	0.0766	5.0000e-004	0.0771	0.0203	4.6000e-004	0.0208		67.6512	67.6512	3.7400e-003		67.7448
Total	**0.1251**	**1.8330**	**0.9390**	**4.6800e-003**	**0.1737**	**5.7000e-003**	**0.1794**	**0.0482**	**5.4300e-003**	**0.0537**		**485.2964**	**485.2964**	**0.0141**		**485.6493**

3.5 Vegetation Management - Riparian - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.0933	9.0490	9.5972	0.0266		0.3693	0.3693		0.3397	0.3397		2,569.9202	2,569.9202	0.8312		2,590.6993
Total	**1.0933**	**9.0490**	**9.5972**	**0.0266**	**0.0000**	**0.3693**	**0.3693**	**0.0000**	**0.3397**	**0.3397**		**2,569.9202**	**2,569.9202**	**0.8312**		**2,590.6993**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0327	1.1202	0.3009	2.5000e-003	0.0607	3.2500e-003	0.0639	0.0174	3.1100e-003	0.0205		261.0282	261.0282	6.4800e-003		261.1904
Worker	0.0972	0.0542	0.6100	9.1000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		90.2016	90.2016	4.9900e-003		90.3264
Total	**0.1299**	**1.1744**	**0.9109**	**3.4100e-003**	**0.1629**	**3.9200e-003**	**0.1668**	**0.0445**	**3.7300e-003**	**0.0482**		**351.2298**	**351.2298**	**0.0115**		**351.5167**

3.5 Vegetation Management - Riparian - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.0933	9.0490	9.5972	0.0266		0.3693	0.3693		0.3397	0.3397	0.0000	2,569.9202	2,569.9202	0.8312		2,590.6993
Total	**1.0933**	**9.0490**	**9.5972**	**0.0266**	**0.0000**	**0.3693**	**0.3693**	**0.0000**	**0.3397**	**0.3397**	**0.0000**	**2,569.9202**	**2,569.9202**	**0.8312**		**2,590.6993**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0327	1.1202	0.3009	2.5000e-003	0.0607	3.2500e-003	0.0639	0.0174	3.1100e-003	0.0205		261.0282	261.0282	6.4800e-003		261.1904
Worker	0.0972	0.0542	0.6100	9.1000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		90.2016	90.2016	4.9900e-003		90.3264
Total	**0.1299**	**1.1744**	**0.9109**	**3.4100e-003**	**0.1629**	**3.9200e-003**	**0.1668**	**0.0445**	**3.7300e-003**	**0.0482**		**351.2298**	**351.2298**	**0.0115**		**351.5167**

3.6 Vegetation Management - Chaparral - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.9921	8.1605	7.9696	0.0240		0.3263	0.3263		0.3002	0.3002		2,319.9125	2,319.9125	0.7503		2,338.6702
Total	**0.9921**	**8.1605**	**7.9696**	**0.0240**	**0.0000**	**0.3263**	**0.3263**	**0.0000**	**0.3002**	**0.3002**		**2,319.9125**	**2,319.9125**	**0.7503**		**2,338.6702**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0196	0.6721	0.1806	1.5000e-003	0.0364	1.9500e-003	0.0384	0.0105	1.8600e-003	0.0123		156.6169	156.6169	3.8900e-003		156.7142
Worker	0.0972	0.0542	0.6100	9.1000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		90.2016	90.2016	4.9900e-003		90.3264
Total	**0.1168**	**0.7263**	**0.7905**	**2.4100e-003**	**0.1386**	**2.6200e-003**	**0.1412**	**0.0376**	**2.4800e-003**	**0.0400**		**246.8186**	**246.8186**	**8.8800e-003**		**247.0406**

3.6 Vegetation Management - Chaparral - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.9921	8.1605	7.9696	0.0240		0.3263	0.3263		0.3002	0.3002	0.0000	2,319.9125	2,319.9125	0.7503		2,338.6702
Total	**0.9921**	**8.1605**	**7.9696**	**0.0240**	**0.0000**	**0.3263**	**0.3263**	**0.0000**	**0.3002**	**0.3002**	**0.0000**	**2,319.9125**	**2,319.9125**	**0.7503**		**2,338.6702**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0196	0.6721	0.1806	1.5000e-003	0.0364	1.9500e-003	0.0384	0.0105	1.8600e-003	0.0123		156.6169	156.6169	3.8900e-003		156.7142
Worker	0.0972	0.0542	0.6100	9.1000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		90.2016	90.2016	4.9900e-003		90.3264
Total	**0.1168**	**0.7263**	**0.7905**	**2.4100e-003**	**0.1386**	**2.6200e-003**	**0.1412**	**0.0376**	**2.4800e-003**	**0.0400**		**246.8186**	**246.8186**	**8.8800e-003**		**247.0406**

3.7 Vegetation Management - Upland - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1431	0.0000	8.1431	3.5393	0.0000	3.5393			0.0000			0.0000
Off-Road	3.2334	29.4901	24.6355	0.0643		1.2794	1.2794		1.1771	1.1771		6,227.8115	6,227.8115	2.0142		6,278.1665
Total	**3.2334**	**29.4901**	**24.6355**	**0.0643**	**8.1431**	**1.2794**	**9.4225**	**3.5393**	**1.1771**	**4.7163**		**6,227.8115**	**6,227.8115**	**2.0142**		**6,278.1665**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0196	0.6721	0.1806	1.5000e-003	0.0364	1.9500e-003	0.0384	0.0105	1.8600e-003	0.0123		156.6169	156.6169	3.8900e-003		156.7142
Worker	0.4859	0.2710	3.0498	4.5500e-003	0.5109	3.3400e-003	0.5143	0.1355	3.0800e-003	0.1386		451.0080	451.0080	0.0250		451.6319
Total	**0.5055**	**0.9432**	**3.2303**	**6.0500e-003**	**0.5473**	**5.2900e-003**	**0.5526**	**0.1460**	**4.9400e-003**	**0.1509**		**607.6250**	**607.6250**	**0.0288**		**608.3461**

3.7 Vegetation Management - Upland - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1431	0.0000	8.1431	3.5393	0.0000	3.5393			0.0000			0.0000
Off-Road	3.2334	29.4901	24.6355	0.0643		1.2794	1.2794		1.1771	1.1771	0.0000	6,227.8115	6,227.8115	2.0142		6,278.1665
Total	**3.2334**	**29.4901**	**24.6355**	**0.0643**	**8.1431**	**1.2794**	**9.4225**	**3.5393**	**1.1771**	**4.7163**	**0.0000**	**6,227.8115**	**6,227.8115**	**2.0142**		**6,278.1665**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0196	0.6721	0.1806	1.5000e-003	0.0364	1.9500e-003	0.0384	0.0105	1.8600e-003	0.0123		156.6169	156.6169	3.8900e-003		156.7142
Worker	0.4859	0.2710	3.0498	4.5500e-003	0.5109	3.3400e-003	0.5143	0.1355	3.0800e-003	0.1386		451.0080	451.0080	0.0250		451.6319
Total	**0.5055**	**0.9432**	**3.2303**	**6.0500e-003**	**0.5473**	**5.2900e-003**	**0.5526**	**0.1460**	**4.9400e-003**	**0.1509**		**607.6250**	**607.6250**	**0.0288**		**608.3461**

3.8 Vegetation Management - Livestock Grazing Upland - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1321	1.0034	0.8397	3.3000e-003		0.0365	0.0365		0.0336	0.0336		319.7463	319.7463	0.1034		322.3316
Total	**0.1321**	**1.0034**	**0.8397**	**3.3000e-003**	**0.0000**	**0.0365**	**0.0365**	**0.0000**	**0.0336**	**0.0336**		**319.7463**	**319.7463**	**0.1034**		**322.3316**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0486	0.0271	0.3050	4.6000e-004	0.0511	3.3000e-004	0.0514	0.0136	3.1000e-004	0.0139		45.1008	45.1008	2.5000e-003		45.1632
Total	**0.0486**	**0.0271**	**0.3050**	**4.6000e-004**	**0.0511**	**3.3000e-004**	**0.0514**	**0.0136**	**3.1000e-004**	**0.0139**		**45.1008**	**45.1008**	**2.5000e-003**		**45.1632**

3.8 Vegetation Management - Livestock Grazing Upland - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1321	1.0034	0.8397	3.3000e-003		0.0365	0.0365		0.0336	0.0336	0.0000	319.7463	319.7463	0.1034		322.3316
Total	**0.1321**	**1.0034**	**0.8397**	**3.3000e-003**	**0.0000**	**0.0365**	**0.0365**	**0.0000**	**0.0336**	**0.0336**	**0.0000**	**319.7463**	**319.7463**	**0.1034**		**322.3316**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0486	0.0271	0.3050	4.6000e-004	0.0511	3.3000e-004	0.0514	0.0136	3.1000e-004	0.0139		45.1008	45.1008	2.5000e-003		45.1632
Total	**0.0486**	**0.0271**	**0.3050**	**4.6000e-004**	**0.0511**	**3.3000e-004**	**0.0514**	**0.0136**	**3.1000e-004**	**0.0139**		**45.1008**	**45.1008**	**2.5000e-003**		**45.1632**

3.9 Vegetation Management - Livestock Grazing Riparian - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1321	1.0034	0.8397	3.3000e-003		0.0365	0.0365		0.0336	0.0336		319.7463	319.7463	0.1034		322.3316
Total	**0.1321**	**1.0034**	**0.8397**	**3.3000e-003**	**0.0000**	**0.0365**	**0.0365**	**0.0000**	**0.0336**	**0.0336**		**319.7463**	**319.7463**	**0.1034**		**322.3316**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0486	0.0271	0.3050	4.6000e-004	0.0511	3.3000e-004	0.0514	0.0136	3.1000e-004	0.0139		45.1008	45.1008	2.5000e-003		45.1632
Total	**0.0486**	**0.0271**	**0.3050**	**4.6000e-004**	**0.0511**	**3.3000e-004**	**0.0514**	**0.0136**	**3.1000e-004**	**0.0139**		**45.1008**	**45.1008**	**2.5000e-003**		**45.1632**

3.9 Vegetation Management - Livestock Grazing Riparian - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1321	1.0034	0.8397	3.3000e-003		0.0365	0.0365		0.0336	0.0336	0.0000	319.7463	319.7463	0.1034		322.3316
Total	**0.1321**	**1.0034**	**0.8397**	**3.3000e-003**	**0.0000**	**0.0365**	**0.0365**	**0.0000**	**0.0336**	**0.0336**	**0.0000**	**319.7463**	**319.7463**	**0.1034**		**322.3316**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0486	0.0271	0.3050	4.6000e-004	0.0511	3.3000e-004	0.0514	0.0136	3.1000e-004	0.0139		45.1008	45.1008	2.5000e-003		45.1632
Total	**0.0486**	**0.0271**	**0.3050**	**4.6000e-004**	**0.0511**	**3.3000e-004**	**0.0514**	**0.0136**	**3.1000e-004**	**0.0139**		**45.1008**	**45.1008**	**2.5000e-003**		**45.1632**

3.10 Facilities Maintenance - Culvert Replacement - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.7666	6.1539	5.8475	0.0171		0.2534	0.2534		0.2346	0.2346		1,641.1646	1,641.1646	0.5176		1,654.1050
Total	**0.7666**	**6.1539**	**5.8475**	**0.0171**	**0.0000**	**0.2534**	**0.2534**	**0.0000**	**0.2346**	**0.2346**		**1,641.1646**	**1,641.1646**	**0.5176**		**1,654.1050**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.5300e-003	0.2240	0.0602	5.0000e-004	0.0121	6.5000e-004	0.0128	3.4900e-003	6.2000e-004	4.1100e-003		52.2057	52.2057	1.3000e-003		52.2381
Worker	0.0972	0.0542	0.6100	9.1000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		90.2016	90.2016	4.9900e-003		90.3264
Total	**0.1037**	**0.2782**	**0.6701**	**1.4100e-003**	**0.1143**	**1.3200e-003**	**0.1156**	**0.0306**	**1.2400e-003**	**0.0318**		**142.4073**	**142.4073**	**6.2900e-003**		**142.5645**

3.10 Facilities Maintenance - Culvert Replacement - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.7666	6.1539	5.8475	0.0171		0.2534	0.2534		0.2346	0.2346	0.0000	1,641.1646	1,641.1646	0.5176		1,654.1050
Total	**0.7666**	**6.1539**	**5.8475**	**0.0171**	**0.0000**	**0.2534**	**0.2534**	**0.0000**	**0.2346**	**0.2346**	**0.0000**	**1,641.1646**	**1,641.1646**	**0.5176**		**1,654.1050**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.5300e-003	0.2240	0.0602	5.0000e-004	0.0121	6.5000e-004	0.0128	3.4900e-003	6.2000e-004	4.1100e-003		52.2057	52.2057	1.3000e-003		52.2381
Worker	0.0972	0.0542	0.6100	9.1000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		90.2016	90.2016	4.9900e-003		90.3264
Total	**0.1037**	**0.2782**	**0.6701**	**1.4100e-003**	**0.1143**	**1.3200e-003**	**0.1156**	**0.0306**	**1.2400e-003**	**0.0318**		**142.4073**	**142.4073**	**6.2900e-003**		**142.5645**

3.11 Environmental Stewardship - Invasive Species Removal - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.4087	10.9962	10.4493	0.0330		0.4476	0.4476		0.4242	0.4242		3,181.0052	3,181.0052	0.8591		3,202.4825
Total	**1.4087**	**10.9962**	**10.4493**	**0.0330**	**0.0000**	**0.4476**	**0.4476**	**0.0000**	**0.4242**	**0.4242**		**3,181.0052**	**3,181.0052**	**0.8591**		**3,202.4825**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.5300e-003	0.2240	0.0602	5.0000e-004	0.0121	6.5000e-004	0.0128	3.4900e-003	6.2000e-004	4.1100e-003		52.2057	52.2057	1.3000e-003		52.2381
Worker	0.0972	0.0542	0.6100	9.1000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		90.2016	90.2016	4.9900e-003		90.3264
Total	**0.1037**	**0.2782**	**0.6701**	**1.4100e-003**	**0.1143**	**1.3200e-003**	**0.1156**	**0.0306**	**1.2400e-003**	**0.0318**		**142.4073**	**142.4073**	**6.2900e-003**		**142.5645**

3.11 Environmental Stewardship - Invasive Species Removal - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.4087	10.9962	10.4493	0.0330		0.4476	0.4476		0.4242	0.4242	0.0000	3,181.0052	3,181.0052	0.8591		3,202.4825
Total	**1.4087**	**10.9962**	**10.4493**	**0.0330**	**0.0000**	**0.4476**	**0.4476**	**0.0000**	**0.4242**	**0.4242**	**0.0000**	**3,181.0052**	**3,181.0052**	**0.8591**		**3,202.4825**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.5300e-003	0.2240	0.0602	5.0000e-004	0.0121	6.5000e-004	0.0128	3.4900e-003	6.2000e-004	4.1100e-003		52.2057	52.2057	1.3000e-003		52.2381
Worker	0.0972	0.0542	0.6100	9.1000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		90.2016	90.2016	4.9900e-003		90.3264
Total	**0.1037**	**0.2782**	**0.6701**	**1.4100e-003**	**0.1143**	**1.3200e-003**	**0.1156**	**0.0306**	**1.2400e-003**	**0.0318**		**142.4073**	**142.4073**	**6.2900e-003**		**142.5645**

3.12 Facilities Maintenance - Other - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0110	0.0000	3.0110	1.6551	0.0000	1.6551			0.0000			0.0000
Off-Road	2.1035	19.2887	15.4373	0.0398		0.8432	0.8432		0.7889	0.7889		3,830.6626	3,830.6626	1.0626		3,857.2281
Total	**2.1035**	**19.2887**	**15.4373**	**0.0398**	**3.0110**	**0.8432**	**3.8542**	**1.6551**	**0.7889**	**2.4440**		**3,830.6626**	**3,830.6626**	**1.0626**		**3,857.2281**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0131	0.4481	0.1204	1.0000e-003	0.0243	1.3000e-003	0.0256	6.9700e-003	1.2400e-003	8.2100e-003		104.4113	104.4113	2.5900e-003		104.4761
Worker	0.1458	0.0813	0.9149	1.3700e-003	0.1533	1.0000e-003	0.1543	0.0407	9.2000e-004	0.0416		135.3024	135.3024	7.4900e-003		135.4896
Total	**0.1588**	**0.5294**	**1.0353**	**2.3700e-003**	**0.1776**	**2.3000e-003**	**0.1799**	**0.0476**	**2.1600e-003**	**0.0498**		**239.7137**	**239.7137**	**0.0101**		**239.9657**

3.12 Facilities Maintenance - Other - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0110	0.0000	3.0110	1.6551	0.0000	1.6551			0.0000			0.0000
Off-Road	2.1035	19.2887	15.4373	0.0398		0.8432	0.8432		0.7889	0.7889	0.0000	3,830.6626	3,830.6626	1.0626		3,857.2281
Total	**2.1035**	**19.2887**	**15.4373**	**0.0398**	**3.0110**	**0.8432**	**3.8542**	**1.6551**	**0.7889**	**2.4440**	**0.0000**	**3,830.6626**	**3,830.6626**	**1.0626**		**3,857.2281**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0131	0.4481	0.1204	1.0000e-003	0.0243	1.3000e-003	0.0256	6.9700e-003	1.2400e-003	8.2100e-003		104.4113	104.4113	2.5900e-003		104.4761
Worker	0.1458	0.0813	0.9149	1.3700e-003	0.1533	1.0000e-003	0.1543	0.0407	9.2000e-004	0.0416		135.3024	135.3024	7.4900e-003		135.4896
Total	**0.1588**	**0.5294**	**1.0353**	**2.3700e-003**	**0.1776**	**2.3000e-003**	**0.1799**	**0.0476**	**2.1600e-003**	**0.0498**		**239.7137**	**239.7137**	**0.0101**		**239.9657**

3.13 Facilities Maintenance - Cleaning, Painting - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	19.3125					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2203	1.9586	2.8720	4.5100e-003		0.0967	0.0967		0.0897	0.0897		431.0973	431.0973	0.1328		434.4183
Total	**19.5328**	**1.9586**	**2.8720**	**4.5100e-003**		**0.0967**	**0.0967**		**0.0897**	**0.0897**		**431.0973**	**431.0973**	**0.1328**		**434.4183**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0972	0.0542	0.6100	9.1000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		90.2016	90.2016	4.9900e-003		90.3264
Total	**0.0972**	**0.0542**	**0.6100**	**9.1000e-004**	**0.1022**	**6.7000e-004**	**0.1029**	**0.0271**	**6.2000e-004**	**0.0277**		**90.2016**	**90.2016**	**4.9900e-003**		**90.3264**

3.13 Facilities Maintenance - Cleaning, Painting - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	19.3125					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2203	1.9586	2.8720	4.5100e-003		0.0967	0.0967		0.0897	0.0897	0.0000	431.0973	431.0973	0.1328		434.4183
Total	**19.5328**	**1.9586**	**2.8720**	**4.5100e-003**		**0.0967**	**0.0967**		**0.0897**	**0.0897**	**0.0000**	**431.0973**	**431.0973**	**0.1328**		**434.4183**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0972	0.0542	0.6100	9.1000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		90.2016	90.2016	4.9900e-003		90.3264
Total	**0.0972**	**0.0542**	**0.6100**	**9.1000e-004**	**0.1022**	**6.7000e-004**	**0.1029**	**0.0271**	**6.2000e-004**	**0.0277**		**90.2016**	**90.2016**	**4.9900e-003**		**90.3264**

3.14 Erosion Prevention, Control, Repair, and Protection - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4725	4.7444	6.1139	9.0400e-003		0.2321	0.2321		0.2149	0.2149		863.8095	863.8095	0.2662		870.4646
Total	**0.4725**	**4.7444**	**6.1139**	**9.0400e-003**	**0.0000**	**0.2321**	**0.2321**	**0.0000**	**0.2149**	**0.2149**		**863.8095**	**863.8095**	**0.2662**		**870.4646**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0196	0.6721	0.1806	1.5000e-003	0.0364	1.9500e-003	0.0384	0.0105	1.8600e-003	0.0123		156.6169	156.6169	3.8900e-003		156.7142
Worker	0.0972	0.0542	0.6100	9.1000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		90.2016	90.2016	4.9900e-003		90.3264
Total	**0.1168**	**0.7263**	**0.7905**	**2.4100e-003**	**0.1386**	**2.6200e-003**	**0.1412**	**0.0376**	**2.4800e-003**	**0.0400**		**246.8186**	**246.8186**	**8.8800e-003**		**247.0406**

3.14 Erosion Prevention, Control, Repair, and Protection - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4725	4.7444	6.1139	9.0400e-003		0.2321	0.2321		0.2149	0.2149	0.0000	863.8095	863.8095	0.2662		870.4646
Total	**0.4725**	**4.7444**	**6.1139**	**9.0400e-003**	**0.0000**	**0.2321**	**0.2321**	**0.0000**	**0.2149**	**0.2149**	**0.0000**	**863.8095**	**863.8095**	**0.2662**		**870.4646**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0196	0.6721	0.1806	1.5000e-003	0.0364	1.9500e-003	0.0384	0.0105	1.8600e-003	0.0123		156.6169	156.6169	3.8900e-003		156.7142
Worker	0.0972	0.0542	0.6100	9.1000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		90.2016	90.2016	4.9900e-003		90.3264
Total	**0.1168**	**0.7263**	**0.7905**	**2.4100e-003**	**0.1386**	**2.6200e-003**	**0.1412**	**0.0376**	**2.4800e-003**	**0.0400**		**246.8186**	**246.8186**	**8.8800e-003**		**247.0406**

3.15 Environmental Stewardship - Beaver Dam Removal - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4656	3.9148	4.0427	0.0101		0.1718	0.1718		0.1587	0.1587		971.2018	971.2018	0.3075		978.8898
Total	**0.4656**	**3.9148**	**4.0427**	**0.0101**	**0.0000**	**0.1718**	**0.1718**	**0.0000**	**0.1587**	**0.1587**		**971.2018**	**971.2018**	**0.3075**		**978.8898**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0131	0.4481	0.1204	1.0000e-003	0.0243	1.3000e-003	0.0256	6.9700e-003	1.2400e-003	8.2100e-003		104.4113	104.4113	2.5900e-003		104.4761
Worker	0.0972	0.0542	0.6100	9.1000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		90.2016	90.2016	4.9900e-003		90.3264
Total	**0.1103**	**0.5023**	**0.7303**	**1.9100e-003**	**0.1265**	**1.9700e-003**	**0.1284**	**0.0341**	**1.8600e-003**	**0.0359**		**194.6129**	**194.6129**	**7.5800e-003**		**194.8025**

3.15 Environmental Stewardship - Beaver Dam Removal - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4656	3.9148	4.0427	0.0101		0.1718	0.1718		0.1587	0.1587	0.0000	971.2018	971.2018	0.3075		978.8898
Total	**0.4656**	**3.9148**	**4.0427**	**0.0101**	**0.0000**	**0.1718**	**0.1718**	**0.0000**	**0.1587**	**0.1587**	**0.0000**	**971.2018**	**971.2018**	**0.3075**		**978.8898**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0131	0.4481	0.1204	1.0000e-003	0.0243	1.3000e-003	0.0256	6.9700e-003	1.2400e-003	8.2100e-003		104.4113	104.4113	2.5900e-003		104.4761
Worker	0.0972	0.0542	0.6100	9.1000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		90.2016	90.2016	4.9900e-003		90.3264
Total	**0.1103**	**0.5023**	**0.7303**	**1.9100e-003**	**0.1265**	**1.9700e-003**	**0.1284**	**0.0341**	**1.8600e-003**	**0.0359**		**194.6129**	**194.6129**	**7.5800e-003**		**194.8025**

3.16 Facilities Maintenance - Low Water Crossings - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.9313	7.8295	8.0854	0.0202		0.3436	0.3436		0.3175	0.3175		1,942.4035	1,942.4035	0.6150		1,957.7796
Total	**0.9313**	**7.8295**	**8.0854**	**0.0202**	**0.0000**	**0.3436**	**0.3436**	**0.0000**	**0.3175**	**0.3175**		**1,942.4035**	**1,942.4035**	**0.6150**		**1,957.7796**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0131	0.4481	0.1204	1.0000e-003	0.0243	1.3000e-003	0.0256	6.9700e-003	1.2400e-003	8.2100e-003		104.4113	104.4113	2.5900e-003		104.4761
Worker	0.0972	0.0542	0.6100	9.1000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		90.2016	90.2016	4.9900e-003		90.3264
Total	**0.1103**	**0.5023**	**0.7303**	**1.9100e-003**	**0.1265**	**1.9700e-003**	**0.1284**	**0.0341**	**1.8600e-003**	**0.0359**		**194.6129**	**194.6129**	**7.5800e-003**		**194.8025**

3.16 Facilities Maintenance - Low Water Crossings - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.9313	7.8295	8.0854	0.0202		0.3436	0.3436		0.3175	0.3175	0.0000	1,942.4035	1,942.4035	0.6150		1,957.7796
Total	**0.9313**	**7.8295**	**8.0854**	**0.0202**	**0.0000**	**0.3436**	**0.3436**	**0.0000**	**0.3175**	**0.3175**	**0.0000**	**1,942.4035**	**1,942.4035**	**0.6150**		**1,957.7796**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0131	0.4481	0.1204	1.0000e-003	0.0243	1.3000e-003	0.0256	6.9700e-003	1.2400e-003	8.2100e-003		104.4113	104.4113	2.5900e-003		104.4761
Worker	0.0972	0.0542	0.6100	9.1000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		90.2016	90.2016	4.9900e-003		90.3264
Total	**0.1103**	**0.5023**	**0.7303**	**1.9100e-003**	**0.1265**	**1.9700e-003**	**0.1284**	**0.0341**	**1.8600e-003**	**0.0359**		**194.6129**	**194.6129**	**7.5800e-003**		**194.8025**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

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

4.3 Trip Type Information

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Recreational	0.543368	0.039458	0.188636	0.127213	0.039750	0.007293	0.027477	0.014011	0.002060	0.000975	0.006673	0.001168	0.001919

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

Mitigated

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

6.0 Area Detail

6.1 Mitigation Measures Area

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

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EBMUD Watershed RMA

Amador County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	0.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	2			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Based on data request and project description.

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

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Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Off-road Equipment - Based on Project Description and Data Request

Trips and VMT - Based on Project Description and Data Request

Grading - Based on Project Description and Data Request.

Architectural Coating - Based on Project Description and Data Request

Vehicle Trips - All emissions modeled under construction

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	0.00	5,000.00
tblConstructionPhase	NumDays	0.00	3.00
tblConstructionPhase	NumDays	0.00	3.00

tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	14.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	4.00
tblConstructionPhase	NumDays	0.00	1.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	4.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	NumDays	0.00	10.00
tblConstructionPhase	NumDays	0.00	15.00
tblConstructionPhase	NumDays	0.00	20.00
tblConstructionPhase	NumDays	0.00	10.00
tblConstructionPhase	NumDays	0.00	3.00
tblGrading	AcresOfGrading	3.50	0.00
tblGrading	AcresOfGrading	0.50	0.00
tblGrading	AcresOfGrading	0.00	30.00
tblGrading	MaterialExported	0.00	120.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

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tblOffRoadEquipment	PhaseName		Facilities Maintenance - Other
tblOffRoadEquipment	PhaseName		Facilities Maintenance - Cleaning, Painting
tblOffRoadEquipment	PhaseName		Erosion Prevention, Control, Repair, and Protection
tblOffRoadEquipment	PhaseName		Environmental Stewardship - Beaver Dam Removal
tblOffRoadEquipment	PhaseName		Facilities Maintenance - Low Water Crossings
tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - Disposal, Piles
tblOffRoadEquipment	PhaseName		Facilities Maintenance - Culvert Replacement
tblOffRoadEquipment	PhaseName		Facilities Maintenance - Cleaning, Painting
tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - In-stream Work
tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - Disposal, Piles
tblOffRoadEquipment	PhaseName		Vegetation Management - Riparian
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tblOffRoadEquipment	PhaseName		Environmental Stewardship - Invasive Species Removal
tblOffRoadEquipment	PhaseName		Facilities Maintenance - Other
tblOffRoadEquipment	PhaseName		Environmental Stewardship - Beaver Dam Removal
tblOffRoadEquipment	PhaseName		Facilities Maintenance - Low Water Crossings

tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - Disposal, Piles
tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - Disposal, Piles
tblOffRoadEquipment	PhaseName		Vegetation Management - Riparian
tblOffRoadEquipment	PhaseName		Vegetation Management - Riparian
tblOffRoadEquipment	PhaseName		Vegetation Management - Chaparral
tblOffRoadEquipment	PhaseName		Vegetation Management - Chaparral
tblOffRoadEquipment	PhaseName		Vegetation Management - Upland
tblOffRoadEquipment	PhaseName		Vegetation Management - Upland
tblOffRoadEquipment	PhaseName		Vegetation Management - Livestock Grazing Upland
tblOffRoadEquipment	PhaseName		Vegetation Management - Livestock Grazing Riparian
tblOffRoadEquipment	PhaseName		Facilities Maintenance - Culvert Replacement
tblOffRoadEquipment	PhaseName		Vegetation Management - Upland
tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - Disposal, Piles
tblOffRoadEquipment	PhaseName		Environmental Stewardship - Invasive Species Removal
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tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - Disposal, Piles
tblOffRoadEquipment	PhaseName		Vegetation Management - Upland
tblOffRoadEquipment	PhaseName		Facilities Maintenance - Other
tblOffRoadEquipment	PhaseName		Erosion Prevention, Control, Repair, and Protection
tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - In-stream Work
tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - Disposal, Piles
tblOffRoadEquipment	PhaseName		Vegetation Management - Riparian
tblOffRoadEquipment	PhaseName		Vegetation Management - Chaparral
tblOffRoadEquipment	PhaseName		Vegetation Management - Upland

tblOffRoadEquipment	PhaseName		Facilities Maintenance - Other
tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - Disposal, Piles
tblOffRoadEquipment	PhaseName		Facilities Maintenance - Cleaning, Painting
tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - In-stream Work
tblOffRoadEquipment	PhaseName		Sediment and Debris Removal - Disposal, Piles
tblOffRoadEquipment	UsageHours	8.00	4.00
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tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.00
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tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	0.00	15.00
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tblTripsAndVMT	VendorTripNumber	0.00	2.00
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tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00

tblTripsAndVMT	VendorTripNumber	0.00	16.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
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tblTripsAndVMT	WorkerTripNumber	8.00	6.00
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tblTripsAndVMT	WorkerTripNumber	10.00	8.00
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tblTripsAndVMT	WorkerTripNumber	10.00	8.00
tblTripsAndVMT	WorkerTripNumber	10.00	4.00
tblTripsAndVMT	WorkerTripNumber	30.00	6.00
tblTripsAndVMT	WorkerTripNumber	18.00	8.00
tblTripsAndVMT	WorkerTripNumber	15.00	8.00
tblTripsAndVMT	WorkerTripNumber	23.00	40.00
tblTripsAndVMT	WorkerTripNumber	5.00	4.00
tblTripsAndVMT	WorkerTripNumber	5.00	4.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CW_TL	14.70	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	19.6317	30.4977	27.4226	0.0698	8.6904	1.2848	9.9752	3.6852	1.1821	4.8673	0.0000	6,779.9515	6,779.9515	2.0403	0.0000	6,830.9580
Maximum	**19.6317**	**30.4977**	**27.4226**	**0.0698**	**8.6904**	**1.2848**	**9.9752**	**3.6852**	**1.1821**	**4.8673**	**0.0000**	**6,779.9515**	**6,779.9515**	**2.0403**	**0.0000**	**6,830.9580**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	19.6317	30.4977	27.4226	0.0698	8.6904	1.2848	9.9752	3.6852	1.1821	4.8673	0.0000	6,779.9515	6,779.9515	2.0403	0.0000	6,830.9580
Maximum	**19.6317**	**30.4977**	**27.4226**	**0.0698**	**8.6904**	**1.2848**	**9.9752**	**3.6852**	**1.1821**	**4.8673**	**0.0000**	**6,779.9515**	**6,779.9515**	**2.0403**	**0.0000**	**6,830.9580**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Sediment and Debris Removal - Culverts, Pipes	Site Preparation	1/3/2022	1/5/2022	5	3	
2	Sediment and Debris Removal - In-stream Work	Site Preparation	1/6/2022	1/12/2022	5	5	
3	Sediment and Debris Removal - Disposal, Piles	Site Preparation	1/13/2022	1/18/2022	5	4	
4	Vegetation Management - Riparian	Site Preparation	1/19/2022	1/20/2022	5	2	
5	Vegetation Management - Chaparral	Site Preparation	1/21/2022	2/3/2022	5	10	
6	Vegetation Management - Upland	Site Preparation	2/4/2022	2/24/2022	5	15	
7	Vegetation Management - Livestock Grazing Upland	Site Preparation	2/25/2022	3/24/2022	5	20	
8	Vegetation Management - Livestock Grazing Riparian	Site Preparation	3/25/2022	4/7/2022	5	10	
9	Facilities Maintenance - Culvert Replacement	Site Preparation	4/8/2022	4/12/2022	5	3	
10	Environmental Stewardship - Invasive Species Removal	Site Preparation	4/8/2022	4/14/2022	5	5	
11	Facilities Maintenance - Other	Site Preparation	4/15/2022	5/4/2022	5	14	
12	Facilities Maintenance - Cleaning, Painting	Architectural Coating	5/5/2022	5/9/2022	5	3	
13	Erosion Prevention, Control, Repair, and Protection	Site Preparation	5/10/2022	5/16/2022	5	5	
14	Environmental Stewardship - Beaver Dam Removal	Site Preparation	5/17/2022	5/20/2022	5	4	
15	Facilities Maintenance - Low Water Crossings	Site Preparation	5/23/2022	5/23/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 5,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Sediment and Debris Removal - Culverts, Pipes	Dumpers/Tenders	1	8.00	16	0.38
Sediment and Debris Removal - Culverts, Pipes	Excavators	1	8.00	158	0.38
Sediment and Debris Removal - Culverts, Pipes	Graders	0	8.00	187	0.41
Sediment and Debris Removal - Culverts, Pipes	Off-Highway Trucks	1	8.00	402	0.38
Sediment and Debris Removal - Culverts, Pipes	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Sediment and Debris Removal - In-stream Work	Excavators	1	4.00	158	0.38
Sediment and Debris Removal - In-stream Work	Graders	0	8.00	187	0.41
Sediment and Debris Removal - In-stream Work	Skid Steer Loaders	1	4.00	65	0.37
Sediment and Debris Removal - In-stream Work	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Sediment and Debris Removal - In-stream Work	Trenchers	1	4.00	78	0.50
Sediment and Debris Removal - Disposal, Piles	Dumpers/Tenders	1	2.00	16	0.38
Sediment and Debris Removal - Disposal, Piles	Excavators	1	2.00	158	0.38
Sediment and Debris Removal - Disposal, Piles	Graders	1	2.00	187	0.41
Sediment and Debris Removal - Disposal, Piles	Off-Highway Trucks	1	2.00	402	0.38
Sediment and Debris Removal - Disposal, Piles	Off-Highway Trucks	1	2.00	402	0.38

Sediment and Debris Removal - Disposal, Piles	Other Material Handling Equipment	1	2.00	168	0.40
Sediment and Debris Removal - Disposal, Piles	Rubber Tired Dozers	1	2.00	247	0.40
Sediment and Debris Removal - Disposal, Piles	Skid Steer Loaders	1	2.00	65	0.37
Sediment and Debris Removal - Disposal, Piles	Sweepers/Scrubbers	1	2.00	64	0.46
Sediment and Debris Removal - Disposal, Piles	Tractors/Loaders/Backhoes	2	2.00	97	0.37
Sediment and Debris Removal - Disposal, Piles	Trenchers	1	2.00	78	0.50
Vegetation Management - Riparian	Excavators	1	4.00	158	0.38
Vegetation Management - Riparian	Graders	0	8.00	187	0.41
Vegetation Management - Riparian	Off-Highway Trucks	2	4.00	402	0.38
Vegetation Management - Riparian	Off-Highway Trucks	1	4.00	402	0.38
Vegetation Management - Riparian	Skid Steer Loaders	1	4.00	65	0.37
Vegetation Management - Riparian	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Vegetation Management - Chaparral	Excavators	0	4.00	158	0.38
Vegetation Management - Chaparral	Graders	0	8.00	187	0.41
Vegetation Management - Chaparral	Off-Highway Trucks	2	4.00	402	0.38
Vegetation Management - Chaparral	Off-Highway Trucks	1	4.00	402	0.38
Vegetation Management - Chaparral	Skid Steer Loaders	1	4.00	65	0.37
Vegetation Management - Chaparral	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Vegetation Management - Upland	Aerial Lifts	1	8.00	63	0.31
Vegetation Management - Upland	Graders	0	8.00	187	0.41
Vegetation Management - Upland	Off-Highway Trucks	2	8.00	402	0.38
Vegetation Management - Upland	Off-Highway Trucks	1	8.00	402	0.38
Vegetation Management - Upland	Other Construction Equipment	1	8.00	172	0.42
Vegetation Management - Upland	Rubber Tired Dozers	1	8.00	247	0.40
Vegetation Management - Upland	Skid Steer Loaders	1	8.00	65	0.37
Vegetation Management - Upland	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Vegetation Management - Livestock Grazing Upland	Graders	0	8.00	187	0.41
Vegetation Management - Livestock Grazing Upland	Off-Highway Trucks	2	1.00	402	0.38
Vegetation Management - Livestock Grazing Upland	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Vegetation Management - Livestock Grazing Riparian	Graders	0	8.00	187	0.41
Vegetation Management - Livestock Grazing Riparian	Off-Highway Trucks	2	1.00	402	0.38
Vegetation Management - Livestock Grazing Riparian	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Facilities Maintenance - Other	Dumpers/Tenders	1	4.00	16	0.38
Facilities Maintenance - Other	Graders	1	4.00	187	0.41
Facilities Maintenance - Other	Off-Highway Trucks	3	4.00	402	0.38
Facilities Maintenance - Other	Pumps	1	8.00	84	0.74
Facilities Maintenance - Other	Rubber Tired Dozers	1	4.00	247	0.40
Facilities Maintenance - Other	Skid Steer Loaders	1	4.00	65	0.37
Facilities Maintenance - Other	Sweepers/Scrubbers	1	4.00	64	0.46
Facilities Maintenance - Other	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Facilities Maintenance - Culvert Replacement	Dumpers/Tenders	1	8.00	16	0.38
Facilities Maintenance - Culvert Replacement	Graders	0	8.00	187	0.41
Facilities Maintenance - Culvert Replacement	Off-Highway Trucks	1	8.00	402	0.38
Facilities Maintenance - Culvert Replacement	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Environmental Stewardship - Invasive Species Removal	Graders	0	8.00	187	0.41
Environmental Stewardship - Invasive Species Removal	Off-Highway Trucks	2	8.00	402	0.38
Environmental Stewardship - Invasive Species Removal	Pumps	1	8.00	84	0.74
Environmental Stewardship - Invasive Species Removal	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Erosion Prevention, Control, Repair, and Protection	Dumpers/Tenders	1	8.00	16	0.38

Erosion Prevention, Control, Repair, and Protection	Graders	0	8.00	187	0.41
Erosion Prevention, Control, Repair, and Protection	Skid Steer Loaders	1	8.00	65	0.37
Erosion Prevention, Control, Repair, and Protection	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Environmental Stewardship - Beaver Dam Removal	Dumpers/Tenders	1	4.00	16	0.38
Environmental Stewardship - Beaver Dam Removal	Graders	0	8.00	187	0.41
Environmental Stewardship - Beaver Dam Removal	Off-Highway Trucks	1	4.00	402	0.38
Environmental Stewardship - Beaver Dam Removal	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Facilities Maintenance - Low Water Crossings	Dumpers/Tenders	1	8.00	16	0.38
Facilities Maintenance - Low Water Crossings	Graders	0	8.00	187	0.41
Facilities Maintenance - Low Water Crossings	Off-Highway Trucks	1	8.00	402	0.38
Facilities Maintenance - Low Water Crossings	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Facilities Maintenance - Cleaning, Painting	Air Compressors	0	6.00	78	0.48
Facilities Maintenance - Cleaning, Painting	Dumpers/Tenders	1	4.00	16	0.38
Facilities Maintenance - Cleaning, Painting	Excavators	1	4.00	158	0.38
Facilities Maintenance - Cleaning, Painting	Tractors/Loaders/Backhoes	1	4.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Sediment and Debris Removal - Culverts, Pi	3	6.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Sediment and Debris Removal - In-stream	4	4.00	6.00	15.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Sediment and Debris Removal - Disposal, P	12	6.00	16.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Vegetation Management - Pinaria	7	8.00	10.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Vegetation Management - Chapar	6	8.00	6.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Vegetation Management - Upland	9	40.00	6.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Vegetation Management - Livesto	2	4.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Vegetation Management - Livesto	2	4.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Facilities Maintenance - Other	11	12.00	4.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Facilities Maintenance - Culvert Replacement	3	8.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Environmental Stewardship - Invasive	3	8.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Erosion Prevention, Control, Repair, and P	4	8.00	6.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Environmental Stewardship - Beaver	4	8.00	4.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Facilities Maintenance - Low Water Crossing	4	8.00	4.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Facilities Maintenance - Cleaning, Painting	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Sediment and Debris Removal - Culverts, Pipes - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8043	6.2552	6.8647	0.0191		0.2492	0.2492		0.2307	0.2307		1,839.9409	1,839.9409	0.5819		1,854.4885
Total	**0.8043**	**6.2552**	**6.8647**	**0.0191**	**0.0000**	**0.2492**	**0.2492**	**0.0000**	**0.2307**	**0.2307**		**1,839.9409**	**1,839.9409**	**0.5819**		**1,854.4885**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.8500e-003	0.2286	0.0670	4.9000e-004	0.0121	6.8000e-004	0.0128	3.4900e-003	6.5000e-004	4.1300e-003		51.2262	51.2262	1.4300e-003		51.2620
Worker	0.0742	0.0483	0.3879	6.0000e-004	0.0766	5.0000e-004	0.0771	0.0203	4.6000e-004	0.0208		59.7692	59.7692	3.2600e-003		59.8508
Total	**0.0810**	**0.2768**	**0.4549**	**1.0900e-003**	**0.0888**	**1.1800e-003**	**0.0900**	**0.0238**	**1.1100e-003**	**0.0249**		**110.9954**	**110.9954**	**4.6900e-003**		**111.1128**

3.2 Sediment and Debris Removal - Culverts, Pipes - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8043	6.2552	6.8647	0.0191		0.2492	0.2492		0.2307	0.2307	0.0000	1,839.9409	1,839.9409	0.5819		1,854.4885
Total	**0.8043**	**6.2552**	**6.8647**	**0.0191**	**0.0000**	**0.2492**	**0.2492**	**0.0000**	**0.2307**	**0.2307**	**0.0000**	**1,839.9409**	**1,839.9409**	**0.5819**		**1,854.4885**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.8500e-003	0.2286	0.0670	4.9000e-004	0.0121	6.8000e-004	0.0128	3.4900e-003	6.5000e-004	4.1300e-003		51.2262	51.2262	1.4300e-003		51.2620
Worker	0.0742	0.0483	0.3879	6.0000e-004	0.0766	5.0000e-004	0.0771	0.0203	4.6000e-004	0.0208		59.7692	59.7692	3.2600e-003		59.8508
Total	**0.0810**	**0.2768**	**0.4549**	**1.0900e-003**	**0.0888**	**1.1800e-003**	**0.0900**	**0.0238**	**1.1100e-003**	**0.0249**		**110.9954**	**110.9954**	**4.6900e-003**		**111.1128**

3.3 Sediment and Debris Removal - In-stream Work - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7100e-003	0.0000	2.7100e-003	4.1000e-004	0.0000	4.1000e-004			0.0000			0.0000
Off-Road	0.4003	3.8805	4.7396	6.8600e-003		0.2250	0.2250		0.2070	0.2070		664.2975	664.2975	0.2149		669.6686
Total	**0.4003**	**3.8805**	**4.7396**	**6.8600e-003**	**2.7100e-003**	**0.2250**	**0.2277**	**4.1000e-004**	**0.2070**	**0.2074**		**664.2975**	**664.2975**	**0.2149**		**669.6686**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0240	0.9971	0.2467	2.4800e-003	0.0514	3.9800e-003	0.0554	0.0140	3.8100e-003	0.0178		258.9696	258.9696	4.1100e-003		259.0723
Vendor	0.0206	0.6857	0.2009	1.4700e-003	0.0364	2.0300e-003	0.0384	0.0105	1.9400e-003	0.0124		153.6787	153.6787	4.2900e-003		153.7860
Worker	0.0495	0.0322	0.2586	4.0000e-004	0.0511	3.3000e-004	0.0514	0.0136	3.1000e-004	0.0139		39.8461	39.8461	2.1800e-003		39.9005
Total	**0.0940**	**1.7149**	**0.7062**	**4.3500e-003**	**0.1389**	**6.3400e-003**	**0.1453**	**0.0380**	**6.0600e-003**	**0.0441**		**452.4945**	**452.4945**	**0.0106**		**452.7589**

3.3 Sediment and Debris Removal - In-stream Work - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7100e-003	0.0000	2.7100e-003	4.1000e-004	0.0000	4.1000e-004			0.0000			0.0000
Off-Road	0.4003	3.8805	4.7396	6.8600e-003		0.2250	0.2250		0.2070	0.2070	0.0000	664.2975	664.2975	0.2149		669.6686
Total	**0.4003**	**3.8805**	**4.7396**	**6.8600e-003**	**2.7100e-003**	**0.2250**	**0.2277**	**4.1000e-004**	**0.2070**	**0.2074**	**0.0000**	**664.2975**	**664.2975**	**0.2149**		**669.6686**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0240	0.9971	0.2467	2.4800e-003	0.0514	3.9800e-003	0.0554	0.0140	3.8100e-003	0.0178		258.9696	258.9696	4.1100e-003		259.0723
Vendor	0.0206	0.6857	0.2009	1.4700e-003	0.0364	2.0300e-003	0.0384	0.0105	1.9400e-003	0.0124		153.6787	153.6787	4.2900e-003		153.7860
Worker	0.0495	0.0322	0.2586	4.0000e-004	0.0511	3.3000e-004	0.0514	0.0136	3.1000e-004	0.0139		39.8461	39.8461	2.1800e-003		39.9005
Total	**0.0940**	**1.7149**	**0.7062**	**4.3500e-003**	**0.1389**	**6.3400e-003**	**0.1453**	**0.0380**	**6.0600e-003**	**0.0441**		**452.4945**	**452.4945**	**0.0106**		**452.7589**

3.4 Sediment and Debris Removal - Disposal, Piles - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5055	0.0000	1.5055	0.8276	0.0000	0.8276			0.0000			0.0000
Off-Road	0.9521	9.0068	7.4176	0.0169		0.4191	0.4191		0.3859	0.3859		1,630.7281	1,630.7281	0.5241		1,643.8310
Total	**0.9521**	**9.0068**	**7.4176**	**0.0169**	**1.5055**	**0.4191**	**1.9246**	**0.8276**	**0.3859**	**1.2135**		**1,630.7281**	**1,630.7281**	**0.5241**		**1,643.8310**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0548	1.8284	0.5357	3.9200e-003	0.0971	5.4100e-003	0.1025	0.0279	5.1700e-003	0.0331		409.8099	409.8099	0.0115		410.0961
Worker	0.0742	0.0483	0.3879	6.0000e-004	0.0766	5.0000e-004	0.0771	0.0203	4.6000e-004	0.0208		59.7692	59.7692	3.2600e-003		59.8508
Total	**0.1290**	**1.8767**	**0.9236**	**4.5200e-003**	**0.1737**	**5.9100e-003**	**0.1796**	**0.0482**	**5.6300e-003**	**0.0538**		**469.5791**	**469.5791**	**0.0147**		**469.9469**

3.4 Sediment and Debris Removal - Disposal, Piles - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5055	0.0000	1.5055	0.8276	0.0000	0.8276			0.0000			0.0000
Off-Road	0.9521	9.0068	7.4176	0.0169		0.4191	0.4191		0.3859	0.3859	0.0000	1,630.7281	1,630.7281	0.5241		1,643.8310
Total	**0.9521**	**9.0068**	**7.4176**	**0.0169**	**1.5055**	**0.4191**	**1.9246**	**0.8276**	**0.3859**	**1.2135**	**0.0000**	**1,630.7281**	**1,630.7281**	**0.5241**		**1,643.8310**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0548	1.8284	0.5357	3.9200e-003	0.0971	5.4100e-003	0.1025	0.0279	5.1700e-003	0.0331		409.8099	409.8099	0.0115		410.0961
Worker	0.0742	0.0483	0.3879	6.0000e-004	0.0766	5.0000e-004	0.0771	0.0203	4.6000e-004	0.0208		59.7692	59.7692	3.2600e-003		59.8508
Total	**0.1290**	**1.8767**	**0.9236**	**4.5200e-003**	**0.1737**	**5.9100e-003**	**0.1796**	**0.0482**	**5.6300e-003**	**0.0538**		**469.5791**	**469.5791**	**0.0147**		**469.9469**

3.5 Vegetation Management - Riparian - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.0933	9.0490	9.5972	0.0266		0.3693	0.3693		0.3397	0.3397		2,569.9202	2,569.9202	0.8312		2,590.6993
Total	**1.0933**	**9.0490**	**9.5972**	**0.0266**	**0.0000**	**0.3693**	**0.3693**	**0.0000**	**0.3397**	**0.3397**		**2,569.9202**	**2,569.9202**	**0.8312**		**2,590.6993**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0343	1.1428	0.3348	2.4500e-003	0.0607	3.3800e-003	0.0641	0.0174	3.2300e-003	0.0207		256.1312	256.1312	7.1500e-003		256.3101
Worker	0.0989	0.0644	0.5172	8.0000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		79.6923	79.6923	4.3500e-003		79.8011
Total	**0.1332**	**1.2071**	**0.8520**	**3.2500e-003**	**0.1629**	**4.0500e-003**	**0.1669**	**0.0445**	**3.8500e-003**	**0.0484**		**335.8235**	**335.8235**	**0.0115**		**336.1111**

3.5 Vegetation Management - Riparian - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.0933	9.0490	9.5972	0.0266		0.3693	0.3693		0.3397	0.3397	0.0000	2,569.9202	2,569.9202	0.8312		2,590.6993
Total	**1.0933**	**9.0490**	**9.5972**	**0.0266**	**0.0000**	**0.3693**	**0.3693**	**0.0000**	**0.3397**	**0.3397**	**0.0000**	**2,569.9202**	**2,569.9202**	**0.8312**		**2,590.6993**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0343	1.1428	0.3348	2.4500e-003	0.0607	3.3800e-003	0.0641	0.0174	3.2300e-003	0.0207		256.1312	256.1312	7.1500e-003		256.3101
Worker	0.0989	0.0644	0.5172	8.0000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		79.6923	79.6923	4.3500e-003		79.8011
Total	**0.1332**	**1.2071**	**0.8520**	**3.2500e-003**	**0.1629**	**4.0500e-003**	**0.1669**	**0.0445**	**3.8500e-003**	**0.0484**		**335.8235**	**335.8235**	**0.0115**		**336.1111**

3.6 Vegetation Management - Chaparral - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.9921	8.1605	7.9696	0.0240		0.3263	0.3263		0.3002	0.3002		2,319.9125	2,319.9125	0.7503		2,338.6702
Total	**0.9921**	**8.1605**	**7.9696**	**0.0240**	**0.0000**	**0.3263**	**0.3263**	**0.0000**	**0.3002**	**0.3002**		**2,319.9125**	**2,319.9125**	**0.7503**		**2,338.6702**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0206	0.6857	0.2009	1.4700e-003	0.0364	2.0300e-003	0.0384	0.0105	1.9400e-003	0.0124		153.6787	153.6787	4.2900e-003		153.7860
Worker	0.0989	0.0644	0.5172	8.0000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		79.6923	79.6923	4.3500e-003		79.8011
Total	**0.1195**	**0.7500**	**0.7181**	**2.2700e-003**	**0.1386**	**2.7000e-003**	**0.1413**	**0.0376**	**2.5600e-003**	**0.0401**		**233.3710**	**233.3710**	**8.6400e-003**		**233.5871**

3.6 Vegetation Management - Chaparral - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.9921	8.1605	7.9696	0.0240		0.3263	0.3263		0.3002	0.3002	0.0000	2,319.9125	2,319.9125	0.7503		2,338.6702
Total	**0.9921**	**8.1605**	**7.9696**	**0.0240**	**0.0000**	**0.3263**	**0.3263**	**0.0000**	**0.3002**	**0.3002**	**0.0000**	**2,319.9125**	**2,319.9125**	**0.7503**		**2,338.6702**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0206	0.6857	0.2009	1.4700e-003	0.0364	2.0300e-003	0.0384	0.0105	1.9400e-003	0.0124		153.6787	153.6787	4.2900e-003		153.7860
Worker	0.0989	0.0644	0.5172	8.0000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		79.6923	79.6923	4.3500e-003		79.8011
Total	**0.1195**	**0.7500**	**0.7181**	**2.2700e-003**	**0.1386**	**2.7000e-003**	**0.1413**	**0.0376**	**2.5600e-003**	**0.0401**		**233.3710**	**233.3710**	**8.6400e-003**		**233.5871**

3.7 Vegetation Management - Upland - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1431	0.0000	8.1431	3.5393	0.0000	3.5393			0.0000			0.0000
Off-Road	3.2334	29.4901	24.6355	0.0643		1.2794	1.2794		1.1771	1.1771		6,227.8115	6,227.8115	2.0142		6,278.1665
Total	**3.2334**	**29.4901**	**24.6355**	**0.0643**	**8.1431**	**1.2794**	**9.4225**	**3.5393**	**1.1771**	**4.7163**		**6,227.8115**	**6,227.8115**	**2.0142**		**6,278.1665**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0206	0.6857	0.2009	1.4700e-003	0.0364	2.0300e-003	0.0384	0.0105	1.9400e-003	0.0124		153.6787	153.6787	4.2900e-003		153.7860
Worker	0.4946	0.3219	2.5862	4.0200e-003	0.5109	3.3400e-003	0.5143	0.1355	3.0800e-003	0.1386		398.4613	398.4613	0.0218		399.0054
Total	**0.5152**	**1.0076**	**2.7870**	**5.4900e-003**	**0.5473**	**5.3700e-003**	**0.5527**	**0.1460**	**5.0200e-003**	**0.1510**		**552.1401**	**552.1401**	**0.0261**		**552.7915**

3.7 Vegetation Management - Upland - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1431	0.0000	8.1431	3.5393	0.0000	3.5393			0.0000			0.0000
Off-Road	3.2334	29.4901	24.6355	0.0643		1.2794	1.2794		1.1771	1.1771	0.0000	6,227.8115	6,227.8115	2.0142		6,278.1665
Total	**3.2334**	**29.4901**	**24.6355**	**0.0643**	**8.1431**	**1.2794**	**9.4225**	**3.5393**	**1.1771**	**4.7163**	**0.0000**	**6,227.8115**	**6,227.8115**	**2.0142**		**6,278.1665**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0206	0.6857	0.2009	1.4700e-003	0.0364	2.0300e-003	0.0384	0.0105	1.9400e-003	0.0124		153.6787	153.6787	4.2900e-003		153.7860
Worker	0.4946	0.3219	2.5862	4.0200e-003	0.5109	3.3400e-003	0.5143	0.1355	3.0800e-003	0.1386		398.4613	398.4613	0.0218		399.0054
Total	**0.5152**	**1.0076**	**2.7870**	**5.4900e-003**	**0.5473**	**5.3700e-003**	**0.5527**	**0.1460**	**5.0200e-003**	**0.1510**		**552.1401**	**552.1401**	**0.0261**		**552.7915**

3.8 Vegetation Management - Livestock Grazing Upland - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1321	1.0034	0.8397	3.3000e-003		0.0365	0.0365		0.0336	0.0336		319.7463	319.7463	0.1034		322.3316
Total	**0.1321**	**1.0034**	**0.8397**	**3.3000e-003**	**0.0000**	**0.0365**	**0.0365**	**0.0000**	**0.0336**	**0.0336**		**319.7463**	**319.7463**	**0.1034**		**322.3316**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0495	0.0322	0.2586	4.0000e-004	0.0511	3.3000e-004	0.0514	0.0136	3.1000e-004	0.0139		39.8461	39.8461	2.1800e-003		39.9005
Total	**0.0495**	**0.0322**	**0.2586**	**4.0000e-004**	**0.0511**	**3.3000e-004**	**0.0514**	**0.0136**	**3.1000e-004**	**0.0139**		**39.8461**	**39.8461**	**2.1800e-003**		**39.9005**

3.8 Vegetation Management - Livestock Grazing Upland - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1321	1.0034	0.8397	3.3000e-003		0.0365	0.0365		0.0336	0.0336	0.0000	319.7463	319.7463	0.1034		322.3316
Total	**0.1321**	**1.0034**	**0.8397**	**3.3000e-003**	**0.0000**	**0.0365**	**0.0365**	**0.0000**	**0.0336**	**0.0336**	**0.0000**	**319.7463**	**319.7463**	**0.1034**		**322.3316**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0495	0.0322	0.2586	4.0000e-004	0.0511	3.3000e-004	0.0514	0.0136	3.1000e-004	0.0139		39.8461	39.8461	2.1800e-003		39.9005
Total	**0.0495**	**0.0322**	**0.2586**	**4.0000e-004**	**0.0511**	**3.3000e-004**	**0.0514**	**0.0136**	**3.1000e-004**	**0.0139**		**39.8461**	**39.8461**	**2.1800e-003**		**39.9005**

3.9 Vegetation Management - Livestock Grazing Riparian - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1321	1.0034	0.8397	3.3000e-003		0.0365	0.0365		0.0336	0.0336		319.7463	319.7463	0.1034		322.3316
Total	**0.1321**	**1.0034**	**0.8397**	**3.3000e-003**	**0.0000**	**0.0365**	**0.0365**	**0.0000**	**0.0336**	**0.0336**		**319.7463**	**319.7463**	**0.1034**		**322.3316**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0495	0.0322	0.2586	4.0000e-004	0.0511	3.3000e-004	0.0514	0.0136	3.1000e-004	0.0139		39.8461	39.8461	2.1800e-003		39.9005
Total	**0.0495**	**0.0322**	**0.2586**	**4.0000e-004**	**0.0511**	**3.3000e-004**	**0.0514**	**0.0136**	**3.1000e-004**	**0.0139**		**39.8461**	**39.8461**	**2.1800e-003**		**39.9005**

3.9 Vegetation Management - Livestock Grazing Riparian - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1321	1.0034	0.8397	3.3000e-003		0.0365	0.0365		0.0336	0.0336	0.0000	319.7463	319.7463	0.1034		322.3316
Total	**0.1321**	**1.0034**	**0.8397**	**3.3000e-003**	**0.0000**	**0.0365**	**0.0365**	**0.0000**	**0.0336**	**0.0336**	**0.0000**	**319.7463**	**319.7463**	**0.1034**		**322.3316**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0495	0.0322	0.2586	4.0000e-004	0.0511	3.3000e-004	0.0514	0.0136	3.1000e-004	0.0139		39.8461	39.8461	2.1800e-003		39.9005
Total	**0.0495**	**0.0322**	**0.2586**	**4.0000e-004**	**0.0511**	**3.3000e-004**	**0.0514**	**0.0136**	**3.1000e-004**	**0.0139**		**39.8461**	**39.8461**	**2.1800e-003**		**39.9005**

3.10 Facilities Maintenance - Culvert Replacement - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.7666	6.1539	5.8475	0.0171		0.2534	0.2534		0.2346	0.2346		1,641.1646	1,641.1646	0.5176		1,654.1050
Total	**0.7666**	**6.1539**	**5.8475**	**0.0171**	**0.0000**	**0.2534**	**0.2534**	**0.0000**	**0.2346**	**0.2346**		**1,641.1646**	**1,641.1646**	**0.5176**		**1,654.1050**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.8500e-003	0.2286	0.0670	4.9000e-004	0.0121	6.8000e-004	0.0128	3.4900e-003	6.5000e-004	4.1300e-003		51.2262	51.2262	1.4300e-003		51.2620
Worker	0.0989	0.0644	0.5172	8.0000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		79.6923	79.6923	4.3500e-003		79.8011
Total	**0.1058**	**0.2929**	**0.5842**	**1.2900e-003**	**0.1143**	**1.3500e-003**	**0.1157**	**0.0306**	**1.2700e-003**	**0.0318**		**130.9185**	**130.9185**	**5.7800e-003**		**131.0631**

3.10 Facilities Maintenance - Culvert Replacement - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.7666	6.1539	5.8475	0.0171		0.2534	0.2534		0.2346	0.2346	0.0000	1,641.1646	1,641.1646	0.5176		1,654.1050
Total	**0.7666**	**6.1539**	**5.8475**	**0.0171**	**0.0000**	**0.2534**	**0.2534**	**0.0000**	**0.2346**	**0.2346**	**0.0000**	**1,641.1646**	**1,641.1646**	**0.5176**		**1,654.1050**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.8500e-003	0.2286	0.0670	4.9000e-004	0.0121	6.8000e-004	0.0128	3.4900e-003	6.5000e-004	4.1300e-003		51.2262	51.2262	1.4300e-003		51.2620
Worker	0.0989	0.0644	0.5172	8.0000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		79.6923	79.6923	4.3500e-003		79.8011
Total	**0.1058**	**0.2929**	**0.5842**	**1.2900e-003**	**0.1143**	**1.3500e-003**	**0.1157**	**0.0306**	**1.2700e-003**	**0.0318**		**130.9185**	**130.9185**	**5.7800e-003**		**131.0631**

3.11 Environmental Stewardship - Invasive Species Removal - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.4087	10.9962	10.4493	0.0330		0.4476	0.4476		0.4242	0.4242		3,181.0052	3,181.0052	0.8591		3,202.4825
Total	**1.4087**	**10.9962**	**10.4493**	**0.0330**	**0.0000**	**0.4476**	**0.4476**	**0.0000**	**0.4242**	**0.4242**		**3,181.0052**	**3,181.0052**	**0.8591**		**3,202.4825**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.8500e-003	0.2286	0.0670	4.9000e-004	0.0121	6.8000e-004	0.0128	3.4900e-003	6.5000e-004	4.1300e-003		51.2262	51.2262	1.4300e-003		51.2620
Worker	0.0989	0.0644	0.5172	8.0000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		79.6923	79.6923	4.3500e-003		79.8011
Total	**0.1058**	**0.2929**	**0.5842**	**1.2900e-003**	**0.1143**	**1.3500e-003**	**0.1157**	**0.0306**	**1.2700e-003**	**0.0318**		**130.9185**	**130.9185**	**5.7800e-003**		**131.0631**

3.11 Environmental Stewardship - Invasive Species Removal - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.4087	10.9962	10.4493	0.0330		0.4476	0.4476		0.4242	0.4242	0.0000	3,181.0052	3,181.0052	0.8591		3,202.4825
Total	**1.4087**	**10.9962**	**10.4493**	**0.0330**	**0.0000**	**0.4476**	**0.4476**	**0.0000**	**0.4242**	**0.4242**	**0.0000**	**3,181.0052**	**3,181.0052**	**0.8591**		**3,202.4825**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.8500e-003	0.2286	0.0670	4.9000e-004	0.0121	6.8000e-004	0.0128	3.4900e-003	6.5000e-004	4.1300e-003		51.2262	51.2262	1.4300e-003		51.2620
Worker	0.0989	0.0644	0.5172	8.0000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		79.6923	79.6923	4.3500e-003		79.8011
Total	**0.1058**	**0.2929**	**0.5842**	**1.2900e-003**	**0.1143**	**1.3500e-003**	**0.1157**	**0.0306**	**1.2700e-003**	**0.0318**		**130.9185**	**130.9185**	**5.7800e-003**		**131.0631**

3.12 Facilities Maintenance - Other - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0110	0.0000	3.0110	1.6551	0.0000	1.6551			0.0000			0.0000
Off-Road	2.1035	19.2887	15.4373	0.0398		0.8432	0.8432		0.7889	0.7889		3,830.6626	3,830.6626	1.0626		3,857.2281
Total	**2.1035**	**19.2887**	**15.4373**	**0.0398**	**3.0110**	**0.8432**	**3.8542**	**1.6551**	**0.7889**	**2.4440**		**3,830.6626**	**3,830.6626**	**1.0626**		**3,857.2281**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0137	0.4571	0.1339	9.8000e-004	0.0243	1.3500e-003	0.0256	6.9700e-003	1.2900e-003	8.2600e-003		102.4525	102.4525	2.8600e-003		102.5240
Worker	0.1484	0.0966	0.7759	1.2100e-003	0.1533	1.0000e-003	0.1543	0.0407	9.2000e-004	0.0416		119.5384	119.5384	6.5300e-003		119.7016
Total	**0.1621**	**0.5537**	**0.9098**	**2.1900e-003**	**0.1776**	**2.3500e-003**	**0.1799**	**0.0476**	**2.2100e-003**	**0.0498**		**221.9909**	**221.9909**	**9.3900e-003**		**222.2257**

3.12 Facilities Maintenance - Other - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0110	0.0000	3.0110	1.6551	0.0000	1.6551			0.0000			0.0000
Off-Road	2.1035	19.2887	15.4373	0.0398		0.8432	0.8432		0.7889	0.7889	0.0000	3,830.6626	3,830.6626	1.0626		3,857.2281
Total	**2.1035**	**19.2887**	**15.4373**	**0.0398**	**3.0110**	**0.8432**	**3.8542**	**1.6551**	**0.7889**	**2.4440**	**0.0000**	**3,830.6626**	**3,830.6626**	**1.0626**		**3,857.2281**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0137	0.4571	0.1339	9.8000e-004	0.0243	1.3500e-003	0.0256	6.9700e-003	1.2900e-003	8.2600e-003		102.4525	102.4525	2.8600e-003		102.5240
Worker	0.1484	0.0966	0.7759	1.2100e-003	0.1533	1.0000e-003	0.1543	0.0407	9.2000e-004	0.0416		119.5384	119.5384	6.5300e-003		119.7016
Total	**0.1621**	**0.5537**	**0.9098**	**2.1900e-003**	**0.1776**	**2.3500e-003**	**0.1799**	**0.0476**	**2.2100e-003**	**0.0498**		**221.9909**	**221.9909**	**9.3900e-003**		**222.2257**

3.13 Facilities Maintenance - Cleaning, Painting - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	19.3125					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2203	1.9586	2.8720	4.5100e-003		0.0967	0.0967		0.0897	0.0897		431.0973	431.0973	0.1328		434.4183
Total	**19.5328**	**1.9586**	**2.8720**	**4.5100e-003**		**0.0967**	**0.0967**		**0.0897**	**0.0897**		**431.0973**	**431.0973**	**0.1328**		**434.4183**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0989	0.0644	0.5172	8.0000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		79.6923	79.6923	4.3500e-003		79.8011
Total	**0.0989**	**0.0644**	**0.5172**	**8.0000e-004**	**0.1022**	**6.7000e-004**	**0.1029**	**0.0271**	**6.2000e-004**	**0.0277**		**79.6923**	**79.6923**	**4.3500e-003**		**79.8011**

3.13 Facilities Maintenance - Cleaning, Painting - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	19.3125					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2203	1.9586	2.8720	4.5100e-003		0.0967	0.0967		0.0897	0.0897	0.0000	431.0973	431.0973	0.1328		434.4183
Total	**19.5328**	**1.9586**	**2.8720**	**4.5100e-003**		**0.0967**	**0.0967**		**0.0897**	**0.0897**	**0.0000**	**431.0973**	**431.0973**	**0.1328**		**434.4183**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0989	0.0644	0.5172	8.0000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		79.6923	79.6923	4.3500e-003		79.8011
Total	**0.0989**	**0.0644**	**0.5172**	**8.0000e-004**	**0.1022**	**6.7000e-004**	**0.1029**	**0.0271**	**6.2000e-004**	**0.0277**		**79.6923**	**79.6923**	**4.3500e-003**		**79.8011**

3.14 Erosion Prevention, Control, Repair, and Protection - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4725	4.7444	6.1139	9.0400e-003		0.2321	0.2321		0.2149	0.2149		863.8095	863.8095	0.2662		870.4646
Total	**0.4725**	**4.7444**	**6.1139**	**9.0400e-003**	**0.0000**	**0.2321**	**0.2321**	**0.0000**	**0.2149**	**0.2149**		**863.8095**	**863.8095**	**0.2662**		**870.4646**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0206	0.6857	0.2009	1.4700e-003	0.0364	2.0300e-003	0.0384	0.0105	1.9400e-003	0.0124		153.6787	153.6787	4.2900e-003		153.7860
Worker	0.0989	0.0644	0.5172	8.0000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		79.6923	79.6923	4.3500e-003		79.8011
Total	**0.1195**	**0.7500**	**0.7181**	**2.2700e-003**	**0.1386**	**2.7000e-003**	**0.1413**	**0.0376**	**2.5600e-003**	**0.0401**		**233.3710**	**233.3710**	**8.6400e-003**		**233.5871**

3.14 Erosion Prevention, Control, Repair, and Protection - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4725	4.7444	6.1139	9.0400e-003		0.2321	0.2321		0.2149	0.2149	0.0000	863.8095	863.8095	0.2662		870.4646
Total	**0.4725**	**4.7444**	**6.1139**	**9.0400e-003**	**0.0000**	**0.2321**	**0.2321**	**0.0000**	**0.2149**	**0.2149**	**0.0000**	**863.8095**	**863.8095**	**0.2662**		**870.4646**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0206	0.6857	0.2009	1.4700e-003	0.0364	2.0300e-003	0.0384	0.0105	1.9400e-003	0.0124		153.6787	153.6787	4.2900e-003		153.7860
Worker	0.0989	0.0644	0.5172	8.0000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		79.6923	79.6923	4.3500e-003		79.8011
Total	**0.1195**	**0.7500**	**0.7181**	**2.2700e-003**	**0.1386**	**2.7000e-003**	**0.1413**	**0.0376**	**2.5600e-003**	**0.0401**		**233.3710**	**233.3710**	**8.6400e-003**		**233.5871**

3.15 Environmental Stewardship - Beaver Dam Removal - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4656	3.9148	4.0427	0.0101		0.1718	0.1718		0.1587	0.1587		971.2018	971.2018	0.3075		978.8898
Total	**0.4656**	**3.9148**	**4.0427**	**0.0101**	**0.0000**	**0.1718**	**0.1718**	**0.0000**	**0.1587**	**0.1587**		**971.2018**	**971.2018**	**0.3075**		**978.8898**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0137	0.4571	0.1339	9.8000e-004	0.0243	1.3500e-003	0.0256	6.9700e-003	1.2900e-003	8.2600e-003		102.4525	102.4525	2.8600e-003		102.5240
Worker	0.0989	0.0644	0.5172	8.0000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		79.6923	79.6923	4.3500e-003		79.8011
Total	**0.1126**	**0.5215**	**0.6512**	**1.7800e-003**	**0.1265**	**2.0200e-003**	**0.1285**	**0.0341**	**1.9100e-003**	**0.0360**		**182.1448**	**182.1448**	**7.2100e-003**		**182.3251**

3.15 Environmental Stewardship - Beaver Dam Removal - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4656	3.9148	4.0427	0.0101		0.1718	0.1718		0.1587	0.1587	0.0000	971.2018	971.2018	0.3075		978.8898
Total	**0.4656**	**3.9148**	**4.0427**	**0.0101**	**0.0000**	**0.1718**	**0.1718**	**0.0000**	**0.1587**	**0.1587**	**0.0000**	**971.2018**	**971.2018**	**0.3075**		**978.8898**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0137	0.4571	0.1339	9.8000e-004	0.0243	1.3500e-003	0.0256	6.9700e-003	1.2900e-003	8.2600e-003		102.4525	102.4525	2.8600e-003		102.5240
Worker	0.0989	0.0644	0.5172	8.0000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		79.6923	79.6923	4.3500e-003		79.8011
Total	**0.1126**	**0.5215**	**0.6512**	**1.7800e-003**	**0.1265**	**2.0200e-003**	**0.1285**	**0.0341**	**1.9100e-003**	**0.0360**		**182.1448**	**182.1448**	**7.2100e-003**		**182.3251**

3.16 Facilities Maintenance - Low Water Crossings - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.9313	7.8295	8.0854	0.0202		0.3436	0.3436		0.3175	0.3175		1,942.4035	1,942.4035	0.6150		1,957.7796
Total	**0.9313**	**7.8295**	**8.0854**	**0.0202**	**0.0000**	**0.3436**	**0.3436**	**0.0000**	**0.3175**	**0.3175**		**1,942.4035**	**1,942.4035**	**0.6150**		**1,957.7796**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0137	0.4571	0.1339	9.8000e-004	0.0243	1.3500e-003	0.0256	6.9700e-003	1.2900e-003	8.2600e-003		102.4525	102.4525	2.8600e-003		102.5240
Worker	0.0989	0.0644	0.5172	8.0000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		79.6923	79.6923	4.3500e-003		79.8011
Total	**0.1126**	**0.5215**	**0.6512**	**1.7800e-003**	**0.1265**	**2.0200e-003**	**0.1285**	**0.0341**	**1.9100e-003**	**0.0360**		**182.1448**	**182.1448**	**7.2100e-003**		**182.3251**

3.16 Facilities Maintenance - Low Water Crossings - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.9313	7.8295	8.0854	0.0202		0.3436	0.3436		0.3175	0.3175	0.0000	1,942.4035	1,942.4035	0.6150		1,957.7796
Total	**0.9313**	**7.8295**	**8.0854**	**0.0202**	**0.0000**	**0.3436**	**0.3436**	**0.0000**	**0.3175**	**0.3175**	**0.0000**	**1,942.4035**	**1,942.4035**	**0.6150**		**1,957.7796**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0137	0.4571	0.1339	9.8000e-004	0.0243	1.3500e-003	0.0256	6.9700e-003	1.2900e-003	8.2600e-003		102.4525	102.4525	2.8600e-003		102.5240
Worker	0.0989	0.0644	0.5172	8.0000e-004	0.1022	6.7000e-004	0.1029	0.0271	6.2000e-004	0.0277		79.6923	79.6923	4.3500e-003		79.8011
Total	**0.1126**	**0.5215**	**0.6512**	**1.7800e-003**	**0.1265**	**2.0200e-003**	**0.1285**	**0.0341**	**1.9100e-003**	**0.0360**		**182.1448**	**182.1448**	**7.2100e-003**		**182.3251**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

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

4.3 Trip Type Information

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Recreational	0.543368	0.039458	0.188636	0.127213	0.039750	0.007293	0.027477	0.014011	0.002060	0.000975	0.006673	0.001168	0.001919

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

Mitigated

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

6.0 Area Detail

6.1 Mitigation Measures Area

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

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B. Biological Resources Assessment

Available Under Separate Cover

Appendix C. Cultural Resources Assessment

Available Under Separate Cover

Appendix D. Mitigation Monitoring and Reporting Plan

Appendix F Mitigation Monitoring and Reporting Plan

Impacts Being Mitigated	Mitigation Measure	Responsible for Implementation	Responsible for Monitoring and/or Enforcement	Timing of Implementation	Applicable Location
Air Quality					
c) Expose sensitive receptors to substantial pollutant concentrations?	**Mitigation Measure AQ-1** During all maintenance activities, EBMUD and/or its contractors will implement the following dust control measures: • Plan projects that involve soil disturbance by equipment or projects that leave areas of exposed soil (bare of vegetation) vulnerable to wind erosion or dust generation from vehicles/equipment in seasons when soil moisture content is at a level that keeps soils bonded or does not produce dust. • Provide wetting (apply/spray water) on project sites or roads periodically to prevent dust when activities are occurring on soil that is dry or has low moisture content. • Apply water (or stabilizers, as appropriate) prior to, during, and after earth-moving operations when soil moisture content is low. • Soil cover such as certified weed free rice straw or hydro mulch can be applied to prevent soil displacement from wind (wind erosion) on sites that are lacking vegetation or protection. • The application of environmentally friendly soil binders or stabilizers may be considered for unpaved roads that experience a high volume of traffic or comprised of known health hazards such as naturally occurring asbestos (NOA). Qualified personnel should be consulted to determine what soil binding products are appropriate for the sight. Consideration for potential impacts to water quality or sensitive species must be considered when choosing a binding product. • Application of desirable seed with appropriate vegetation during post construction activities may reduce wind erosion if a successful vegetative cover is achieved. • Cap roads and trails that have documented NOA with road base/gravel to reduce impacts that create dust from vehicles or trail users. • Application of a soil binder/dust suppressant on roads with known NOA. • Equipment operating in areas with known NOA must have a closed cab with air filtration. Maintenance-related ground-disturbing activities within potential NOA-containing areas (specifically areas in the vicinity of the ultramafic rock outcropping located approximately 0.4 – 1.5 miles east of the North Arm and South Arm of Pardee Reservoir) will be required to comply with CARB's airborne toxic control measures (ATCM) for NOA. For areas of one acre or less EBMUD or its contractors will implement the following dust mitigation measures: • Construction vehicle speed at the work site must be limited to fifteen (15) miles per hour or less; • Prior to any ground disturbance, sufficient water must be applied to the area to be disturbed to prevent visible emissions from crossing the property line; • Areas to be graded or excavated must be kept adequately wetted to prevent visible emissions from crossing the property line; • Storage piles must be kept adequately wetted, treated with a chemical dust suppressant, or covered when material is not being added to or removed from the pile; • Equipment must be washed down before moving from the property onto a paved public road; and • Visible track-out on the paved public road must be cleaned using wet sweeping or a HEPA filter equipped vacuum device within twenty-four (24) hours. For areas greater than one acre, EBMUD and its contractors will prepare and implement an asbestos dust mitigation plan in compliance with the State Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations. The plan will specify actions to be taken during maintenance activities to minimize NOA emissions. The plan will also address specific emission sources as identified by the ATCM to be: track-out onto the paved public road; active storage piles; inactive disturbed surface areas and storage piles; traffic on unpaved on-site roads; earthmoving activities; off-site transport of materials; and post-project stabilization of disturbed soil surfaces. Specific measures to be implemented will include but not be limited to removing visible track out, keeping active storage piles covered or wet, controlling inactive areas or storage	EBMUD	EBMUD	Prior to, during, and post maintenance activities	All project sites

Impacts Being Mitigated	Mitigation Measure	Responsible for Implementation	Responsible for Monitoring and/or Enforcement	Timing of Implementation	Applicable Location
	piles, maintain trucks and wet loads to prevent spillage, and limit vehicle speeds. EBMUD and its contractors will submit the plan to the applicable local air district for approval prior to implementation, and will not proceed with maintenance activity implementation until the applicable local air district has approved the plan and proposed BMPs or an exemption is received.				
Biological Resources					
a) Have a substantial adverse impact, 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 Dept. of Fish & Wildlife or U.S. Fish & Wildlife Service?	**Mitigation Measure BIO-1** A qualified biologist shall hold an annual training session for maintenance staff responsible for performing routine maintenance activities. The training will include a description of special-status species and their habitats and protective measures to ensure that such species are not adversely impacted by routine maintenance activities (e.g., pre-activity surveys, installation of exclusion fencing when special-status species identified in an area). If special-status species are known or suspected to occur at the work site, a biologist or trained maintenance staff person shall be formally appointed as a biological monitor to ensure that appropriate protective measures are implemented. Each morning prior to commencement of project work, the biological monitor shall inspect the work site, including holes and depressions, to ensure that special-status species identified as potentially present are not within the project work area.	EBMUD	EBMUD	Prior to and during maintenance activities	All project sites
	Mitigation Measure BIO-2 Equipment and materials staging areas shall be located wholly within upland areas and, if feasible, within paved or gravel areas. Vegetation disturbance shall be limited to the immediate maintenance footprint necessary. Imported soils should be similar in pH to native soils and be cleansed of pathogens and weed seeds prior to use through heating, solarization, or other appropriate methods.	EBMUD	EBMUD	During maintenance activities	All project sites
	Mitigation Measure BIO-3 If there is potential for special-status plants to occur at a maintenance work site (i.e., the site supports either previously undisturbed native vegetation or vegetation disturbance has not occurred for at least three years in a location that is also suitable for rare plants known to occur in the region), a qualified biologist shall conduct pre-activity special-status plant surveys during the appropriate blooming period, prior to initiation of routine maintenance activities. Any observed sensitive plants species shall be mapped and flagged for avoidance where feasible. EBMUD shall notify CDFW or CNPS upon discovery of any sensitive plant species. If sensitive plant species are discovered, the following measures shall be implemented: • Special-status plant species shall be avoided or minimized by limiting ground disturbance where special-status plants occur. • If plant species that are listed on the federal or California Endangered Species Lists or plants ranked with 1B.1 or 1B.2 CNPS ranking cannot be avoided, EBMUD will salvage the affected plants and transplant them to a similar habitat in the Project vicinity. The re-established population should achieve a 1:1 ratio (transplanted: re-established) after 2 years. If this performance criterion cannot be met, the appropriate agencies (e.g., USFWS, CDFW) will be consulted for additional options, such as payment of an in-lieu fee to the state CNPS program. • If any additional special-status plant species are discovered on-site that cannot be avoided, the appropriate agencies (e.g., USFWS, CDFW) shall be consulted by EBMUD to determine the appropriate species-specific mitigation measures. • Species-specific mitigation may include repairing, rehabilitating, or restoring the impacted area; preserving in-situ populations on-site; or by providing off-site compensation. Off-site compensation may include the permanent protection of an off-site population through a conservation easement or the purchase of mitigation banking credits at a 2:1 ratio (mitigation: impacted population).	EBMUD	EBMUD	Prior to and during maintenance activities	Areas with potential for special-status plant occurrences as defined in the measure
	Mitigation Measure BIO-4 If ground squirrel burrows occur within a maintenance site location, a biologist will visually assess each burrow to be impacted for the presence of Crotch bumble bees or an active nest prior to construction. Visual investigation may include observing the burrow during suitable bee flight times and weather conditions, and employing the use of a burrow scope to confirm presence or absence of a nest. If the species or an active nest are not observed, the burrow investigated shall be covered or collapsed until the maintenance activity occurs. If the species or an active nest is found within a burrow, the	EBMUD	EBMUD	Prior to and during maintenance activities	Areas with potential for Crotch bumble bee occurrences as defined in the measure

Impacts Being Mitigated	Mitigation Measure	Responsible for Implementation	Responsible for Monitoring and/or Enforcement	Timing of Implementation	Applicable Location
	burrow will be avoided through marking a 10-foot buffer around the opening with flagging or fencing. EBMUD shall coordinate with CDFW to obtain necessary approval to encourage passive bee nest eviction (e.g., placement of non-lethal deterrents around the burrow entrance) in February or March (when bee colonies are most likely to relocate), after which ground-disturbance may commence in April or May. If passive bee nest eviction is not successful, EBMUD will consult with CDFW and follow all recommendations.				
	Mitigation Measure BIO-5 Within ten days prior to commencement of maintenance work, the maintenance site shall be surveyed for the presence of elderberry bushes. Within the boundaries of the EBMUD's Safe Harbor Agreement (SHA) (SHA# 81420-2009-F-0106) with the USFWS, EBMUD shall work around identified elderberry bushes and all requirements set forth by the SHA agreement shall be followed. If an elderberry bush is discovered outside of the SHA boundaries, the US Fish and Wildlife Service Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (USFWS 2017) shall be followed. To protect any elderberry bush (naturally occurring or enhanced), no heavy equipment operations shall occur within 20 feet of the dripline of any elderberry bush. No equipment fueling shall occur within 165 feet of the elderberry bush.	EBMUD	EBMUD	Prior to and during maintenance activities	All project sites
	Mitigation Measure BIO-6 EBMUD shall complete habitat assessments to determine the occupancy of habitat within and immediately adjacent to maintenance work sites by special-status species prior to the commencement of maintenance activity at the work site. Habitat assessments shall include a desktop review site vegetation characteristics and review of current extant occurrence records (CNDDB, USFWS Official Species Lists) followed by field review to determine if suitable habitat conditions exist. When habitat assessments confirm the presence or potential presence of special-status species, or that habitat for special-status species exist at a work site and such species are known to exist within reasonable dispersal distance of the work area, a qualified biologist shall conduct a reconnaissance-level survey within 14 days prior to the commencement of routine maintenance activities, including all areas where heavy equipment will be operated, such as adjacent upland access routes and staging areas. If special-status species are found, work shall be halted until the individual leaves the work area under its volition, or pending coordination with the appropriate agencies (i.e., CDFW, USFWS, NMFS) for State or federally listed species. Species that are not State or federally listed as endangered or threatened or State candidate species may be relocated by the qualified biologist if unable to leave on their own or found to be in danger. EBMUD shall not take or disturb any State or federally listed endangered or threatened species or State candidate species without applicable permission from the appropriate wildlife agency. When habitat assessments confirm the presence or potential presence of State or federally listed species and maintenance activities will impact occupied or potentially occupied habitat, and EBMUD determines those impacts cannot be avoided, EBMUD shall consult with a qualified biologist to identify appropriate mitigation actions to ensure that impacts to habitat are less than significant. EBMUD shall consider the following mitigation strategies for permanent and temporary impacts: 1) habitat restoration, 2) habitat enhancement, 3) habitat preservation, and/or 4) mitigation credit purchase from an agency-approved bank with suitable credits and service area coverage of the impact location at a 2:1 ratio. Habitat restoration, preservation and enhancement areas will require the development and implementation of a habitat management plan with the following success criteria to ensure the preserved and/or enhanced area is managed as suitable habitat for the target species in perpetuity. • Conduct biological monitoring surveys to confirm suitable habitat conditions for the target species and document habitat performance metrics (e.g., vegetation presence, cover, and maturity) for a period of 10 years. • Perform routine eradication of invasive vegetation species to maintain the intended vegetation diversity and structural components consistent with the target species' habitat requirements. • Restrict deeds to maintain and manage the preserve for the target species in perpetuity, with the ability to grant the preserve to a habitat conservancy, public agency, or other local habitat management entity.	EBMUD	EBMUD	Prior to, during and after maintenance activities	All project sites

Impacts Being Mitigated	Mitigation Measure	Responsible for Implementation	Responsible for Monitoring and/or Enforcement	Timing of Implementation	Applicable Location
	• In perpetuity preserve funding and maintenance reserves. • Compensatory habitat mitigation is inclusive of other applicable habitat restoration and revegetation.				
	Mitigation Measure BIO-7 A qualified biologist shall check the maintenance site location for all life stages of special-status amphibians (e.g., California tiger salamander, California red-legged frog, foothill yellow-legged frog, or western spadefoot), 14 days or less prior to the start of the project. In addition, all field crew personnel shall visually check for special-status amphibians under parked vehicles, equipment, or staged materials prior to moving the vehicle, equipment, or materials. Project activities shall be halted if a significant rain event occurs. In the event of a significant rain event, the site shall be cleared of special-status amphibians by a qualified biologist before work activities can resume. If at any time special-status amphibians are detected, all work shall be suspended until the individual leaves the work area under its volition, or the USFWS and/or CDFW shall be notified and consulted with prior to commencing with the maintenance activity. To avoid potential take of aestivating special-status amphibians during discing, EBMUD will instead mow suitable upland habitat within 500 feet of known special-status amphibian occurrences based on CNDDB and EBMUD records. Further, only mowing methods that do not significantly disturb the soil (defined as no disturbance below two inches) will be used. Such methods include the use of bladed mowers or string trimmers (e.g., weed whackers). Flail mowers may be used, but only if the cutting mechanism is raised such that soil below two inches is not disturbed, including during travel down slopes where topographic changes are present.	EBMUD	EBMUD	Prior to and during maintenance activities	All project sites
	Mitigation Measure BIO-8 To minimize adverse impacts to special-status species and their habitats, work within streams with natural (earthen or rock-lined) bottoms and/or banks shall be conducted only between June 1 and October 15. Work within concrete-lined channels shall be conducted only between April 15 and October 15. No equipment shall be operated in wetted portions of the stream (including ponded, flowing, or wetland areas) at any time except as necessary to dewater the immediate maintenance work site (surface flows only) or divert water flow around the work site. Pumps used in dewatering shall include a 1/8-inch mesh screened intake to prevent impingement. Flow diversions shall maintain flows to downstream reaches at all times, and shall be implemented using standard best management practices (e.g., gravel bags, silt fencing, or other filtration devices) to prevent in-stream pollution and/or visible siltation or turbidity at 50 Nephelometric Turbidity Units [NTU]) above the background NTU levels upstream. If the turbidity reading downstream of the Project site is greater than 30 NTUs above turbidity upstream of the site, EBMUD shall modify BMPs or activities (for example, fix siltation devices and continue to monitor every two hours). If turbidity continues to exceed the background for 4 hours, EBMUD shall stop work, modify BMPs and wait to resume work until background turbidity levels are achieved. Flows to downstream reaches shall mimic natural flows necessary to support aquatic life. Said flows shall be of sufficient quality and quantity and appropriate temperature to support fish and other aquatic life both above and below the diversion structure as determined by the EBMUD biologist. Normal flow shall be restored to the affected stream or waterbody immediately upon completion of work at that location. Coffer dam and other water diversion designs shall be submitted to CDFW for approval prior to commencement of maintenance activities. Coffer dams shall be constructed with clean river gravel or sand bags, and may be sealed with sheet plastic. Sand bags and any sheet plastic shall be removed from the stream upon project completion. Clean river gravel may be left in the stream, but the coffer dams must be breached to return the stream flow to its natural channel. The water diversion shall be constructed with the least amount of disruption to the channel or shoreline. In-water maintenance activities shall not be initiated if maintenance work cannot be completed prior to the onset of a storm event predicted by 72-hour weather forecasts from the National Weather Service. All equipment shall be removed from the channel at least 12 hours before such an event occurs. If an unanticipated storm event occurs, EBMUD shall inspect active maintenance work sites for indications of bank erosion and/or channel sedimentation; if noticeable erosion or sedimentation has occurred, EBMUD shall implement appropriate erosion control best management practices (BMPs). Erosion control BMPs shall consist of wildlife-friendly plastic-free (including bio-degradable plastic) materials such as jute netting, coconut fiber blanket, or similar erosion control blanket.	EBMUD	EBMUD	Prior to and during maintenance activities	All project sites

Impacts Being Mitigated	Mitigation Measure	Responsible for Implementation	Responsible for Monitoring and/or Enforcement	Timing of Implementation	Applicable Location
	Non-living vegetation and debris not anchored to a bank or the channel bed by sediment may be removed at any time, if necessary, to prevent imminent flooding. Restorative maintenance activities such as revegetation above the mean high-water level may be completed outside of the specified work period if appropriate erosion control BMPs are implemented.				
	Mitigation Measure BIO-9 Staging and storage areas for equipment, materials, fuels, lubricants and solvents shall be located outside of the stream channel and banks. Stationary equipment such as motors, pumps, generators, compressors and welders, located adjacent to the stream, shall be positioned over drip-pans. Vehicles shall be moved away from the stream prior to refueling and lubrication. Any equipment or vehicles driven and/or operated in proximity to the stream shall be checked and maintained daily to prevent the release of contaminants. Any hazardous or toxic materials that could be deleterious to aquatic life shall be contained in watertight containers or removed from the project site. Such materials include, but are not limited to, debris soil, silt, bark, rubbish, creosote treated wood, raw cement/concrete or washings thereof, asphalt, paint or other coating material, and oil or other petroleum products. These materials shall be prevented from contaminating the soil and/or entering state or federal waters, including wetlands.	EBMUD	EBMUD	During maintenance activities	All project sites
	Mitigation Measure BIO-10 Water that has come in contact with uncured concrete shall not be allowed to enter the stream channel until the pH is between 6.5 and 8.0 pH units. Containment of leachate shall adhere to the following Best Management Practices: • Concrete structures shall be allowed to cure (dry) for at least 28 days before coming into contact with channel flows, Flows contaminated with leachate shall be separated from the main stream flows via a diversion structure until the pH falls within the range specified above. • If the 28-day curing period is infeasible, EBMUD shall institute a minimum 7-day curing period and apply a sealant designed for use in aquatic environments, such as Deep Seal™ or Elasto Deck™. The sealant shall be allowed to cure for a minimum of 72 hours prior to the reintroduction of water to the treated surface. • Wash-down water from concrete delivery trucks, concrete pumping equipment, and other tools and equipment shall not be allowed to enter the stream channel or waterbody and should be removed from the site for cleaning following construction. No dry concrete shall be placed on the banks or in a location where it could be carried into the channel or waterbody by wind or runoff.	EBMUD	EBMUD	During maintenance activities	Project sites involving new concrete installation
	Mitigation Measure BIO-11 Maintenance work or tree removal shall be conducted between September 16 and January 31, outside of the nesting bird season, where feasible. However, if maintenance work or tree removal is scheduled to occur during the nesting bird season, between February 1 and September 15, a qualified biologist shall conduct reconnaissance-level surveys for nesting birds no more than 14 days prior to routine maintenance activities. Surveys shall include upland access routes and equipment and materials staging areas in addition to each work site. If this survey finds evidence of nesting birds, an avoidance buffer shall be implemented to avoid nest disturbance and work in the immediate area shall be postponed until the biologist determines the nest is no longer active. The avoidance buffer shall be based on the nest location, topography, cover and species' tolerance to disturbance and shall be determined by a qualified biologist through coordination with CDFW (for State-listed species) or USFWS (for federally-listed species). If an avoidance buffer is not achievable, a qualified biologist shall monitor the nest(s) to document that no take of the nest (nest failure) occurs. If it is determined that construction activity is resulting in nest disturbance, work should cease immediately and CDFW or USFWS should be contacted. EBMUD will coordinate with CDFW and/ or USFWS appropriately to obtain approvals and guidance in rare situations where nest removal cannot be avoided. If a lapse in project-related work of 14 days or longer occurs, another focused survey shall be required before project work is reinitiated. If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the maintenance work period, no further action is required. Trees and shrubs within the footprint that are determined to be unoccupied by special-status birds or that are located outside the no-disturbance buffer for active nests may be removed. Nests initiated during work (while significant disturbance from maintenance activities persist) may be presumed to be unaffected, and only a minimal buffer is required (as determined by a qualified biologist).	EBMUD	EBMUD	Prior to and during maintenance activities	All project sites

Impacts Being Mitigated	Mitigation Measure	Responsible for Implementation	Responsible for Monitoring and/or Enforcement	Timing of Implementation	Applicable Location
	Any tree with an active or historical eagle nest shall not be removed without consultation with USFWS under the Bald and Golden Eagle Project Act.				
	Mitigation Measure BIO-12 Between February 15th and August 15th, project activities shall not occur within 0.5 miles of an active Swainson's hawk nest. If Project activities must occur within 0.5 mile of a nest, EBMUD will consult with CDFW, and if necessary, obtain all necessary permits under the California Endangered Species Act (CESA).	EBMUD	EBMUD	During maintenance activities	All project sites
	Mitigation Measure BIO-13 A qualified biologist shall conduct a pre-construction take avoidance survey for the burrowing owl prior to initiating maintenance-related ground disturbance activities in or near grassland habitats. In areas where owl presence is not found, construction may proceed without further action. If western burrowing owl occupancy within a project site is confirmed, EBMUD shall develop and implement a CDFW-approved Burrowing Owl Monitoring and Mitigation Plan in coordination with CDFW. If a prior plan was developed and approved by CDFW, then that plan shall be implemented.	EBMUD	EBMUD	Prior to and during maintenance activities	All project sites in or near grassland habitats
	Mitigation Measure BIO-14 Maintenance work shall be conducted between August 1 and February 28 to avoid the bat maternity period, where feasible. However, if maintenance work occurs between August 1 and February 28, a preconstruction survey for roosting bats shall be conducted by a qualified biologist within two weeks prior to construction to ensure that no roosting bats are disturbed during maintenance activities. If roosting surveys are inconclusive, indicate potential occupation by a special-status bat species, and/or identify a large day roosting population or maternity roost by any bat species within 200 feet of an active work area, a qualified biologist shall conduct focused day- and/or night-emergence surveys as appropriate. If active maternity roosts or day roosts are found in areas that would be removed or modified as part of maintenance work, activities shall commence before maternity colonies form (before March 1) or after young are flying (after July 31). Disturbance-free buffer zones (determined by a qualified biologist in coordination with CDFW) shall be observed during the maternity roost season (March 1 through July 31) for any active maternity colony identified during the surveys to protect maternity roosts. If a non-breeding bat roost is found in a structure anticipated for modification or removal, the individual(s) shall be safety evicted, under the direction of a qualified biologist in such a way that ensures individuals are not injured. If preconstruction surveys indicate that no roosting is present or potential roosting habitat is unoccupied during the construction period, no further action is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by roosting bats or that are located outside the no-disturbance buffer for active roosting sites may be removed. Roosting initiated during construction is presumed to be unaffected, and no buffer would be necessary.	EBMUD	EBMUD	Prior to and during maintenance activities	All project sites
	Mitigation Measure BIO-15 If a possible American badger den is found during implementation of pre-activity surveys, EBMUD shall implement the following avoidance or minimization measures for American badger: • If the den with evidence of badger occupancy (e.g., scat, tracks) is within a Project site, then a one-way door will be installed for a period of three days to evict the badger outside of the badger pupping season (August to October). • Project activities shall not occur within 200 feet of a confirmed badger den or pupping den during the pupping season, which is August to October.	EBMUD	EBMUD	Prior to and during maintenance activities	All project sites
	Mitigation Measure BIO-16 In areas subject to dewatering, EBMUD shall check daily for stranded aquatic life as the water level drops. All reasonable efforts shall be made to capture and move all stranded aquatic life observed in the dewatered areas. Capture methods may include fish landing nets, dip nets, buckets and by hand. Captured aquatic life shalt be released immediately in the body of water closest to the work site.	EBMUD	EBMUD	During maintenance activities	Project sites that are dewatered
	Mitigation Measure HAZ-1 (see description below)				

Impacts Being Mitigated	Mitigation Measure	Responsible for Implementation	Responsible for Monitoring and/or Enforcement	Timing of Implementation	Applicable Location
	Mitigation Measure HYD-1 (see description below)				
	Mitigation Measure HYD-2 (see description below)				
b) Have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Dept. of Fish & Wildlife or U.S. Fish & Wildlife Service?	**Mitigation Measure BIO-1 (see description above)**				
	Mitigation Measure BIO-2 (see description above)				
	Mitigation Measure BIO-8 (see description above)				
	Mitigation Measure BIO-9 (see description above)				
	Mitigation Measure BIO-10 (see description above)				
	Mitigation Measure BIO-17 Any trees which must be cut shall be cut at ground level, leaving the root mass in place to maintain bank stability. Any live native trees greater than 4 inches diameter at breast heigh (DBH) removed shall be replaced at a 3:1 ratio, and exposed/disturbed areas shall be revegetated per MMs BIO-18, and BIO-19 below. Replacement trees may include use of cuttings, acorns, or potted saplings (e.g., D-pots, five-gallon containers), and shall be native species adapted to the lighting, soil and hydrological conditions at the replanting site. If replanting within the work area is infeasible due to slope steepness or other physical constraints, replacement trees may be planted at an alternate location along the stream corridor.	EBMUD	EBMUD	During maintenance activities	All project sites
	Mitigation Measure BIO-18 All exposed/ disturbed areas and access points within the stream zone or waterbody left barren of vegetation following maintenance activities shall be revegetated with a blend of habitat-appropriate erosion control seeds using only fast growing, native species. The seed mix shall be certified weed-free and seeded areas shall be mulched. All other areas of disturbed soil which drain towards the stream channel or waterbody shall be seeded with native erosion control grass seeds. Revegetation shall be completed immediately (within two weeks) after maintenance activities cease or before a significant rain event. Seeding placed after October 15 must be covered with broadcast straw, jute netting, coconut fiber blanket or similar erosion control blanket. Erosion control blankets with plastic monofilament or woven plastic strands, including biodegradable plastics, shall not be used.	EBMUD	EBMUD	After maintenance activities	All project sites
	Mitigation Measure BIO-19 To ensure a successful revegetation effort, all plants shall be monitored and maintained as necessary for five years. The following success criteria shall apply: • All plantings shall have a minimum of 75% survival at the end of 5 years. • Plants shall attain 70% cover after three years and 75% coverage after 5 years. • If the survival and/or cover requirements are not meeting these goals, EBMUD is responsible for replacement planting, additional watering, weeding, invasive exotic eradication, or any other practice, to achieve these requirements. Replacement plants shall be monitored with the same survival and growth requirements for five years after planting. Revegetation monitoring shall be conducted annually for a period of five (5) years to determine whether these goals have been met, and an annual report shall be provided to CDFW regarding revegetation status.	EBMUD	EBMUD	After maintenance activities	Project areas where revegetation occurs
	Mitigation Measure BIO-20 When riprap is placed for bank slope protection on a previously vegetated bank, it shall not be grouted or mortared. Interstitial spaces between rocks shall be backfilled with clean native soils or imported fill and planted with trees, shrubs, or other vegetation to minimize habitat loss. Only rocks and boulders free of organic material and soil that could carry weeds or pathogens from other areas shall be used for the project. Riprap shall be properly keyed into the bank and be of sufficient size to remain in place and withstand the highest velocity of water anticipated within the stream channel.	EBMUD	EBMUD	During maintenance activities	Project sites where riprap is used for bank slope protection
	Mitigation Measure HAZ-1 (see description below)				
	Mitigation Measure HYD-1 (see description below)				

Impacts Being Mitigated	Mitigation Measure	Responsible for Implementation	Responsible for Monitoring and/or Enforcement	Timing of Implementation	Applicable Location
	Mitigation Measure HYD-2 (see description below)				
c) Have a substantial adverse impact 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?	**Mitigation Measure BIO-8 (see description above)**				
	Mitigation Measure BIO-21 Prior to the implementation of any project that shall result in a net "loss" of waters of the U.S. and/or State, EBMUD shall coordinate with and obtain permits from the U.S. Army Corps of Engineers and the Regional Water Quality Control Board as appropriate. Compensatory mitigation for the loss of waters of the U.S. and/or State shall occur at a minimum 1:1 ratio for permanent impacts. Compensatory mitigation options may include restoration, enhancement, and preservation on- or off-site, or the purchase of mitigation credits at an approved mitigation bank.	EBMUD	EBMUD	Prior to maintenance activities	All project sites
d) Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	**Mitigation Measure BIO-16 (see description above)**				
Cultural Resources					
a) Cause a substantial adverse change in the significance of a unique historical resource pursuant to Section 15064.5?	**Mitigation Measure CR-3** Prior to initiating maintenance activities in a given year, EBMUD shall review the Archaeological Resources GIS database, including mapping developed to identify areas sensitive for surface and buried archaeological resources, for all locations where ground-disturbing maintenance activities within previously undisturbed soils (excluding sediment removal areas in drainages) are anticipated. A qualified archaeologist shall conduct a review and assessment of those maintenance sites that overlap with newly recorded resources within the last year to determine the potential for affecting significant cultural resources. If a location identified for maintenance activities that require ground disturbance has not previously been surveyed for archaeological resources, a qualified archaeologist shall conduct a field review to determine if surficial evidence of a resource is present. Further archival record search and literature review (including a review of the Sacred Lands Inventory of the Native American Heritage Commission) shall be conducted, as appropriate. Identified cultural resources that may be impacted by a proposed maintenance activity shall be evaluated for eligibility for listing on the California Register of Historical Resources (CRHR), or as a unique archaeological site or tribal cultural resource (TCR), if they cannot be avoided by maintenance activities. Cultural resources that are eligible for the CRHR are considered to be significant cultural resources, as are unique archaeological sites and TCRs. Cultural resources that are identified within Project areas subject to federal approval, permits, or funding shall also be evaluated for eligibility for listing on the NRHP. Cultural resources determined to be eligible for listing on the NRHP are automatically eligible for listing on the CRHR and are considered to be significant cultural resources. A cultural resources report summarizing the results of the assessment and indicating appropriate management actions for individual maintenance sites (e.g., no action, monitoring during construction, presence/absence testing for subsurface resources; data recovery, etc.) shall be developed by a qualified archaeologist. The management actions shall be implemented to avoid significant effects to cultural resources.	EBMUD	EBMUD	Prior to and during maintenance activities	All project sites
	Mitigation Measure CR-4 *Archaeological Data Recovery.* If it is infeasible to avoid impacts on archaeological sites that have been determined to be eligible for listing on the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP), additional research including, but not necessarily limited to, archaeological excavation shall be conducted (California Code of Regulations [CCR] Section 15126.4 (b)(3)(C)). This work shall be conducted by a qualified archaeologist and shall include preparation of a research design; additional archival and historical research; archaeological excavation; analysis of artifacts, features, and other attributes of the resource; and preparation of a technical report documenting the methods and results of the investigation in accordance with the California Office of Historic Preservation *Guidelines for Archaeological Research*	EBMUD	EBMUD	Prior to and during maintenance activities	All project sites

Impacts Being Mitigated	Mitigation Measure	Responsible for Implementation	Responsible for Monitoring and/or Enforcement	Timing of Implementation	Applicable Location
	Design (1991). The purpose of this work is to recover a sufficient quantity of data to compensate for damage to or destruction of the resource. The procedures to be employed in this data recovery program shall be determined in consultation with responsible agencies and interested parties, as appropriate. Where necessary, EBMUD would seek Native American input and consultation.				
b) Cause a substantial adverse change in the significance of a unique archaeological resource as defined in Section 15064.5?	**Mitigation Measure CR-1** All EBMUD maintenance personnel shall attend a cultural resources training course. The training program will be completed in person or by watching a video conducted by a qualified archaeologist. The program will discuss cultural resources awareness within the project work limits, including the responsibilities of maintenance personnel, applicable mitigation measures, confidentiality, and notification requirements. Prior to accessing or performing maintenance work, all EBMUD personnel shall sign an attendance sheet by the qualified archaeologist verifying that they have attended the appropriate level of training; have read and understood the contents of the training; have read and understood the contents of the "Confidentiality of Information on Archaeological Resources"; and shall comply with all project environmental requirements. In the event that potential cultural resources are discovered at a maintenance site, all maintenance activities shall immediately cease at the location of discovery and within 100 feet of the discovery. EBMUD will retain a qualified archaeologist to inspect the findings within 24 hours of discovery. If it is determined that maintenance activities could damage a historical resource as defined by CEQA [or a historic property as defined by the National Historic Preservation Act of 1966, as amended], maintenance activities shall cease in an area determined by the archaeologist until a mitigation plan has been prepared, approved by EBMUD, and implemented to the satisfaction of the archaeologist (and Native American representative if the resource is prehistoric, who shall be identified by the Native American Heritage Commission [NAHC]). In consultation with EBMUD, the archaeologist (and Native American representative) will determine when construction can resume.	EBMUD	EBMUD	Prior to and during maintenance activities	All project sites
	Mitigation Measure CR-2 In the event that human remains are discovered, all maintenance activities shall immediately cease at the location of discovery and within 100 feet of the discovery. EBMUD will contact the County Coroner pursuant to Health and Human Safety Code Section 7050.5 to determine whether or not the remains are Native American. If the remains are determined to be Native American, the Coroner will contact the Native American Heritage Commission (NAHC). The NAHC will then implement the requirements of Pub. Res. Code 5097.98 and identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn would make recommendations to EBMUD for the appropriate means of treating the human remains and any associated funerary objects.	EBMUD	EBMUD	During maintenance activities	All project sites
c) Disturb any human remains, including those interred outside of formal cemeteries?	**Mitigation Measure CR-1 (see description above)**				
	Mitigation Measure CR-2 (see description above)				
Geology and Soils					
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	**Mitigation Measure GEO-1** If items of paleontological interest are accidentally discovered during maintenance, work shall be immediately suspended at, and within 100 feet of the discovery site. EBMUD will retain a qualified paleontologist to inspect the findings within 24 hours of discovery. The qualified paleontologist, in accordance with Society of Vertebrate Paleontology guidelines (Society of Vertebrate Paleontology 2010), will assess the nature and importance of the find and recommend appropriate salvage, treatment, and future monitoring and management. If it is determined that maintenance activities could damage a paleontological resource as defined by the Society of Vertebrate Paleontology guidelines, maintenance activities shall cease in an area determined by the paleontologist until a salvage, treatment, and future monitoring and management plan has been prepared, approved by EBMUD, and implemented to the satisfaction of the paleontologist. In consultation with EBMUD, the paleontologist will determine when maintenance activity can resume.	EBMUD	EBMUD	During maintenance activities	All project sites
Hazards and Hazardous Materials					
a) Create a significant hazard to the public or the	**Mitigation Measure HAZ-1**	EBMUD	EBMUD	Prior to maintenance activities	All project sites

Impacts Being Mitigated	Mitigation Measure	Responsible for Implementation	Responsible for Monitoring and/or Enforcement	Timing of Implementation	Applicable Location
environment through the routine transport, use, or disposal of hazardous materials?	Prior to the start of maintenance activities, EBMUD shall establish a Contingency Plan detailing the procedures and countermeasures that will be implemented when an accidental release of hazardous materials occurs in order to prevent the release from entering navigable waters, or otherwise create a hazard to the public or the environment. The Contingency Plan shall include a list of the hazardous substances typically used for maintenance activities, including petroleum products, and countermeasures that shall be taken to prevent spills, monitor hazardous substances, and provide immediate response to spills. Spill response measures shall address notification of the appropriate agencies including phone numbers; spill-related worker, public health, and safety issues; spill control, and spill cleanup. All EBMUD maintenance staff shall be familiar with Contingency Plan procedures and countermeasures for preventing and controlling the spilling of known hazardous substances used on the jobsite or staging areas.				
	Mitigation Measure BIO-8 (see description above)				
	Mitigation Measure BIO-9 (see description above)				
	Mitigation Measure BIO-10 (see description above)				
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	**Mitigation Measure HAZ-1 (see description above)**				
	Mitigation Measure BIO-8 (see description above)				
	Mitigation Measure BIO-9 (see description above)				
	Mitigation Measure BIO-10 (see description above)				
g) Expose people or structures, either directly or indirectly, to the risk of loss, injury or death involving wildland fires?	**Mitigation Measure WILD-1 (see description below)**				
Hydrology and Water Quality					
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	**Mitigation Measure HYD-1** All exposed soils within the work area shall be stabilized immediately following the completion of earthmoving activities to prevent erosion into the stream channel. Erosion control BMPs, such as silt fences, straw hay bales, gravel or rock-lined ditches, water check bars, and broadcasted straw will be used. Plastic monofilament or bound/stitched cross-joint based erosion control blankets will not be used within the stream zone or riparian areas. Erosion control BMPs shall be monitored during and after each storm event for effectiveness. Modifications, repairs, and improvements to erosion control BMPs shall be made as needed to protect water quality. Silt laden runoff will not be allowed to enter the stream or be directed to an area that may enter the stream at any point. All non-biodegradable silt barriers (e.g., plastic silt fencing, netting surrounding coil logs or rolls) shall be removed after areas have stabilized with erosion control vegetation (usually after the first growing season).	EBMUD	EBMUD	During maintenance activities	All project sites

Impacts Being Mitigated	Mitigation Measure	Responsible for Implementation	Responsible for Monitoring and/or Enforcement	Timing of Implementation	Applicable Location
	Mitigation Measure HYD-2 When work in streams with water is unavoidable, streamflow shall be diverted around the work area by construction of temporary instream fences or other barriers. The following measures shall be implemented to minimize impacts to water quality associated with dewatering activities: • The area to be dewatered shall encompass the minimum area necessary to perform the maintenance activity. • Construction of instream barriers shall begin in the upstream area and continue in a downstream direction, and the flow shall be diverted only when construction of instream barriers is complete. • Instream barriers shall be installed both upstream and downstream, not more than 100 feet from the extent of the work areas. • Streamflows shall be allowed to travel by gravity flow around or through the work site through pipes. • A qualified biologist shall be present to ensure that fish and other aquatic vertebrates are not stranded during construction and implementation of channel dewatering. • Downstream flows adequate to prevent fish or vertebrate stranding shall be maintained at all time during dewatering activities. • Diverted and stored water shall be protected from maintenance activity-related pollutants, such as soils, equipment lubricants, and fuels. • If necessary, discharged water shall pass over some form of energy dissipater to prevent erosion of the downstream channel. Silt bags will be attached to the end of discharge hoses and pipes to remove sediment from discharged water. • When maintenance is completed, the temporary instream barrier shall be removed as soon as possible but no later than 48 hours after work is completed. Impounded water shall be released at a reduced velocity to minimize erosion, turbidity, and harm to downstream habitat. • When diversion structures are removed, to the extent practicable, the ponded flows shall be directed into the low-flow channel within the work site to minimize downstream water quality impacts. • The area disturbed by installation of instream structures shall be restored at the completion of the maintenance activity.	EBMUD	EBMUD	During maintenance activities	All in-stream work
	Mitigation Measure BIO-9 (see description above)				
	Mitigation Measure BIO-10 (see description above)				
	Mitigation Measure HAZ-1 (see description above)				
c) Substantially alter the existing drainage pattern of the site area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) Result in substantial erosion or siltation on- or off-site	**Mitigation Measure HYD-1 (see description above)**				
	Mitigation Measure HYD-2 (see description above)				
Noise					

Impacts Being Mitigated	Mitigation Measure	Responsible for Implementation	Responsible for Monitoring and/or Enforcement	Timing of Implementation	Applicable Location
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	**Mitigation Measure NOI-1** EBMUD shall implement the following noise and vibration-reducing practices to minimize disturbances to residential areas surrounding work sites: • Work or activity of any kind shall be limited to the hours from 7:00 a.m. to 5:00 p.m. Monday through Friday. Activities in residential areas shall not occur on Saturdays, Sundays, or EBMUD observed holidays except during emergencies, or with advance notification of surrounding residents. • Advanced notification about the estimated duration of the activity shall be provided prior to the start of maintenance adjacent properties within 43 feet of the proposed Project's sites where powered equipment shall be used. • Powered equipment (vehicles, heavy equipment, and hand equipment such as chainsaws) shall be equipped with adequate mufflers. Best available noise control techniques (e.g., mufflers, intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) shall be used for all equipment and trucks, as necessary. • Stationary noise sources (e.g., pumps, chippers) shall be located as far from sensitive receptors as possible. If they must be located near receptors, adequate muffling (with enclosures when feasible) shall be used. Enclosure opening or venting shall face away from sensitive receptors.	EBMUD	EBMUD	Prior to and during maintenance activities	All project sites
b) Generation of excessive groundborne vibration or groundborne noise levels?	**Mitigation Measure NOI-1 (see description above)**				
Tribal Cultural Resources					
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	**Mitigation Measure TCR-1** EBMUD retains a database of all previously recorded cultural resources within the EBMUD Watershed. Prior to implementation of any individual maintenance activity that requires ground disturbance, EBMUD will review its cultural resources database for the presence of archaeological sites. Should any known sites with human remains be recorded within 100 feet of the proposed action, EBMUD shall retain a professional archaeologist to conduct a pedestrian survey of the Project area to determine whether the project would impact the resource. If the site is outside of the proposed Project footprint, the site shall be avoided and protected with fencing, if appropriate. Unnecessary attention should not be drawn to the site. If the site cannot be avoided by Project implementation, EBMUD will work with a local tribe that has a traditional and cultural affiliation with the Project area to develop a culturally appropriate treatment plan.	EBMUD	EBMUD	Prior to and during maintenance activities	All project sites
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be	**Mitigation Measure CR-1 (see description above)**				
	Mitigation Measure CR-2 (see description above)				
	Mitigation Measure CR-3 (see description above)				

Impacts Being Mitigated	Mitigation Measure	Responsible for Implementation	Responsible for Monitoring and/or Enforcement	Timing of Implementation	Applicable Location
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 the Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	**Mitigation Measure CR-4 (see description above)**				
Wildfire					
b) Due to slope, prevailing winds, or other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from wildfire or the uncontrolled spread of a wildfire?	**Mitigation Measure WILD-1** The following measures shall be implemented to reduce the potential for and spread of a wildfire: • All maintenance sites shall be supplied and maintained with adequate fire-fighting equipment capable of extinguishing incipient fires. • All earthmoving and portable equipment with internal combustion engines shall be equipped with a spark arrestor to reduce the potential for igniting a wildfire. Such equipment shall be maintained to ensure proper functioning of spark arrestor. • Combustible materials shall be removed from the maintenance site once maintenance is complete. • Approved access for firefighting shall be maintained during maintenance work.	EBMUD	EBMUD	Prior to and during maintenance activities	All project sites
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power line or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	**Mitigation Measure WILD-1 (see description above)**				

Appendix E. Safe Harbor Agreement

SAFE HARBOR AGREEMENT
FOR EAST BAY MUNICIPAL UTILITY DISTRICT LANDS
IN SAN JOAQUIN, AMADOR AND CALAVERAS COUNTIES

1. INTRODUCTION

This Safe Harbor Agreement (Agreement) is entered into between the East Bay Municipal Utility District (EBMUD) and the U.S. Fish and Wildlife Service (Service); hereinafter collectively called the "Parties." The purposes of this Agreement are (1) to promote the enhancement and management of habitat for California red-legged frog (*Rana aurora draytonii*), California tiger salamander (*Ambystoma californiense*), and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) on EBMUD watershed lands in San Joaquin, Amador and Calaveras counties; and (2) to provide certain regulatory assurances to EBMUD. This Agreement follows the Service's Safe Harbor Agreement policy (64 FR 32717) and regulations (64 FR 32706), both of which implement section 10(a)(1)(A) of the Endangered Species Act (ESA).

Upon approval, this Agreement will serve as the basis for the Service to issue an enhancement of survival permit (Permit) pursuant to Section 10(a)(1)(A) of the ESA. The Permit authorizes the incidental taking of California red-legged frog, California tiger salamander, and valley elderberry longhorn beetle associated with the enhancement and conservation management of these species' habitats, other lawful uses of the property (as described in Section 10 of this Agreement), and the potential future return of any eligible land to pre-Agreement conditions (baseline) within the period during which the Permit is in effect.

2. LIST OF COVERED SPECIES

This Agreement covers the following federally listed species, which are hereafter referred to as the "covered species": the California red-legged frog (CRLF), the California tiger salamander (CTS), and the valley elderberry longhorn beetle (VELB).

3. DESCRIPTION OF ENROLLED PROPERTY

The property subject to this Agreement consists of approximately 28,000 acres (11,330 hectares) of East Bay Municipal Utility District lands in San Joaquin, Calaveras and Amador counties, California, hereafter referred to as the "enrolled property." The enrolled property, which consists of about 19,710 acres of land and 9,034 acres of water surface (7,977 and 3,656 hectares respectively), is more precisely indicated on the attached map (Exhibit 1). The enrolled property borders and includes Camanche and Pardee dams and reservoirs, extending from less than 50 feet (15 m) to about 3 miles (4.8 km) from the high-water surface elevation of Camanche and Pardee reservoirs. It also includes the lands adjacent to the lower Mokelumne River for approximately ½ mile (0.8 km) below Camanche Dam. Current and recent land use practices on the enrolled property include management for water supply, flood control, grazing, aquaculture,

hydroelectric power, wastewater treatment, facility maintenance, residential use, and recreation. Habitat types[1] (and approximate area[2]) of the enrolled property include Annual Grassland (7,851 acres, 3,177 hectares), Blue Oak Woodland (4,564 acres, 1,847 hectares); Blue Oak-Foothill Pine (2,692 acres, 1,089 hectares); Chamise-Redshank Chaparral (1,623 acres, 657 hectares); Montane Hardwood (1,580 acres, 639 hectares); Mixed Chaparral (1,140 acres, 461 hectares); Barren (198 acres, 80 hectares); Urban (61 acres, 25 hectares); and, Ponderosa Pine (2 acres, 1 hectare). The amount of habitat to be restored and enhanced within the property is approximately 220 acres.

4. BASELINE DETERMINATION

The Parties agree that the baseline conditions applicable to this agreement are as detailed in this Section and in Exhibit 2. In order to receive the assurances regarding take of covered species specified in Section 10 hereof, EBMUD must maintain on the property at least as much habitat for the covered species as is shown in Exhibit 2 (Baseline Habitat).

Due to the size of the property, the difficulty of accessing much of it, the uncertainty regarding whether potentially suitable breeding sites are actually utilized by listed amphibians, and the general compatibility of existing land uses on the covered property with the conservation of such species, the baseline of upland habitat will be considered to be maintained so long as no major changes to existing uses of the property (such as conversion to row crops, commercial housing construction, or developments of comparable magnitude) are made.

5. MANAGEMENT ACTIVITIES

EBMUD will undertake the conservation management activities described in Exhibit 3 (Conservation Management Activities) on the enrolled property. The objective of such activities is to restore and maintain healthy, contiguous native plant communities that include elderberry bushes (*Sambucus* sp.) for VELB; restore and maintain suitable breeding ponds, moist refuge habitat, and upland dispersal habitat for CTS and CRLF; manage vegetation and grazing appropriate to the conservation needs of the covered species, consistent with water quality protection and fire management; control non-native predators; and implement related protection and conservation measures. It is anticipated that these activities will enhance the probability that local populations of the covered species will persist and increase. Implementation of these management activities will be initiated within 1 year after execution of this Agreement, and all Conservation Management Activities entailing restoration, development, or enhancement of habitat will be completed within 5 years after execution of this Agreement. The Conservation Management Activities – including maintenance of the restored, newly-developed, and/or enhanced habitat – will be maintained for a minimum of thirty years after execution of this Agreement.

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[1]As defined in the "California Wildlife Habitat Relationships System"and adopted by the California Department of Fish and Game. It is an adaptation of Mayer and Laudenslayer (1988).
[2]As determined by the USDA Forest Service Region 5 CALVEG GIS maps (USDA Forest Service 1981).

6. NET CONSERVATION BENEFIT

Implementation of this Agreement is expected to provide a "net conservation benefit" to the covered species, because the collective management activities performed by EBMUD pursuant to this Agreement are expected to provide an increase in the covered species' populations by restoring and maintaining the covered species' habitat.

Implementation of the conservation management activities in this Agreement are expected to enhance the probability that local metapopulations of VELB will persist by increasing the amount of elderberry bush habitat and by increasing the connectivity of habitats through replacement of non-native invasive species with native trees, shrubs (including elderberry bushes), sedges and grasses.

Both CRLF and CTS are known to breed in freshwater ponds; in some areas of the enrolled property, stock ponds represent a significant portion of available breeding sites. The stock ponds to be restored pursuant to this Agreement are existing ponds that have experienced sedimentation, have need of spillway or levee repair, or are otherwise impaired. Removal of sediments as described in Exhibit 3 (Conservation Management Activities) will increase the availability of deep water habitats for the covered species, prolong the useful life of the pond, reduce the risk of spillway or levee failure, and lessen the risk of drying out before metamorphosis of larvae. Similarly, spillway and levee repairs will also prolong the expected useful life of the ponds and reduce the risk of pond failure. Associated vegetation and grazing management will improve breeding and upland dispersal habitat conditions. The control of non-native predators will dramatically improve the ability of a pond to serve as a breeding site for CRLF and CTS. Shallow water development and management will increase useful breeding habitat, enhance and improve moist refuge habitat, and provide connectivity between and among suitable breeding habitats. The protection and management of adjacent upland habitat as provided in Exhibit 3 (Conservation Management Activities) will further enhance connectivity. Together, these measures are expected to result in an increase in the quantity and quality of breeding habitat capable of producing larger local populations that in turn are capable of dispersing over broader areas.

7. OTHER RESPONSIBILITIES OF THE PARTIES

A. In addition to carrying out the management activities set forth in Section 5 (Management Activities), EBMUD agrees to:

1. Notify the Service 30 days in advance of any planned activity on the enrolled property that EBMUD reasonably anticipates will result in "take" (i.e., death, injury, or other harm) of the covered species or a reduction in the number of living elderberry bushes with 1 or more stems of 1 inch or greater in diameter at the base; and provide the Service the opportunity to assist on avoidance and minimization measures, and capture and/or relocate the potentially affected animals or bushes, if appropriate. Emergency situations, such as wild fires, floods, epidemic disease, or other factors, may require management actions not specified in this Agreement. In these situations, the Parties acknowledge that

it may be impossible to provide the 30-day notice required by the Agreement prior to initiation of activities that could result in take of covered species. However, EBMUD will notify the Service as soon as reasonably possible after discovering such a situation (except for wild fires < 20 acres in size, which will be provided to the Service in the annual monitoring report), and will make reasonable accommodations to the Service to attempt to relocate affected individuals of the Covered Species or their host plant prior to the emergency management actions. The Parties acknowledge that relocation efforts may be precluded by certain emergency situations. EBMUD and the Service will work cooperatively to avoid impacts to Covered Species.

2. Allow the Service, or those authorized by the Service (which may include EBMUD personnel), to monitor the populations of covered species in the areas where the management activities described in Section 5 are being carried out.

3. Allow access to the enrolled property upon reasonable notice by the Service or its agents for purposes related to this agreement, including capture and relocation of the covered species. Relocation shall be to locations deemed appropriate by EBMUD.

4. Provide the Service with the annual reports described in Exhibits 4 and 5, due by March 31 of each year, which summarize the actions undertaken pursuant to this Agreement, maintenance of baseline conditions, and any observations of listed species during the preceding year.

5. Notify the Service of any injured or killed specimens of the covered species of which it becomes aware as a result of the implementation of the management actions.

6. Notify the Service of any transfer of ownership of all or portions of the enrolled property, so that the Service can attempt to contact the new owner, explain the baseline responsibilities applicable to the enrolled property, and seek to interest the new owner in signing the existing Agreement or a new one to benefit listed species on the enrolled property.

B. In consideration of the foregoing, the Service agrees to:

1. Upon execution of the Agreement, issue to EBMUD a permit in accordance with ESA section 10(a)(1)(A), and valid for a period of 30 years, authorizing take of the covered species as a result of implementing management activities, or as a result of other lawful activities on the enrolled property after the management activities have been initiated, provided that such taking shall be consistent with maintaining baseline conditions on the enrolled property.

2. Provide to EBMUD technical assistance, to the maximum extent practicable, when requested; and provide information on Federal funding programs.

8. OTHER LANDOWNERS WHO MAY SECURE INCIDENTAL TAKE AUTHORIZATION

Landowners who own land adjoining the enrolled property may, without committing to undertake any management activities described in Section 5 (Management Activities) hereof on such adjoining land, secure the incidental take authority conferred by the permit issued by the Service to EBMUD pursuant to Section 7.B.1, provided: (1) a survey undertaken on the adjoining land by a qualified person satisfactory to the Service establishes the baseline conditions on the adjoining property; and (2) the owner of the adjoining property enters into a written agreement with the Service, in which the owner agrees to maintain baseline conditions.

9. AGREEMENT AND PERMIT DURATION

The Agreement becomes effective upon issuance by the Service of the ESA section 10(a)(1)(A) permit described in Section 7 hereof, and will be in effect for 30 years. The permit will have a term of 30 years.

10. ASSURANCES REGARDING TAKE OF COVERED SPECIES

Provided that such take is consistent with maintaining the baseline conditions identified in Section 4 (Baseline Determination) hereof, the ESA section 10(a)(1)(A) permit referenced in Section 7 shall authorize the taking of covered species incidental to otherwise lawful activities by EBMUD, by its employees or agents, by neighboring landowners who have entered into agreements pursuant to Section 8 hereof, and by those authorized by law to control flooding in the Mokelumne River watershed in the following circumstances:

1. Implementing the management activities identified in Section 5 (Management Activities) hereof; or

2. Making any lawful use of the enrolled property after the management activities identified in Section 5 have been initiated, including but not limited to grazing and grazing management; growing forage crops within the Camanche Hills Hunt Club; use of registered pesticides and herbicides (provided that such use is in accordance with label restrictions and activities specified in Exhibit 3 (Conservation Management Activities)); recreation; fire prevention and control; emergency fire-fighting; prescribed burns (provided that such burns follow the procedures listed in Exhibit 3)); construction, use, and maintenance of fences, access roads, paths and trails; dam, dike, spillway, causeway, aqueduct, and powerhouse operation and maintenance; water supply and flood control operation and maintenance; existing wastewater treatment; operation and maintenance of facilities, residences, and hatchery.

11. MODIFICATIONS

A. Modification of the Agreement. Either party may propose amendments to this Agreement by providing written notice to, and obtaining the written concurrence of, the other Party. Such notice shall include a statement of the proposed modification, the reason for it, and its expected results. The Parties will respond to proposed modifications within 60 days of receipt of such notice. Proposed modifications will become effective upon the other Parties' written concurrence.

B. Termination of the Agreement. As provided for in Part 12 of the Service's Safe Harbor Policy (64 FR 32717), EBMUD may terminate this Agreement for circumstances beyond its control, without affecting its rights under this Agreement, by giving written notice to the Service. In such circumstances, EBMUD may, pursuant to the permit referenced in Section 7.B.1 hereof, return the enrolled property to baseline conditions even if the management activities identified in Section 5 have not been fully implemented.

C. Permit Suspension or Revocation. The Service may suspend or revoke the permit referenced in Section 7.B.1 above for cause in accordance with the laws and regulations in force at the time of such suspension or revocation. EBMUD has the right to appeal any suspension or revocation to a mutually agreed upon arbitrator.

D. Baseline Adjustment. The baseline conditions for the enrolled property may be adjusted by mutual agreement of the Parties if, during the term of this Agreement and for reasons beyond the control of EBMUD (e.g., droughts, floods, wild fires, epidemic disease, climate change, etc.) the amount of suitable habitat for covered species on the enrolled property is diminished.

12. OTHER MEASURES

A. Remedies. No party shall be liable in monetary damages for any breach of this Agreement, any performance or failure to perform an obligation under this Agreement or any other cause of action arising from this Agreement.

B. Dispute Resolution. The Parties agree to work together in good faith to resolve any disputes, using dispute resolution procedures agreed upon by all Parties.

C. Succession and Transfer. As provided in Part 11 of the Service's Safe Harbor Agreement Policy, if EBMUD transfers its interest in the enrolled property to another non-Federal entity, the Service will regard the new owner as having the same rights and responsibilities, including baseline responsibilities, with respect to the enrolled property as EBMUD, if the new owner agrees and commits in writing to become a party to this Agreement and the permit referenced in Section 7 above in place of EBMUD.

D. Availability of Funds. Implementation of this Agreement is subject to the requirements of the Anti-Deficiency Act and the availability of appropriated funds.

Nothing in this Agreement will be construed by the Parties to require the obligation, appropriation, or expenditure of any funds from the U.S. Treasury. The Parties acknowledge that the Service will not be required under this Agreement to expend any Federal agency's appropriated funds unless and until an authorized official of that agency affirmatively acts to commit to such expenditures as evidenced in writing.

E. No Third-Party Beneficiaries. This Agreement does not create any new right or interest in any member of the public as a third-party beneficiary, nor shall it authorize anyone not a party to this Agreement to maintain a suit for personal injuries or damages pursuant to the provisions of this Agreement. The duties, obligations, and responsibilities of the Parties to this Agreement with respect to third parties shall remain as imposed under existing law. In the event that any third party successfully challenges the permit referenced in Section 7.B.1 hereof, the Service shall, at the request of EBMUD, allow EBMUD to return the enrolled property to its baseline conditions.

F. Other Listed Species, Candidate Species, and Species of Concern. In the event that other species not initially covered by this Agreement are subsequently listed as threatened or endangered under the ESA, provided that such other species are associated with habitats of the covered species, the Parties may agree to amend this Agreement and associated permit to include such other species as covered species. In addition, it is possible that other listed, proposed, or candidate species, or species of concern may occur in the future on the enrolled property as a direct result of the management actions specified in Section 5 above. If that occurs, and EBMUD so requests, the Parties may agree to amend the Agreement and associated permit to include such additional species as covered species. The amendment of the Agreement pursuant to this provision shall specify as the baseline for such subsequently covered species the lesser of the following: the amount of habitat for that species on the enrolled property that existed at the time the Agreement was signed, as determined by the baseline habitat described in Exhibit 2; or the amount of habitat for that species on the enrolled property at the time of the amendment of the Agreement, determined in a manner approved by the Parties.

G. Notices and Reports. Any notices and reports, including monitoring and annual reports, required by this Agreement shall be delivered to the persons listed below, as appropriate:

Safe Harbor Program Coordinator
U.S. Fish and Wildlife Service
2800 Cottage Way, Room W-2605
Sacramento, California 95825

H. Nothing in this Agreement precludes EBMUD from expanding Pardee and/or Camanche reservoirs in the future. Should EBMUD elect to raise dam heights and enlarge reservoir capacity at Pardee and/or Camanche reservoirs, EBMUD will obtain all necessary federal or state authorizations, including authorization for take of listed species.

I. Because a portion of the enrolled property is already enrolled in the Lower Mokelumne River Safe Harbor Agreement for Valley elderberry longhorn beetle, nothing in this Agreement enlarges or diminishes any right or responsibility of EBMUD under that prior agreement, and vice versa.

IN WITNESS WHEREOF, THE PARTIES HERETO have executed this Safe Harbor Agreement to be in effect as of the date that Service issues the permit referred to in Section 7.B.1 above.

Richard W. Ken for — 6/2/09

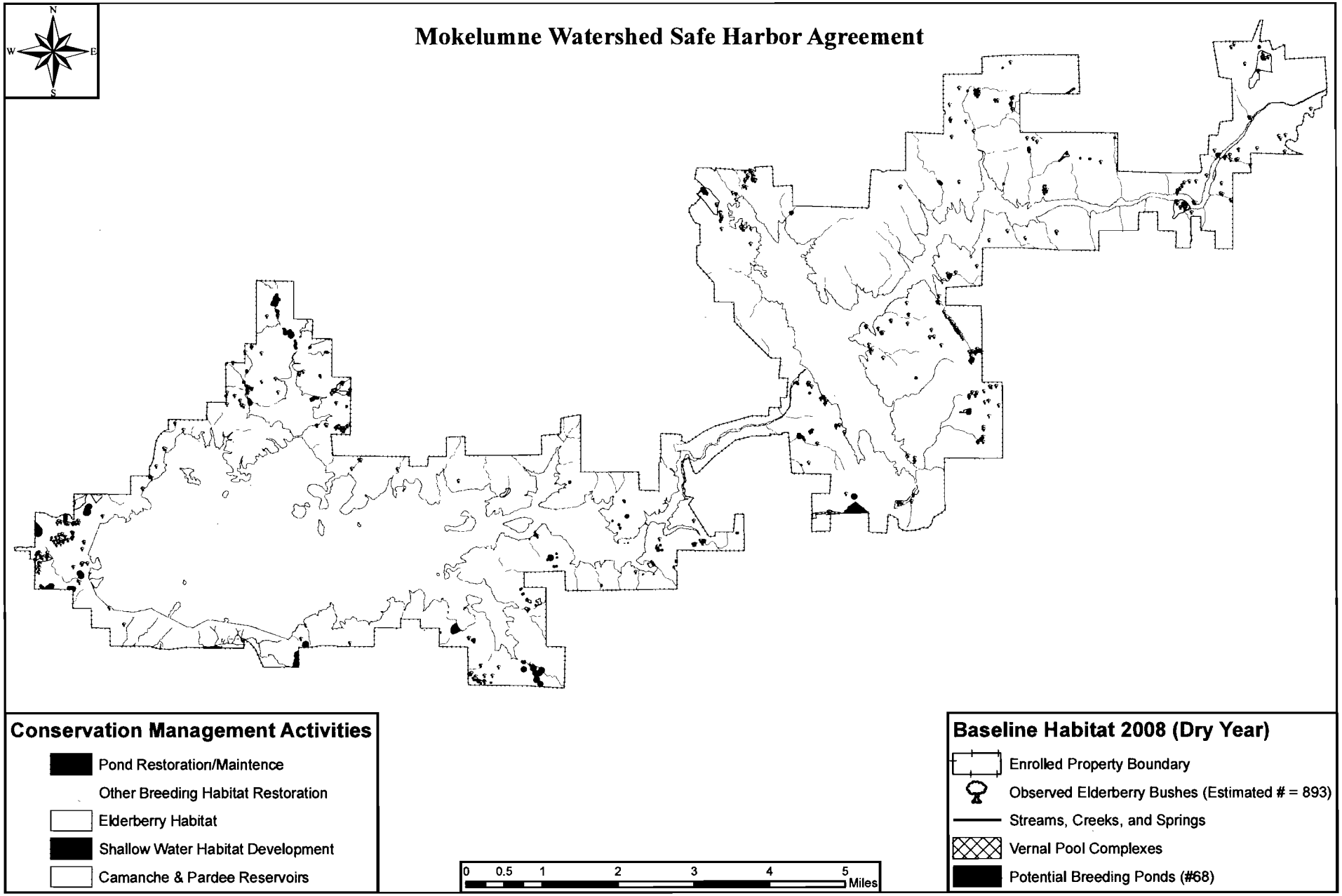
Dennis M. Diemer — Date
General Manager
East Bay Municipal Utility District

Susan Moore — 6/2/09

Susan Moore — Date
Field Supervisor
U.S. Fish and Wildlife Service

Exhibit 1
Map of the Enrolled Property, Baseline Habitat, and Conservation Management Sites

Mokelumne Watershed Safe Harbor Agreement



Conservation Management Activities

- Pond Restoration/Maintence
- Other Breeding Habitat Restoration
- Elderberry Habitat
- Shallow Water Habitat Development
- Camanche & Pardee Reservoirs

Baseline Habitat 2008 (Dry Year)

- Enrolled Property Boundary
- Observed Elderberry Bushes (Estimated # = 893)
- Streams, Creeks, and Springs
- Vernal Pool Complexes
- Potential Breeding Ponds (#68)

Exhibit 2
BASELINE HABITAT

In order to maintain the baseline, the amounts of habitat on the enrolled property in each category must remain at least as large as recorded below. The methods that will be used to determine these baseline habitat amounts are shown under "Methods", below. EBMUD has provided to Service maps (Exhibit 1) showing the current locations of baseline habitat.

VERNAL POOL COMPLEXES

The number of vernal pool complexes is 12, composed of 37 pools with a combined maximum surface acreage of approximately 10.3 acres (4.17 hectares) (to the nearest 1/10 acre, 0.04 hectare) as measured in a "Dry" water year type[1].

BREEDING POND HABITAT FOR CALIFORNIA TIGER SALAMANDER AND CALIFORNIA RED-LEGGED FROG

The number of ponds that provide breeding habitat is 68, with a combined maximum surface acreage of approximately 35.8 acres (14.48 hectares) (to the nearest 1/10 acre, 0.04 hectare) as measured in a "Dry" water year type[1].

OTHER BREEDING HABITAT FOR CALIFORNIA RED-LEGGED FROGS

The number of sites other than ponds and vernal pools that may provide suitable breeding habitat (streams, creeks, springs) is approximately 157,524 linear feet (48,013 meters) (to the nearest foot, meter) as measured in a "Dry" water year type[1].

VALLEY ELDERBERRY LONGHORN BEETLE HABITAT

The number of elderberry bushes that have 1 or more stems 1 inch (2.54 cm) or greater in diameter at the base is 893. EBMUD shall be deemed to have maintained baseline conditions with respect to the VELB if it maintains at least that amount of elderberry bushes on the enrolled property, regardless of the location of such bushes.

METHODS

1. The acreage of vernal pool complexes, breeding pond habitat, and other breeding habitat recorded as the baseline reflect the maximum wetted acreage in the water year type(s) in which the baseline is assessed. In order to maintain the baseline, the same amount of acreage must be maintained – measured as maximum wetted acreage in the comparable water year type(s) [1].
2. Baseline vernal pool complexes: Vernal pools are seasonal depressional wetlands that are covered by shallow water for two or more consecutive weeks during winter and/or spring, but may be completely dry for most of the summer and fall. Although generally isolated, they are sometimes connected to each other by vernal swales, which – if present – are included in the baseline surface area. Beneath vernal pools lies either bedrock or a hard clay layer in the soil that helps keep water in the pool. In order to maintain the baseline, the wetted acreage of vernal pool complexes on the enrolled property must be at least as much as

measured above in a comparable water year type[1]. These baseline amounts were identified based on aerial photography and visual inspection.

3. Baseline breeding pond habitat for California tiger salamander and California red-legged frog: Breeding pond habitat shall not include reservoirs, wastewater ponds, or recreation ponds. Breeding pond habitat shall include standing bodies of fresh water (natural and man-made ponds, and other ephemeral or permanent water bodies) on enrolled property that:

   (a) Become inundated during winter rains and hold water for a minimum of 12 weeks in the winter or spring[2];

   (b) Are bordered at least in part by 173 m (567 ft) wide buffers of terrestrial habitat suitable for burrowing mammals[3]; and,

   (c) Either retain water during the dry season or have moist refuge habitat available within 200 m (656 feet)[4].

   In order to maintain the baseline, the number of ponds and the combined maximum acreage on the enrolled property must be at least as much as measured above in a comparable water year type[1]. These baseline amounts were identified based on aerial photography and visual inspection.

4. Baseline "Other" breeding habitat: "Other habitat will be included if it provides standing or slow-moving water from March through July during comparable water year types[1]. Such habitat my include streams, deep pools or backwaters within streams and creeks, marshes, and major springs. These baseline amounts identified based on aerial photography and/or visual inspection as appropriate.

5. Baseline elderberry bush habitat: In order to be included in the baseline, an elderberry bush must have 1 or more stems 1 inch (2.54 cm) or greater in diameter. For purposes of determining the baseline, a group of shoots that originates from the same root system or a group of shoots that occurs within a 5-meter (16.4 feet) radius shall be considered one bush. The baseline was calculated by estimating the number of elderberry bushes occurring in each habitat type[6] and the area of each habitat type[7] occurring on enrolled property (to the nearest 10 acres, 4 hectares). Such estimates were derived from GIS based on aerial photography, combined with visual field surveys. In order to maintain the baseline, the total number of elderberry bushes on the enrolled property must be at least as much as estimated above.

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[1] Water year types are defined by the unimpaired runoff into Pardee Reservoir as determined by the April 1st Bulletin 120 Report of the California Department of Water Resources.

[2] Note that pond management that mimics the natural water cycle, where possible, will be the most beneficial for the California red-legged frog (USFWS 2002).

[3] Trenham et al. (2001) recommended that plans to maintain local populations of California tiger salamanders should include pond(s) surrounded by at least 173-m (567-ft) wide buffers of terrestrial habitat occupied by burrowing mammals.

[4] Post-metamorphic CRLF and CTS spend much of each year on land and providing appropriate upland habitat conditions is essential to maintaining healthy populations. CRLF require above-ground vegetation for shelter. They need moist microhabitats where they can find refuge when moving around on land, especially if the pond is dry. Bulger et al. (2003) found that CRLF use dense patches of shrubs and herbaceous vegetation and, based on radio tracking, recommended protecting these resources within 100m of ponds. They also observed CRLF moving among ponds up to 3 km apart, but found no clear habitat preferences during migration. Outside of the breeding season, CTS live exclusively on land, primarily in

the burrows of ground squirrels and gophers. CTS have been found up to 2 km from any known breeding pond, although CTS adults remain more concentrated within 200 m of the pond.
A moist refuge may be formed by debris piles, dead and down trees, a trough, seep wetland, polunge pool, riparian area or the like, and must be available and moist year-round.
[5] Trenham and Shaffer (2005) estimate that in optimal habitat, 95% of CTS remain within 630m of breeding ponds.
[6] As defined in the "California Wildlife Habitat Relationships System" adopted by the California Department of Fish and Game. It is an adaptation of Mayer and Laudenslayer (1988).
[7] As determined by the USDA Forest Service Region 5 CALVEG GIS maps (USDA Forest Service 1981).

Exhibit 3
CONSERVATION MANAGEMENT ACTIVITIES

The following conservation management activities reflect current understanding of the habitat requirements of the covered species. Any conservation management activities may be changed by mutual agreement of EBMUD and the Service to reflect improved understanding of the covered species' needs or other considerations. EBMUD has provided to the Service maps (Exhibit 1) showing potential sites for Conservation Management Activities.

Conservation management activities for the benefit of the Valley elderberry longhorn beetle

- Develop 200 acres of elderberry habitat in the areas shown on Exhibit 1 or in substantially similar areas if restoration in the areas shown proves impractical.
- In these areas:
    - Plant and maintain native species typical of the canopy, subcanopy, shrub, and herbaceous layers found in Valley Foothill Riparian habitats[1], preferably with stock obtained from local sources; if elderberries already exist on the site, encourage recruitment and growth of additional elderberries via natural processes, and/or
    - Plant and maintain elderberry bushes, using local stock when practical, at a density of at least 24 bushes per acre (59 per hectare), or at a density appropriate for conditions at the site with the goal of increasing Valley elderberry longhorn beetle dispersal opportunities.
- Limit pesticide and herbicide use within these restored areas to those contact herbicides necessary to control invasive weeds; do not use aerial application of pesticides or herbicides within 100 feet (30.5 meters) of the restored area.
- Remove non-native invasive species as appropriate to facilitate restoration.
- When prescribed burns are initiated by EBMUD, take all practical measures to protect elderberry shrubs and riparian areas from damage. Whenever feasible, such prescribed burns also should be managed to foster restoration of native riparian and upland vegetation.

Conservation management activities for the benefit of the California red-legged frog and California tiger salamander

- Allow reintroduction of California red-legged frogs on the enrolled property with advance notice and in locations deemed appropriate and approved by EBMUD, if requested by the Service.
- Maintain 10.3 acres (4.17 hectares) of vernal pool complexes.
- Develop 2 acres of new shallow water habitat between 1,300 and 3,900 feet (400 and 1,200 meters) from existing breeding pond habitat[2] in the areas shown on Exhibit 1 or in substantially similar areas if restoration in the areas shown proves impractical. Any new ponds will incorporate the features described below for the restoration and maintenance of existing constructed ponds.

- Restore, and then maintain 17.3 acres of existing constructed ponds in the areas shown on Exhibit 1 or in substantially similar areas if restoration in the areas shown proves impractical. The ponds may be used to provide livestock water and will incorporate the following features when feasible:
    - Ponds will be sized and/or managed to retain sufficient water for tadpole development during the entire rearing season (January, or whenever rains commence, through late July or early August, in most years a minimum of 20 weeks); ponds can be allowed to dry during the fall (typically mid-August through early December).
    - Ponds will contain a shallow water area for tadpole and juvenile rearing. This shallow area (25 – 50 cm (10 – 20 inches) deep) should be unshaded and contain no or very short emergent plants. The shallow area will be designed so that the water warms quickly in the winter sun but is of sufficient water depth to provide aquatic habitat throughout spring.
    - Ponds also will contain a deep water escape area with portions deeper than 1 meter (3.3 feet). This deep water area should contain a mosaic of open water and dense aquatic vegetation, or dense patches of shoreline vegetation adjacent to deep water.
    - When possible, the areal extent of the shallow and deep portions of the pond should be about equal.
    - Plant species commonly found in CTS and CRLF ponds should be present, be expected to regenerate or colonize naturally, or be planted. These species include spike rushes (*Eleocharis* spp.), rushes (*Juncus* spp.), bulrushes (*Scirpus* spp.), cattails (*Typha* spp.), and willows (*Salix* spp.).
    - Partially submerged rocks, logs or other structures may be added to the pond as basking sites.
    - To the extent feasible, vegetative buffers, a sediment trap, grazing management, or other management techniques will be used upstream of the pond to reduce sediment loading.
    - Routine pond maintenance activities will be conducted outside of the CRLF and CTS breeding seasons (December through July) employing impact and avoidance and minimization measures[3].
    - When vegetation management is required, mechanical methods will be used preferentially; chemical methods also may be used September through November.
    - If mosquito control is required, bacterial larvicides will be used.
- Enhance, and then maintain other breeding habitat, and/or other shallow water habitat in the areas shown on Exhibit 1, for a total of 1,500 linear feet (457 m). Restoration shall consist of: restoring native vegetation typical of the canopy, subcanopy, shrub, and herbaceous layers found in those habitats; and controlling nonnative invasive species to the extent feasible.
- Manage pesticide applications as follows near vernal pool complexes, breeding habitat described in Exhibit 2, and new or restored shallow water habitat and ponds described in Exhibit 3:
    - Prohibit aerial application of pesticides on enrolled lands within 200 feet (61 m).

- Prohibit ground use of contact pesticides on enrolled lands within 60 feet (18.3 m).
- Exceptions to these prohibitions include the use of approved pesticides for the purpose of public health vector control when such program is administered by a public entity, and/or use of approved pesticides for the purpose of controlling state-designated invasive species and noxious weeds when such program is administered by a public entity, provided application of the pesticides shall be limited to localized spot treatments using hand-held devices and may not occur within 15 feet (4.6 m) of vernal pools or breeding ponds, nor when precipitation is occurring or is forecast to occur within 24 hours.
- Prohibit use of fumigants on enrolled lands; poison bait is allowed only if it is broadcast or put in confined bait stations.

- Control non-native predators (including, but not limited to, bullfrogs, mosquitofish catfish, crayfish) in breeding habitats described in Exhibit 2 and in new or restored shallow water habitats and ponds described in Exhibit 3 as follows:
  - Drain the ponds in the fall and winter as necessary to eliminate predatory species (typically after the first fall rains).
  - Use alternative methods to control non-native predators in shallow water habitat where such draining is inappropriate.
  - In no case will non-native predators be introduced into extant, restored or created standing bodies of freshwater (does not include reservoirs, wastewater ponds or recreation ponds).
- Enhance and/or maintain existing suitable upland dispersal and aestivation habitat within 2,067 ft (630m) of the vernal pool complexes, breeding habitats described in Exhibit 2, or new or enhanced shallow water habitats and ponds described in Exhibit 3. Enhancement may include the following features:
  - Dense patches of shrubs and low-growing grassland vegetation within 650 ft (200 m) of breeding ponds to provide habitat for CRLF.
  - Moist refuge habitat (e.g., debris piles, dead and down trees, seeps, wetland, plunge pool, riparian area, densely packed piles of rocks, or other microhabitat) available year-round within 650 ft (200 m) of breeding ponds.
  - Low-growing grassland with brushy areas and/or stands of riparian and oak woodlands within 2,067 ft (630 m) to provide habitat for CTS. This area will be managed to encourage ground squirrel and rodent burrows (>5 burrows per 323 ft^2).

  Maintenance of upland habitat does not preclude continuation of past land use practices and normal operations such as those listed in Section 10.2 of the Agreement. For purposes of this section, suitable upland habitat must be on the enrolled property and must not currently be impacted by disking or significant vehicular traffic.
- Manage livestock grazing activities according to the guidelines in Exhibit 5.
- Prohibit discing and/or grading in existing suitable upland habitats within 2,067 ft (630m) of new or restored shallow water habitats and ponds described in Exhibit 3. Exceptions to this prohibition include areas where livestock congregate or move in large numbers; growing forage crops within the Camanche Hills Hunt Club; fire

prevention and control (including emergency fire fighting); construction, use, and maintenance of access roads, paths and trails; dam, dike, spillway, causeway, aqueduct, and powerhouse operation and maintenance; water supply operation and maintenance; existing wastewater treatment; operation and maintenance of facilities, residences, and hatchery.

[1] As defined in the "California Wildlife Habitat Relationships System" adopted by the California Department of Fish and Game. It is an adaptation of the description in Mayer and Laudenslayer (1988).

[2] Marsh and Trenham (2001) determined that aggregations of amphibians at individual breeding ponds may not represent distinct populations and in many cases should not be managed as distinct units. Groups of ponds may often be a more meaningful unit of management than individual ponds. Since CTS and CRLF have been shown to disperse from 0.4 to 1.2 km from breeding ponds (Service 2002, 2004), development of shallow water habitat within the dispersal range may benefit any metapopulations on the enrolled property or neighboring properties.

[3] When conducting conservation management activities at CRLF and CTS breeding sites, or other aquatic habitats, utilize the following measures to avoid or reduce potential impacts. Prior to entering sites, remove mud, snails, algae, and other debris from nets, traps, boots, vehicle tires, and all other surfaces. Between sites, boots, nets, traps, etc. should then be scrubbed with 70 percent ethanol solution and rinsed clean with sterilized water. Avoid cleaning equipment in the immediate vicinity of a pond or wetland. Qualified biologists will perform surveys within 10 days prior to conservation management activity. CTS and CRLF found in the project site will be avoided through rescheduling activity or the CTS and CRLF adults will be temporarily held (no more than 12 hours) at the site or moved to an unaffected area. To avoid breeding and larval CTS and CRLF, conservation management activities will only be performed when the site is dry or when CTS or CRLF are absent.

References

Bulger J.B., N.J. Scott, and R.B. Seymour. 2003. Terrestrial activity and conservation of adult California red-legged frogs *Rana aurora draytonii* in coastal forests and grasslands. Biological Conservation 110:85-95.

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Mayer, K.E. and W. F. Laudenslayer, Jr. 1988. *A Guide to Wildlife Habitats of California.* California Department of Fish and Game, Sacramento, California.

Trenham, P.C., and H.B. Shaffer. 2005. Amphibian upland habitat use and its consequences for population viability. Ecological Applications 15(4):1158-1168.

USDA Forest Service. 1981. *CALVEG: A Classification of California Vegetation.* Pacific Southwest Region, Regional Ecology Group, San Francisco CA. 168 pp.

U.S. Fish and Wildlife Service (Service). 2002. Recovery Plan for the California red-legged frog (*Rana aurora draytonii*). U.S. Fish and Wildlife Service, Portland, Oregon. vii + 173 pp.

_____. 2004. Endangered and threatened plants and animals; Determination of threatened status for the California tiger salamander; and special rule exemption for existing routine ranching activities; Final Rule. FR 69 (149): 47212-47248.

Trenham, P.C., W.D. Koenig, and H.B. Shaffer. 2001. Spatially autocorrelated demography and interpond dispersal in the salamander *Ambystoma californiense*. Ecology 82(12):3519-3530.

Exhibit 4
MONITORING ACTIVITIES

EBMUD will monitor the following annually and provide Service with a summary report.

- For each habitat type listed in Exhibits 2 and 3,
  - the amount of habitat maintained and/or restored during the previous year; and
  - a general summary of the condition (e.g., excellent, good. fair, poor) of these habitats.
- The month and year when management activities are initiated; and the month and year when management activities entailing restoration, development, or enhancement of habitat are completed.
- Any observations of covered species on the enrolled property.
- Any wildfires occurring on the enrolled property.
- Photos from photo points established by mutual agreement of EBMUD and Service.

EBMUD also will provide to Service the results of its monitoring for ecological indicators developed pursuant to the Mokelumne Watershed Master Plan.

Exhibit 5
LIVESTOCK GRAZING GUIDELINES

These guidelines shall apply only to the upland habitats included in Exhibit 2 (i.e., included in the baseline) and in existing, suitable upland dispersal and aestivation habitat within 2,067 ft (630m) of the new or restored shallow water habitats and ponds described in Exhibit 3. These guidelines may be changed from time to time by mutual agreement of Service and EBMUD.

EBMUD shall:

- Ensure that all pastures will not be overgrazed and that a layer of Residual Dry Matter will be maintained to minimize soil erosion and enhance the quality and quantity of forage produced.
  - Residual Dry Matter (RDM) shall mean the amount of standing, dead plant material and litter from the previous year's growth of herbaceous plants and shall be expressed in pounds per acre.
- The amount of RDM, as measured during the month of September in dry annual grassland[1] shall be as follows:

Flat Slopes (0-10%)	300 Pounds/Acre
Medium Slopes (10-20%)	400 Pounds/Acre
Moderate Slopes (20-40%)	500 Pounds/Acre
Steep Slopes (>40%)	600 Pounds/Acre

- It is recognized that local over-utilization may occur adjacent to watering facilities, corrals and salting areas. These areas will not be used to determine the RDM levels of a pasture. If the RDM levels drop below the amounts specified above, then all livestock shall be immediately removed from the affected pasture(s) until such time as EBMUD determines that said pasture(s) have recovered sufficiently for restocking.

EBMUD will provide monitoring results to Service annually, and provide copies of annual grazing plans to Service upon request. If the above thresholds are not met in a particular year, Service may require that the portions of the Annual Grazing Plans for the following year that are relevant to the upland habitats described above be reviewed by Service.

[1] Bartolome, J.W., W.E. Frost, N.K. McDougald, and M. Conner. 2002. California Guidelines for Residual Dry Matter (RDM) Management on Coastal and Foothill Annual Rangelands. University of California, Division of Agriculture and Natural Resources, Publication 8092.