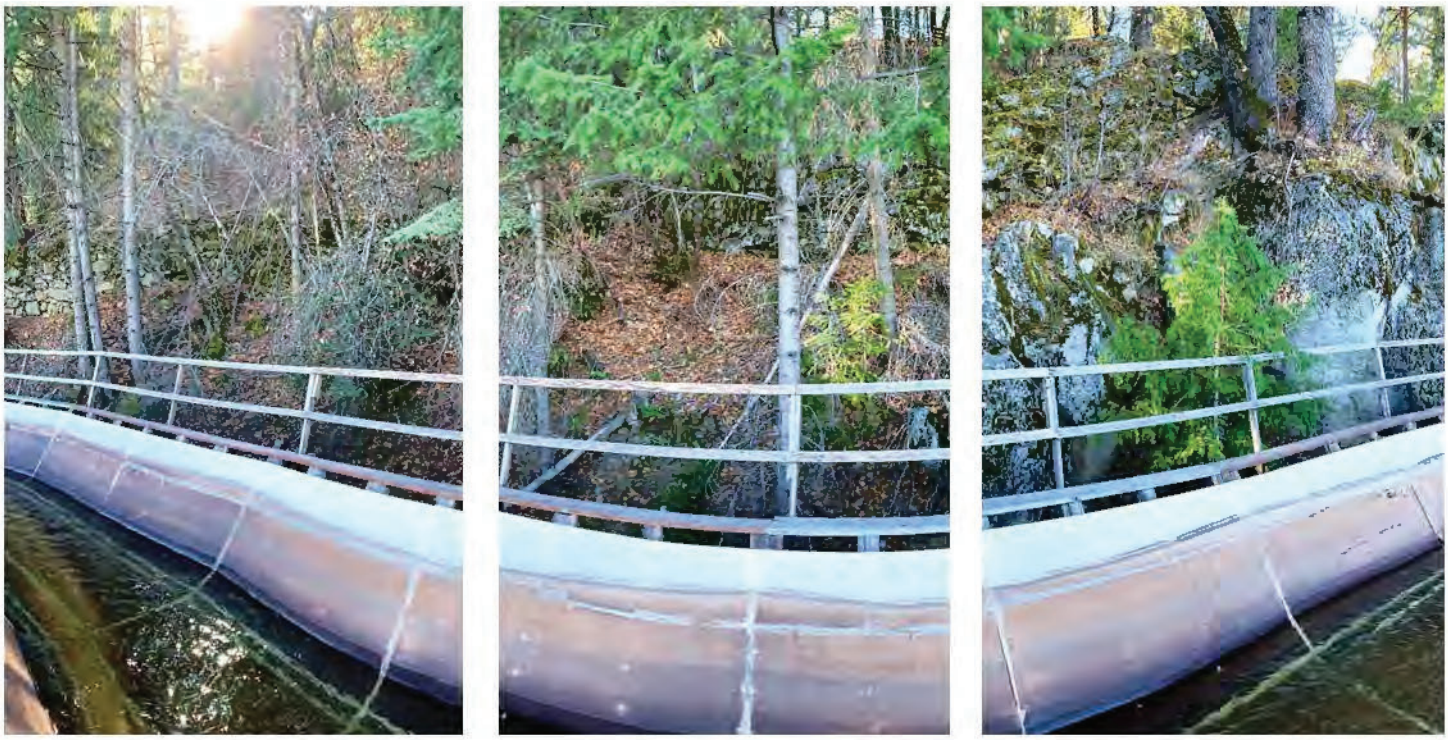


FLUME 48 UTILITY AND INFRASTRUCTURE REPLACEMENT PROJECT

DRAFT ENVIRONMENTAL IMPACT REPORT

State Clearinghouse Number 2024120943

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Acronyms and Abbreviations

A

AADT	average annual daily traffic
AB	Assembly Bill
ADA	Americans with Disabilities Act
amsl	above mean sea level
APE	Area of Potential Effect
API	Area of Potential Impact

B

BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
BP	Before Present
BRA	Biological Resources Area

C

CAA	Federal Clean Air Act
CAAQs	California ambient air quality standards
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CARB	California Air and Resources Board
CalEEMod	California Emissions Estimator Model
Cal/OSHA	California Division of Occupational Safety and Helath
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	methane
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CHSC	California Health and Safety Code
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO2-equivalents
County	El Dorado County
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CSMP	Corridor System Management Plan
CWA	Clean Water Act

CWHR	California Wildlife Habitat Relationship System
cy	cubic yards

D

dB	decibel
dBA	A-Weighted decibel
DPR	Department of Parks and Recreation
District	El Dorado Irrigation District
DTSC	California Department of Toxic Substances Control

E

EDAPCD	El Dorado County Air Pollution Control District
EDAQMD	El Dorado Air Quality Management District
EID	El Dorado Irrigation District
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
ESA	Federal Endangered Species Act

F

FSS	U.S. Forest Service Sensitive Species
FPA	Federal Power Act
FERC	Federal Energy Regulatory Commission
FGC	Fish and Game Code
FHSZ	Fire Hazard Severity Zone
FSM	Forest Service Manual
FTA	Federal Transit Authority

G

GHG	greenhouse gases
GWP	global warming potential

H

HAER	Historic American Engineering Record
HFC	hydrofluorocarbon
HRA	health risk assessment

I

IPaC	Information for Planning and Conservation
IS	Initial Study

L

lbs	pounds
L_{dn}	day/night noise level
L_{eq}	average sound level
LHMP	Local Hazard Mitigation Plan
L_{max}	maximum sound level
LOS	Level of Service
LRMP	Land and Resource Management Plan

LUST	Leaking Underground Storage Tank

M

MBTA	Migratory Bird Treaty Act
MCAB	Mountain Counties Air Basin
mg	milligrams
MIS	Management Indicator Species
mph	miles per hour
MSE	mechanically stabilized earth
MT	metric tons
MTP/SCS	Metropolitan Transportation Plan/Sustainable Communities Strategy

N

N_2O	Nitrous oxide
NAAQS	National ambient air quality standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NO_X	oxides of nitrogen
NOA	Notice of Availability
NOI	Notice of Intent
NOP	Notice of Preparation
NPDES	National Pollution Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NO_2	nitrogen dioxide
NO_x	oxides of nitrogen
NPS	National Park Service
NWI	National Wetland Inventory

O

O_3	ozone
O&M	operations and maintenance
OEHHA	Office of Environmental Health Hazard Assessment
OHP	Office of Historic Preservation
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration

P

PFC	perfluorocarbon
PG&E	Pacific Gas and Electric
PM	particulate matter
PM2.5	particulate matter less than or equal to 2.5 micrometers in diameter
PM10	particulate matter less than or equal to 10 micrometers in diameter
ppb	parts per billion

ppm	parts per million
ppv	peak particle velocity
PRC	California Public Resources Code

R

RCRA	Resource Conservation Recovery Act
ROG	reactive organic gas
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board

S

SACOG	Sacramento Area Council of Governments
SB	Senate Bill
sf	square feet
SF_6	sulfur hexafluoride
SHPO	State Historic Preservation Officer
SLF	Sacred Lands File
SMAQMD	Sacramento Metropolitan Air Quality District
SO_2	sulfur dioxide
SRA	State Responsibility Area
SSC	species of special concern
SWRCB	State Water Resources Control Board
SWPPP	Stormwater Pollution Prevention Plan

T

TAC	toxic air contaminant
TCR	Tribal Cultural Resource
TSCA	Toxic Substances Control Act
TSMP	Transportation System Management Plan

U

UAIC	United Auburn Indian Community of the Auburn Rancheria
µg	micrograms
USC	United States Code
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
USFWS	U.S. Fish and Wildlife Service

V

VMT	vehicle miles traveled

W

WUI	wildland urban interface

Executive Summary

ES.1 INTRODUCTION

The El Dorado Irrigation District (EID or District) has prepared this Draft Environmental Impact Report (EIR) to provide decision makers, the public, and agencies with information about the potential environmental impacts of the Flume 48 Utility and Infrastructure Replacement Project (Project) in El Dorado County, California. The District owns and operates the El Dorado Hydroelectric Project, which is licensed by the Federal Energy Regulatory Commission (FERC) as Project 184. Project 184 includes the El Dorado Canal, which consists of various conveyance structures (e.g., flumes, canals, tunnels, siphons) that convey approximately one third of the District's total drinking water supply to over 125,000 residents in El Dorado County and provides water to generate clean renewable energy through a 21-megawatt hydroelectric generation facility. Flume 48 is a component of this critical water conveyance system, and is constructed of wood that is highly susceptible to damage and destruction by natural hazards including wildfires, landslides, and falling trees and rocks. The immediately adjacent forested areas were burned in the 2014 King Fire. Therefore, the Project would replace the wooden flume with a more durable ignition resistant concrete conveyance structure (i.e., U-shaped concrete canal). The non-historic era wood flume is constructed on a historic, hand-stacked rock wall that was constructed in 1875. The Project is also designed to improve the durability of the El Dorado Canal system and ensure continued operational reliability of Project 184 overall.

The California Environmental Quality Act (CEQA) specifies that a public agency must prepare an environmental impact report (EIR) for any project that it proposes to carry out or approve that may result in a significant effect on the physical environment (California Public Resources Code, Section 21080[d]). Serving as the CEQA lead agency, the District has prepared this EIR in accordance with CEQA and the State CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15000 et seq.). This EIR is an informational document that will inform public agency decision makers and the public of the potential significant environmental effects of the Project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the Project (State CEQA Guidelines, Section 15121(a)).

ES.2 SUMMARY OF PROJECT DESCRIPTION

ES.2.1 Project Location

The approximately 5-acre project site is located east of the town of Pollock Pines in unincorporated El Dorado County. The project site is located north of Highway 50 and west of Fresh Pond on steep terrain along the South Fork American River canyon in a forested area. The project site consists of land owned by the District and private land that contains an existing residence. Elevations on the project site range from approximately 3,840 to 3,900 feet above mean sea level. The site is characterized as having slopes of approximately 1:1 and is heavily forested with trees up to approximately 30 inches in diameter. The project site is immediately south of the Eldorado National Forest.

ES.2.2 Project Objectives

The purpose of the Project is to replace the existing wooden Flume 48 with a concrete-lined canal to meet current safety standards, improve the durability and reliability, and thereby improve the safety, durability, and reliability of Project 184 overall. The Project is designed to meet the following objectives:

- Provide a facility that is resistant to damage from catastrophic wildfires;
- Provide continued water supply and hydroelectric generation;
- Improve the safety and reliance of the El Dorado Canal system;
- Ensure continued operational reliability of the El Dorado Canal system; and
- Improve access to the El Dorado Canal system.

ES.2.3 Construction

The Project includes the removal and demolition of approximately 448 linear feet of Flume 48, which includes a wooden flume, a historic hand-stacked rock wall, and a spillway. Construction of the new conveyance structure would involve construction of a mechanically stabilized earth (MSE) retaining wall, construction of a new U-shaped concrete canal, slope stabilization, and access improvements to allow for construction and continued maintenance access to the canal segment. Vegetation and hazard trees within the limits of work would be cleared, and hazardous rocks in the immediate vicinity of the work area would be either removed or stabilized in place. The project site is currently accessible via an existing private residential driveway off Highway 50. An existing cleared and graded area is present above the flume and would be used for construction staging and access.

Construction of the Project is scheduled to occur during the District's annual canal maintenance outage, which typically occurs annually from October through December. The Project would be completed over the course of two annual outages, with construction being suspended during the regular operational period of the canal (mid-December through September). Construction activities would require material haul trips, supply and delivery trips, and worker trips over the duration of the Project. Construction activities would require material haul trips, supply and delivery trips, and worker trips over the duration of the Project. Slope stabilization and erosion control measures would be implemented as needed to maintain a safe work environment.

ES.2.4 Operations and Maintenance

Ongoing operations and maintenance (O&M) of the Project would be required throughout the life of the facilities. Typical operations would be similar to the current levels and types of O&M activities. Maintenance of the Project would likely be less than current activities since the concrete conveyance structure would not be as susceptible to damage as the current wood flume structure. Maintenance would include system inspections, facility repairs, and vegetation management along the canal. Operational access to the canal would occur along the access routes installed as part of the Project. Future O&M activities and vegetation management would be completed in compliance with FERC-approved plans for Project 184 including, but not limited to, the Project 184 Transportation Management Plan, Project 184 Visual Resource Management Plan, Project 184 Hazardous Substances Plan, Project 184 Noxious Weed Prevention and Control Plan, Project 184 Canal Release Points Plan, and Flume 48 Replacement Quality Control Inspection Plan. Since O&M requirements after construction of the Project would be similar to existing requirements, O&M activities are not evaluated in this EIR.

ES.3 SUMMARY OF PROJECT ALTERNATIVES

CEQA requires that an EIR describe and evaluate a range of reasonable alternatives to the project or to the location of projects that would feasibly attain most of the basic project objectives and would avoid or substantially lessen significant project impacts (CEQA Guidelines Section15126.6). The alternatives analysis must include the No Project alternative as a point of comparison. In addition to the No Project alternative, the alternatives to the Project considered in this EIR were developed based on information gathered during the preliminary project design and are summarized below. Based on the comparison of relevant impacts of the alternatives, as described in **Section 5**, the Project is considered the environmentally superior alternative.

ES.3.1 No Project Alternative

Under the No Project alternative, the Project would not be implemented and the existing wood flume would remain in its current condition. There would be no construction of an MSE retaining wall or access improvements and the existing historic rock wall would still not meet current factors of safety due to loose fill and voids. The existing wooden flume would remain highly susceptible to damage and destruction by natural hazards including wildfires, landslides, and falling trees and rocks.

ES.3.2 Alternative 1

Under Alternative 1, the existing wooden flume would be removed and the existing rock wall would be stabilized in place to provide a wildfire-hardened facility and meet current code requirements. The rock wall and bench stabilization would consist of installing tieback anchors and a structurally reinforced shotcrete wall. Once the bench is complete, a concrete flume would be constructed to meet current code requirements. Access improvements under Alternative 1 would be the same as those outlined for the Project and would include a permanent access road and two temporary access roads.

Alternative 1 would require complex construction performed by highly specialized subcontractors. The stability of the existing hand-stacked rock wall and bench is not currently adequate to support drilling activities from the top of the bench and would need to be mitigated or conducted utilizing hand-operated equipment from scaffolding in front of the wall. Alternative 1 would require up to 100 tieback anchors in unfavorable ground conditions, correlating to an anticipated construction duration of more than 11 months to install the tieback anchors, and is not constructable within two outages as the Project can be constructed.

Alternative 1 would require a reinforced concrete flume on top of the existing bench, which would be more susceptible to damage from wildfires and impacts from trees and rocks than the concrete canal provided by the proposed MSE construction. Final stability under Alternative 1 would be more uncertain than that of MSE construction due to the inability to verify foundation conditions and engineering properties of the existing retained bench. Drainage of the retained bench behind the tieback wall would be limited to discrete drilled horizontal drains as opposed to the continuous subdrain of MSE and is less capable of preventing saturated earth pressures from developing behind the wall.

ES.4 RESPONSIBLE AND TRUSTEE AGENCIES

The District, as the CEQA lead agency, has the principal responsibility for approving and carrying out the Project, as well as for ensuring that CEQA requirements and other applicable regulations are met.

Agencies that may have a role in approving all or a portion of the Project may include, but are not limited to:

- State Water Resources Control Board (SWRCB)
- California Office of Historic Preservation

ES.5 AREAS OF CONTROVERSY/ISSUES TO BE RESOLVED

Pursuant to CEQA Guidelines Sections 15123(b)(2) and (3), the Executive Summary is required to address areas of controversy, including those raised by agencies and the public, as well as issues to be resolved. Based on comments made during the public review period in response to information published in the Notice of Preparation (NOP), no areas of controversy were identified for the Project.

ES.6 PUBLIC REVIEW

The District has issued a Notice of Availability (NOA) to provide agencies and the public with formal notification that the Draft EIR is available for review and comment. The NOA was also published in the Mountain Democrat newspaper at the time of publication of the Draft EIR. The NOA, Draft EIR, and Draft EIR Appendices are available online at www.eid.org/ceqa and at the District Customer Service Building located at 2890 Mosquito Road Placerville, California. The NOA is also available at the following locations:

- El Dorado County Recorder-Clerk Placerville Office, 360 Fair Lane, Placerville, California
- Placerville Main Public Library, 345 Fair Lane, Placerville, California
- Pollock Pines Public Library, 6210 Pony Express Trail, Pollock Pines, California

Agencies, organizations, and interested parties have the opportunity to comment on this Draft EIR during the 45-day public review period. Please include the commenter's full name and address. Comments may be submitted to EID at Flume48EIR@eid.org or by U.S. mail to: El Dorado Irrigation District 2890 Mosquito Road, Placerville, California 95667 by 5 pm on October 3, 2025; Attention: Michael C. Baron. In accordance with the Americans with Disabilities Act and California law, it is the policy of the District to offer its public programs, services, and meetings in a manner that is ready accessible to everyone, including individuals with disabilities. If you are a person with a disability and require information or materials in an appropriate alternative format; or if you require any other accommodation, please contact the District's ADA coordinator at 530.642.4045 or e-mail at adacoordinator@eid.org.

Upon completion of the public review period, the District will review the comments received and prepare written responses to environmental issues raised pursuant to CEQA Guidelines Section 15088 and, if necessary, will make related revisions to the Draft EIR text. Comments received and the responses to comments will be included as part of the record for consideration by the District in its decision-making process.

Following certification of the Final EIR, the District may then consider approval of the action as described in CEQA Guidelines Section 15092, which states that a public agency shall not decide to approve or carry out a project for which an EIR was prepared unless either: (1) the project as approved would not have a significant effect on the environment, or (2) the agency has eliminated or substantially lessened all significant effects where feasible and made a determination that any remaining significant effects found to be unavoidable are acceptable due to overriding considerations.

If the action is approved by the District, CEQA Guidelines Section 15091 requires the District to adopt findings describing how each of the significant impacts identified in the EIR are being mitigated. The findings will describe the reasons why significant unavoidable impacts, if any, cannot be mitigated. The findings will also describe the District's findings with respect to the alternatives that were analyzed in the EIR.

If the District decides to approve the action or any alternative analyzed in the Final EIR, despite a finding that it would have significant and unavoidable impacts, the District will also adopt a Statement of Overriding Considerations describing the benefits of the action that, in the District's judgment, outweigh its significant environmental impacts, pursuant to CEQA Guidelines Section 15093. Finally, the District will adopt a Mitigation Monitoring and Reporting Plan, as required under CEQA Guidelines Sections 15096 (g) and 15097, which describes how it will ensure that the mitigation measures being required will be carried out.

ES.7 SUMMARY OF IMPACTS AND MITIGATION

CEQA requires that the environmental analysis contained in the EIR also includes a summary of the Project and its consequences, including identification of each potentially significant impact of the Project, the level of effect the Project may have, and any proposed mitigation measures. **Table ES-1** presents a summary of the impacts and mitigation measures identified for the Project. A complete description of each impact and mitigation measure is included in **Section 3**.

Table ES-1: Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
3.2 Air Quality			
Impact AIR-1: Conflict or obstruct implementation of the applicable air quality plan from construction activities?	Significant	**Mitigation Measure AIR-1**: Dust and Emissions Control Plan	Less than Significant
Impact AIR-2: Result in a cumulatively considerable net increase of any criteria pollutant from construction activities?	Less than Significant	None Required	Less than Significant
Impact AIR-3: Expose sensitive receptors to substantial pollutant concentrations?	Less than Significant	None Required	Less than Significant
3.3 Biological Resources			
Impact BIO-1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	Significant	**Mitigation Measure BIO-1:** Preconstruction Nesting Bird and Raptor Survey **Mitigation Measure BIO-2**: Worker Awareness Training **Mitigation Measure BIO-3**: Avoid and Minimize Impacts on Roosting Bats	Less than Significant
3.4 Cultural Resources			
Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	Significant and Unavoidable	**Mitigation Measure CUL-1**: Document the El Dorado Canal Rock Wall Discontiguous District (P-09-000599/CA-ELD-000511H) segment within Flume 48.	Significant and Unavoidable
Impact CUL-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	Significant	**Mitigation Measure CUL-2**: Preconstruction Cultural Resource Awareness Training **Mitigation Measure CUL-3**: Address Previously Undiscovered Historical and Archaeological Resources	Less than Significant
Impact CUL-3: Disturb any human remains, including those interred outside of formal cemeteries?	Significant	**Mitigation Measure CUL-3**: Address Previously Undiscovered Historical and Archaeological Resources	Less than Significant
3.5 Geology and Soils			
Impact GEO-1: Result in substantial soil erosion or the loss of topsoil?	Significant	**Mitigation Measure GEO-1:** Prepare and Implement a SWPPP and BMPs	Less than Significant
3.6 Greenhouse Gas Emissions			
Impact GHG-1: Generate greenhouse gas emissions from construction activities?	Less than Significant	None Required	Less than Significant
Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing greenhouse gas emissions?	Less than Significant	None Required	Less than Significant
3.7 Hazards and Hazardous Materials			
Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials during construction activities?	Significant	**Mitigation Measure GEO-1:** Prepare and Implement a SWPPP and BMPs **Mitigation Measure HAZ-1:** Prepare and Implement a Hazardous Materials Release Prevention Plan	Less than Significant

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment during construction activities?	Significant	**Mitigation Measure GEO-1:** Prepare and Implement a SWPPP and BMPs **Mitigation Measure HAZ-1:** Prepare and Implement a Hazardous Materials Release Prevention Plan	Less than Significant
Impact HAZ-3: Expose people or structures to a significant risk of loss, injury, or death involving wildland fires during construction activities?	Significant	**Mitigation Measure WILD-1:** Prepare and Implement a Fire Safety Plan	Less than Significant
3.8 Hydrology and Water Quality			
Impact HYD-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	Significant	**Mitigation Measure GEO-1:** Prepare and Implement a SWPPP and BMPs **Mitigation Measure HAZ-1:** Prepare and Implement a Hazardous Materials Release Prevention Plan	Less than Significant
Impact HYD-2: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would (i) result in Substantial Erosion or Siltation on- or off-Site; (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?; (iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or (iv) impede or redirect flood flows?	Significant	**Mitigation Measure GEO-1:** Prepare and Implement a SWPPP and BMPs	Less than Significant
3.9 Tribal Cultural Resources			
Impact TRIB-1: Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 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 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, 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 § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.)?	Significant	**Mitigation Measure TRIB-1:** BMPs to Reduce or Avoid Impacts on Tribal Cultural Resources **Mitigation Measure TRIB-2:** Preconstruction Tribal Cultural Resource Awareness and Sensitivity Training **Mitigation Measure TRIB-3:** Address Previously Undiscovered Tribal Cultural Resources	Less than Significant

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
3.10 Noise and Vibration			
Impact NOISE-1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Less than Significant	None Required	Less than Significant
Impact NOISE-2: Generation of excessive groundborne vibration or groundborne noise levels?	Less than Significant	None Required	Less than Significant
3.11 Transportation			
Impact TRA-1: Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	Less than Significant	None Required	Less than Significant
Impact TRA-2: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Significant	**Mitigation Measure TRA-1:** Prepare and Implement a Traffic Control Plan	Less than Significant
Impact TRA-3: Result in inadequate emergency access?	Significant	**Mitigation Measure TRA-1:** Prepare and Implement a Traffic Control Plan	Less than Significant
3.12 Wildfires			
Impact WILD-1: Located in or near SRAs or lands classified as very high fire hazard severity zones, would the Project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	Significant	**Mitigation Measure WILD-1:** Prepare and Implement a Fire Safety Plan	Less than Significant

Section 1 | Introduction

The El Dorado Irrigation District (EID or District) has prepared this Draft Environmental Impact Report (EIR) to provide decision makers, the public, and agencies with information about the potential environmental impacts of the Flume 48 Utility and Infrastructure Replacement Project (Project) in El Dorado County, California. This Draft EIR was prepared in compliance with the California Environmental Quality Act (CEQA) of 1970 (as amended) and the California Environmental Quality Act Guidelines (California Code of Regulations [CCR] Title 14, Section (§) 15000 et seq.) (collectively CEQA).

1.1 PROJECT BACKGROUND

The District owns and operates the El Dorado Hydroelectric Project, which is licensed by the Federal Energy Regulatory Commission (FERC) as Project 184. Project 184 includes the El Dorado Canal, which consists of various conveyance structures (e.g., flumes, canals, tunnels, siphons) to convey approximately one third of the District's drinking water supply to over 125,000 residents in El Dorado County, California, and also provides clean renewable energy through a 21-megawatt hydroelectric generation facility. Flume 48 is an approximately 448-foot-long wooden flume that is a component of this critical water conveyance system. However, Flume 48 is constructed of wood and is highly susceptible to damage and destruction by natural hazards including wildfires, landslides, and falling trees and rocks. Therefore, the District is proposing to replace the wooden flume with a more durable ignition resistant concrete conveyance structure (i.e., U shaped concrete canal). The non-historic era wood flume is primarily supported by a historic hand-stacked rock wall and bench that was constructed in 1875. The proposed Project includes the removal and replacement of approximately 448 linear feet of the existing wooden flume, spillway, timber substructure, and rock wall with a cast-in-place reinforced concrete U-shaped canal built on a mechanically stabilized earth (MSE) bench to improve the durability of the El Dorado Canal system and ensure continued operational reliability of Project 184 overall.

1.2 CEQA PROCESS

CEQA requires public agencies to identify, disclose, and consider the potential environmental impacts of proposed discretionary actions that agencies are considering for approval. When a project may result in significant environmental impacts, the Lead Agency must prepare an EIR and certify its adequacy before it considers whether to approve the project.

A project that may have a significant impact on the environment cannot be approved unless the Lead Agency adopts mitigation measures that would reduce that impact to a less-than-significant level, if feasible. If an impact would remain significant after mitigation (i.e., significant and unavoidable), the Lead Agency is still required to mitigate the impact to the extent feasible. An EIR is an informational document used for this purpose in the State of California (State), regional, and local planning and decision-making processes to disclose potential environmental effects.

The District, as the CEQA Lead Agency, has prepared this Draft EIR for public review and comment pursuant to the requirements of CEQA Guidelines Sections 15080 to 15097. The Draft EIR will be available for review and comment by public agencies and the public for a period of 45 days (CEQA Guidelines Section 15105).

Pursuant to CEQA Guidelines Section 15088, the District will evaluate comments on environmental issues received on the Draft EIR and will provide written responses to those comments that raised significant environmental issues. The District will prepare the Final EIR, which may include necessary revisions to the Draft EIR, comments received on the Draft EIR, a list of individuals, organizations, and public agencies that provided comments; and written responses to comments that raised significant environmental issues pursuant to CEQA Guidelines Sections 15088−15089 and 15132. As required by CEQA Guidelines Section 15090, prior to approval, the District will certify that the Final EIR complies with CEQA, that the District has reviewed and considered the information contained in the Final EIR before making its decision, and that the Final EIR reflects the District's independent judgment and analysis.

1.2.1 Intended Uses of EIR/Agency Roles

As described in the CEQA Guidelines (14 CCR Section 15121[a]), an EIR is a public informational document that assesses environmental effects of a project and identifies mitigation measures and alternatives to the project that could reduce or avoid significant environmental impacts. This Draft EIR evaluates the potential environmental impacts of the Project. The analysis herein has been prepared at a "project level" pursuant to the State CEQA Guidelines Section 15161. Accordingly, this Draft EIR focuses on changes in the environment that could result during all phases of the Project, including planning, construction, operation, and maintenance.

The State CEQA Guidelines (Section 15367) identify a Lead Agency as the public agency that is responsible for approving and implementing a project. The District is both the Lead Agency and the Project proponent and is responsible for providing documentation and implementing steps necessary to satisfy CEQA requirements for the Project. As the Lead Agency, the District has prepared this Draft EIR, will be responsible for preparing the Final EIR, and is responsible for ensuring that the EIR is available for review by the public and interested agencies and parties. The District will also be responsible for EIR certification and potential Project approval.

An EIR is an informational document used in the planning and decision-making process. It is not the purpose of an EIR to recommend approval or denial of a project. The information contained in this Draft EIR and the administrative record will be reviewed and considered by the District prior to making a decision to approve, disapprove, or modify the Project. Other public agencies may use this document in their decision-making or permit processes related to the Project. A CEQA responsible agency is a State agency, board, commission, or any local or regional agency other than the Lead Agency that has a legal responsibility for reviewing, carrying out, approving, or permitting aspects of a project. A CEQA trustee agency is a State agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California.

1.2.2 IS/NOP and Public Scoping

In accordance with CEQA Guidelines Section 15082(a), the District distributed a Notice of Preparation (NOP) and Initial Study (IS) for the Draft EIR on December 19, 2024 (**Appendix A**). For each environmental resource area outlined in Appendix G of the CEQA Guidelines, the NOP/IS assessed whether the Project would result in no impact, a less-than-significant impact, or a potentially significant impact that would necessitate further evaluation. The comment period for the NOP/IS closed on January 30, 2025. Four comment letters were received in response to the NOP/IS and are summarized in **Table 1.2-1** (**Appendix A**).

Table 1.2-1: Comment Letters Received on the NOP/IS

Date	Commenter	Affiliation	Summary	Relevant EIR Section
January 2, 2025	Peter G. Minkel	Central Valley Regional Water Quality Control Borad, Engineering Geologist	Discussed potential permits and considerations associated with water quality.	▪ Section 2, Project Description ▪ Section 2.6, Potential Permits, Plans and Approvals ▪ Section 3.8, Hydrology and Water Quality
January 2, 2025	Pricilla Torres-Fuentes	California Native American Heritage Commission, Cultural Resources Analyst	Discussed tribal consultation and mitigation regarding potential impacts to tribal cultural resources.	▪ Section 3.4, Cultural Resources ▪ Section 3.9, Tribal Cultural Resources
January 17, 2025	Gary Arnold	California Department of Transportation, District 3 Division of Planning, Local Assistance, and Sustainability Branch Chief	Discussed potentially necessary permits and requested the complete site plan when available	▪ Section 2.6, Potential Permits, Plans and Approvals ▪ Section 3.11, Transportation
January 17, 2025	Anna M. Starkey, M.A., RPA	United Auburn Indian Community of the Auburn Rancheria, Tribal Historic Preservation Department, Cultural Regulatory Manager	Confirmed the lack of culturally sensitive resources in the area of the project site.	▪ Section 3.4, Cultural Resources ▪ Section 3.9, Tribal Cultural Resources

1.2.3 Scope of Draft EIR Analysis

Pursuant to the State CEQA Guidelines Section 15143, a lead agency may limit an EIR's discussion of environmental impacts to resource areas where significant impacts on the environment may occur. Through preparation of the IS, the District concluded that additional environmental review in an EIR would be conducted for only those CEQA Guidelines Appendix G Checklist items that required further impact analysis. The Draft EIR does not address resource areas where the Project was determined to have no impact or a less-than-significant impact in the IS, including the following: Aesthetics, Agriculture and Forestry Resources, Land Use/Planning, Mineral Resources, Population/Housing, Public Services, Recreation, Utilities/Service Systems, and Energy. Therefore, the following resource topics are focused only on those impacts found to be potentially significant and requiring further impact analysis:

- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Transportation
- Tribal Cultural Resources
- Wildfire

Thresholds of significance were established by the District based on CEQA Guidelines Appendix G Checklist, Federal, State, and local regulations, resource-specific policy guidance, and available scientific information. The environmental analysis for these resource areas is presented in **Section 3** of this Draft EIR.

1.2.4 Tribal Consultation

Assembly Bill (AB) 52, passed in 2014, requires consultation with Native American Tribes during the CEQA process. In accordance with AB 52, concurrent with the release of the NOP/IS, the District sent project notification letters to tribal representatives of the United Auburn Indian Community of the Auburn Rancheria (UAIC), Shingle Springs Band of Miwok Indians, Wilton Rancheria, and Wopumnes-Nisenan Tribes on December 19, 2024. UAIC provided a response indicating the Project area does not appear to be culturally sensitive and that they are unaware of any recorded sites on or near the project site. As of the date of publication of this Draft EIR, no further responses requesting consultation under AB 52 have been received by the District.

1.2.5 Public Review Process/Draft EIR Comment Period

EID has issued a Notice of Availability (NOA), in accordance with CEQA Guidelines Section 15087, to provide agencies and the public with notification that the Draft EIR is available for review and comment during the public comment period from August 20, 2025 to October 3, 2025. The NOA was also published in the Mountain Democrat newspaper at the time of publication of the Draft EIR. The NOA, Draft EIR, and Draft EIR Appendices are available online at www.eid.org/ceqa and at the District Customer Service Building located at 2890 Mosquito Road Placerville, California. The NOA is also available at the following locations:

- El Dorado County Recorder-Clerk Placerville Office, 360 Fair Lane, Placerville, California
- Placerville Main Public Library, 345 Fair Lane, Placerville, California
- Pollock Pines Public Library, 6210 Pony Express Trail, Pollock Pines, California

Agencies, organizations, and interested parties have the opportunity to comment on this Draft EIR during the 45-day public review period. Please include the commenter's full name and address. Comments may be submitted to the District at Flume48EIR@eid.org or by U.S. mail to: El Dorado Irrigation District 2890 Mosquito Road, Placerville, California 95667 by 5 pm on October 3, 2025; Attention: Michael C. Baron. In accordance with the Americans with Disabilities Act (ADA) and California law, it is the policy of the District to offer its public programs, services, and meetings in a manner that is ready accessible to everyone, including individuals with disabilities. If you are a person with a disability and require information or materials in an appropriate alternative format; or if you require any other accommodation, please contact the District's ADA coordinator at 530.642.4045 or e-mail at adacoordinator@eid.org.

Effectively Commenting on the Draft EIR

Readers are invited to review and comment on the adequacy and completeness of this Draft EIR, particularly in describing the potential impacts, the level of severity of potential impacts, the mitigation measures being proposed to reduce or avoid significant impacts, and the alternatives being considered. In this regard, CEQA defines "significant effect on the environment" as a substantial or potentially substantial adverse change in any of the physical conditions within the area affected by the Project's actions, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance (CEQA Guidelines Section 15382).

"Mitigation" includes actions that would avoid the impact altogether; minimize the impact; rectify by repairing, rehabilitating, or restoring the impacted environment; reduce the impact over time; or compensate for the impact by replacing or providing substitute resources or environments (CEQA Guidelines Section 15370). The most effective comments are generally those that focus on the adequacy and completeness of the environmental analysis and that are supported by factual evidence. Note that comments that focus on the District's decision to approve or deny an action are not considered comments on the adequacy of this Draft EIR.

1.2.6 Preparation of Final EIR

Pursuant to CEQA Guidelines Section 15088, upon completion of the public review and comment period, the District will review comments received, will prepare written responses to relevant concerns raised, and, if necessary, will make related revisions to the Draft EIR text. Comments received and responses to comments received will be included in the Final EIR as part of the record for consideration by the District in its decision-making process. Responses will be incorporated into the Final EIR and provided to commenting public agencies at least 10 days prior to certification of the EIR (CEQA Guidelines Section 15088[b]). The general process for the preparation and certification of an EIR is described under Section 15096 of the CEQA Guidelines.

Following certification of the Final EIR, the District may then consider approval of the Project as described in CEQA Guidelines Section 15092, which states that a public agency shall not decide to approve or carry out a project for which an EIR was prepared unless either: (1) the project as approved would not have a significant effect on the environment, or (2) the agency has eliminated or substantially lessened all significant effects where feasible and made a determination that any remaining significant effects found to be unavoidable are acceptable due to overriding considerations.

If the Project is approved by the District, CEQA Guidelines Section 15091 requires the District to adopt findings describing how each of the significant impacts identified in the EIR will be mitigated. The findings will describe the reasons why significant unavoidable impacts, if any, cannot be mitigated. The findings will also describe the District's findings with respect to the alternatives analyzed in the EIR. If the District decides to approve the Project or any alternative analyzed in the Final EIR, despite a finding that it would have significant and unavoidable impacts, the District will also adopt a Statement of Overriding Considerations describing the benefits of the action that, in the District's judgment, outweigh its significant environmental impacts, pursuant to CEQA Guidelines Section 15093. Finally, the District will adopt a Mitigation Monitoring and Reporting Plan, as required under CEQA Guidelines Sections 15096 (g) and 15097, which describes how it will ensure that the mitigation measures will be implemented.

1.3 ORGANIZATION OF THE DRAFT EIR

This Draft EIR contains the following components:

Executive Summary: This section provides a summary of the Project description, including project objectives, project alternatives, agency roles and responsibilities, areas of controversy/issues to be resolved, information on public review and final EIR, and summary of environmental impacts and mitigation measures.

Section 1, Introduction: This section describes the project background, CEQA process, CEQA scoping process, preparation of the Final EIR, and organization of this Draft EIR.

Section 2, Project Description: This section describes the project, including a brief description of the project's location, purpose, objectives, project components, and project construction and maintenance activities.

Section 3, Environmental Setting and Impact Analysis: Section 3 includes analysis of criteria identified in the NOP/IS for evaluation in the Draft EIR in 11 resource areas that describe existing regulatory and environmental conditions and the Project's anticipated environmental impacts. The following resource topics are analyzed in Section 3:

3.2 Air Quality
3.3 Biological Resources
3.4 Cultural Resources
3.5 Geology and Soils
3.6 Greenhouse Gas Emissions
3.7 Hazards and Hazardous Materials
3.8 Hydrology and Water Quality
3.9 Tribal Cultural Resources
3.10 Noise and Vibration
3.11 Transportation
3.12 Wildfire

These sections identify feasible mitigation measures to address impacts determined to be significant.

Section 4, Other CEQA Considerations. Section 4 describes the project's potential to induce growth and identifies irreversible environmental changes and significant unavoidable impacts resulting from the project and analyzes cumulative impacts.

Section 5, Alternatives. This section describes the process through which alternatives to the project were developed and screened, describes the alternatives selected for detailed evaluation, evaluates their likely environmental impacts, and identifies the environmentally superior alternative.

Section 6, Report Preparers. This is a list of the individuals involved in preparing the EIR and their responsibilities.

Section 7, References. This is a list of the references cited throughout the EIR organized by appearance in associated Sections and sections.

Appendices. The appendices to the EIR provide additional, often more technical or specialized information about various environmental topics discussed in the EIR.

Section 2 | Project Description

The District owns and operates the El Dorado Hydroelectric Project, which is licensed by the FERC as Project 184. Project 184 includes the El Dorado Canal, which consists of various conveyance structures (e.g., flumes, canals, tunnels, siphons), to convey approximately one-third of the District's total drinking water supply to over 125,000 residents in El Dorado County, California, and also provide water to generate clean renewable energy through a 21-megawatt hydroelectric generation facility. Flume 48 is a component of this critical water conveyance system. Flume 48 is constructed of wood, which is highly susceptible to damage and destruction by natural hazards including wildfires, landslides, and falling trees and rocks. Therefore, the District is proposing to implement the Flume 48 Utility and Infrastructure Replacement Project (Project), which would replace the wooden flume with a more durable ignition resistant concrete conveyance structure (i.e., U shaped concrete canal). The Project is also designed to improve the durability of the El Dorado Canal system and ensure continued operational reliability of Project 184 overall. The Project includes the removal and replacement of approximately 448 linear feet of the existing wooden flume, spillway, timber substructure, and rock wall with a cast-in-place reinforced concrete U-shaped canal built on an MSE bench. This section describes the project location, objectives, components and characteristics, construction activities, operation and maintenance activities, and permits and other approvals necessary to implement the Project.

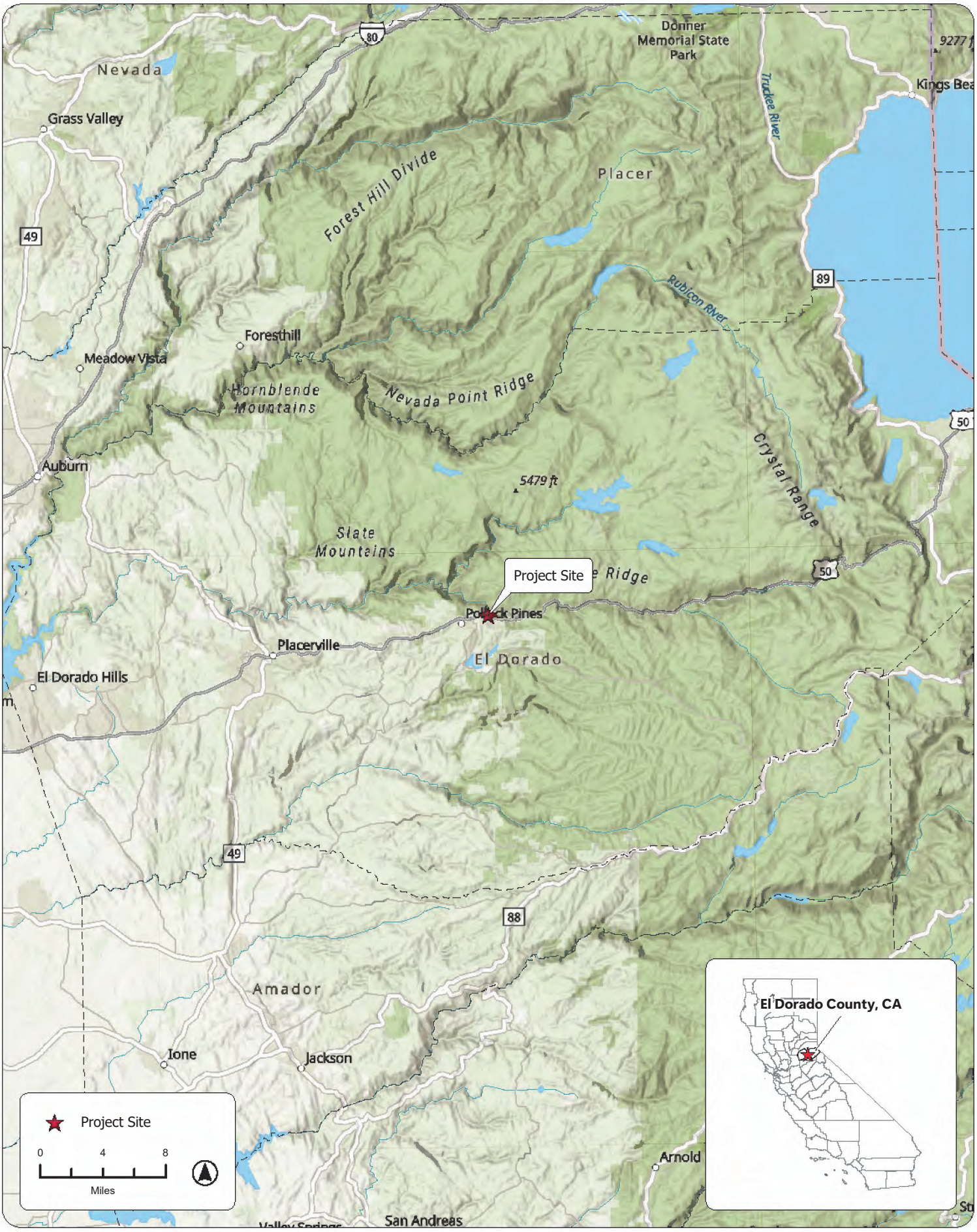
2.1 PROJECT LOCATION

The approximately 5-acre project site is located east of the town of Pollock Pines in unincorporated El Dorado County, as shown in **Figure 1**, in Sections 32 and 33 in Township 11N, Range 13E on the U.S. Geological Survey (USGS) Pollock Pines quadrangle. The project site is located north of Highway 50 and west of Fresh Pond on steep terrain along the South Fork American River canyon in a forested area (**Figures 2** and **3**). The project site consists of land owned by the District and private land that contains an existing residence. Elevations on the project site range from approximately 3,840 to 3,900 feet above mean sea level. The site is characterized as having slopes of approximately 1:1 and is heavily forested with trees up to approximately 30 inches in diameter. The project site is immediately south of the Eldorado National Forest, and the adjacent forested areas exhibit a sparse understory and burn-scarred trees from the 2014 King Fire (**Figure 4**).

2.2 PROJECT OBJECTIVES

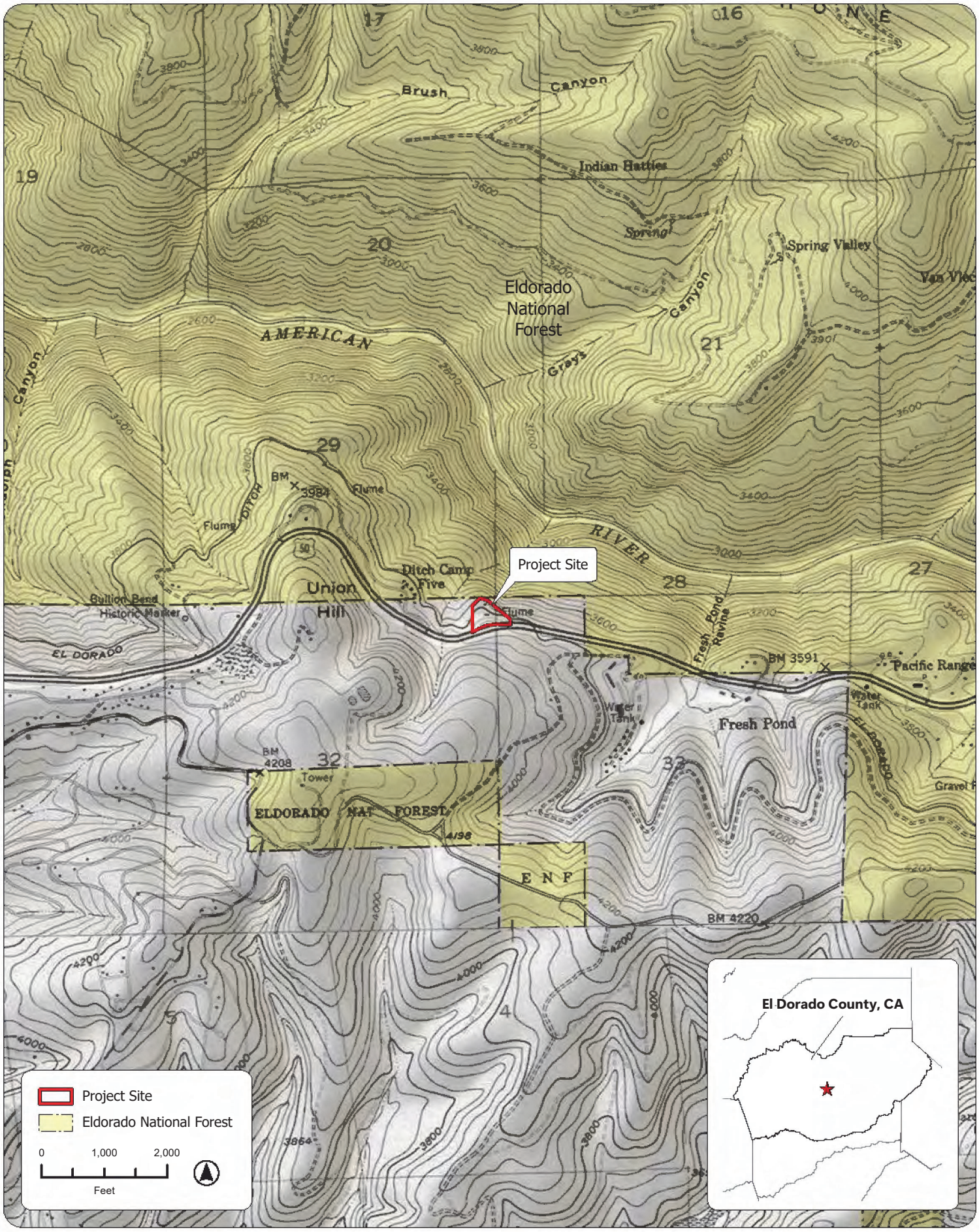
The purpose of the Project is to replace the existing wooden Flume 48 with a concrete lined canal to meet current safety standards, improve the durability and reliability, and thereby improve the safety, durability, and reliability of Project 184 overall. The Project is designed to meet the following objectives:

- Provide a facility that is resistant to damage from catastrophic wildfires;
- Provide continued water supply and hydroelectric generation;
- Improve the safety and reliance of the El Dorado Canal system;
- Ensure continued operational reliability of the El Dorado Canal system; and
- Improve access to the El Dorado Canal system.



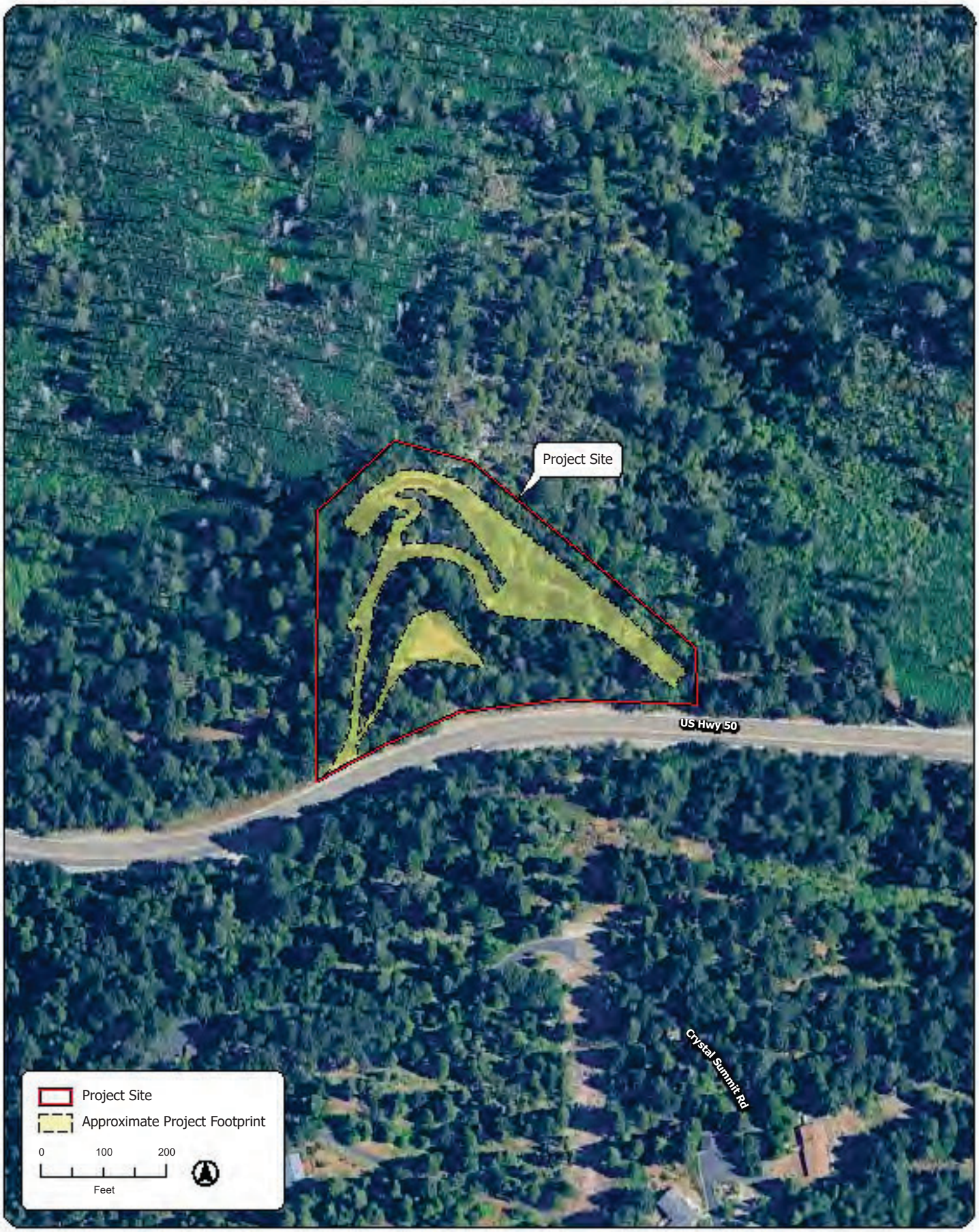
SOURCE: ESRI, 2025; Acorn Environmental, 6/12/2025

Figure 1
Regional Location



SOURCE: USFS, 2019; "Pollock Pines, CA" USGS 7.5 Minute Topographic Quadrangle, T11N R13E, Sections 32 & 33, Mt. Diablo Baseline & Meridian; ESRI, 2025; Acorn Environmental, 7/31/2025

Figure 2
Site and Vicinity



SOURCE: ESRI, 2025; Google Earth Aerial Photograph, 6/17/2024; Acorn Environmental, 7/21/2025

Figure 3
Aerial Overview



PHOTO 1: Existing historic hand-stacked rock wall and flume.



PHOTO 2: Existing rock wall abutting the upstream end of the flume.



PHOTO 3: View looking upstream from the upstream end of the spillway structure showing limited space between the flume and uphill slope.



PHOTO 4: View from the spillway structure looking upslope at the existing residence in close proximity.



PHOTO 5: Existing wooden flume conveying water.



PHOTO 6: Forested area adjacent to the project site showing a sparse understory and burn-scarred trees from the 2014 King Fire.

Figure 4
Photographs of Existing Conditions

2.3 PROJECT COMPONENTS AND CHARACTERISTICS

The main components of the Project include mobilization, access improvements, and site preparation; flume, wall, and spillway replacement; and the installation of permanent slope stabilization measures. Photographs of existing conditions of the project site are included in **Figure 4**. The Project would not result in changes to the operation or capacity of the El Dorado Canal system, and no changes or temporary variances to FERC license requirements would be required to implement the Project. Project components are further discussed below.

2.3.1 Mobilization, Access Improvements, and Site Preparation

Mobilization, access improvements, and site preparation activities include the mobilization of construction equipment to the project site and establishing construction access roads and staging areas within the project site. The project site is currently accessible via an existing private residential driveway off Highway 50. An existing cleared and graded area is present above the flume and would be used for construction staging and access (**Figures 3** and **5**). Access improvements would include road maintenance activities along an existing driveway encroachment off Highway 50 to be used for site access and the installation of three access roads (A, B, and C) to allow for construction and continued maintenance access to the canal segment. Vegetation and hazard trees within the limits of work would be cleared, and hazardous rocks in the immediate vicinity of the work area would be either removed or stabilized in place. To facilitate the flume replacement and minimize the outage duration, the proposed access roads would be constructed prior to the outage. The Project would include one permanent access road to the canal to facilitate the flume replacement and long-term operations and maintenance. Two temporary access roads would also be installed to facilitate construction activities associated with the flume replacement. Proposed access improvements are described below and shown in **Figure 6**.

Access Road A (Permanent)

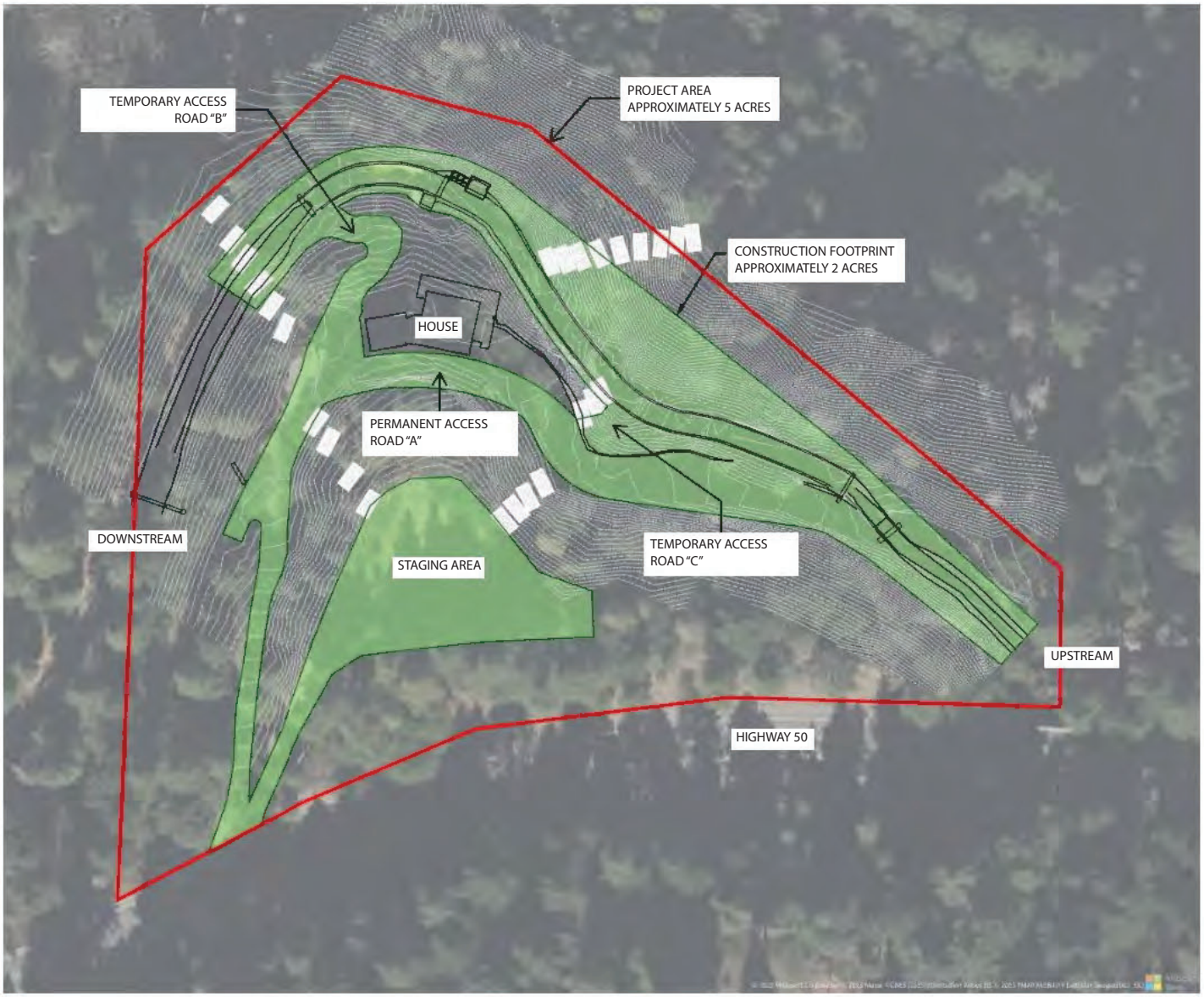
Access Road A would allow for access to the flume at the upstream transition following the Highway 50 alignment. Because the existing hand-stacked rock wall at the outside edge of Highway 50 is unstable and large voids have eroded behind the facing rock, the existing rock wall cannot be used to support construction equipment and has the potential to damage Flume 48. To establish safe access to the flume, the rock wall would be removed and a soil nail wall would installed to provide sufficient width for construction access between the uphill slope and the adjacent private residence.

Access Road B (Temporary)

Access Road B would allow for the spillway replacement and subsequent downstream flume and transition construction to occur independently from the flume replacement upstream of the spillway. This access road is necessary to complete construction within the outage period. After construction, the road would be removed and the alignment and grade would be restored.

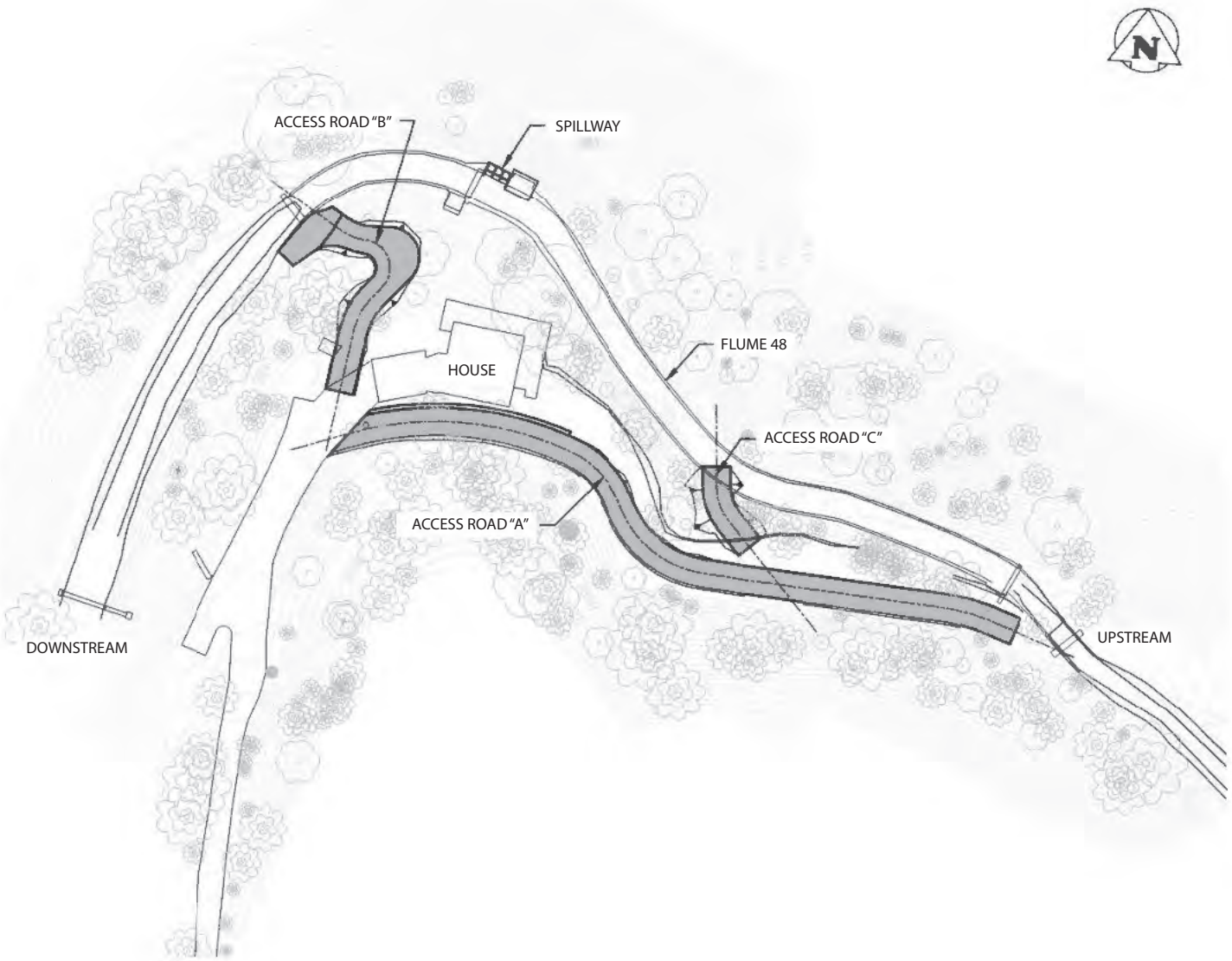
Access Road C (Temporary)

Access Road C would provide access for tracked equipment to the flume from Access Road A without using the bench from the upstream transition. After completion of construction, the road would be removed and the alignment and grade would be restored.



SOURCE: KGS, 5/2025; Acorn Environmental, 6/23/2025

Figure 5
Site Plan



SOURCE: KGS, 5/2025; Acorn Environmental, 6/23/2025

Figure 6
Access Improvements

2.3.2 Flume, Wall, and Spillway Replacement

Replacement of the existing flume, wall, and spillway would involve the demolition and removal of the existing spillway, wooden flume, timber substructure, and hand-stacked rock wall, and replacement with an MSE bench and cast-in-place reinforced concrete U-shaped canal. The existing wooden flume structure and the historic rock wall are shown in **Figure 4.** The Project would not modify the existing capacity or operation of the existing facility but is intended to achieve the project objectives and meet current factors of safety requirements. The existing wooden flume, supporting timbers, and spillway materials would be hauled off-site and disposed of in accordance with applicable regulatory requirements. The boulders that comprise the hand-stacked rock wall may be reused below the MSE bench as riprap, which would reduce hauling off-site.

Construction of the MSE wall would involve the demolition of the existing rock wall, excavation to native competent material to accommodate a footing or leveling pad, installation of appropriate drains within the new foundation, rock anchors to stabilize sections of the embankment, and construction of the MSE wall. A typical cross-section of an MSE-supported canal is shown on **Figure 7,** representative photographs of MSE wall construction are provided in **Figure 8**. Construction of the new concrete conveyance structure would include a new cast-in-place U-shaped canal that would occur on top of the new foundation and be tied into the upstream and downstream canal sections. The proposed U-shaped canal would be constructed utilizing a concrete invert slab cast directly on engineered fill as well as shotcrete walls. The spillway structure would be constructed using reinforced concrete with steel gates in the active bays and timber stoplogs in the passive bay. The proposed U-shaped canal would provide for an approximate 8-foot-wide footpath with handrails along the outboard side of the canal to provide safe access for operations and maintenance. Representative photographs of an MSE wall and U-shaped canal are provided in **Figure 9**.

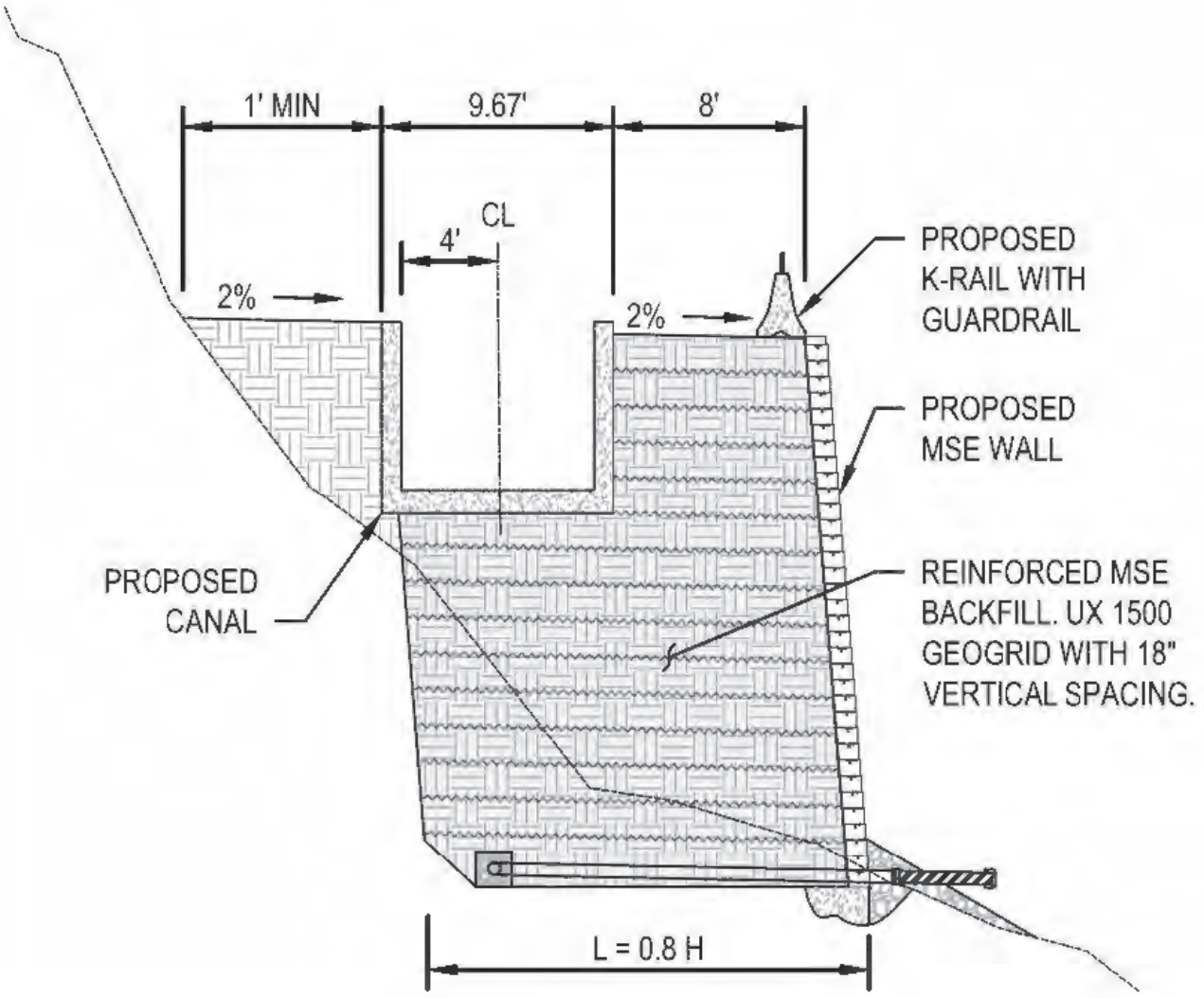
2.3.3 Installation of Permanent Slope Stabilization Measures

The installation of permanent slope stabilization measures (e.g., slope/rock scaling, anchoring/pinning, rock fall protection) would be conducted as necessary to stabilize areas upslope of the new U-shaped canal. The Project would incorporate the use of bioengineered natural and manmade materials to stabilize disturbed areas within the project site.

2.4 PROJECT CONSTRUCTION

2.4.1 Construction Schedule and Sequencing

Construction of the Project is scheduled to occur during the District's annual canal maintenance outage, which typically occurs annually from October through December. The Project would be completed over the course of two annual outages, with construction being suspended during the regular operational period of the canal (mid-December through September). Construction would be completed by an approximately 10 to 20-person crew and would typically occur 10 to 12 hours per day, 6 days per week. Certain critical construction activities such as MSE construction may require up to 24 hours of work per day, seven days per week, to complete work within the scheduled outage. The following summarizes the anticipated construction phasing and schedule, however, the sequence of construction activities split between Phase 1 and 2 may be modified as needed to accommodate potential access constraints.



SOURCE: KGS, 5/2025; Acorn Environmental, 6/12/2025

Figure 7
Canal Cross-Section



PHOTO 1: Mesa Block MSE Construction



PHOTO 2: U-Shaped Canal Construction

Figure 8
Example Photographs



PHOTO 1: Typical Mesa Block MSE Facing



PHOTO 2: Typical Reinforced U-Shaped Canal On MSE

Figure 9
Example Photographs

Pre-Outage Construction Activities

Pre-Outage construction activities would occur between August and October. Contractors would install a soil nail retaining wall near the private residence to create a minimum 14-foot-wide road (Access Road A). A precast barrier rail would be placed near the residence to prevent damage to the structure. Fill would be imported and stockpiled. The stockpiled material would be moisture-conditioned, mixed, and covered, and temporary best management practices (BMPs) would be installed at the staging area and within the Phase I construction limits. Stockpiling and soil nail wall activities are independent and would be performed concurrently. Approximately 200 cubic yards (cy) of export are anticipated for pre-outage construction activities.

Phase 1 Construction Outage

The Phase 1 construction outage would occur between October and mid-December during the first year of construction. This phase would include the demolition of the portion of the rock wall nearest to Highway 50 to provide access for tracked equipment to the flume and the upstream transition. The upstream transition area would be infilled and graded to allow truck access to the bench. The existing wooden flume and supports would also be demolished in this phase. The existing hand-stacked rock wall and bench would be excavated and boulders could be placed on the toe slope as rip-rap erosion mitigation. Excavated soil would be screened to four inches below grade, but if the resulting gradation does not meet requirements for MSE backfill, the excavated material could be blended with imported material at a ratio determined by the geotechnical engineer. Concrete leveling pads would be doweled into and cast on weathered bedrock and the MSE wall and bench would be constructed. A handrail would be constructed at the top of the MSE wall and a temporary transition to the existing spillway would be constructed. The cast-in-place U-shaped canal would be constructed during this phase, working upstream from the temporary transition at the spillway. The upstream transition would be constructed and the footbridge re-established. Phase 1 has an anticipated export of 4,000 cy and import of 4,200 cy of material.

Many aspects of Phase 1 would be constructed and implemented concurrently. Following completion of Phase 1 construction activities, the project site would be stabilized as necessary using temporary BMPs to allow the District to resume use of the El Dorado Canal until Phase 2 construction activities are initiated.

Phase 2 Construction Outage

The Phase 2 Construction Outage would occur between October and mid-December. This phase would include construction of Access Road B and infill the downstream transition with backfill to establish access to the bench. Temporary BMPs would be installed within the Phase 2 construction limits. The flume section downstream of the spillway and the existing spillway would be demolished. A new spillway would be constructed and ancillary equipment installed. Construction would also include construction of the cast-in-place U-shaped canal starting at the spillway working downstream, the strip footings doweled and cast on bedrock or engineered fill, and the downstream transition. Many aspects of Phase 2 would be constructed and implemented concurrently. Following completion of Phase 2 construction activities, the project site would be restored and stabilized using permanent BMPs, or if site restoration would occur the following spring/summer, temporary BMPs would be employed. For Phase 2, approximately 30 cy would be exported and 40 cy would be imported.

Temporary Access Road Restoration

If the installation of permanent BMPs is not completed immediately following completion of construction, site restoration would occur between April and June or soon as weather and site conditions permit.

Temporary construction Access Roads B and C would be restored and permanent erosion control measures would be installed. These tasks may be conducted concurrently. Approximately 40 cy of material would be exported during site restoration.

2.4.2 Construction-Related Traffic

Construction activities would require material haul trips, supply and delivery trips, and worker trips over the duration of the Project. During construction, approximately 10 to 20 construction workers per day would be on the project site. Vehicle access to the project site would be provided by Access Road A, which would be accessed through the existing residential driveway off Highway 50 (**Figure 6**). Typical traffic patterns during construction of the Project could occur 12 hours per day and 5 to 7 days per week, although construction activities could occur up to 24 hours a day if required. Estimated truck hauling trips are described in **Section 2.4.4** below.

2.4.3 BMPs and Site Stabilization and Restoration

Construction would require compliance with the National Pollution Discharge Elimination System (NPDES) Construction Stormwater General Permit, which would require the development of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP will identify construction phases and permanent BMPs. BMPs including the use of weed-free straw bales, straw mulch, fiber rolls, and silt fences, would be implemented as necessary to prevent erosion. Surface drainage improvements (e.g., water bars, filter barriers, surface drainage ditches) would also be implemented as necessary to reduce the potential for erosion. To reduce erosion potential on the disturbed areas downslope of the canal bench, bare surfaces would be seeded. The Project would also incorporate the use of bioengineered natural and manmade materials to stabilize disturbed areas within the project site and may include the use of biodegradable weed-free certified natural-fiber erosion control materials.

Construction waste materials would be disposed of in compliance with local, state, and federal hazardous waste requirements at appropriate facilities. In accordance with the Project 184 Hazardous Substances Plan, the Project would also be required to implement measures to appropriately manage hazardous substances within the boundary of Project 184, including requirements for storage, spill prevention and response and reporting procedures, and by implementing spill prevention measures included in the SWPPP. Dust abatement would be implemented as necessary to prevent fugitive dust from leaving the Project area. After construction is completed, the temporary access roads would be restored to their original state. The District would conduct noxious weed monitoring and treatments as necessary in areas where construction activities occurred in accordance with the Project 184 Noxious Weed Prevention and Control Plan. Additionally, to minimize the potential for damage to the on-site residence, the use of high-vibration equipment during construction within 15 feet of the structure would be limited to the extent feasible.

2.4.4 Construction Equipment and Quantities

Construction equipment likely to be used during construction is outlined in **Table 2.4-1**. All diesel-powered equipment would meet Tier 4 Final emission standards. The proposed replacement of Flume 48 would include demolition and removal of the existing 448-foot-long wooden flume and substructure, demo and removal of the existing spillway, removal of approximately 3,500 cy of bench material, construction of approximately 8,000 square-feet of MSE wall, placement of approximately 4,500 cy of backfill material, and placement of approximately 448 linear-feet of cast-in-place canal.

The construction earthwork and materials quantities, shown in **Table 2.4-2**, include the access road improvements. The Project would use imported engineered fill from a certified aggregate supply facility as needed. Based on the preliminary estimated quantities, bulking, and shrinking, up to 700 truckloads of material would be imported to the project site. However, the actual amount may be significantly reduced by processing materials from on-site excavations for reuse as engineered fill.

Table 2.4-1: Construction Equipment

Construction Equipment	
Bulldozer	Demolition hammer
Personal pick-up trucks	Crane
Backhoe	Rotary drill
Air compressor	Concrete truck
Excavator	Generator
All-terrain vehicle	Concrete pumper
Dump truck	Chainsaw
Tracked dump truck	Roller
Jack hammer	Miscellaneous hand and power tool
Transfer truck	Compactor

Table 2.4-2: Earthwork and Materials Quantities

Activity/Materials	Approximate Quantities
Total Project Area	5.0 acres
Limit of Work Area	2.0 acres
Excavation	3,750 cy
Engineered Fill	4,600 cy
MSE Wall Facing	8,000 sf
Concrete/Shotcrete	600 cy
Reinforcing Steel	235,000 lbs
Aggregate Base All-Weather Surface	10,250 sf
Soil Nail Facing	8,000 sf

cy = cubic yards; sf = square feet

Approximately 670 cy of concrete/shotcrete are estimated, or approximately 70 mixer truckloads, of fill. The corresponding steel reinforcing would be approximately 235,000 pounds resulting in roughly 10 truckloads. The Project would use approximately 8,000 sf, or approximately 30 truckloads, of MSE facing block.

2.5 PROJECT OPERATIONS AND MAINTENANCE

Ongoing operations and maintenance (O&M) of the Project would occur once construction is complete. Typical operations would be similar to the current levels and types of O&M activities.

Maintenance of the Project would likely be less than current activities since the concrete conveyance structure would not be as susceptible to damage as the current wood flume structure. Maintenance would include system inspection, facility repairs, and vegetation management along the canal. Operational access to the canal would occur along the permanent access road.

Future O&M activities and vegetation management would be conducted in compliance with FERC-approved plans for Project 184 including, but not limited to, the Project 184 Transportation Management Plan, Project 184 Visual Resource Management Plan, Project 184 Hazardous Substances Plan, Project 184 Noxious Weed Prevention and Control Plan, Project 184 Canal Release Points Plan, and Flume 48 Replacement Quality Control Inspection Plan. Since O&M requirements after construction of the Project would be similar to existing requirements, O&M activities are not evaluated in the Draft EIR.

2.6 POTENTIAL PERMITS, PLANS, AND APPROVALS

The District and its contractors would comply with the terms and conditions of applicable permits, plans, and agency approvals for the Project. The Project may be subject to the permits and approvals shown in **Table 2.6-1**. Although the Project is within El Dorado County, EID is a special district with equal authority, and is exempt from the El Dorado County General Plan and Zoning Ordinance requirements pursuant to Government Code Sections 53091(D) and (E) as stated below:

> *Building and zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code.*

While Government Code Sections 53091(D) and (E) apply to resource areas analyzed in **Section 3** of this document, the District uses goals and policies outlined in the General Plan as a metric for analyzing impacts under CEQA and therefore has elected to implement certain goals and policies when appropriate for a project. Additionally, the Project is located largely within the existing FERC Project 184 license boundary, with the exception of portions of the proposed access road improvements. Work would be completed in compliance with applicable requirements of the following FERC-approved plans for Project 184 and Flume 48:

- Project 184 Transportation System Management Plan
- Project 184 Visual Resource Management Plan
- Project 184 Hazardous Substances Plan
- Project 184 Noxious Weed Prevention and Control Plan
- Project 184 Canal Release Points Plan
- Flume 48 Replacement Quality Control Inspection Plan

Table 2.6-1: Potential Permits and Approvals

Agency	Approvals/Permits
EID (Lead Agency)	▪ Certification of Final EIR and Adoption of Findings and Statement of Overriding Considerations. ▪ Approval of the Project and construction plans.
State Water Resources Control Board, Sacramento Region	▪ Approval of Project coverage under NPDES Construction General Permit, Stormwater General Permit Compliance.
California Office of Historic Preservation	▪ National Historic Preservation Act Consultation.

Section 3 | Environmental Analysis

3.1 ORGANIZATION AND ANALYSIS

This section describes the approach to identifying relevant environmental and regulatory setting information, evaluating environmental impacts, and identifying feasible mitigation measures discussed in each resource area.

3.1.1 Approach

California environmental law is governed by CEQA, found in Public Resources Code (PRC) Section 21000 et seq. and the CEQA Guidelines (14 CCR Section 15000 et seq.). CEQA requires that EIRs evaluate potentially significant effects on the physical environment associated with implementing a proposed project and identify feasible mitigation measures and alternatives to reduce those effects. A "[s]ignificant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project (CEQA Guidelines Section 15382).

CEQA Guidelines Section 15126.2 states:

> An EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving consideration due to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, and human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected.

An EIR also must discuss inconsistencies between a proposed project and applicable general plans and regional plans (CEQA Guidelines Section 15125(d)). Furthermore, according to Section 15126.4 of the CEQA Guidelines, an EIR must describe potentially feasible measures that could avoid or minimize significant adverse impacts (CEQA Guidelines Section 15126.4(a)(1)) that are fully enforceable through permit conditions, agreements, or other legally binding processes (CEQA Guidelines Section 15126.4(a)(2)). Mitigation measures are not required for effects found to be less than significant.

CEQA Guidelines Section 15126.4(a)(1)(d) specifies that if a mitigation measure were to result in a significant impact, the effects of the mitigation measure will be discussed. Each mitigation measure included in this EIR was considered as to whether it would result in a significant impact upon implementation.

3.1.2 Operations and Maintenance Activities

Since O&M requirements after construction of the Project would be similar to those applicable to ongoing O&M operations for the current flume, there would be no new O&M activities or vehicle trips that do not already occur under existing conditions. Additionally, maintenance of the Project would likely be less than maintenance associated with current operations since the concrete conveyance structure would not be as susceptible to damage as the existing wood flume structure. Therefore, O&M operations are not evaluated in this EIR.

3.1.3 Resources and Criteria Eliminated from Further Analysis

Pursuant to CEQA Guidelines, the discussion of potential impacts on the physical environment is focused on impacts that may be significant. CEQA Guidelines Sections 15126.2(a) and 15128 allow a Lead Agency to limit the details of discussion of the environmental effects (impacts) that are not considered significant. Resource areas that would not be significantly impacted by implementation of the Project have been eliminated from further analysis in this EIR. These resource areas include aesthetics, agriculture and forestry resources, energy, land use and planning, mineral resources, population and housing, public services, recreation, and utilities and service systems. Additionally, several criteria within the remaining resource sections that are included in the EIR have been eliminated from further analysis in this EIR. These criteria are identified within each resource section. The rationale for eliminating resource areas and criteria from further evaluation in this EIR was documented in the IS released with the NOP for the Project. The criteria from Appendix G of the CEQA Guidelines relevant to each resource area was addressed in the NOP/IS, which is provided in **Appendix A**.

3.1.4 Section Format

Each resource area analyzed in Section 3 contains the following components:

- **Regulatory Setting,** which presents the federal, State, and/or local laws, regulations, plans, and policies that are relevant to each resource area.
- **Environmental Setting**, which presents the existing environmental conditions within the project site boundaries and the surrounding area, as appropriate, to establish baseline conditions, in accordance with CEQA Guidelines Section 15125. The extent of the environmental setting area evaluated appropriately differs amongst resource areas, depending on the locations where potential impacts would be expected. For example, air quality impacts are assessed for the air basin (macro-scale), as well as the site vicinity (micro- scale), whereas geology and soils impacts are assessed for the project site only.
- **Environmental Impacts and Mitigation Measures**, which presents the thresholds of significance, analysis methodology, impact analysis, and mitigation measures, as follows:
    - **Criteria Evaluated in the NOP/IS**, which identifies criteria evaluated in the NOP/IS that were determined not to require additional analysis in the EIR.
    - **Thresholds of Significance**, which presents the thresholds of significance used in this EIR that were developed using criteria from the CEQA Guidelines Appendix G Checklist; State, federal, and local regulatory schemes; local/regional plans and ordinances; accepted practice; consultation with recognized experts; and other professional opinions.
    - **Analysis Methodology**, which describes the methodology used to evaluate impacts, including quantitative methods developed for the EIR.

- **Impact Analysis**, which discusses each potential environmental impact from the Project related to the thresholds of significance. Direct and indirect impacts, as well as temporary and long-term impacts, are identified by comparing the effects of the proposed Project to baseline conditions. Project impacts are organized numerically in each resource section (e.g., Impact AIR-1, Impact AIR-2). A bold- font impact statement precedes the discussion of each impact while its level of significance follows the discussion of each impact. The discussion that follows the impact summary includes the substantial evidence supporting the impact significance conclusion.
- **Mitigation Measures**, which includes specific details of the mitigation with responsible parties, timing, and performance standards identified. Mitigation measures are also organized numerically in each resource section. When impacts are not significant, no mitigation measures are required.
- **Significance after Mitigation**, which discusses either why mitigation measures reduce the impact to less than significant or why the impact is significant and unavoidable.

3.1.5 Impact and Mitigation Measure Terminology

This EIR uses the following terminology to describe environmental impacts and mitigation measures for the Project.

- An impact is considered to be a **beneficial impact** if the analysis concludes that the impact would cause a positive change or improvement in the particular environmental resource or issue.
- A finding of **no impact** is made when the analysis concludes that the project would not affect the particular environmental resource or significance threshold.
- An impact is considered **less than significant** if the analysis concludes that the significance threshold would not be exceeded.
- An impact is considered **significant** if the analysis concludes that the significance threshold is exceeded.
- An impact is considered **less than significant with mitigation** if the analysis concludes that the significance threshold would be exceeded, but that mitigation measures would reduce the impact to less than significant levels.
- An impact is considered **significant and unavoidable** if the analysis concludes that the significance threshold would be exceeded, but either no feasible mitigation measures have been identified, or potentially feasible mitigation measures that have been identified do not reduce the impact to less than significant.
- **Mitigation measures** refer to potentially feasible specific measures that can be adopted to avoid, minimize, rectify, reduce, or eliminate, or compensate, for an impact.

3.1.6 Impact Descriptors

Potential Project-related impacts fall into the following categories:

- A **temporary or short-term impact** would occur primarily during construction activities and could last from several days at one site to up to approximately three years after the anticipated duration of construction activities for the project.
- A **long-term impact** would last longer than approximately three years following completion of construction. In some cases, a long-term impact could be considered a permanent impact.
- A **direct impact** is an impact that would be caused by an action and would occur at the same time and place as the action.

- An **indirect impact** is an impact that would be caused by an action but would occur later in time, or at another location, yet is reasonably foreseeable in the future. Examples of indirect impacts include growth-inducing impacts and other impacts related to changes in land use patterns and related effects on the physical environment.
- A **cumulative impact** is an impact resulting from a project when added to impacts of other past, present, and probable future actions (regardless of what agency or person undertakes the actions), referred to in this document as a "related project." A significant cumulative impact occurs when the proposed project makes a "cumulatively considerable" incremental contribution to a significant cumulative impact. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, current projects, and probable future or related projects (State CEQA Guidelines Section 15064(h)(1)). Cumulative impacts are evaluated in **Section 4** of this EIR.

3.2 AIR QUALITY

This section examines the degree to which implementing the proposed Project may result in adverse changes in air quality. This section describes existing conditions, summarizes applicable regulations, discusses air quality conditions, and analyzes potential construction- and operation- related air quality impacts from the Project.

3.2.1 Regulatory Setting

Federal Laws, Regulations, and Policies

Clean Air Act

The Federal Clean Air Act (CAA) requires the United States Environmental Protection Agency (EPA) to establish health-based air quality standards at the Federal level. The national ambient air quality standards (NAAQS) were established for the following criteria pollutants: ozone (O_3); carbon monoxide (CO); nitrogen dioxide (NO_2); sulfur dioxide (SO_2); lead; and particulate matter (PM), which is subdivided into two classes based on particle size: PM equal to or less than 10 micrometers in diameter (PM_{10}) and PM equal to or less than 2.5 micrometers in diameter ($PM_{2.5}$). Areas of the State are designated as attainment, nonattainment, maintenance, or unclassified for the various pollutant standards according to the Federal CAA.

State Laws, Regulations, and Policies

California Clean Air Act

The California CAA requires the California Air Resources Board (CARB) to establish health-based air quality standards at the State level. The California ambient air quality standards (CAAQS) were established for the following criteria pollutants: CO, O_3, SO_2, NO_2, PM_{10}, $PM_{2.5}$, lead, sulfate, visibility reducing particles, hydrogen sulfide, and vinyl chloride. Areas of the State are designated as attainment, nonattainment, maintenance, or unclassified for the various pollutant standards according to the California CAA.

Regional Laws, Regulations, and Policies

El Dorado Air Quality Management Plan

The El Dorado Air Quality Management District (EDAQMD) is the agency primarily responsible for monitoring NAAQS and CAAQS exceedances and ensuring that air quality conditions are maintained within the County. The EDAQMD rules and regulations that may apply during the construction of the proposed Project include, but are not limited to, the following:

Rule 202 – Visible Emissions

A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminants for a period or periods aggregating more than three minutes in any one hours which is:

1. As dark or darker in shade as that designated as No. 1 on the Ringelmann chart, as published by the United States Bureau of Mines, or
2. Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection (A) of this section (CARB, 2025a).

Rule 207 – Particulate Matter (PM)

A person shall not release or discharge into the atmosphere from any source or single processing unit, exclusive of sources emitting combustion contaminants only, PM emissions in excess of 0.1 grams per cubic foot of dry exhaust gas at standard conditions (CARB, 2025a).

Rule 223 – Fugitive Dust:

223.1 General:

A. Purpose: The purpose of this Rule is to reduce the amount of PM entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.
B. Applicability: The provisions of this rule are applicable to specified outdoor fugitive dust sources. The definitions, exemptions, requirements, administrative requirements, recordkeeping requirements, and test methods set forth in this rule are applicable to Rules 223, 223-1 and 223-2 of the Rules and Regulations of EDAQMD (CARB, 2025a).

223.4 Requirements:

A. Visible Emissions Not Allowed Beyond Boundary Line: A person shall not cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area, such that the presence of such fugitive dust remains visible, or exceed shade darker as that designated as No. 0 on the Ringelmann Chart, or exceed zero percent opacity as determined in accordance with EPA Method 9, in the atmosphere beyond the boundary line of the emission source.
B. Concentration Limit: A person shall not cause or allow PM_{10} levels to exceed 50 micrograms per cubic meter, 24-hour average, when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high- volume PM samplers or other EPA approved equivalent methods for PM_{10} monitoring. Sampling, if deemed necessary and required by the Air Pollution Control Officer, shall be conducted in accordance with the procedures specified in Section 223.5.A (CARB, 2025a).

Rule 223-1 Fugitive Dust - Construction, Bulk Material Handling, Blasting, Other Earthmoving Activities and Carryout and Track out Prevention

223-1.1 General:

A. Purpose: The purpose of this rule is to limit fugitive dust emissions from construction, and construction related activities.
B. Applicability: This rule applies to any construction or construction related activities, including, but not limited to, land clearing, grubbing, scraping, travel on site, and travel on access roads. This rule also applies to all sites that are subject to this rule where carryout or track out has occurred or may occur on paved public roads or the paved shoulders of a paved public road. This rule also applies to the construction of new landfill disposal sites or modification to existing landfill disposal sites prior to commencement of landfilling activities (CARB, 2025a).

223-1.4 General Requirements:

1. Visible emissions shall not exceed the shade designated as No. 0 on the Ringelmann Chart, or 0% opacity as determined in accordance with EPA Method 9, at 25 feet from the point of origin and at the property line. Visible emissions shall not exceed the shade designated as No. 1 on the Ringelmann Chart, or 20% opacity as determined in accordance with EPA Method at the point of origin.
2. Vehicle Speed Limitations and Posting of Speed Limit Signs: An owner/operator shall limit the speed of vehicles traveling within construction sites if necessary to prevent visible dust emissions in excess of the standards in Section 223-1.4 A.
3. When sustained wind speeds result in visible dust emissions in excess of the standards in Section 223-2.4A., despite the application of dust mitigation measures, grading and earthmoving operations except for dust mitigation activities shall be suspended (CARB, 2025a).

Local Laws, Regulations, and Policies

El Dorado County General Plan

As a special district with equal authority, the District is exempt from following goals and policies within the County's General Plan and Zoning Ordinance. However, the District aims to comply with those goals and policies and use them as a metric for formulating an impact analysis (El Dorado County, 2004, as amended).

Goal 6.7: Air Quality Maintenance. (A) Strive to achieve and maintain ambient air quality standards established by the U.S. Environmental Protection Agency and the California Air Resources Board. (B) Minimize public exposure to toxic or hazardous air pollutants and air pollutants that create unpleasant odors.

Objective 6.7.1: El Dorado County Clean Air Plan - Adopt and enforce Air Quality standards to reduce the health impacts caused by harmful emissions.

Policy 6.7.1.1: Improve air quality through land use planning decisions.

Policy 6.7.1.2: Support local and regional air quality improvement efforts.

Objective 6.7.7: Construction Related, Short-Term Emissions - Reduce construction related, short-term emissions by adopting regulations which minimize their adverse effects.

Policy 6.7.7.1. The County shall consider air quality when planning the land uses and transportation systems to accommodate expected growth, and shall use the recommendations in the most recent version of the EDAQMD Guide to Air Quality Assessment: Determining Significance of Air Quality Impacts Under the California Environmental Quality Act, to analyze potential air quality impacts (e.g., short-term construction, long-term operations, toxic and odor-related emissions) and to require feasible mitigation requirements for such impacts. The County shall also consider any new information or technology that becomes available prior to periodic updates of the Guide. The County shall encourage actions (e.g., use of light-colored roofs and retention of trees) to help mitigate heat island effects on air quality.

3.2.2 Environmental Setting

Regional Air Quality

The project site is located in the Mountain Counties Air Basin (MCAB) which is comprised of Plumas, Sierra, Nevada, Placer (middle portion), El Dorado (western portion), Amador, Calaveras, Tuolumne, and Mariposa counties. The MCAB lies along the northern Sierra Nevada Mountain range, close to or contiguous with the Nevada border, and covers an area of roughly 11,000 square miles. The western slope of El Dorado County, from Lake Tahoe on the east to the Sacramento County boundary on the west, lies within the MCAB. Elevations range from over 10,000 feet at the Sierra crest down to several hundred feet above sea level at the Sacramento County boundary. Throughout the county, the topography is highly variable and includes rugged mountain peaks and valleys with extreme slopes and differences in altitude in the Sierras, as well as rolling foothills to the west. (El Dorado County Air Pollution Control District [EDAPCD], 2002)

The general climate of the MCAB varies considerably with elevation and proximity to the Sierra Ridge. The terrain features of the MCAB make it possible for various climates to exist in relatively close proximity. The pattern of mountains and hills causes a wide variation in rainfall, temperature, and localized winds throughout the basin. Temperature variations have an important influence on wind flow, dispersion along mountain ridges, vertical mixing, and photochemistry. The Sierra Nevada receives large amounts of precipitation from storms moving in from the Pacific in the winter, with lighter amounts from intermittent "Monsoonal" moisture flows from the south and cumulus buildup in the summer. Precipitation levels are high in the highest mountain elevations but decline rapidly toward the western portion of the basin. Winter temperatures in the mountains can be below freezing for weeks at a time, and substantial depths of snow can accumulate, but in the western foothills, winter temperatures usually dip below freezing only at night and precipitation is mixed as rain or light snow. In the summer, temperatures in the mountains are mild, with daytime peaks in the 70s to low 80s Fahrenheit, but the western end of the county can routinely exceed 100 degrees Fahrenheit. (EDAPCD, 2002)

The topography and meteorology of the MCAB combine such that local conditions predominate in determining the effect of emissions in the basin. Regional airflows are affected by the mountains and hills, which direct surface air flows, cause shallow vertical mixing, and create areas of high pollutant concentrations by hindering dispersion. Inversion layers, where warm air overlays cooler air, frequently occur and trap pollutants close to the ground. In the winter, these conditions can lead to CO "hotspots" along heavily traveled roads and at busy intersections. During summer's longer daylight hours, stagnant air, high temperatures, and plentiful sunshine provide the conditions and energy for the photochemical reaction between reactive organic compounds (ROG) and oxides of nitrogen (NO_X) that result in the formation of O_3. Because of its long formation time, ozone is a regional pollutant rather than a local hotspot problem (EDAPCD, 2002).

In the summer, the strong upwind valley air flowing into the basin from the Central Valley to the west is an effective transport medium for ozone precursors and ozone generated in the Bay Area and the Sacramento and San Joaquin valleys. These transported pollutants predominate as the cause of ozone in the MCAB and are largely responsible for the exceedances of the State and Federal ozone AAQS in the MCAB. The CARB has officially designated the MCAB as "ozone impacted" by transport from those areas (13 CCR sec. 70500).

Criteria Air Pollutants

Individual air pollutants at certain concentrations may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation. Six air pollutants have been identified by the EPA and the CARB as being of concern on both the nationwide and Statewide levels: O_3; CO; NO_2; SO_2; lead; and PM, which is subdivided into PM_{10} and $PM_{2.5}$. Because these are the most prevalent air pollutants known to be harmful to human health, and extensive health effects criteria documentation is available for these pollutants, they are commonly referred to as "criteria air pollutants." Each criteria air pollutant is described below (EPA, 2025a).

- **Ozone** is the principal component of smog and is formed in the atmosphere through a series of reactions involving ROG and NO_X in the presence of sunlight. ROG and NO_X are called ozone precursors. NO_X includes various combinations of nitrogen and oxygen, such as nitric oxide and NO_2. Ozone is a principal cause of lung and eye irritation in the urban environment. Large ozone concentrations are usually produced only in summer, when atmospheric inversions are greatest and temperatures are high. ROG and NO_X emissions are both considered critical in ozone formation.
- **Carbon monoxide** is a colorless and odorless gas that, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. Relatively high concentrations are typically found near crowded intersections and along heavily used roadways carrying slow-moving traffic. Even under the most severe meteorological and traffic conditions, high CO concentrations are limited to locations within a relatively short distance (300 to 600 feet) of heavily traveled roadways. Vehicle traffic emissions can cause localized CO impacts, and severe vehicle congestion at major signalized intersections can generate elevated CO levels called "hot spots," which can be hazardous to human receptors adjacent to the intersections.
- **Nitrogen dioxide** is a product of combustion and is generated in vehicles and stationary sources such as power plants and boilers. It is also formed when ozone reacts with nitric oxide in the atmosphere. NO_2 can cause lung damage. As noted above, NO_2 is part of the NO_X family and is a principal contributor to ozone and smog generation. Sulfur dioxide is a combustion product, with the primary source being power plants and heavy industries that use coal or oil as fuel. SO_2 is also a product of diesel engine combustion. Health effects of SO_2 include lung disease and breathing problems for asthmatics. SO_2 in the atmosphere contributes to the formation of acid rain.
- **Lead** is a highly toxic metal that may cause a range of human health effects. Previously, the lead used in gasoline anti-knock additives represented a major source of lead emissions to the atmosphere. EPA began working to reduce lead emissions soon after its inception, issuing the first reduction standards in 1973. Lead emissions have decreased substantially as a result of the near-elimination of leaded-gasoline use.
- **PM** is a complex mixture of extremely small particles and liquid droplets. PM is made up of several components: acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. Natural PM sources include windblown dust and ocean spray. The size of PM is directly linked to the potential for causing health problems.

EPA is concerned about particles that are 10 micrometers in diameter or smaller, because these particles generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Individuals particularly sensitive to fine-particle exposure include older adults, people with heart and lung disease, and children. As discussed previously, EPA groups PM into two categories:

- **$PM_{2.5}$** consists of fine particles, such as those found in smoke and haze. Sources of fine particles include all types of combustion activities (e.g., motor vehicles, power plants, wood burning) and certain industrial processes. $PM_{2.5}$ is also formed through reactions of gases such as SO_2 and NO_X in the atmosphere. $PM_{2.5}$ is the major cause of reduced visibility (haze) in California.
- **PM_{10}** encompasses both fine and coarse dust particles; the fine particles are $PM_{2.5}$. Coarse particles, such as those found near roadways and dusty industries, are larger than 2.5 micrometers and smaller than 10 micrometers in diameter. Sources of coarse particles include crushing or grinding operations and dust from paved or unpaved roads. Control of PM_{10} is achieved primarily by controlling dust at construction and industrial sites, cleaning paved roads, and wetting or paving frequently used unpaved roads.

Air Quality Standards

Health-based air quality standards for these criteria pollutants have been established by the EPA at the national level (NAAQS) and by CARB at the state level (CAAQS). These standards are designed to protect public health, with an added margin of safety, from the adverse effects of air pollution. In addition to the six criteria pollutants regulated at the national level, California has adopted additional standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. **Table 3.2-1** presents the NAAQS and the CAAQS.

Table 3.2-1: National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1] Concentration[3]	National Standards[2] Primary[3, 4]	National Standards[2] Secondary[3, 5]
Ozone (O3) [6]	1 hour	0.09 ppm (180 µg/m^3)	–	Same as primary standard
Ozone (O3) [6]	8 hours	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	Same as primary standard
Respirable particulate matter (PM10) [7]	24 hours	50 µg/m^3	150 µg/m^3	Same as primary standard
Respirable particulate matter (PM10) [7]	Annual arithmetic mean	20 µg/m^3	–	Same as primary standard
Fine particulate matter (PM2.5) [7]	24 hours	–	35 µg/m^3	Same as primary standard
Fine particulate matter (PM2.5) [7]	Annual arithmetic mean	12 µg/m^3	12 µg/m^3	15 µg/m
Carbon monoxide (CO)	8 hours	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
Carbon monoxide (CO)	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	None
Carbon monoxide (CO)	8 hours (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–

Pollutant	Averaging Time	California Standards[1] Concentration[3]	National Standards[2] Primary[3, 4]	National Standards[2] Secondary[3, 5]
Nitrogen Dioxide (NO2) [8]	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as primary standard
Nitrogen Dioxide (NO2) [8]	1 hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	None
Sulfur Dioxide (SO2) [9]	Annual Arithmetic Mean	–	0.030 ppm (for certain areas) [h]	–
Sulfur Dioxide (SO2) [9]	24 hours	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas)	–
Sulfur dioxide (SO2) [9]	3 hours	–	–	0.5 ppm (1,300 µg/m^3)
Sulfur dioxide (SO2) [9]	1 hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	–
Lead (Pb) [10, 11]	30-day average	1.5 µg/m^3	–	–
Lead (Pb) [10, 11]	Calendar quarter	–	1.5 µg/m^3 (for certain areas)	Same as primary standard
Lead (Pb) [10, 11]	Rolling 3- month average	–	0.15 µg/m3	Same as primary standard
Visibility-reducing particles [12]	8 hours	See footnote [12]	No national standards	No national standards
Sulfates	24 hours	25 µg/m3	No national standards	No national standards
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m^3)	No National Standards	No National Standards
Vinyl Chloride [10]	24 hours	0.01 ppm (26 µg/m^3)	No National Standards	No national standards

Notes: µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; ppb = parts per billion; ppm = parts per million

[1] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[5] National Secondary Standards: The levels of air quality necessary to protect public welfare from any known or anticipated adverse effects of a pollutant.

[6] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[7] On February 7, 2024, the national annual $PM_{2.5}$ primary standard was lowered from 12.0 µg/m3 to 9.0 µg/m3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m3, as was the annual secondary standard of 15.0 µg/m3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[8] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
[9] On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical of 0.075 ppm.
[10] The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
[11] The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
[12] In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.
Source: CARB, 2024a

California National Area Designations

Both EPA and CARB use ambient air quality monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. An “attainment” designation for an area signifies that pollutant concentrations did not exceed the established standard. In most cases, areas designated or redesignated as attainment must develop and implement maintenance plans, which are designed to ensure continued compliance with the standard.

In contrast, a “nonattainment” designation indicates that a pollutant concentration has exceeded the established standard. Nonattainment may differ in severity. To identify the severity of the problem and the extent of planning and actions required to meet the standard, nonattainment areas are assigned a classification that is commensurate with the severity of their air quality problem (e.g., moderate, serious, severe, extreme). Finally, an “unclassified” designation indicates that insufficient data exist to determine attainment or nonattainment. The California designations also include a subcategory called “nonattainment-transitional,” a designation given to nonattainment areas that are progressing and nearing attainment. **Table 3.2-2** describes El Dorado County area attainment designations for State and National ambient air quality (CARB 2023; EPA 2025b).

Toxic Air Contaminants

In addition to criteria air pollutants, EPA regulates toxic air contaminants (TACs), also known as hazardous air pollutants. TACs are those air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. According to the 2013 Edition of the California Almanac of Emissions and Air Quality, health risks from TACs can largely be attributed to relatively few compounds, the most important being diesel PM. Other TACs that pose high ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene (CARB, 2013). Diesel PM poses the greatest health risk among the 10 TACs mentioned.

Table 3.2-2: El Dorado County Area Designations for State and National Ambient Air Quality

Criteria Air Pollutants	State Designation	National Designation
O_3	Nonattainment	Severe Nonattainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Unclassified	Unclassified/Attainment
CO	Unclassified	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sulfates	Attainment	-
Lead	Attainment	Unclassified/Attainment
Hydrogen Sulfides	Unclassified	-
Visibility Reducing Particles	Unclassified	-

Source: CARB 2023, EPA 2025b

A wide range of sources, from industrial plants to motor vehicles, emit TACs. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects, such as cancer, birth defects, neurological damage, asthma, bronchitis, and genetic damage, or short-term acute effects, such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches.

Asbestos

Asbestos is listed as a TAC by the CARB and a hazardous air pollutant by EPA. Asbestos is of special concern in El Dorado County because it occurs naturally in surface deposits of several types of ultramafic materials (materials that contain magnesium and iron and a very small amount of silica) (EDAPCD, 2002). Due to the known health risks from exposure to asbestos (i.e. development of lung disease, mesothelioma, and asbestosis) it is strictly regulated (EPA, 2024). EDAQMD is responsible for implementing and enforcing asbestos-related regulations and programs. There are no known likely areas of naturally occurring asbestos at the project site, and the nearest mapped area of naturally occurring asbestos is located approximately 11 miles west of the project site, near the Finnon Reservoir (El Dorado County, 2018).

Sensitive Receptors

Sensitive receptors include schools, residences, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. The closest sensitive receptor to the project site is a private residence located within the site boundary on land not owned by EID. Another residence is located approximately 650 feet west of the project site, and additional homes are situated across Highway 50, approximately 800 feet to the south.

3.2.3 Environmental Impacts and Mitigation Measures

Criteria Evaluated in the IS

The following criteria evaluated in the IS were determined not to require additional analysis in the EIR (refer to **Appendix A**):

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

Thresholds of Significance

Resources areas in Appendix G of the CEQA Guidelines were assessed in the IS and the following criteria were determined to need further evaluation in this EIR:

- Would the Project conflict with or obstruct implementation of the applicable air quality plan?
- Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard?
- Would the Project expose sensitive receptors to substantial pollutant concentrations?

EDAQMD has established thresholds to help determine the significance of criteria air pollutant emissions from a project. EDAQMD has determined that mass emissions in excess of the ROG and NO_X levels shown in **Table 3.2-3** from any project could affect the EDAQMD's commitment to attain the Federal 1-hour ozone standard in El Dorado County (which is a part of the Sacramento Metro Region), and thus, could have a significant adverse impact on air quality in the region. Mass emissions of fugitive dust (PM_{10}) are not required to be quantified and may be presumed less than significant if the project implements mitigation measures that prevent visible dust from leaving the property boundaries, consistent with Table C.4, "Best Available Fugitive Dust Control Measures," in the EDAPCD CEQA Guide (EDAPCD, 2002).

Table 3.2-3: EDAQMD Significance Thresholds

Pollutant	Pounds per Day
ROG	82
NO_X	82

Source: EDAPCD, 2002

Analysis Methodology

Emissions of criteria air pollutants were evaluated using methodologies and guidance recommended by EDAQMD. Project construction-related emissions of criteria air pollutants were quantified using the California Emissions Estimator Model (CalEEMod) Version 2022.1.1.29. Construction-related emissions were estimated using information such as construction schedule and phasing, expected duration of activities, equipment type, quantity, and hours of usage, volumes of material to be hauled, and number of construction workers on-site during each construction phase. Equipment assumptions were based on observations from previous flume replacement projects, with added conservatism applied to the estimated operating hours for each equipment type and activity. All diesel-powered construction equipment will meet Tier 4 Final emissions standards. Construction information used to estimate air emissions is discussed in **Section 2** and **Appendix C**. Construction-related emissions of ROG and NO_X were compared with the applicable EDAQMD thresholds of significance. Although EDAQMD does not have an established threshold for PM_{10}, estimated construction emissions of PM_{10} are provided for disclosure purposes. Construction-related criteria air pollutant emissions estimated for each year of Project construction (2026 and 2027) are presented and compared to the EDAQMD significance thresholds in **Table 3.2-4**. Emissions modeling data summarized in this section is provided in **Appendix C**.

Table 3.2-4: Unmitigated Criteria Air Pollutant Emissions from Construction Activities

Emissions Category	ROG (lbs/day)	NO_X (lbs/day)	PM_{10} (lbs/day)
2026			
EDAQMD Threshold	82	82	None
Unmitigated Emissions	4.57	37.4	109
Exceedance	No	No	-
2027			
EDAQMD Threshold	82	82	None
Unmitigated Emissions	2.93	16.9	70.4
Exceedance	No	No	-

Notes: yellow-shaded cells indicate exceedance of the applicable significance threshold. lbs/day = pounds per day.
Source: **Appendix C**.

The Project would not modify the capacity or operation of the existing flume. As such, it would not result in any operational air quality impacts. The Project involves replacing the existing wooden Flume 48 with a structure designed to withstand damage from wildfires and impacts from trees or boulders. As such, the Project would not result in any long-term operational emissions.

Impact Analysis

Impact AIR-1: Would the Project conflict or obstruct implementation of the applicable air quality plan from construction activities? **(Less than Significant with Mitigation)**

Consistency with an air quality plan is determined based on whether a project would conflict with or obstruct implementation of the Federal and State air quality plans, which would lead to increases in the frequency or severity of existing air quality violations. The Project is located within El Dorado County as part of the larger MCAB and is under the jurisdiction of EDAQMD. Therefore, EDAQMD is responsible for establishing and enforcing air quality rules and regulations in the jurisdiction of the Project that address the requirements of Federal and State air quality laws.

Both MCAB and El Dorado County are designated as nonattainment for the Federal 8-hour ozone standard, and State ozone and PM_{10} standards (EDAPCD, 2002). As shown in **Table 3.2-4**, construction-related emissions of ROG and NO_X, which are both precursors to ozone formation, would not exceed applicable EDAQMD significance thresholds and therefore would not result in a significant adverse impact on air quality in the region. As discussed above, the Project would not result in any operational air quality impacts, since the existing use of the site would remain unchanged.

While EDAQMD does not have an established significance threshold for PM_{10}, PM_{10} emissions are shown in **Table 3.2-4** for disclosure purposes. Because the Project would generate fugitive dust and both MCAB and El Dorado County are designated as nonattainment for PM_{10}, the Project could result in a potentially significant impact from emissions of fugitive dust. Therefore, Mitigation Measure AIR-1 would be implemented to reduce potential impacts to **less than significant with mitigation**.

Mitigation Measure AIR-1: Dust and Emissions Control Plan

A Dust and Emissions Control Plan shall be prepared and implemented prior to construction that is substantially consistent with EDAQMD standards.

Additionally, the District will implement applicable EDAQMD adopted rules designed specifically to address a variety of air quality impacts due to construction-related air quality emissions. EDAQMD rules that could be applicable to the Project include (Rule 202, 207, 223, and 223-1). The following measures shall be conducted throughout the construction period to limit and control dust and air emissions:

- Material excavated, stockpiled, or graded shall be sufficiently watered, treated, or covered to prevent fugitive dust from leaving the property boundaries and/or causing a public nuisance.
- Areas with vehicle traffic shall be watered or have a dust palliative applied as necessary to minimize dust emissions.
- On-site vehicle traffic shall be limited to a speed of 15 miles per hour (mph) on unpaved roads.
- Land clearing, grading, earth moving, or excavation activities on the project site shall be suspended as necessary to prevent excessive windblown dust when winds are expected to exceed 20 mph.
- Inactive portions of the construction site shall be covered, seeded, or watered or otherwise stabilized until a suitable cover is established.
- Material transported off-site shall be either sufficiently watered or securely covered to prevent it from being entrained in the air and there must be a minimum of six inches of freeboard in the bed of the transport vehicle.
- Paved streets adjacent to the project site shall be reasonably clean through methods such as sweeping or washing at the end of each day, or more frequently, if necessary, to remove excessive accumulation or visibly raised areas of soil that may have resulted from activities at the Project area.
- Prior to the end of construction, ground cover on the project site shall be re-established through seeding.
- Construction equipment will be properly maintained.

Timing: Before and during construction activities.
Responsibility: The District and its construction contractor(s).

Significance after Mitigation

The implementation of Mitigation Measure AIR-1 would ensure that the Project would not conflict with any applicable air quality plan as it would not exceed EDAQMD thresholds of significance and would implement BMPs defined in EDAQMD rules to control fugitive dust emissions. Therefore, this impact would be reduced to have a **less than significant impact with mitigation**.

Impact AIR-2: Would the Project result in a cumulatively considerable net increase of any criteria pollutant from construction activities? **(Less than Significant)**

Both MCAB and El Dorado County are designated as nonattainment for the Federal 8-hour ozone standard, and State ozone and PM_{10} standards (EDAPCD, 2002). By its nature, air pollution is largely a cumulative impact. No single project by itself is sufficient in size to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. EDAQMD has developed regional air quality thresholds as allowable project-level emissions limits to enable the region to attain and maintain ambient air quality standards. Therefore, if a project exceeds its identified project-level significance thresholds, a project's cumulative impact would be cumulatively considerable.

See Impact AIR-1 above for discussion of Project construction-related criteria air emissions. As shown in **Table 3.2-4**, estimated construction-related emissions of ROG and NO_X are less than EDAQMD thresholds of significance for each year of Project construction. Therefore, the Project would not result in cumulatively considerable net increase in any criteria pollutant from construction activities, and this impact would be **less than significant**.

Impact AIR-3: Would the Project expose sensitive receptors to substantial pollutant concentrations? **(Less than Significant)**

Some members of the population are especially sensitive to emissions of air pollutants: children, older adults, persons with preexisting respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. These people and places where they congregate should be given special consideration during the evaluation of a Project's air quality impacts. As discussed in **Section 3.2.2**, "Environmental Setting," the nearest sensitive receptor to the project site is a private residence located within the site boundary on land not owned by EID. Although this residence is located within the project site boundary, the individual who resides there would temporarily reside off-site during all construction activities. The next nearest residence is located approximately 650 feet west of the project site, and additional homes are situated across Highway 50, approximately 800 feet to the south.

The greatest potential for TAC emissions would result from diesel PM and CO generated by diesel-powered heavy-duty construction equipment and off-road vehicles, as well as fugitive dust from excavation activities. However, all diesel-powered construction equipment will meet Tier 4 Final emissions standards, which are the most stringent currently in effect. These standards reduce emissions of NO_X and PM by up to 80 times per hour compared to older Tier 0 engines, resulting in substantially lower air quality impacts (CARB, 2025b). The primary factor in determining health risk from TAC exposure is the dose, which is a function of both concentration and duration of exposure. According to the State Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments (HRAs) evaluating long-term residential exposure to TACs are typically based on a 70-year exposure period (OEHHA, 2015). However, HRAs should reflect the actual duration of emission-generating activities. In this case, construction emissions would occur over an approximate one-year period, spanning portions of both 2026 and 2027, which is a relatively short duration when compared to the 70-year exposure period typically used in assessing long-term health risks from TACs. Furthermore, the dose (i.e., concentration levels) to which nearby receptors would be exposed would be limited because of their distance from the project site. CARB's Air Quality and Land Use Handbook states that PM levels drop by 70 percent at a distance of 500 feet from a roadway (CARB, 2005). Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. Construction of the Project would temporarily increase traffic volumes both on the project site and on streets near the project site (i.e., hauling and construction worker vehicles); therefore, the Project would be expected to increase local CO concentrations during construction. However, due to the distance of sensitive receptors from the project site (over 500 feet), and the rural nature of the project site where background concentrations of CO are low, it is anticipated that diesel PM and fugitive dust concentrations would decrease substantially and would not be detected at the nearest sensitive receptor, and hauling and construction worker vehicle trips would not generate CO emissions that would expose sensitive receptors to substantial pollutant concentrations. Further, because construction activities would be mobile and temporary and would progress linearly along the flume corridor, individual receptors would only experience elevated pollutant concentrations for limited durations during nearby phases of work. Additionally, the project site is not located in or near an area with naturally occurring asbestos. Therefore, this impact would be **less than significant**.

3.3 BIOLOGICAL RESOURCES

This section identifies the regulatory setting applicable to species, provides an overview of the existing biological resources on the project site and vicinity, and analyzes impacts from the Project on special-status species.

3.3.1 Regulatory Setting

Federal Laws, Regulations, and Policies

Endangered Species Act of 1973

Under the Federal Endangered Species Act (ESA), the Secretary of the Interior and the Secretary of Commerce jointly have the authority to list a species as threatened or endangered (16 U.S. Code (USC) Section 1533(c)). Pursuant to ESA requirements, each Federal agency must consult with U.S. Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Service (NMFS) to ensure that any action it authorizes, funds, or carries out does not jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat (16 USC Section 1536(a)(2)). Section 7 of the ESA provides a means for authorizing incidental take of Federally endangered or threatened species that result from Federally conducted, permitted, or funded projects. Similarly, Section 10 authorizes incidental take of Federally endangered or threatened species that result from projects that do not include any Federal agency action.

Migratory Bird Treaty Act of 1918 and the Bald and Golden Eagle Protection Act

The Migratory Bird Treaty Act (MBTA) (16 USC Sections 703−711) and the Bald and Golden Eagle Protection Act (BGEPA) (16 USC Section 668) protect specific species of birds and prohibit intentional take (i.e., harm or harassment) when the purpose of an activity is to take migratory birds, eggs, or nests. The MBTA protects migratory birds from take through the setting of hunting limits and seasons and protecting birds and their occupied nests and eggs. The BGEPA prohibits the take or commerce of any part of the bald or golden eagle. USFWS administers the MBTA and BGEPA and reviews actions that may affect the protected species.

National Threatened, Endangered, and Sensitive Species Program

The Threatened, Endangered, and Sensitive Species Program includes management for all threatened, endangered and designated U.S. Forest Service (USFS) Sensitive Species (FSS) on National Forest System lands. USFS designates sensitive species for each national forest. Sensitive species are designated by Regional Foresters for each national forest region. A Sensitive Species is defined by the Forest Service as any plant or animal species identified by a Regional Forester for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or habitat capability. In the Pacific Southwest Region (Region 5), these species are listed in the 2013 Sensitive Animal Species List (USFS, 2013a) and 2013 Sensitive Plant Species List (USFS, 2013b). Sensitive species receive special management attention as prescribed by Forest Service Manual (FSM) 2670, with the goal of preventing further population declines that could lead to federal listing under the Endangered Species Act (USFS, 2005). Furthermore, within each forest's Land and Resource Management Plan (LRMP), the USFS identifies Management Indicator Species (MIS) as required by 36 CFR 219.19 (National Forest Management Act 1982 rule), to evaluate the effects of management alternatives.

State Laws, Regulations, and Policies

California Endangered Species Act

The California Department of Fish and Wildlife (CDFW) has jurisdiction over species listed as threatened or endangered under the California Endangered Species Act (CESA), which is codified in Fish and Game Code (FGC) Sections 2050–2089. Section 2080 prohibits the take of any species listed as threatened or endangered under CESA. The CESA, enacted in 1970, prohibits take of State- listed threatened and endangered species. The California FGC defines take as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (FGC Section 86). The CESA also designates "candidate species" which are afforded the same level of protection as listed species. An Incidental Take Permit from the CDFW is required for take of any State-listed or candidate species, and any take must be minimized and fully mitigated. In the 1960s, prior to the enactment of the CESA, California created a designation to provide protection to rare species. This designation remains today and is referred to as "fully protected" species, which "may not be taken or possessed at any time." CDFW cannot issue an Incidental Take Permit for fully protected species. CDFW also designates "species of special concern" (SSC), which are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational values. These species do not have the same legal protection as listed species but may be added to official lists in the future.

Native Plant Protection Act: FGC: Section 1900 et seq.

The Native Plant Protection Act (NPPA), enacted in 1977 and codified in Fish and Game Code Section 1900 et seq., is administered by CDFW. The NPPA prohibits the "take" of endangered, threatened, or rare plant species native to California, except under specific exemptions provided in the FGC. FGC §1901 defines a "native plant" as: a plant growing in a wild, uncultivated state which is normally found growing in California. Species may be listed as endangered, threatened, or rare when their prospects of survival and reproduction are in jeopardy. While the term "rare" is not strictly defined by abundance or distribution, it is often applied to species that are either narrowly distributed or low in population density. If a project may result in take of listed plant species, consultation with CDFW and the implementation of avoidance, permitting, or mitigation measures may be required.

Nesting Migratory Bird and Raptors: FGC, Section 3503, 3503.5, and 3800

FGC Sections 3503, 3503.5, and 3800 prohibit the take, possession, or destruction of birds, their nests or eggs. Disturbances that cause nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) or the loss of habitat upon which the birds depend is considered "taking" and is potentially punishable by fines and/or imprisonment (FGC Section 3503−3503.5).

3.3.2 Environmental Setting

Literature Review and Survey

A Biological Resources Assessment (BRA) prepared by GEI Consultants Inc., which includes information from biological resources databases, was used to complete this section and is provided in **Appendix D**. For purposes of analyzing potential special-status species presence or absence within the project site and vicinity, the study area for the BRA included the project site plus a 50-foot buffer downslope and 25-foot buffer upslope of the flume. The following database searches, site-specific documentation, field work, and other compiled sources on sensitive biological resources in the project site and vicinity have been utilized in preparation of this section.

The project site is in the Pollock Pines USGS 7.5-minute quadrangle. Most database searches included this quadrangle and eight adjacent quadrangles including Tunnel Hill, Devil Peak, Robbs Peak, Slate Mountain, Riverton, Camino, Sly Park, and Old Iron Mountain quadrangles. The following information sources were reviewed to identify regulated species that have the potential to occur in the project site or vicinity:

- CDFW California Natural Diversity Database (CNDDB) (**Appendix D**);
- California Native Plant Society (CNPS) online Inventory of Rare and Endangered Vascular Plants of California (**Appendix D**);
- USFWS Information for Planning and Conservation (IPaC) (**Appendix D**);
- USFWS Critical Habitat Mapper (**Appendix D**);
- USFS Region 5 Sensitive Plant Species (**Appendix D**); and
- USFS Sensitive Animal Species List (**Appendix D**)

Additionally, additional or updated database materials have been generated from the following sources:

- CNDDB (**Appendix E**);
- CNPS online Inventory of Rare and Endangered Vascular Plants of California (**Appendix E**);
- USFWS IPaC (**Appendix E**);
- USFWS Critical Habitat Mapper (**Appendix E**);
- USFWS National Wetlands Inventory (NWI) (NWI, 2025)
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Custom Soil Resource Report (NRCS, 2025)

Updated special-status species lists are included in **Appendix E**, and special-status species that have since been added to lists and that have not been addressed in the BRA (**Appendix D**) are summarized in the table contained in **Appendix E**.

A biological resources survey of the project site was conducted by GEI biologists and botanists on July 21, 2022. The survey was conducted to map habitat/land cover types, assess for potentially jurisdictional aquatic resources, and assess the suitability of habitat to support special-status plant and wildlife species. The survey included a floristic evaluation of all the plant taxa in the project site using Jepson Manual dichotomous key (Jepson et al., 2025). Proposed access roads and staging areas were surveyed with a 25-foot buffer around the boundaries. Sensitive biological resources were initially identified by desktop analysis and later verified and further assessed during the survey.

Additionally, a Wetland Assessment was prepared by GEI consultants in July 2023 and is included as **Appendix F**. An aquatic resources survey of the project site was conducted on May 19, 2023 that consisted of a pedestrian survey, recording aquatic/drainage features, and conducting a vegetation and hydrologic assessment of the features.

Climate and Topography

The project site is in western El Dorado County within the Sierra Nevada ecoregion of California. The topography of the project site slopes gradually from the southwest to the northeast. Soils within the project site are classified by the NRCS as acidic rock land; Chaix very rocky coarse sandy loam, 9 to 50 percent slopes; and Josephine very rocky loam, 15 to 50 percent slopes (NRCS, 2025). Regional climate is characterized by a Mediterranean climate with cool, wet winters, and hot, dry summers. Elevation within the project site is approximately 3,840 to 3900 feet above mean sea level (amsl).

Habitat/Land Cover Types

The project site is comprised of mixed Douglas fir forest habitat and urban land cover as shown on **Figure 10**, and is immediately south of the Eldorado National Forest, and the adjacent forested areas exhibit a sparse understory and burn-scarred trees from the 2014 King Fire (**Figure 4**).

Douglas Fir

Portion of the project site are comprised of mixed Douglas fir forest as shown in **Figure 10**. Dominant plant species include Douglas fir (*Pseudotsuga menziesii*), black oak (*Quercus kelloggii*), and incense cedar (*Calocedrus decurrens*). In El Dorado County, Douglas fir forests occur between 2,000 and 6,000 feet (UCANR, 2025). Other tree species observed within or adjacent to the project site include black oak (*Quercus kelloggii*), incense cedar (*Calocedrus decurrens*), canyon live oak (*Quercus chrysolepis*), Ponderosa pine (*Pinus ponderosa*), and big-leaf maple (*Acer macrophyllum*).

Urban

The portions of the project site containing the residential structure, driveway, and flume/canal comprise an urban land cover. These areas are developed and managed.

Drainages

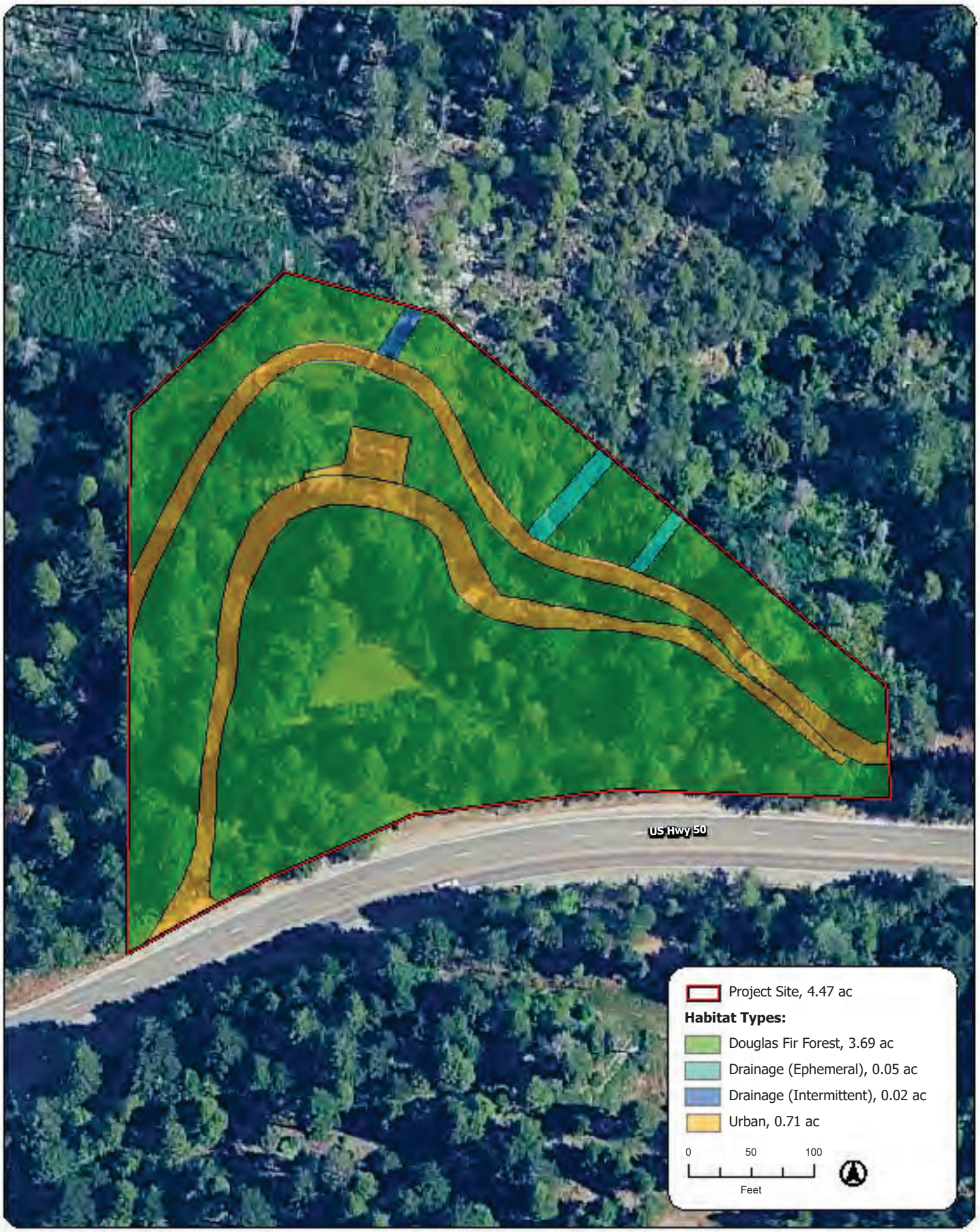
Two small ephemeral drainages and one intermittent drainage were identified within the project site, as shown on **Figure 10**. The two ephemeral drainages flow northeast of the project site toward the South Fork American River. At the time of the survey, the drainages exhibited evidence of ephemeral water flow but lacked vegetation and riparian habitat. The intermittent drainage is located below the elevated flume and travels northeast over concrete. During the 2023 aquatic resources survey, these drainages were determined to originate from a leak in the flume and were determined to not be potentially jurisdictional waterbodies subject to regulation by regulatory agencies (**Appendix F**). Additionally, there was no continuous water flow to support moisture or vegetation growth.

Open Water

Water is conveyed in the elevated flume, also known as the El Dorado Canal system, in a general east to west direction typically from mid-December to October each year. The canal system, including Flume 48, is typically dewatered from October to mid-December each year during the annual maintenance outage. The flume is manmade and is void of vegetation or suitable substrate to support wildlife and plant life in the long-term.

Wildlife Habitat

The Douglas fir forest in the vicinity of the project site has the potential to support a variety of wildlife species, including rodents and mammals that may use this habitat for foraging, cover, and fawning, bird species, and various predators and raptors that may feed on the rodents and other small mammals. Overall, wildlife populations in the vicinity of the flume have been substantially affected by disturbance associated with past and ongoing human activities, including residential uses, vehicle traffic associated with Highway 50, and construction and maintenance of the existing flume system. As a result, the abundance and diversity of native species is minimal.



SOURCE: GEI, Consultants, 12/2022; ESRI, 2025; Google Earth Aerial Photograph, 6/17/2024; Acorn Environmental, 7/24/2025

Figure 10
Habitat Types

Special-Status Species

CEQA requires an assessment of the effects of a project on species that are "threatened, rare, or endangered" and typically referred to as "special-status species." Some special-status species are also regulated by federal and State laws and ordinances that are described above. For the purposes of this analysis, special-status species are defined as follows:

- Species listed, candidates for listing, or proposed for listing by ESA or CESA as endangered, threatened, or rare;
- Species identified by CDFW as species of SSC;
- Plants listed as rare under NPPA of 1977 (FGC Section 1900 et seq.);
- Species designated as Fully Protected under the CFGC;
- Birds protected under MBTA and FGC Section 3503, 3503.5, 3800(a), and 3513;
- Plant or animal species ranked by the Eldorado National Forest as FSS[1] (USFS, 2013a; USFS, 2013b); or
- Plants that meet the definition of rare or endangered under CEQA (14 CCR Section 15380) including Lists 1B, 2B, 3 and 4 of the CNPS California Rare Plant Ranks (CRPR).

Plants with a CRPR are considered "special plants" by CDFW. "Special plants" is a broad term that refers to refer to all taxa inventoried in the CNDDB, regardless of their legal or protection status. For wildlife species not listed under state or federal endangered species acts, CDFW applies the term "California SSC". Plants ranked as CRPR 1A through 2B may qualify as endangered, rare, or threatened species within the definition presented in Section 15380 of the State CEQA Guidelines. In general, CRPR 3 and 4 species do not meet the definition of endangered, rare, or threatened pursuant to State CEQA Guidelines Section 15380, and therefore, are not discussed further.

The results of the database queries identified several special-status species that occur in the region. Tables 1 and 2 in **Appendix D** provide information, including habitat requirements, for special-status species plants and wildlife that were identified in the database search results and other biological resources information sources and determined to have the potential to occur within the project site. An updated IPaC list, CNPS list, CNDDB list, and critical habitat map are included in **Appendix E**. Species that were determined to have the potential to occur within the project site are discussed and evaluated below.

Special-Status Plants

A total of 45 special-status plant species were evaluated for the potential to occur in the project site (**Appendices D and E**). Nine special-status plant species were determined to have the potential to occur within the project site. Those species include Big-scale balsamroot (*Balsamorhiza macrolepis*), Pleasant valley mariposa-lily (*Calochortus clavatus* var. *avius*), Sierra arching sedge (*Carex cyrtostachya*), Mountain lady's slipper (*Cypripedium montanum*), Saw-toothed lewisia (*Lewisia serrata*), Yellow bur navarretia (*Navarretia prolifera ssp*. *Lutea*), Stebbins' phacelia (*Phacelia stebbinsii*), Sierra blue grass (*Poa sierrae*), and Brownish beaked rush (*Rhynchospora capitella*).

Numerous species were eliminated from consideration based on 1) a lack of suitable habitat and elevation

[1] The USFS also designates species as MIS. MIS are species identified by USFS in the land and resource management plans of each national forest that represent habitat types that either occur within the national forest boundary and/or species that are presumed to be sensitive to the various forest management activities within that forest (USFS, 2004). Although MIS designations are noted within this EIR, species are not considered special-status species with this designation alone.

requirements 2) lack of suitable soil types; and/or 3) not being present during the survey conducted during the suitable blooming periods. Soils on the project site are not serpentine or volcanic soils that could support special-status plants endemic to these soil types. The survey was conducted during the bloom period for all nine potentially occurring special-status plant species, and no special-status plants were observed. Additionally, soils mapped within the project site include Josephine silt loam soils that are sometimes associated with known occurrences of Pleasant Valley mariposa-lily (*Calochortus clavatus ssp. avius*), a CRPR 1B.2 species. A reference population approximately eight miles west for the Pleasant Valley mariposa-lily, which has the potential to occur on the project site, was visited on June 16, 2022. Additionally, proposed critical habitat is pending for the foothill yellow legged frog, and includes the project site and surrounding region. However, the project site lacks suitable habitat to support foothill yellow legged frog.

Special-Status Wildlife Species

A total of 26 special-status wildlife species were evaluated for the potential to occur in the project site (**Appendices D and E**). Based on the review of existing documentation and observations made during the survey, habitat within the project site may be suitable for California spotted owl (*Strix occidentalis*), and is unlikely to be suitable for American goshawk (*Accipiter atricapillus*), bald eagle (*Haliaeetus leucocephalus*), pallid bat (*Antrozous pallidus*), and Townsend's big-eared bat (*Corynorhinus townsendii*). Species were eliminated from consideration based on known limiting ranges or lack of suitable habitat within the project site. The project site also contains suitable habitat to support nesting migratory birds and raptors protected under the MBTA.

California Spotted Owl

California spotted owl is listed as USFWS Proposed Threatened, Bird of Conservation Concern under the MBTA, State of California SSC, and a USFS Sensitive Species. California spotted owls generally inhabit older forests that contain structural characteristics necessary for nesting, roosting, and foraging. In the Sierra Nevada range, a majority of California spotted owls occur within mid-elevation ponderosa pine, mixed conifer, white fir, and mixed- evergreen forest types, with fewer owls occurring in the lower elevation oak woodlands of the western foothills. Nesting occurs February 1 through July 31, and nests are typically found in areas of high canopy cover, a high number of large trees, and downed trees.

There is potentially suitable nesting habitat within and adjacent to the project site. The CNDDB spotted owl viewer also shows several pairs of spotted owls three miles from the project site (CDFW, 2025). Approximately four pairs were recorded as occurring near the project site since 2020 (CDFW, 2025).

American Goshawk

In 2023, the northern goshawk was divided into two species: the American goshawk and Eurasian goshawk. The species was divided due to genetic and vocal differences between the two populations, based in North America and Eurasia, respectively. The American goshawk is a California SSC and a USFS Sensitive Species**.** This species forages and nests in mature and old-growth forest stands over much of their California range. Suitable nesting and foraging habitat requires an adequate prey base of smaller passerines as well as small mammals, such as squirrel and rabbits. Nest stands have larger trees, greater canopy cover, and relatively more open understories than stands lacking nests (Shuford and Gardali, 2008). The critical nesting and fledging period occurs March 1 to August 15 (Shuford and Gardali, 2008). Seasonal movements and migration occur downslope after breeding season, as far as valley foothill hardwood habitat in Sierra Nevada (California Wildlife Habitat Relationship System [CWHR], 2008).

American goshawk (formerly northern goshawk) could use the project site as a movement corridor with

limited foraging habitat. Prey is limited to small to medium sized birds that could be on the project site. Prey abundance and suitable old-growth forest nesting habitat is in the vicinity, but small mammal burrows were not observed during the survey. No nests were observed in the project site or immediate vicinity during the survey. The nearest occurrence record of a nest location is recorded is over seven miles east of the project site.

Bald Eagle

Bald eagle is protected under The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d) and is listed as California Endangered, CDFW Fully Protected, and as a USFS Sensitive Species**.** Bald eagles typically nest in forested areas adjacent to large bodies of water away from heavily developed areas when possible. For perching, bald eagles prefer tall, mature coniferous or deciduous trees that afford a wide view of the surroundings (Buehler, 2000). In winter, bald eagles can also be found in dry, open uplands if there is access to open water for fishing.

Bald eagles tend to use tall, sturdy conifers that protrude above the forest canopy, providing easy flight access and good visibility. Nests are typically built near the trunk, high up in the tree but below the crown. Nests can take up to three months to build and may be reused year after year (CWHR, 1999). In most of California, the breeding season lasts from January through July or August. The young fledge after 11 or 12 weeks.

Bald eagle has minimal potential to forage and move through the project site or utilize the project site for nesting. This species nests in large, mature conifers with dense canopy and an open understory, generally near water. The project site does not have bodies of water nearby large enough to provide adequate habitat for foraging bald eagles. No records of nesting bald eagles have been found near or within the Project boundaries. The nearest known occurrence is approximately eight miles north of the project site.

Pallid bat

Pallid bat is listed as a CDFW SSC and as a USFS Sensitive Species. They can be found roosting in caves, rock crevices, mines, hollow trees, and structures in a wide variety of habitat including grasslands, shrublands, woodlands, and forests from sea level through mixed conifer forests. The species is most common in open, dry habitats with rocky areas for roosting (CWHR, 2025). Pallid bats do not migrate, except for short distances to winter hibernacula. Breeding takes place in early October and continues sporadically throughout the winter. The gestation period lasts from 7 to 10 weeks and young are born between May and June. The young begin to fly at 4 to 5 weeks after birth and are weaned in 6 to 8 weeks.

The project site is located within the yearlong range for pallid bat and provides suitable foraging and roosting habitat. Spaces beneath the elevated flume structure in the project site could provide migrant bats night and day roosts. Trees in the woodland and forest also provide suitable roosting habitat, however no hollows were observed. Routine maintenance of the elevated flume structure limits the availability of habitat in the project site during that time. Higher quality roosting habitat can be found adjacent to the project site and in the greater vicinity. The nearest reported occurrence is approximately 17 miles southwest of the project site.

Townsend's big-eared bat

Townsend's big-eared bat is listed as a USFS Sensitive Species and CDFW SSC. This species is found throughout California except for subalpine and alpine habitats, and its most abundant in mesic habitats.

This species requires caves, mines, tunnels, buildings, or other human-made structures for roosting

(CWHR, 2000a). The proximity of roosting and foraging site, and summer maternity colonies and hibernacula are usually within a few miles of each other. Townsend's big-eared bat mating occurs from November to February and gestation lasts 8 to 12 weeks. Births occur in May and June, peaking in late May. Young bats are weaned in 6 weeks and fly in 2.5 to 3 weeks after birth. Hibernacula sites are used from October to April.

The project site is located within the yearlong range for Townsend's big-eared bat and provides suitable foraging and roosting habitat. Spaces beneath the elevated flume structure in the project site could provide migrant bats night and day roosts. Trees in the woodland and forest also provide suitable roosting habitat, however no hollows were observed. Routine maintenance of the elevated flume structure limits the availability of habitat in the project site during that time. Higher quality roosting habitat can be found adjacent to the project site and in the greater vicinity. The nearest reported occurrence is approximately 15 miles north of the project site.

Fringed myotis

Fringed myotis is designated as a USFS Sensitive Species and is considered a California SSC. This bat occurs throughout much of California and is found primarily in coniferous and mixed woodland habitats, at low to mid-elevations, often in drier environments. Caves, mines, rock crevices, buildings, and exfoliating bark are common roosts (CWHR, 2000b). Fringed myotis typically forage in open habitats such as woodland edges and riparian corridors, and their foraging areas are usually located near day roosts. Summer maternity colonies and winter hibernacula are often within close proximity, although some seasonal movement may occur.

The project site is located within the yearlong range for Fringed myotis and provides suitable foraging and roosting habitat. Spaces beneath the elevated flume structure in the project site could provide migrant bats night and day roosts. Trees in the woodland and forest also provide suitable roosting habitat, however no hollows were observed. Routine maintenance of the elevated flume structure limits the availability of habitat in the project site during that time. Higher quality roosting habitat can be found adjacent to the project site and in the greater vicinity. The nearest reported occurrence is approximately 4.5 miles southwest of the project site.

Western Bumblebee

Western bumblebee is a CDFW SSC and USFS Sensitive. This species is a generalist forager and does not depend on a singular flower type. Overwintering and nesting sites require above and below ground micro-sites, which include logs, stumps, and abandoned rodent and ground-nesting bird nests (Washington Department of Fish and Wildlife, 2025). The colonies for this species are annual. In the late-winter or early-spring, queens emerge from overwintering sites to search for suitable nests. Once the workers emerge from their cocoons, they take over tending and provisioning young. Later in the season, males and new queens are produced, which then mate. The individuals that survive the winter are only the newly mated queens, the males, workers and old queens eventually die.

The western bumblebee could use the project site as an overwintering or foraging site. The project site supports few flowering plants in the understory, and there was no meadow habitat on or adjacent to the project site. The nearest occurrence record of a nest location is recorded is over 23 miles from the project site.

Nesting Migratory Bird and Raptors Species Protected under the Migratory Bird Treaty Act

Nesting raptors and other migratory bird species are protected under the Migratory Bird Treaty Act and the California Fish and Game Code Sections 3503, 3503.5, 3800(a), and 3513. There is a high potential for nesting raptors and other migratory birds protected under the MBTA and FGCs to occur within the project site and vicinity. Although any impact would be incidental to construction, and not the purpose of the Project or Project-related activity, pre-outage construction activities during the nesting season (approximately February 15 through September 15) have the potential to cause direct impacts to nesting birds. Any disturbance resulting in nest abandonment, the loss of eggs, or direct mortality to a nesting bird would be considered a significant impact. Construction disturbance such as noise may cause short-term avoidance of the Project area by birds. Habitat fragmentation may impact bird dispersal and increase populations of species that prey on special-status birds (e.g., raccoons, brown-headed cowbirds).

Trees and shrubs in the access area of the project site could provide suitable habitat for nesting raptors and birds, including migratory species. The flume is routinely maintained and disturbed, therefore, the wooden structure would not provide suitable habitat. The potential for nesting birds and raptors to occur onsite is limited to species that may forage or nest in coniferous forest, utilize the forest as a movement corridor, or migrate through in transit between nesting or foraging areas. Because extensive areas of similar or higher-quality coniferous forest habitat is present in the vicinity of the project site, these species are more likely to forage and nest elsewhere if temporarily affected by construction-related disturbance.

3.3.3 Environmental Impacts and Mitigation

Criteria Evaluated in the IS

The following criteria evaluated in the IS were determined not to require additional analysis in the EIR (refer to **Appendix A**):

- Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?
- Would the Project have a substantial adverse effect on State or Federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
- Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?
- Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?

Thresholds of Significance

Resources areas in Appendix G of the CEQA Guidelines were assessed in the IS and the following criteria were determined to need further evaluation in this EIR.

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

Analysis Methodology

The analysis of impacts on biological resources that could result from Project activities focuses on evaluating the potential to adversely affect special-status species and their habitats. Impact conclusions consider the habitat quality, impact extent, impact duration, and impact intensity (e.g., level of harm, injury/loss, or degradation suffered by the resource). The impact analysis is based on the results of survey and desktop research in relation to the baseline habitat conditions, known and potential species occurrence, and species natural history traits that influence how they may be impacted by Project activities. For purposes of this assessment, species determinations within the BRA (**Appendix D**) assessed herein are defined as follows. Special-status species determined to have no potential to occur are presumed absent and are therefore not discussed further.

- **No potential to occur:** Potentially suitable habitat is not present. Habitat on and adjacent to the project site is clearly unsuitable for the species (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime) or is outside of the known range of the species.
- **Unlikely to occur:** Potentially suitable habitat present but species unlikely to be present because of very restricted distribution. Few habitat components meeting the species' requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. Additionally, the project site may be outside the known range of the species or isolated such that the species is unlikely to access the area.
- **Could occur:** Suitable habitat is available; however, there are few or no other indicators that the species may be present. Some habitat components meeting the species' requirements are present, and/or only some of the habitat on or adjacent to the project site is unsuitable.
- **Likely to occur:** Habitat conditions, behavior of the species, known occurrences in the vicinity, or other factors indicate a relatively. The species has a moderate probability of being found within the project site.
- **High Potential**. The species, or evidence of its presence, was observed during reconnaissance-level surveys or was reported by others. All habitat components meeting the species' requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found within the project site.

Approximately five acres of temporary and permanent impacts would occur within the limits of work for the proposed Project. Temporary impacts are associated with road maintenance, construction of the u-shaped concrete canal, and noise associated with Project activities. Temporary increases in noise levels from equipment mobilization, grading, and earth-moving, as well as increased levels of human movement could disrupt species within the project site and vicinity. Permanent impacts are long-term changes to the ecological functions in the project site. Permanent impacts are associated with removal of existing vegetation in the forest habitat for construction access to the existing elevated flume, removal of the existing rock wall, and the construction of the new u-shaped concrete canal. Activities related to operation and maintenance would be similar to current activities and would not result in new or different types of impacts related to biological resources. Therefore, operational activities are not evaluated further in this section.

Impact Analysis

Impact BIO-1: Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service? **(Less than Significant with Mitigation/No Impact)**

Nesting Migratory Birds and Raptors

The Project Site and adjacent areas may contain suitable nesting habitat for nesting migratory birds and raptors, including California spotted owl, as well as minimal nesting habitat for bald eagle and American goshawk. No active nests were observed during the survey of the project site (**Appendix D**). Spotted owls were detected three miles west of the Project site during surveys conducted in 2021 (**Appendix D**). American Goshawk was not detected near the Project site during surveys conducted in 2021 (**Appendix D**). Habitat within the Project site is unsuitable or only minimally suitable for bald eagle due to lack of a nearby water source.

Construction activities are planned to occur between August and January, which is outside most of the general nesting season for migratory birds and raptors (February 15 to September 15), the critical nesting and fledgling period for American goshawk (March 1 to August 15), and the nesting season for bald eagle (January to July 31), and is outside the nesting season for California spotted owl (February 1 to July 31).

The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed under 50 CFR 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The direct injury or death of a migratory bird due to construction activities or other construction-related disturbance that causes nest abandonment, nestling abandonment, or forced fledging would be considered "take" under federal law. Pre-outage construction activities may begin starting in August. If work were to occur during the general nesting season, indirect impacts from construction noise and human disturbance and direct impacts from removing trees could potentially result in nest abandonment or destruction of nests. Such impacts would be considered significant. Therefore, Mitigation Measure BIO-1 and BIO-2 would be implemented to reduce potential impacts to **less than significant with mitigation**.

Mitigation Measure BIO-1: Preconstruction Nesting Bird and Raptor Survey

The District shall implement the following measures to avoid and minimize impacts to nesting migratory birds and raptors, including bald eagle, American goshawk, and California spotted owl:

- Should commencement of construction occur between February 15 and September 15, a qualified biologist shall conduct preconstruction surveys for active nests of migratory nesting birds and raptors within 14 days before the start of construction-related activities.
- If active nests are observed, a qualified biologist shall establish appropriate avoidance buffers around nests that will be sufficient so that breeding will not be likely to be disrupted or adversely affected by Project activities. An avoidance buffer will constitute an area where Project-related activities (i.e., vegetation removal, earth- moving, and construction) will not occur. Avoidance buffers would be species-specific to avoid impacts on nesting raptors and/or other birds. Factors to be considered for determining buffer size will include: the presence of existing buffers provided by vegetation, topography, and infrastructure; nest height; locations of foraging territory; and baseline levels of noise and human activity.

- The avoidance buffer zone will be delineated by highly visible, temporary construction fencing.
- A qualified biologist will monitor active nests during construction to ensure that the nest is not harmed or harassed by the noise or activity resulting from Project-related activities.
- Avoidance buffers will be maintained until a qualified biologist has determined that the young have fledged and are no longer reliant on the nest or parental care for survival.
- If construction activities need to occur within the buffer, a biological monitor shall be present to monitor the birds' behavior. The biologist will have the authority to halt work if the birds exhibit behaviors of agitation.
- If there is a lapse in construction activity for more than 14 consecutive days during the nesting season or if construction activity is phased at the work site, preconstruction and nesting bird surveys shall be repeated.

Timing: Before and during construction activities
Responsibility: District

Mitigation Measure BIO-2: Worker Awareness Training

Worker awareness training regarding nesting migratory birds/raptors, bald eagle, American goshawk, California spotted owl, Townsend's big-eared bat, pallid bat, fringed myotis, and western bumblebee shall be provided by a qualified biologist to on-site workers prior to beginning construction. Training materials (i.e., printed handouts) that provide information on the following topics shall be provided to workers:

- How to recognize special-status animal species that could occur on the project site (special-status species identification and associated habitat);
- What to do if special-status species are encountered on the project site;
- Information on practicing good housekeeping (e.g., removing litter, trash, and other debris on a daily basis to avoid attracting animals to the project site) and implementing BMPs;
- Information on other mitigation measures relevant to biological resources; and
- Information on regulations and applicable civil and criminal penalties for violations.

The training shall initially be presented to key personnel at Project kickoff. Printed handouts shall be distributed and used for future reference by personnel. Personnel that are trained during the Project kickoff shall be responsible for making sure that other workers on the Project receive the training before initiating on-site work. A roster of trained Project personnel shall be maintained in the Project construction office and made available for review by regulatory agencies, if needed. For multi-year projects, the training shall be updated on a yearly basis to ensure project applicability and any lessons learned. All personnel are required to re-take the training yearly.

Timing: Before and during construction activities
Responsibility: District

Significance after Mitigation

Implementing Mitigation Measures BIO-1 and BIO-2 would reduce this impact because pre-construction surveys would be conducted if tree or vegetation removal or commencement of construction occurs during the nesting seasons, and buffers would be established if active nests are detected during pre-construction surveys. Worker awareness training would also provide workers with a species overview. Therefore, this impact would be **less than significant with mitigation**.

Special-Status Invertebrates

One special-status invertebrate has low potential to occur on the project site: western bumblebee. This species could forage onsite if suitable flowering plants such as *Ceanothus* sp.*, Centaurea* sp.*, Cirsium* sp.*,* and *Melilotus* sp. are present, but the project site does not support dense populations of flowering herbaceous species due to the density of the forest canopy that limits light penetration to the forest floor. Western bumblebee could nest in underground cavities such as abandoned chipmunk burrows, but rodent burrows were not identified on the project site. The nearest recent documented occurrence of this species is on the Emerald Bay quadrangle at Washoe Meadows State Park. Because the project site does not support high densities of flowering plants, this species is highly unlikely to occur, or nest, on the project site. Additionally, Mitigation Measure BIO-2 would be implemented to reduce impacts in the unlikely scenario that western bumblebee was to occur on the project site. There would be a **less than significant impact with mitigation.**

Refer to Mitigation Measure BIO-2

Special-Status Roosting Bats

It was determined that the project site could potentially support Townsend's big-eared bat, pallid bat, and fringed myotis. Spaces beneath the elevated flume structure in the project site could provide migrant bats night and day roosts. Trees in the woodland and forest also provide suitable roosting habitat, however no hollows were observed. The flume is routinely maintained and disturbed, therefore, the likelihood of bats roosting under it is low. Higher quality roosting habitat may occur adjacent to the project site and in the greater vicinity. However, the project site also contains frequent disturbances related to the adjacent Highway 50 and the existing residence, and it is therefore unlikely for nesting individuals to occur within these areas.

Indirect impacts may include elevated noise levels during the above activities. Impacts are more likely if construction activities occur were to occur during the maternity season (March through July) or the overwintering season (October through February) when these species are less mobile and less likely to be able to escape danger. Therefore, Mitigation Measures BIO-2 and BIO-3 would be implemented to reduce potential impacts to **less than significant with mitigation.**

Refer to Mitigation Measure BIO-2.

Mitigation Measure BIO-3: Avoid and Minimize Impacts on Roosting Bats

The District shall implement the following measures to avoid and minimize impacts to potentially occurring special-status roosting bats.

- Avoidance of Sensitive Life Stages of Bats: If vegetation removal or commencement of construction occurs outside of the bat maternity activity period, from March through July, and outside of the overwintering period, from October through February, no mitigation is required.
- Roosting Bat Habitat Assessment and Surveys: If vegetation removal or commencement of construction occurs within the bat maternity activity period, from March through July, a habitat assessment shall be conducted a minimum of 30- to 90-days prior to tree removal and shall include a visual inspection of potential roosting features (e.g., cavities, crevices in wood and bark, and exfoliating bark) on all trees slated for trimming or removal. If suitable habitat is identified on the impacted trees the qualified biologist can either conduct night emergence surveys or complete a visual examination of roost features to determine if roosting bats are present.

If bats are identified, a temporary 300-foot buffer shall be established with no Project activities allowed until the bats have vacated on their own accord as confirmed by a qualified biologist. The biologist shall be present for all activities that have the potential to impact bats.

- Two-step Tree Removal Process: If vegetation removal or commencement of construction occurs during the overwintering seasonal period of bat activity, from October through February, a two-step tree removal process would be implemented. Two-step tree removal shall be conducted over two consecutive days. The first day (in the afternoon), under the direct supervision and instruction by a qualified biologist, limbs and branches shall be removed by a tree cutter using hand tools only; limbs with cavities, crevices or deep bark fissures shall be avoided. The second day the entire tree shall be removed. The biologist shall be present for all activities that have the potential to impact bats.

Timing: Before and during construction activities
Responsibility: District

Significance after Mitigation

Implementing Mitigation Measures BIO-2 and BIO-3 would reduce this impact because biological resources awareness training would be conducted, vegetation removal and construction activities would commence outside of bat maternity and overwintering periods, pre-construction surveys would be conducted if necessary, and a two-step tree removal process would be implemented if vegetation removal or commencement of construction occurs during the overwintering seasonal period of bat activity. Therefore, this impact would be **less than significant with mitigation**.

Special-Status Plant Species

As detailed in **Appendices D and E**, the following special-status plant species were identified as having potentially suitable habitat within the project site:

- Big-scale balsamroot
- Pleasant valley mariposa-lily
- Sierra arching sedge
- Mountain lady's slipper
- Saw-toothed lewisia
- Yellow bur navarretia
- Stebbins' phacelia
- Sierra blue grass
- Brownish beaked rush

A survey was conducted during the blooming period for all nine species and no special-status plants were observed. Therefore, they are presumed absent from the project site. There would be **no impact**.

3.4 CULTURAL RESOURCES

This section includes the environmental and regulatory setting for cultural resources and describes potential impacts on cultural resources and that could result from implementing the project. Cultural resources are buildings, sites, structures, objects that may have historic, architectural, archaeological, cultural, or scientific importance. Tribal Cultural Resources (TCRs) are addressed in Section 3.9, "Tribal Cultural Resources."

3.4.1 Regulatory Setting

Federal Laws, Regulations, and Policies

Section 106 of the National Historic Preservation Act

Compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, is required to obtain a Federal permit. Section 106 requires that Federal agencies and entities that these agencies fund or permit to consider the effects of their actions on properties that are listed in the National Register of Historic Places (NRHP), or that may be eligible for such listing. To determine whether an undertaking could affect NRHP-eligible properties, cultural resources (including archaeological, locations of sacred importance to Native Americans, historical, and architectural properties) must be inventoried and evaluated. The Section 106 review process consists of four steps:

1. Initiate the Section 106 process by establishing the undertaking, developing a plan for the public involvement, and identifying other consulting parties;
2. Identify historic properties (resources that are eligible for inclusion in the NRHP) by determining the scope of efforts, identifying cultural resources within the area potentially affected by the project, and evaluating properties' eligibility for NRHP inclusion;
3. Assess adverse effects by applying the Section 106 criteria of adverse effect to identified historic properties; and
4. Resolve adverse effects by consulting with the State Historic Preservation Officer (SHPO) and other consulting agencies, including the Advisory Council on Historic Preservation, if necessary, to develop an agreement that addresses the treatment of historic properties.

NRHP Evaluation Criteria

The NRHP Evaluation Criteria is the nation's master inventory of known historic resources. It is administered by the National Park Service (NPS), in consultation with the SHPO. The NRHP includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the Federal, State, or local level. The NRHP criteria and associated definitions are outlined in the National Register Bulletin: How to Apply the National Register Criteria for Evaluation (NPS, 1997). The following is a summary of that bulletin.

Properties (structures, sites, buildings, districts, and objects) more than 50 years of age can be listed in the NRHP provided they meet one of the evaluation criteria described below; however, properties less than 50 years of age that are of exceptional significance or are contributors to a district, that also meet the evaluation criteria, can be included in the NRHP. The NRHP uses the following four criteria under which a property can be considered significant for listing:

A. Properties associated with events that have made a significant contribution to the broad patterns of history.
B. Properties associated with the lives of persons significant in our past.
C. Properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.
D. Properties that have yielded or may likely yield information important in prehistory or history.

Properties can be listed individually or as contributors to a historic district. In addition to meeting one of the evaluation criteria, a property must also retain integrity to convey that significance. Although the evaluation of integrity is sometimes subject to judgement, it must always be grounded in an understanding of the property's physical features and how they relate to its significance. The NRHP recognizes the following seven aspects of integrity:

- Location: the place where the historic property was constructed or the place where the historic event occurred.
- Design: the combination of elements that create the form, plan, space, structure, and style of a property.
- Setting: the physical environment of a historic property.
- Materials: the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.
- Workmanship: the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.
- Feeling: a property's expression of the aesthetic or historic sense of a particular period of time.
- Association: the direct link between an important historic event or person and historic property.

State Laws, Regulations, and Policies

California Environmental Quality Act

The California Environmental Quality Act (PRC § 21000 et seq.) establishes that historical and archaeological resources are afforded consideration and protection by CEQA (14 CCR § 21083.2, 14 CCR § 15064). The guidelines under CEQA define cultural resources under two regulatory designations: historical resources and unique archaeological resources. However, only significant resources need to be addressed, specifically resources listed in, or determined to be eligible for listing in, the California Register of Historic Resources (CRHR) (PRC Section 21084.1).

California Register of Historical Resources

CRHR includes resources listed in or formally determined eligible for listing in the NRHP, as well as some California Historical Landmarks and Points of Historical Interest. Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be significant resources for purposes of CEQA, unless a preponderance of evidence indicates otherwise (PRC Section 5024.1, 14 CCR Section 4850). Eligibility criteria for the CRHR are similar to the NRHP but focus on importance of resources to California history and heritage. A cultural resource may be eligible for listing in the CRHR if it:

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

State CEQA Guidelines also require consideration of unique archaeological resources (CCR Section 15064.5).

As used in California PRC Section 21083.2, the term "unique archaeological resource" refers to an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

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

In addition, the State CEQA Guidelines require consideration of TCRs, which are either: (1) sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that is either on or eligible for inclusion in the CRHR or a local historic register; or, (2) resources the lead agency (in this case, the District), at its discretion and supported by substantial evidence, chooses to treat as a TCR. Additionally, a cultural landscape may also qualify as a TCR if it meets the criteria to be eligible for inclusion in the CRHR and is geographically defined in terms of the size and scope of the landscape. Other historical resources, unique archaeological resources, and non-unique archaeological resources addressed in this section could also be TCRs if they conform to the criteria to be eligible for inclusion in the CRHR. TCRs are addressed in Section 3.8, "Tribal Cultural Resources."

In addition to meeting one or more of the above criteria, resources eligible for listing in the CRHR must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. These regulations apply to the eligibility determination of cultural resources in the project area.

Health and Safety Code Section 7050.5 (2023)

Section 7050.5 of the California Health and Safety Code prohibits the disinterment, disturbance, or removal of human remains from any location other than a dedicated cemetery. PRC Section 5097.98 (also referenced in State CEQA Guidelines Section 15064.59[e]) identifies steps to follow in the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery. These steps include but are not limited to requiring that if human remains are discovered in any place other than a dedicated cemetery no further disturbance or excavation of the site or nearby area reasonably suspected to contain remains shall occur until the county coroner has examined the remains.

Local Laws, Regulations, and Policies

As a special district with equal authority, the District is exempt from following goals and policies within the County's General Plan and Zoning Ordinance. However, the District aims to comply with those goals and policies and use them as a metric for formulating an impact analysis (El Dorado County 2004, as amended).

Goal 7.5: Ensure the preservation of the County's important cultural resources.

> **Objective7.5.1**: Creation of an identification and preservation program for the County's cultural resources.

Policy 7.5.1.1: The County shall establish a Cultural resources Ordinance. This ordinance shall provide a broad regulatory framework of the mitigation of impacts on cultural resources (including historic, prehistoric and paleontological resources) by discretionary projects. This Ordinance should include (but not be limited to) and provide for the following:

A. Appropriate (as per guidance from the Native American Heritage Commission) Native American monitors to be notified regarding project involving significant round- disturbing activities that could affect significant resources.
B. A 100-foot development setback in sensitive areas as a study threshold when deemed appropriate.
C. Identification of appropriate buffers, given the nature of the resources within which ground-disturbing activities should be limited.
D. A definition of cultural resources that are significant to the County. This definition shall conform to (but not necessarily be limited to) the significance criteria used for the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR) and Society of Vertebrate Paleontology.
E. Formulation of project review guidelines for all development projects.
F. Development of a cultural resources sensitivity map of the County.

Policy 7.5.1.2: Reports and/or maps identifying specific locations of archaeological or historical sites shall be kept confidential in the Planning Department but shall be disclosed where applicable.

Policy 7.5.1.3: Cultural resource studies (historic, prehistoric and paleontological resources) shall be conducted prior to approval of discretionary projects. Studies may include, but are not limited to, record searches through the North Central Information Center at California State University, Sacramento, the Museum of Paleontology, University of California, Berkeley, field surveys, subsurface testing, and/or salvage excavations. The avoidance and protection of sites shall be encouraged.

Policy 7.5.1.4: Promote the registration of historic districts, sites, buildings, structures, and objects in the National Register of Historic Places and inclusion in the California State Office of Historic Preservation's California Points of Historic Interest and California Inventory of Historic Resources.

Policy 7.5.1.5: Cultural Resources Preservation Commission shall be formed to aid in the protection and preservation of the County's important cultural resources. The Commission's duties shall include, but are not limited to:

A. Assisting in the formulation of policies for the identification, treatment, and protection of cultural resources (including historic cemeteries) and the curation of any artifacts collected during field collection/excavation;
B. Assisting in preparation of a cultural resources inventory (to include prehistoric sites and historic sites and structures of local importance);
C. Reviewing all projects with identified cultural resources and making recommendations on appropriate forms of protection and mitigation; and
D. Reviewing sites for possible inclusion in the National Register of Historic Places, California Register, and on the State and local lists of cultural properties.

The County shall treat any significant cultural resources (i.e., those determined California Register of Historical Resources/National Register of Historic Places eligible and unique paleontological resources), documented as a result of a conformity review for ministerial development, in accordance with CEQA standards.

Policy 7.5.1.6: The County shall treat any significant cultural resources (i.e., those determined California Register of Historical Resources/National Register of Historic Places eligible and unique paleontological resources, documented as a result of a conformity review for ministerial development, in accordance with CEQA standards.

Objective 7.5.3: Recognition of Prehistoric/Historic Resources. Recognition of the value of the County's prehistoric and historic resources to residents, tourists, and the economy of the County, and promotion of public access and enjoyment of prehistoric and historic resources where appropriate.

3.4.2 Environmental Setting

This section presents a summarization of the prehistoric, ethnographic, and historic-era cultural settings relevant to the project site and surrounding area presented in **Appendix G**. The prehistoric context traces human occupation from the early Archaic period through the emergence of complex village societies prior to sustained European contact. The ethnographic overview focuses on the Nisenan, whose territory included the Project vicinity and whose seasonal use of the area is well documented in anthropological sources. The historic-era narrative begins with early Spanish exploration and continues through the Mexican land grant era, the Gold Rush, and subsequent infrastructure, logging, and land use developments that shaped the region into the modern era. For additional information, see **Appendix G**.

Native American Culture Prior to Non-Native Contact

Archaeological evidence from the region reveals a long sequence of prehistoric cultural development, providing insight into patterns of human occupation well before European contact. Archaeological evidence indicates that the project site has been used for thousands of years, with the earliest occupation associated with the Lower Archaic period (10,000 to 8,000 before present [BP]). During this time, people practiced broad-spectrum foraging and made limited use of acorns. As the climate became warmer and drier during the Middle Archaic period (8,000 to 3,000 BP), the use of acorns and riverine resources increased. By the Upper Archaic period (3,000 to 1,400 BP), cooler and wetter conditions supported growing populations and more permanent settlements. The Emergent period (1,400 BP to common era [CE] 1850) marked the development of larger, organized villages with evidence of social complexity, shell bead currency, and a transition from atlatls to bow and arrow technology.

These cultural periods reflect a long history of adaptation to the foothill environment, with people relying on plant gathering, hunting, and fishing. Archaeological findings from the region, including mortars, pestles, and burial features, support the interpretation that the area was used repeatedly for subsistence and ceremonial purposes well before the arrival of European explorers and settlers.

Ethnographic Setting

The ethnographic context of the project site and vicinity is defined by the Nisenan, a group of the Southern Maidu people, who occupied much of the western Sierra Nevada foothills prior to Euro-American settlement. The Southern Hill Nisenan, in particular, are associated with the region around the project site.

While villages were densely located in the river plains, the foothill region near the project site and vicinity was largely used for seasonal hunting and gathering, with no major permanent villages reported within five miles.

Ethnographic sources describe a rich subsistence pattern based on the seasonal availability of plant and animal resources. Gathering focused on acorns, pine nuts, wild roots, and berries, with processing and storage carried out in organized family groups. Hunting of deer, elk, and rabbits was conducted using coordinated drives, while fishing occurred year-round using weirs, nets, and traps. Ethnographers documented the use of tule balsas and canoes for navigating rivers and the reliance on both freshwater mussels and lamprey eels. Insects such as grasshoppers and grubs were also part of the diet. These patterns reflect a broad-based subsistence system well adapted to the riverine and upland environments of the Sierra foothills.

Historical Setting

During the Spanish period (1769–1821), exploration of the Sacramento Valley and American River region occurred, but no permanent Spanish missions or settlements were established in the project site vicinity. In the Mexican period (1822–1848), land grants were issued and early settlers such as John Sutter founded agricultural and trading operations in the valley. Explorers such as John C. Fremont traversed the Sierra Nevada, and the development of wagon routes—including the Johnson Cut-off—laid the groundwork for later migration and development.

The American period (1848–present) brought transformative change to the region following the discovery of gold in Coloma in 1848. El Dorado County became one of the original counties in the new state of California. Placer mining gave way to hydraulic mining, which required an extensive system of flumes, canals, and reservoirs. The El Dorado Canal, built in the 1870s using Chinese labor and dry-laid granite, carried water across the region for mining and later irrigation and power. The canal system remained central to regional development and was ultimately acquired by the El Dorado Irrigation District in 1925.

Throughout the mid- to late 19th century, the region became a major corridor for transportation and commerce. The Pony Express passed through Pollock Pines, and overland travelers used the Carson and Johnson passes to reach California's interior. With the arrival of the Transcontinental Railroad and the construction of the Lincoln Highway in the 1920s, the project site and vicinity saw continued investment in roads, hydroelectric infrastructure, and land development. Western States Gas and Electric and later PG&E used the canal system to generate power, and the district expanded its role in water supply and wastewater management.

Logging and recreation also became major industries. Sawmills operated throughout the region, and towns like Pollock Pines were founded to support timber processing. The area eventually transitioned into a recreational landscape, with vacation homes and public lands drawing visitors to the mountains. Roads such as Highway 50 were widened and improved in the mid-20th century, further increasing access. However, decades of logging and development contributed to wildfire vulnerability. The King Fire in 2014 and the Caldor Fire in 2021 burned tens of thousands of acres, threatening homes, communities, and infrastructure.

Today, the project site and vicinity reflects a layered history of Indigenous land use, gold mining, transportation development, and environmental change. The cumulative effects of these historical activities continue to influence land management, cultural resources, and community identity in the region.

3.4.3 Environmental Impacts and Mitigation Measures

Criteria Evaluated in the IS

All resource topics evaluated in the IS were determined to require additional analysis in the EIR; no topics were excluded from further evaluation (refer to **Appendix A**).

Thresholds of Significance

Resources areas in Appendix G of the CEQA Guidelines were assessed in the IS and the following criteria were determined to need further evaluation in this EIR:

- Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.
- Disturb any human remains, including those interred outside of formal cemeteries.

Analysis Methodology

In accordance with 36 CFR 800.5, the Advisory Council on Historic Preservation's implementing regulations identify criteria for adverse effects on cultural resources. Impacts are considered significant if one or more of the following conditions would result from implementation of the Project. The following criteria were used to determine effects on historic properties:

- Whether the undertaking would have an effect on a historic property when the undertaking may alter the characteristics of the property that may qualify the property for inclusion in the NRHP. For the purposes of determining the type of effect, alteration to features of a property's location, setting, or use may be relevant depending on the property's significant characteristics and should be considered
- Whether the undertaking would have an adverse effect when the effect on the historic property may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association. Adverse effects on the historic properties include, but are not limited to:
    - Physical destruction, damage, alteration or all or part of the property.
    - Isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification from NRHP.
    - Introduction of visual, audible, or atmospheric elements that are out of character with the property or that alter its setting.
    - Neglect of the property, resulting in its deterioration or destruction.
    - Transfer, lease, or sale of the property.

An assessment of impacts for the purposes of this EIR is made only for those resources determined to be eligible or recommended to be eligible for listing in the NRHP/CRHR. Resources that have been determined to be eligible for listing in the NRHP, are listed in the NRHP, or are recommended to be eligible for listing are referred to as historic properties. Resources that have been found or recommended to be ineligible for listing in the NRHP/CRHR are not considered further in this EIR.

Similarly, because isolated artifacts are generally not considered to be potentially eligible for listing in the NRHP and because an assessment of impacts for the purposes of this EIR is made only for those resources determined to be eligible for listing in the NRHP/CRHR or that are listed in the NRHP/CRHR, isolated artifacts are not considered to be historic properties or a historical resource and an assessment of impacts on those resources is not necessary. Therefore, isolated artifacts are not considered further in this EIR.

Records Search and Literature Review

A literature and records search of the project site and surrounding area was conducted in April, 2025 at the North Central California Information, which is part of the California Historical Resources Information System (CHRIS). The records search identified 22 previous studies that have been conducted at least partially within the Project area, ranging from publication dates of 1969 to 2019. The records search also identified 11 cultural resources within the project site and 0.5 miles of it. See Table 2 of **Appendix G** for additional information.

Literature Review

Government Land Office Maps of township, Range, and Sections in the Area of Potential Impacts (API)/Area of Potential Effects (APE) were reviewed online, as were historical USGS topographic maps. For local history, Roseville, Rocklin, and other relevant sources, such as Ancestry.com and the Placer County Water Agency, were examined for information. Names and Places uncovered in these resources were entered into the California Digital Newspaper collection search engine to find historical newspaper articles related to the study area.

Pedestrian Surveys

An archaeological survey was conducted on April 18, 2025, by Piñon staff archeologist Taylor Alshuth and architectural historian Elizabeth O'Brian. Weather conditions were sunny and clear with good to fair visibility range with vegetation, such as grass, being the main hinderances. Within the survey areas, the staff archaeologists examined the ground surface for the presence of historic artifacts (e.g., metal, glass, ceramics, structural remnants), prehistoric artifacts (e.g., flaked or ground stone tools, tool-making debris), and other features that might indicate precontact and historic human activity. In areas where surface visibility was poor, crew members examined animal burrows, erosional cuts, and road cuts to identify potential cultural deposits.

Site recordation methods conformed to guidelines outlined in the Office of Historic Preservation (OHP) Handbook for Completing an Archaeological Site Record (OHP, 1989). Site recording was conducted with a focus on a broad capture of each resource and its primary components.

The survey crew revisited previously recorded resources identified by the CHRIS records search within or immediately adjacent to the project site. Records for all successfully revisited resources were supplemented or updated using Department of Parks and Recreation (DPR) 523-series forms. Updates to existing site records prioritized documentation of apparent differences or changes in resource conditions and apparent differences in cultural constituents. When appropriate, cultural resource boundaries were updated.

Impact Analysis

Impact CUL-1: Would the Project Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5? (**Significant and Unavoidable**)

A total of three cultural resources were identified within the project site, including one historic district, one previously recorded resource, and one newly documented resource. These resources consist of the El Dorado Canal Rock Wall Discontiguous District (P-09-000599/CA-ELD-000511H), the Lincoln Highway/US Route 50 (P-09-000809), and the onsite residence with a garage and chicken coop at 7337 Route 50. Of these, only P-09-000599/CA-ELD-000511H is eligible for the NRHP. The other resources are not considered eligible for the NRHP (See Section 5 of **Appendix G** for additional information on their ineligibility), and are not addressed further.

P-09-000599/CA-ELD-000511H (i.e. Flume 48 rock wall) is considered eligible under NRHP/CRHR Criteria A/1 and C/3 due to it being a contributing resource to the El Dorado Canal Rock Wall Discontiguous District. Thus, it is considered a historical resource for the purposes of CEQA (See Section 5 of **Appendix G** for additional information on the reasoning for its eligibility).

Under the Project, the proposed demolition of the rock wall will cause a direct adverse effect to the El Dorado Rock Wall Discontiguous District under 36 CFR 800.5 (a)(2)(i) because it would physically destroy a substantial part of a contributing segment of a historic property. The action would cause the material demolition of the entirety of the Flume 48 bench rock wall (P-09-000599/CA-ELD-000511H). The demolition would, therefore, diminish all aspects of the integrity of the historic district. In addition, the Project will also replace the demolished rock wall with an MSE wall, constructed with modern methods, which is an adverse effect under 36 CFR Part 800.5 (2)(i) and (ii). Therefore, Mitigation Measure CUL-1 would be implemented to address potential impacts. There would be a **less than significant impact with mitigation.**

Mitigation Measure CUL-1: Document the Flume 48 Rock Wall (P-09-000599/CA-ELD-000511H)

The District shall hire a qualified architectural historian to prepare Historic American Engineering Record (HAER) documentation for the historic rock wall that shall meet Section 106 requirements and follow NPS guidelines. The HAER shall include standard information such as a historical narrative and photographs of the resource in a manner consistent with Section 106 requirements. Preparation of the documentation shall include three main tasks: gather data, prepare photographic documentation, and prepare a written descriptive report. Copies of the report and photographs shall be distributed to appropriate area repositories including local historical societies and organizations and branches of the El Dorado County Library system. Additional or alternate mitigation may be required, pending further Section 106 consultation with the SHPO and other consulting parties.

Timing: Prior to and during construction activities
Responsibility: EID

Significance after Mitigation

Implementing Mitigation Measure CUL-1 would reduce this impact because the historic rock wall would be documented. However, this impact would not be reduced to a less-than-significant level because character-defining features and the integrity of the rock wall would still be impaired through its removal. Therefore, the Project impact to the historic rock wall would be **significant and unavoidable**.

Impact CUL-2: Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? (**Less than Significant with Mitigation**)

No precontact or historic era archaeological resources have been previously identified in the project site and vicinity. The pedestrian survey did not identify previously unrecorded archaeological resources. Therefore, there are no known archaeological resources within the project site. Although unlikely, it is still possible that undiscovered archaeological resources might be inadvertently discovered during Project-related, ground-disturbing activities and could be adversely affected. Therefore, Mitigation Measure CUL-2 and CUL-3 would be implemented to address potential impacts. There would be a **less than significant impact with mitigation.**

Mitigation Measure CUL-2: Preconstruction Cultural Resource Awareness Training

The District shall provide cultural resources awareness training for workers prior to beginning Project construction activities. The District shall prepare training materials (e.g., printed handouts, recorded presentation) that provide information on the following topics:

- How to recognize cultural resources, including prehistoric and historic artifacts,
- What to do if artifacts are encountered in the Project area,
- Information on other measures relevant to cultural resources, and
- Information on regulations and applicable civil and criminal penalties for violations.

The training shall initially be presented to key Project personnel at the Project kickoff. Printed handouts shall be distributed and used for future reference by Project personnel. Project personnel that are trained during the Project kickoff shall be responsible for making sure that other workers on the Project receive the training before initiating on-site work. A roster of trained Project personnel shall be maintained in the Project construction office and made available for review by regulatory agencies, if needed. This training may be conducted in coordination with tribal cultural resource awareness training (see Mitigation Measure TRIB-2 in Section 3.8).

Timing: Prior to construction activities
Responsibility: The District and its construction contractor(s)

Mitigation Measure CUL-3: Address Previously Undiscovered Historical and Archaeological Resources

If cultural resources are encountered during construction, compliance with federal and State regulations and guidelines regarding the treatment of cultural resources and/or human remains shall be required.

1. If potential prehistoric or historic-period archaeological resources are encountered during Project implementation, construction activities within 100 feet shall halt and the District shall be notified.
2. A qualified archaeologist, defined as one meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology, shall inspect the findings as soon as practicable following discovery and report the results of the inspection to EID.
3. If the identified archaeological resource is determined to be tribal cultural resource, the District and a qualified archaeologist shall coordinate with and solicit input from a culturally affiliated Native American Tribal Representative regarding significance and treatment of the resource as a potential Tribal Cultural Resource. Any Tribal Cultural Resources discovered during Project work shall be treated in consultation with the tribe, with the goal of preserving in place with proper treatment. See Mitigation Measure TRIB-1, TRIB-2, and TRIB-3 for more discussion of tribes and culturally sensitive areas.

4. If the resource is determined to qualify as a historical resource or a unique archaeological resource (as defined pursuant to the CEQA Guidelines), and if it is determined that the Project has potential to damage or destroy the resource, mitigation shall be implemented in accordance with PRC Section 21083.2 and CEQA Guidelines Section 15126.4. Consistent with CEQA Guidelines Section 15126.4(b)(3), mitigation shall be accomplished through either preservation in place or, if preservation in place is not feasible, data recovery through excavation.
5. If preservation in place is feasible, this may be accomplished through one of the following means: (1) modifying the construction plan to avoid the resource; (2) incorporating the resource within open space; (3) capping and covering the resource before building appropriate facilities on the resource site; or (4) deeding the resource site into a permanent conservation easement.
6. If avoidance or preservation in place is not feasible, a qualified archaeologist shall prepare and implement a detailed treatment plan to recover the scientifically consequential information from and about the resource, which shall be reviewed and approved by the District prior to any excavation at the resource site.
7. Treatment of unique archaeological resources shall follow the applicable requirements of PRC Section 21083.2, including creation of a treatment plan. Treatment for most resources shall consist of (but shall not be limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim of targeting the recovery of important scientific data contained in the portion(s) of the significant resource to be impacted by the Project. The treatment plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, curation of artifacts and data at an approved facility, and dissemination of reports to local and State repositories, libraries, and interested professionals.

Timing: Prior to and during construction activities
Responsibility: The District and its construction contractor(s)

Significance after Mitigation

Implementing Mitigation Measures CUL-2 and CUL-3 would reduce this impact because training would be provided for construction workers to identify cultural resources and cultural resources unexpectedly identified during construction would be properly handled and assessed. Therefore, the potential impact from the Project would be **less than significant with mitigation**.

Impact CUL-3: Would the Project disturb any human remains, including those interred outside of formal cemeteries? (**Less than Significant with Mitigation**)

There are no known human burials or remains within the project site, and it is unlikely there are any unknown human remains on the site. While unlikely, there is the possibility that human remains might be encountered by Project-related, ground-disturbing activities. Therefore, Mitigation Measure CUL-4 would be implemented to address potential impacts. There would be a **less than significant impact with mitigation.**

Mitigation Measure CUL-4: Avoid Potential Effects on Undiscovered Burials

The District shall implement the following measures to reduce or avoid impacts related to undiscovered burials. In accordance with the California Health and Safety Code (CHSC), if human remains are uncovered during ground-disturbing activities, all potentially damaging ground-disturbance in the area of the burial and within a 100-foot radius shall halt and the El Dorado County Coroner shall be notified immediately. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or State lands (CHSC Section 7050.5[b]).

If the coroner determines that the remains are those of a Native American, then the District shall ensure that the procedures for the treatment of Native American human remains contained in CHSC Sections 7050.5 and 7052 and Public Resources Code Section 5097 are followed. California law recognizes the need to protect Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction.

Timing: During construction activities
Responsibility: The District and its construction contractor(s)

Significance after Mitigation

Implementing Mitigation Measure CUL-4 would reduce this impact because the finding would be assessed by an archaeologist and treated or investigated in accordance with State laws. Therefore, the potential impact from the Project would be **less than significant with mitigation**.

3.5 GEOLOGY AND SOILS

This section provides an overview of the existing geology and soil conditions within the project site and vicinity, identifies the regulatory setting, and analyzes the potential impacts of the Project on soil and erosion.

3.5.1 Regulatory Setting

Federal Laws, Regulations, and Policies

Clean Water Act

The Clean Water Act (CWA) of 1972 establishes the basic structure for regulating discharges of pollutants into waters of the U.S. and gives the EPA authority to implement pollution control programs such as setting wastewater standards for industries. In most states, EPA has delegated this authority to State agencies. In California, the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs) implement these programs. The Project is within the jurisdiction of the Central Valley RWQCB. The CWA includes the Federal Antidegradation Policy which was enacted to require the States to enact policies to fully protect existing water uses and the level of water quality required to protect and maintain the existing uses. Specific sections of the CWA that are applicable to the Project are described below.

Clean Water Act Section 402

Section 402 of the CWA establishes the NPDES permit process, which provides a regulatory mechanism for the control of point source discharges (a municipal or industrial discharge at a specific location or pipe) to waters of the U.S. The NPDES program also regulates: 1) diffuse source discharges caused by general construction activities over one acre; and 2) stormwater discharges in municipal stormwater systems where runoff is carried through a developed conveyance system to specific discharge locations. The SWRCB and the nine RWQCBs are responsible for the protection of water quality in California.

State Laws, Regulations, and Policies

Construction General Permit

The SWRCB adopted the Construction General Permit, Order No. 2022-0057-DWQ, effective September 1, 2023 in compliance with its responsibilities to enforce the NPDES.

The Construction General Permit regulates construction site stormwater management. Projects that disturb one acre of soil or more or that disturb less than one acre but are part of a larger common plan of development that in total disturbs one acre or more, are required to obtain coverage under the Construction General Permit for discharges of stormwater associated with construction activities. The Construction General Permit requires the preparation of a project-specific SWPPP to minimize potential stormwater impacts to surface waters. Construction activities that are subject to this permit include clearing, grading, and ground disturbance (e.g., stockpiling, excavation).

Permit applicants are required to submit a Notice of Intent (NOI) to the SWRCB and to prepare a SWPPP. The SWPPP identifies BMPs that must be implemented to reduce construction effects on receiving water quality based on pollutants. The BMPs are directed at implementing sediment and erosion control measures, as well as other measures to control chemical contaminants. The SWPPP must also include descriptions of the BMPs to reduce pollutants in stormwater discharges after all construction phases have been completed at the site (i.e., post-construction BMPs). The SWPPP must contain a visual monitoring program, a chemical monitoring program for "nonvisible" pollutants to be implemented if there is a failure of BMPs, and a sediment monitoring plan if the site discharges directly to a waterbody listed on the CWA section 303(d) list of waterbodies impaired for sediment.

Local Laws, Regulations, and Policies

El Dorado County General Plan

As a special district with equal authority, the District is exempt from following goals and policies within the County's General Plan and Zoning Ordinance. However, the District aims to comply with those goals and policies and use them as a metric for formulating an impact analysis (El Dorado County 2004, as amended).

Goal 7.1: Soil Conservation: Conserve and protect the County's soil resources.

Objective 7.1.2: Erosion/Sedimentation: Minimize soil erosion and sedimentation.

Policy 7.1.2.1: Development or disturbance of slopes over 30% shall be restricted. Standards for implementation of this policy, including but not limited to exceptions for access, reasonable use of the parcel, and agricultural uses shall be incorporated into the Zoning Ordinance.

Policy 7.1.2.2: Discretionary and ministerial projects that require earthwork and grading, including cut and fill for roads, shall be required to minimize erosion and sedimentation, conform to natural contours, maintain natural drainage patterns, minimize impervious surfaces, and maximize the retention of natural vegetation. Specific standards for minimizing erosion and sedimentation shall be incorporated into the Zoning Ordinance.

Policy 7.1.2.3: Enforce Grading Ordinance provisions for erosion control on all development projects and adopt provisions for ongoing, applicant-funded monitoring of project grading.

Goal 7.3: Water Quality and Quantity: Conserve, enhance, and manage water resources and protect their quality from degradation.

Objective 7.3.1: Water Resource Protection: Preserve and protect the supply and quality of the County's water resources including the protection of critical watersheds, riparian zones, and aquifers.

Policy 7.3.1.1: Encourage the use of BMPs, as identified by the Soil Conservation Service, in watershed lands as a means to prevent erosion, siltation, and flooding.

El Dorado County Ordinance Code Chapter 110.14

The Grading, Erosion, and Sediment Control Ordinance contained in the El Dorado County Code of Ordinance Chapter 110.14 regulates grading activities in the unincorporated area of the County. The ordinance is intended to safeguard life, limb, health, property and public welfare; to avoid pollution of watercourses; and to ensure that the intended use of a graded site is consistent with the following:

- County General Plan;
- Specific Plans adopted;
- Adopted Stormwater Management Plan;
- California Fire Safe Standards; and
- Any applicable County ordinances, including the Zoning Ordinance (set forth in Title 130) and the California Building Code (CBC).

The ordinance establishes the procedures for the issuance of grading permits, approval of plans, and inspection of grading construction sites (El Dorado County, 2025).

3.5.2 Environmental Setting

The project site is located in the Eldorado National Forest, in a densely vegetated area with a steep natural slope. Elevations in the Project area range from about 3,840 to 3,900 feet amsl. Stormwater drainage in the Project area occurs via natural drainages or roadside ditches. The naturally steep slope and varied topography in the region has led to frequent erosion (El Dorado County, 2003).

Project Site Soils

According to the USDA NRCS Web Soil Survey two soil map units are generally present within the project site, as shown in **Table 3.5-1** (NRCS, 2025). These soils are well drained, with more than 80-inches to the water table and have a medium runoff capacity.

Table 3.5-1: Soils within the Project Vicinity

Soil Series Name and Identification Number	Drainage	Depth to Water Table	Runoff
CcE – Chaix very rocky coarse sandy loam, 9 to 50 percent slopes	Well drained	More than 80 inches	Medium
JsE – Josephine very rocky loam, 15 to 50 percent slopes	Well drained	More than 80 inches	Medium

Source: NRCS, 2025

3.5.3 Environmental Impacts and Mitigation Measures

Criteria Evaluated in the IS

The following criteria evaluated in the IS were determined not to require additional analysis in the EIR (refer to **Appendix A**):

- Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landslides?
- Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?
- Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial direct or indirect risks to life or property?
- Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?
- Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Thresholds of Significance

Resources areas in Appendix G of the CEQA Guidelines were assessed in the IS and the following criteria were determined to need further evaluation in this EIR.

- Would the Project result in substantial soil erosion or the loss of topsoil?

Impact Analysis

Impact GEO-1: Would the Project result in substantial soil erosion or the loss of topsoil? **(Less than Significant with Mitigation)**

The Project includes the grubbing of existing vegetation, removing hazard trees, grading, installing an MSE wall and concrete at the flume, as well as road and slope stabilization. As discussed in **Section 2** and shown in **Table 2.4-2**, earthwork would include the demolition and removal of the existing wooden flume, its substructure, and the spillway, and the removal of bench material. Additionally, the placement of backfill material and cast-in-place canal would also occur. The fill material will be imported and stockpiled. The stockpiled material would be moisture-conditioned, mixed, and covered, with temporary BMPs installed at the staging area. This would be limited to the staging area for Phase I of construction.

The disturbance of existing vegetation and grading could result in an increase in stormwater runoff, particularly during the winter months, which in turn could result in erosion, loss of topsoil, and sedimentation. Ground disturbing activities related to the Project would result in temporary and short-term disturbance of soil and could expose disturbed areas to storm events. Rainfall of sufficient intensity could dislodge soil particles from the soil surface. If particles are dislodged and the storm is large enough to generate runoff, substantial localized erosion could occur. In addition, soil disturbance during summer could result in substantial loss of topsoil caused by wind erosion. Therefore, impacts related to soil erosion would be considered significant. Therefore, Mitigation Measure GEO-1 would be implemented to reduce potential impacts to **less than significant with mitigation.**

Mitigation Measure GEO-1: Prepare and Implement a SWPPP and BMPs

The selected construction contractor shall be required to comply with a site-specific SWPPP to reduce the risk of substantial soil erosion or loss of topsoil in accordance with requirements of the latest amendment of the NPDES Construction General Permit. The Construction General Permit requires a SWPPP be prepared by a qualified SWPPP developer. The SWPPP is required to identify appropriate BMPs to prevent erosion or soil loss as a result of the Project. These measures would include the implementation of construction staging in a manner that minimizes the amount of area disturbed at any one time and secondary containment for storage of fuel and oil. Additionally, these measures would include the management of stockpiles and disturbed areas by means of earth berms, diversion ditches, straw wattles, straw bales, silt fences, gravel filters, mulching, revegetation, and temporary covers as appropriate. The SWPPP shall also meet post-construction performance standards to ensure the post construction site is stabilized appropriately.

Timing: Before and during construction activities.
Responsibility: The District and its construction contractor(s)

Significance after Mitigation

Implementing Mitigation Measure GEO-1 would reduce this impact through obtaining coverage under the NPDES Construction General Permit and implementing BMPs to prevent and control pollution and minimize and control runoff and erosion during construction. Therefore, the impact from the Project would be **less than significant with mitigation**.

3.6 GREENHOUSE GAS EMISSIONS

This section provides an overview of the existing sources of greenhouse gas emissions within the Project area and vicinity, identifies the regulatory setting, and analyzes the potential impacts of the Project on greenhouse gas emissions.

3.6.1 Regulatory Setting

Federal Laws, Regulations, and Policies

Clean Air Act

EPA is the Federal agency responsible for implementing the Federal CAA. On April 2, 2007, in Massachusetts v. EPA, 549 U.S. 497, the Supreme Court found that greenhouse gases (GHGs) are air pollutants covered by the Federal CAA and that EPA has the authority to regulate GHGs. The court held that the EPA Administrator must determine whether GHG emissions from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether science is too uncertain to make a reasoned decision. On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- Endangerment finding: The EPA Administrator found that the current and projected concentrations of the six key well-mixed GHGs (carbon dioxide [CO_2], methane [CH_4], nitrous oxide [N_2O], hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and sulfur hexafluoride [SF_6]) in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or contribute finding: The EPA Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to GHG pollution, which threatens public health and welfare.

State Laws, Regulations, and Policies

With the passage of legislation, including Senate Bills (SBs), Assembly Bills (ABs), and executive orders, California launched an innovative and proactive approach to dealing with GHG emissions and climate change at the State level.

Assembly Bill 1493

AB 1493 requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emission standards were designed to apply to automobiles and light trucks beginning with model year 2009. In 2009, the EPA Administrator granted a CAA waiver of preemption to California. This waiver allowed California to implement its own GHG emissions standards for motor vehicles beginning with model year 2009. California agencies worked with Federal agencies to conduct joint rulemaking to reduce GHG emissions for passenger car model years 2017–2025.

Executive Order S-3-05

The goal of Executive Order S-3-05, signed in 2005 by Governor Arnold Schwarzenegger, is to reduce California's GHG emissions to 2000 levels by 2010, 1990 levels by 2020, and 80% below 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of AB 32.

Assembly Bill 32

AB 32, the California Global Warming Solutions Act of 2006, was signed in September 2006. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on Statewide GHG emissions. It requires that Statewide GHG emissions be reduced to 1990 levels by 2020. In December 2008, CARB adopted its Climate Change Scoping Plan (Scoping Plan) (CARB, 2008), which contains the main strategies California will implement to achieve the required GHG reductions required by AB 32. The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of the State's GHG inventory. CARB further acknowledges that decisions about how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors.

CARB is required to update the Scoping Plan at least once every 5 years to evaluate progress and develop future inventories that may guide this process. CARB has updated the Scoping Plan twice since it was first adopted in December 2008. CARB updated the Scoping Plan, and draft updates were issued for initial review and comment on October 1, 2013, and February 10, 2014. The final Scoping Plan update was adopted on May 22, 2014. Additional updates were made to the Scoping Plan in 2017 and 2022. The latest draft update was issued for initial review and comment on May 10, 2022. The final Scoping Plan update was adopted in December 2022.

Senate Bill 97 (Chapter 185, 2007)

SB 97, signed in August 2007, acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. SB 97 required the Governor's Office of Planning and Research to develop recommended amendments to the State CEQA Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Executive Order B-55-18

EO B-55-18, signed in September 2018, set a target of Statewide carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter.

Assembly Bill 1279

In September 2022, AB 1279 codified EO B-55-18 into law. AB 1279 requires the State to achieve net zero GHG emissions as soon as possible, but no later than 2045, to achieve and maintain net negative GHG emissions; and to ensure that by 2045, Statewide anthropogenic GHG emissions are reduced to at least 85% below 1990 levels.

3.6.2 Environmental Setting

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. A portion of the solar radiation that enters the earth's atmosphere is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space. This infrared radiation (i.e., thermal heat) is absorbed by GHGs within the earth's atmosphere. As a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on the earth.

GHGs are present in the atmosphere naturally, are released by natural and anthropogenic (human-caused) sources, and are formed from secondary reactions taking place in the atmosphere. Natural sources of GHGs include human, animal, and plant respiration; organic matter decomposition; and ocean evaporation. Anthropogenic sources include the combustion of fossil fuels, waste treatment, and agricultural processes. The following GHGs are widely accepted as the principal contributors to human-induced global climate change: CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6.

Natural sources of CO_2 include organic matter decomposition; animal and plant respiration; and ocean evaporation. Anthropogenic sources include burning coal, oil, natural gas, and wood. CH_4 is the main component of natural gas and is associated with agricultural practices and landfills. N_2O is a colorless GHG that results from industrial processes, vehicle emissions, and agricultural practices. HFCs are synthetic chemicals used as a substitute for chlorofluorocarbons in automobile air conditioners and refrigerants. PFCs are produced as a byproduct of various industrial processes associated with aluminum production and the manufacturing of semiconductors. SF_6 is an inorganic, odorless, colorless, nontoxic, and nonflammable GHG used for insulation in electric power transmission and distribution equipment, and in semiconductor manufacturing.

Global warming potential (GWP) is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to CO_2. The GWP of a GHG is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time (i.e., lifetime) that the gas remains in the atmosphere ("atmospheric lifetime"). The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main GHGs that have been attributed to human activity include CH_4, which has a GWP of 27 to 30, and N_2O, which has a GWP of 273 (EPA, 2025c). For example, 1 ton of CH_4 has the same contribution to the greenhouse effect as approximately 27 to 30 tons of CO_2. GHGs with lower emission rates than CO_2 may still contribute to climate change because they are more effective at absorbing outgoing infrared radiation than CO_2 (i.e., they have a high GWP). The concept of CO_2-equivalents (CO_2e) is used to account for the different GWP potentials of GHGs to absorb infrared radiation.

GHG emissions from human activities are considered a major contributor to the intensification of the greenhouse effect, leading to a trend of accelerated warming of the Earth's atmosphere and oceans, with associated impacts on global circulation patterns and climate. Similarly, impacts of GHGs are borne globally, as opposed to the more localized air quality effects of criteria air pollutants and TACs.

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; however, no single project alone is expected to measurably contribute to a noticeable incremental change in the global average temperature or to a global climate, local climate, or microclimate. Given the nature of environmental consequences from GHGs and global climate change, CEQA requires that lead agencies evaluate the cumulative impacts of GHGs, even relatively small additions, on a global basis.

Greenhouse Gas Emission Sources

GHG emissions contributing to global climate change are attributable to both natural processes and human actions. For purposes of accounting for and regulating GHG emissions attributable to human activities, sources of GHG emissions are grouped into emission categories. CARB identifies the following categories, which account for most anthropogenic GHG emissions generated within California:

- *Transportation*: On-road motor vehicles, recreational vehicles, aviation, ships, and rail.
- *Electric Power:* Use and production of electrical energy.
- *Industrial*: Mainly stationary sources (e.g., boilers and engines) associated with process emissions.
- *Commercial and Residential:* Area sources, such as landscape maintenance equipment, fireplaces, and consumption of natural gas for space and water heating.
- *Agriculture:* Agricultural sources that include off-road farm equipment; irrigation pumps; crop residue burning (CO_2); and emissions from flooded soils, livestock waste, crop residue decomposition, and fertilizer volatilization (CH_4 and N_2O).
- *High GWP Gases*: Refrigerants for stationary and mobile source air conditioning and refrigeration, electrical insulation (e.g., SF_6), and various consumer products that use pressurized containers.
- *Recycling and Waste:* Waste management facilities and landfills; primary emissions are CO_2 from combustion and CH4 from landfills and wastewater treatment (CARB, 2024b).

3.6.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance

Resources areas in Appendix G of the CEQA Guidelines were assessed in the IS and the following criteria were determined to need further evaluation in this EIR:

- Would the Project generate greenhouse gas (GHG) emissions, either directly or indirectly, that may have a significant impact on the environment?
- Would the Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

EDAQMD has not established quantitative GHG thresholds for evaluating GHG emissions in CEQA analyses; however, the Sacramento Metropolitan Air Quality Management District (SMAQMD) has adopted CEQA thresholds for GHG emissions. In the absence of a local threshold, SMAQMD thresholds were used to evaluate the significance of GHG emissions from construction activities. The SMAQMD emissions significance thresholds consider any construction or operational phase of a project emitting over 1,100 metric tons (MT) of CO_2e to be considered significant (SMAQMD, 2020).

Analysis Methodology

Construction-related GHG emissions were calculated using CalEEMod Version 2022.1.

Construction-related emissions were estimated using information such as construction schedule and phasing, expected duration of activities, equipment type, quantity, and hours of usage, volumes of material to be hauled, and number of construction workers on-site during each construction phase. Equipment assumptions were based on observations from previous flume replacement projects, with added conservatism applied to the estimated operating hours for each equipment type and activity. All diesel-powered construction equipment is specified to meet Tier 4 Final emissions standards. Construction information used to estimate GHG emissions is discussed in **Section 2**, "Project Description" and **Appendix C**. Construction-related GHG emissions estimated for each year of Project construction (2026 and 2027) are presented and compared to the SMAQMD's GHG significance thresholds in **Table 3.6-1**. GHG modeling data summarized in this section is provided in **Appendix C**. The Project would not modify the capacity or operation of the existing flume. As such, it would not result in any operational GHG emissions. The Project involves replacing the existing wooden Flume 48 with a structure designed to withstand damage from wildfires and impacts from trees or boulders. As such, the Project would not result in any long-term operational GHG emissions.

Table 3.6-1: Unmitigated GHG Emissions from Construction Activities

Emissions Category	MT of CO_2e per year
SMAQMD Threshold	1,100
2026	
Unmitigated Emissions	1,080
Exceedance	No
2027	
Unmitigated Emissions	700
Exceedance	No

Source: **Appendix C**.

Impact Analysis

Impact GHG-1: Would the Project generate greenhouse gas emissions from construction activities? **(Less than Significant)**

The proposed Project would generate construction-related GHG emissions from vehicle engine exhaust from operation of heavy-duty construction equipment, haul trips, and construction worker vehicle trips. The construction-related GHG emissions estimated for each year of Project construction is presented in **Table 3.6-1**. The Project would not generate construction-related GHG emissions exceeding the SMAQMD construction threshold of 1,100 MT of CO_2e per year during any construction year. Therefore, the Project impact related to GHG emissions from construction-related activities would be **less than significant**.

Impact GHG-2: Would the Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing greenhouse gas emissions? **(Less than Significant)**

El Dorado County has no applicable plans, policies, or regulations regarding GHG emissions. CARB's Scoping Plan identifies measures that would indirectly address GHG emissions from construction activities, including the phasing in of cleaner technology for diesel engine fleets (including construction equipment) and the development of a Low Carbon Fuel Standard.

Policies formulated under the mandate of AB 32 that apply to construction-related activities, either directly or indirectly, are assumed to be implemented Statewide and would be applicable to the Project if implemented before the start of construction. The proposed Project's construction emissions would comply with any mandate or standards set forth by the Scoping Plan.

Although implementing the proposed Project would cause temporary construction-related GHG emissions, emissions would cease following completion of the Project. Additionally, as stated in Impact GHG-1, the Project would not generate construction-related GHG emissions exceeding the SMAQMD construction threshold of 1,100 MT of CO2e per year during any construction years. Lastly, as mentioned above, the Project is consistent with CARB's Scoping Plan. Therefore, the Project would not conflict with an applicable plan, policy, or regulation with the purpose of reducing GHG emissions, and the impact from the Project would be **less than significant**.

3.7 HAZARDS AND HAZARDOUS MATERIALS

This section provides an overview of the existing hazards and hazardous materials conditions within the project site and vicinity, identifies the regulatory setting, and analyzes potential impacts to hazards and hazardous materials from the Project.

3.7.1 Regulatory Setting

Federal Laws, Regulations, and Policies

The EPA is the lead federal agency responsible for enforcing federal regulations regarding hazardous materials. The primary legislation governing hazardous materials includes the Resource Conservation and Recovery Act (RCRA) (42 U.S.C. Section 6901 et seq.), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. Section 9601 et seq.), and the Toxic Substances Control Act (TSCA) (15 U.S.C. Section 2601 et seq.).

Resource Conservation and Recovery Act

At the federal level, the principal agency regulating the generation, transport, and disposal of hazardous substances is the EPA, under the authority of the RCRA of 1976. RCRA established an all-encompassing federal regulatory program for hazardous substances that is administered by the EPA. Under RCRA, the EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances. RCRA was amended by the Hazardous and Solid Waste Amendments of 1984, which specifically prohibits the use of certain techniques to dispose of various hazardous substances. The EPA has delegated much of the RCRA requirements to the California Department of Toxic Substances Control (DTSC).

Comprehensive Environmental Response, Compensation, and Liability Act

CERCLA of 1980, also known as the "Superfund Act," provides a federal fund to identify, characterize, and remediate hazardous material sites. Through the Superfund Act, the EPA was granted the authority to identify and obtain the cooperation of parties responsible for hazardous material incidents and conditions.

Toxic Substances Control Act

TSCA established the mechanisms by which the EPA tracks, screens, and tests industrial chemicals currently produced or imported into the U.S. that may pose an environmental or human health hazard.

TSCA addresses the production, importation, use, and disposal of specific chemicals including polychlorinated biphenyls, asbestos, radon, and lead-based paints.

Federal Occupational Safety and Health Act

The Occupational Safety and Health Administration (OSHA) administers the Federal Occupational Safety and Health Act which requires training handlers of hazardous materials, notifying employees who work in the vicinity of hazardous materials, acquiring material safety data sheets which describe the proper use of hazardous materials, and training employees to remediate any hazardous material accidental releases.

Wildfire Regulations

Code of Federal Regulations (CFR) 36, Chapter II, Part 261

CFR Title 36, Chapter II, Part 261 discusses actions that are prohibited and could result in fire damages to federal lands. These include (a) carelessly or negligently throwing or placing any ignited substance or other substance that may cause a fire, (b) firing any tracer bullet or incendiary ammunition; (c) causing timber, trees, slash, brush, or grass to burn except as authorized by permit; (d) leaving fire without completely extinguishing it; (e) causing and failing to maintain control of a fire that is not a prescribed fire that damages forest lands; (f) building, attending, maintaining, or using a campfire without removing all flammable material from around the campfire adequate to prevent its escape; and (g) negligently failing to maintain control of a prescribed fire on Federal lands that damages the land.

Executive Oder 13855

Executive Order 13855 promotes active management of U.S. forests, rangelands, and other federal lands to improve conditions and reduce wildfire risk. The Executive Order emphasizes that federal agencies must collaborate with State and local institutions and incorporate active management principles into all land management planning efforts in order to address the challenges of wildland fire.

Federal Power Act 16 U.S.C. §§ 797(e) and 808 (2000)

The Federal Power Act (FPA) is the primary federal statute governing the wholesale transmission and sale of electric power, as well as the regulation of hydroelectric power. The Federal Energy Regulatory Commission (FERC) licenses and regulates the construction and operation of non-federal hydropower projects under the FPA. The District owns and operates the El Dorado Hydroelectric Project (Project 184) under a license with FERC. The District, as the Licensee of Project No. 184, is responsible to comply with the articles and conditions contained in the FERC license, including the following condition relevant to hazardous materials:

Condition No. 15 – Hazardous Substances Plan: The plan establishes the District's responsibilities for the handling of hazardous materials within the FERC boundary (EID, 2008).

State Laws, Regulations, and Policies

Department of Toxic Substances Control

The DTSC is the State agency primarily responsible for the regulation of hazardous materials in California. DTSC is responsible for the management of hazardous substances and oversees the investigation and remediation of contaminated sites. The SWRCB and nine RWQCBs are primarily responsible for the protection of groundwater and surface water resources from hazardous materials in California. The Project is within the jurisdiction of the Central Valley RWQCB.

California Hazardous Waste Control Act

The Hazardous Waste Control Act is implemented by regulations contained in Title 22 of CCR that describe requirements for the proper management of hazardous wastes. This legislation created the State hazardous waste management program, which is similar to, but more stringent than the federal RCRA program. The program includes hazardous waste criteria for:

- Identification and classification;
- Generation and transportation;
- Design and permitting of recycling, treatment, storage, and disposal facilities;
- Treatment standards;
- Operation of facilities and staff training; and
- Closure of facilities and liability requirements

The Hazardous Waste Control Act and Title 22 regulations list potentially hazardous materials and establish criteria for identifying, packaging, and disposal. Under these regulations, the generator of hazardous waste must complete a manifest that accompanies the material from the point of generation to transportation to the ultimate disposal location, with copies of the manifest filed with DTSC.

State California Occupational Safety and Health Act

The California Division of Occupational Safety and Health (Cal/OSHA) regulates worker safety similar to Federal OSHA but also requires preparation of an Injury and Illness Prevention Program, an employee safety program of inspections, procedures to correct unsafe conditions, employee training, and occupational safety communication. In addition, Cal/OSHA regulations indirectly protect the general public by requiring construction managers to post warning signs, limit public access to construction areas, and obtain permits for work considered to present a significant risk of injury, such as excavations greater than 5 feet.

Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act (Section 25500 et seq. of the California Health and Safety Code) defines hazardous materials as any material that, due to its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health, safety, or the environment if released. Although hazardous materials are not strictly defined as hazardous wastes, the health concerns involved are similar. To avoid public and environmental health risk, facility descriptions, material inventories, and emergency response plans are generally required for operations involving hazardous materials and wastes.

Hazardous Materials Transport

The California Highway Patrol (CHP), the California Department of Transportation (Caltrans), and DTSC have the responsibility for enforcing Federal and State regulations and responding to hazardous materials transportation emergencies.

Regulations governing hazardous materials transport are included in the California Vehicle Code (CCR Title 13); the State Fire Marshal Regulations (CCR Title 19); and CCR Title 22, Division 4.5, Chapter 13. As outlined by Chapter 13, Division 4.5 of Title 22, transport of hazardous materials can only be conducted under a registration issued by DTSC Identification numbers are issued by DTSC or EPA for tracking hazardous waste transporters and treatment, storage, and disposal facilities for hazardous materials.

The identification number is used to identify the hazardous waste handler and to track waste from point of origin to final disposal. Transporters of hazardous waste must register as a hazardous waste hauler with the DTSC. Each truck, trailer, semitrailer, or container used for shipping hazardous waste must be designed and constructed, and its contents limited, that under conditions normally incident to transportation, there would be no release of hazardous waste to the environment. All material transport takes place under manifest, and compliance with Title 22 requires that transporters take immediate action to protect human health and the environment in the event of spill, release, or mishap.

California Vehicle Code

Title 13 of the CCR establishes regulations for motor carrier transport of hazardous materials. All motor carrier transporters of hazardous materials are required to have a Hazardous Materials Transportation license issued by CHP. In addition, placards identifying that hazardous materials are being transported must be displayed on the vehicle. The California Vehicle Code Section 31303 requires that hazardous materials be transported via routes with the least overall travel time and prohibits the transportation of hazardous materials through residential neighborhoods. CHP is authorized to designate and enforce route restrictions for the transportation of hazardous materials.

California Public Resources Code

Section 4427

PRC Section 4427 limits the use of any motor, engine, boiler, stationary equipment, welding equipment, cutting torches, tarpots, or grinding devices from which a spark, fire, or flame may originate, when the equipment is located on or near land covered by forest, brush, or grass. Before such equipment may be used, all flammable material, including snags, must be cleared away from the area around such operation for a distance of 10 feet. A serviceable round point shovel with an overall length of not less than 46 inches and a backpack pump water-type fire extinguisher, fully equipped and ready for use, must be maintained in the immediate area during the operation.

Section 4428

PRC Section 4428 limits industrial operations on or near any land covered by forest, brush, or grass between April 1 and December 1 of any year, or other times when ground litter and vegetation will sustain combustion permitting the spread of fire. Such operations must provide and maintain, for firefighting purposes only, suitable and serviceable tools in the following amounts, manner, and locations:

- A sealed box of tools must be located in the operating area, at a point accessible in the event of fire. The fire toolbox must contain a backpack pump-type fire extinguisher filled with water, two axes, two McLeod fire tools, and enough shovels for each employee at the operation to be equipped to fight fire.
- Each passenger vehicle used must be equipped with a shovel and an ax, and any other vehicle used must be equipped with a shovel. Each tractor used must also be equipped with a shovel.

Section 4431

PRC Section 4431 requires users of gasoline-fueled internal combustion–powered equipment operating within 25 feet of flammable material on or near land covered by forest, brush, or grass to have a tool for firefighting purposes at the immediate location of use. This requirement is limited to periods when burn permits are necessary. Under Section 4431, the Director of Forestry and Fire Protection specifies the type and size of fire extinguisher necessary to provide at least a minimum assurance of controlling fire caused by use of portable power tools during various climatic and fuel conditions.

Section 4442

PRC Section 4442 prohibits the use of internal combustion engines running on hydrocarbon fuels on any land covered by forest, brush, or grass unless the engine is equipped with a spark arrestor and is constructed, equipped, and maintained in good working order when traveling on any such land.[2]

Local Laws, Regulations, and Policies

El Dorado County Ordinance Code Chapter 8.38

Chapter 8.38 of the El Dorado County Ordinance Code regulates any person that would handle, store, use, transport, process or dispose of a hazardous material, hazardous waste, or extremely hazardous waste. Requirements under Chapter 8.38 include disclosure of hazardous materials release, possible hazardous materials inspection, and prevention of possible environmental impacts due to hazardous material.

El Dorado County Multi-Jurisdiction Local Hazard Mitigation Plan

As described under the El Dorado County General Plan, the El Dorado County Multi-Jurisdiction Local Hazard Mitigation Plan (LHMP) provides a risk assessment of all potential natural and selected human-caused hazards and identifies all potential types of disaster likely to occur in El Dorado County, including wildland fire. One purpose of the LHMP is to minimize the magnitude of potential wildfire disasters (El Dorado County, 2024).

El Dorado County General Plan

As a special district with equal authority, the District is exempt from following goals and policies within the County's General Plan and Zoning Ordinance. However, the District aims to comply with those goals and policies and use them as a metric for formulating an impact analysis (El Dorado County 2004, as amended).

Goal 6.1: Coordination. A coordinated approach to hazard and disaster response planning.

> **Objective 6.1.1**: El Dorado County Multi-Jurisdictional Local Hazard Mitigation Plan. The El Dorado County Multi-Jurisdictional Local Hazard Mitigation Plan shall serve as the implementation program for this Goal.
>
> > **Policy 6.1.1.1:** The El Dorado County Multi-jurisdictional LHMP shall serve as the implementation program for the coordination of hazard planning and disaster response efforts within the County and is incorporated by reference to this Element. The County will ensure that the LHMP is updated on a regular basis to keep pace with the growing population.

Goal 6.2: Fire Hazards. Minimize fire hazards and risks in both wildland and developed areas.

> **Objective 6.2.2**: Limitations to Development. Regulate development in areas of high and very high fire hazard as designated by the California Department of Forestry and Fire Prevention Fire Hazard Severity Zone Maps.
>
> > **Policy 6.2.2.1**: Fire Hazard Severity Zone Maps shall be consulted in the review of all projects so

[2] A spark arrester is a device constructed of nonflammable materials specifically for the purpose of removing and retaining carbon and other flammable particles larger than 0.0232 inch from the exhaust flow of an internal combustion engine that uses hydrocarbon fuels, or which is qualified and rated by the U.S. Forest Service.

that standards and mitigation measures appropriate to each hazard classification can be applied. Land use densities and intensities shall be determined by mitigation measures in areas designated as high or very high fire hazard.

Policy 6.2.2.2: The County shall preclude development in areas of high and very high wildland fire hazard or in areas identified as wildland-urban interface (WUI) communities within the vicinity of Federal lands that are a high risk for wildfire, as listed in the Federal Register Executive Order 13728 of May 18, 2016, unless such development can be adequately protected from wildland fire hazard, as demonstrated in a WUI Fire Safe Plan prepared by a qualified professional as approved by the El Dorado County Fire Prevention Officers Association. The WUI Fire Safe Plan shall be approved by the local Fire Protection District having jurisdiction and/or California Department of Forestry and Fire Protection (Resolution 124-2019, August 6, 2019).

Objective 6.2.3: Adequate Fire Protection. Application of uniform fire protection standards to development projects by fire districts.

Policy 6.2.3.2: As a requirement of new development, the applicant must demonstrate that adequate access exists or can be provided to ensure that emergency vehicles can access the site and private vehicles can evacuate the area.

Policy 6.2.3.4: All new development and public works projects shall be consistent with applicable State Wildland Fire Standards and other relevant State and Federal fire requirements.

Goal 6.6: Management of Hazardous Materials. Recognize and reduce the threats to public health and the environment posed by the use, storage, manufacture, transport, release, and disposal of hazardous materials.

Objective 6.6.1: Regulation of Hazardous Materials. Regulate the use, storage, manufacture, transport and disposal of hazardous materials in accordance with State and Federal regulations.

Policy 6.6.1.1: The Hazardous Waste Management Plan shall serve as the implementation program for management of hazardous waste in order to protect the health, safety, property of residents and visitors, and to minimize environmental degradation while maintaining economic viability.

Project 184 Hazardous Substances Plan

As part of EID Project 184, the proposed Project is subject to the Project 184 Hazardous Substances Plan which establishes the District's responsibilities for the handing of hazardous materials within the FERC boundary. The purpose of this Oil and Hazardous Substances Plan is to provide structure and procedures to minimize damage resulting from the release of oil and hazardous substances, pollutants, and/or contaminants. This plan describes response protocols and addresses specific needs in the event of a release or spill that poses a threat to the environment or to human health and welfare. The plan will identify and meet the following objectives:

1. Maintain in the project site, a cache of spill cleanup equipment suitable to contain any spill from the Project;

2. To periodically inform the FS [Forest Service] and SWRCB [State Water Resources Control Board]

of the location of the spill cleanup equipment on National Forest System lands and/or Project 184 and of the location, type, and quantity of oil and hazardous substances stored on the project site;
3. To inform the FS and the SWRCB immediately of the nature, time, date, location, and action taken for any spill affecting National Forest System lands and licensee adjoining property; and
4. Include measures to address findings regarding sampling of structures/soils to determine whether leaks or contamination exist.

The contractor is required to follow the Project 184 Hazardous Substances Plan to reduce the risk of exposure to hazards due to the handling of hazardous materials during construction.

3.7.2 Environmental Setting

Definition of Terms

Hazardous wastes are defined in California Health and Safety Code Section 25141(b) as wastes that:

> …because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause, or significantly contribute to an increase in mortality or an increase in serious illness [, or] pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Section 25532(j) of the Health and Safety Code defines "regulated substances accident risk" to mean a potential for the accidental release of a regulated substance into the environment that could produce a significant likelihood that persons exposed may suffer acute health effects resulting in significant injury or death. Section (j) defines "regulated substance" to mean any substance that is either of the following (20 CFR Article 2 Section 25532):

1) A regulated substance listed in Section 68.130 of Title 40 of the Code of Federal Regulations pursuant to paragraph (3) of subsection (r) of Section 112 of the Clean Air Act (42 U.S.C. Sec. 7412(r)(3)).
2) An extremely hazardous substance listed in Appendix A of Part 355 (commencing with Section 355.10) of Subchapter J of Chapter I of Title 40 of the Code of Federal Regulations that is any of the following:
   i) A gas at standard temperature and pressure.
   ii) A liquid with a vapor pressure at standard temperature and pressure equal to or greater than 10 millimeters mercury.
   iii) A solid that is one of the following:
      I) In solution or in molten form.
      II) In powder form with a particle size less than 100 microns.
      III) Reactive with a National Fire Protection Association rating of 2, 3, or 4.
   iv) A substance that the office determines may pose a regulated substances accident risk pursuant to subclause (II) of clause (i) of subparagraph (B) or pursuant to Section 25543.3.

Known Contamination Sites

A search of publicly available databases maintained under Section 65962.5 of the PRC (i.e., the “Cortese List”), was conducted to determine whether any known hazardous material spills have occurred either at or within 0.25 mile of the project site. These databases include EnviroStor, maintained by DTSC, and GeoTracker, maintained by SWRCB.

The results of these records searches indicated that no open cases are active within the project site (DTSC, 2025; SWRCB, 2025a). The nearest closed site is approximately 0.25 miles west of the project site (SWRCB Site No. T0601700008). This site was a Pacific Gas & Electric (PG&E) camp (Camp #5), which experienced a gasoline Leaking Underground Storage Tank (LUST). No cleanup actions were reported for public noticing, but the case was closed in 1996 (SWRCB, 2025b).

Fire Hazards

According to the California Department of Forestry and Fire Protection's Fire Hazard Severity Zone (FHSZ) map, the project site is in a very high FHSZ (California Department of Forestry and Fire Protection [CAL FIRE], 2025). The project site is within the State Responsibility Area, therefore CAL FIRE is responsible for fire prevention and suppression, although the project site borders the Eldorado National Forest where the U.S. Forest Service is responsible for fire prevention. See **Section 3.12** for a detailed discussion of wildfire hazards.

3.7.3 Environmental Impacts and Mitigation Measures

Criteria Evaluated in the IS

The following criteria evaluated in the IS were determined not to require additional analysis in the EIR (refer to **Appendix A**):

- Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
- Would the Project 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?
- 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 site?
- Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Thresholds of Significance

Resources areas in Appendix G of the CEQA Guidelines were assessed in the IS and the following criteria were determined to need further evaluation in this EIR.

- Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?
- Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Analysis Methodology

Potential impacts on the environment related to hazards and hazardous materials were evaluated based on the type and location of anticipated Project-related construction activities.

The analysis was based on review of publicly available information and databases related to existing land uses, wildfire hazard zones, and known soil and/or groundwater contamination sites within and near the project site. Hazardous materials associated with the Project would be limited to those originating from construction and construction equipment. Fuels, such as diesel and gasoline, oils, and lubricants would be required for the operation of construction equipment.

Impact Analysis

Impact HAZ-1: Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials during construction activities? **(Less than Significant with Mitigation)**

Construction of the Project would utilize typical construction equipment as outlined in **Table 2.4-1** and vehicles containing fuel, oil, and grease, as well as use and transport of such materials. Limited quantities of certain hazardous materials such as solvents and glues would be used during construction. There is low likelihood that substantial quantities of hazardous materials would be stored on-site during construction. Moreover, materials would not include acutely hazardous materials or substances listed in 40 CFR 355 Appendix A: Extremely Hazardous Substances and Their Threshold Planning Quantities.

The Project could create a significant hazard to construction workers, the public, or the environment through accidental spills, leaking construction equipment, or traffic accidents. However, transportation of hazardous materials would comply with State regulations governing hazardous materials transport included in the California Vehicle Code (CCR Title 13), the State Fire Marshal Regulations (Title 19 of the CCR), and Title 22 of the CCR. Title 13 of the CCR requires motor carrier transporters of hazardous materials to have a Hazardous Materials Transportation license issued by the CHP, and placards identifying that hazardous materials are being transported must be displayed on the vehicle.

As described throughout the regulatory setting above, there is an established comprehensive federal, State, regional, and local framework independent of the CEQA process that is intended to reduce the risks associated with the use, transport, and disposal of hazardous materials. The use and disposal of hazardous materials is heavily regulated at both the federal and State level; these regulations are promulgated and enforced by agencies such as EPA, SWRCB, DTSC, and Cal/OSHA. The District is required to comply with appropriate regulatory agency standards designed to avoid hazardous waste releases.

Mandatory adherence to federal and State regulations reduces the risk of exposure to hazardous materials used during construction. Each of these regulations is specifically designed to protect the public health through improved procedures for the handling of hazardous materials, better technology in the equipment used to transport these materials, and a more coordinated quicker response to emergencies. Regardless, the potential for accidental spill of hazardous materials during Project construction and creation of significant hazards remains. This would be a significant impact. Therefore, Mitigation Measures GEO-1 and HAZ-1 would be implemented to reduce potential impacts to **less than significant with mitigation.**

Mitigation Measure GEO-1: Prepare and Implement a SWPPP with BMPs to Reduce Erosion

Refer to Impact GEO-1 in **Section 3.5**.

Mitigation Measure HAZ-1: Prepare and Implement a Hazardous Materials Release Prevention Plan

The District shall require the Contractor to follow the Project 184 Hazardous Substances Plan to reduce the risk of exposure to hazards due to the handling of hazardous materials during construction. The plan identifies control measures to prevent the release of hazardous materials, as well as a detailed action plan to respond to an incidental spill in compliance with all local, State, and federal regulations relating to the handling and disposal of hazardous materials. Throughout construction, the construction contractor shall be responsible for following the plan and implementing the action plan in the event of a spill. The District shall be responsible for verifying and documenting that the contractor follows the Project 184 Hazardous Substances Plan. The selected construction contractor shall be responsible for following the plan and implementing the action plan in event of a spill.

Timing: Before and during construction activities.
Responsibility: The District and its construction contractor(s)

Significance after Mitigation

Implementing Mitigation Measure GEO-1 would reduce this impact because a NPDES Construction General Permit would be obtained and BMPs would be implemented to prevent the release of hazardous materials. Implementing Mitigation Measure HAZ-1 would reduce this impact because the District and its construction contractor(s) would be required to implement the Project 184 Hazardous Substances Plan to reduce the risk of exposure to hazards due to the handling of hazardous materials during construction. Therefore, the impact from the Project would be **less than significant with mitigation**.

Impact HAZ-2: Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment during construction activities. **(Less than Significant with Mitigation)**

No known contamination sites are located at or adjacent to the project site (DTSC, 2025; SWRCB, 2025a). Construction of the Project would require use of typical construction equipment (e.g., gasoline- or diesel-powered machinery) and vehicles containing fuel, oil, and grease, as well as use and transport of these materials. The Project could create a significant hazard to the construction workers, the public, or the environment through accidental spills, leaking construction equipment, or traffic accidents. In addition, during site preparation and construction activities, construction workers could come in contact with and be exposed to undocumented hazardous materials and conditions.

As discussed previously in Impact HAZ-1, the District would be required to comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. Adherence to Federal and State regulations reduces the risk of exposure to hazardous materials used during construction. Each of these regulations is specifically designed to protect the public health through improved procedures for the handling of hazardous materials, better technology in the equipment used to transport these materials, and a more coordinated quicker response to emergencies. Regardless, the potential for accidental spill of hazardous materials during Project construction and creation of significant hazards remains. This would be a significant impact. Therefore, implementation of Mitigation Measures GEO-1 and HAZ-1 would be implemented to reduce potential impacts to **less than significant with mitigation**.

Mitigation Measure GEO-1: Prepare and Implement a SWPPP and BMPs to Reduce Erosion

Refer to Impact GEO-1 in **Section 3.5**.

Mitigation Measure HAZ-1: Prepare and Implement a Hazardous Materials Release Prevention Plan

Refer to Impact HAZ-1 above.

Significance after Mitigation

Implementing Mitigation Measure HAZ-1 would reduce this impact because the District and its construction contractor(s) would be required to prepare and implement the Project 184 Hazardous Substances Plan to reduce the risk of exposure to hazards due to the handling of hazardous materials during construction. Therefore, the impact from the Project would **be less than significant with mitigation**.

Impact HAZ-3: Would the Project expose people or structures to a significant risk of loss, injury, or death involving wildland fires during construction activities. **(Less than Significant with Mitigation)**

It should be reiterated that the primary purpose for the Project is to protect against wildfires and reduce the overall risk through wooden flume replacement. During construction, the primary fire hazards would be from vehicles and construction equipment. Construction vehicles use flammable fuels, such as diesel and gasoline, and would be operated in proximity to dry vegetation; and their hot tailpipes or sparks from chains or other metal objects could ignite dry brush, especially during the warmer, dry months between June and October. Therefore, depending on the time of year and location of construction activities, there could be a temporary increase in fire risk in the area due to Project construction activities. Wildfire risks would be offset by compliance with fire safety and wildfire suppression measures identified in the regulatory setting above and discussed further in **Section 3.12**, "Wildfire." Adherence to safety measures, when considered together, would decrease the risk of exposure of people or structures to wildfire. Regardless, the potential for temporary increase in fire risk from Project construction activities remains. This would be a significant impact. Therefore, Mitigation Measure WILD-1 would be implemented to reduce potential impacts to **less than significant with mitigation**.

Mitigation Measure WILD-1: Prepare and Implement a Fire Safety Plan

Refer to Impact WILD-1 in **Section 3.12**.

Significance after Mitigation

Implementing Mitigation Measure WILD-1 would reduce this impact because the District would be required to prepare and implement a Fire Safety Plan during vegetation removal and construction activities, which would include preventative measures, procedures for evaluating weather conditions during which fire risk is elevated, and equipment to prevent fire and respond to a fire immediately. Therefore, the impact from the Project would **be less than significant with mitigation**.

3.8 HYDROLOGY AND WATER QUALITY

This section provides an overview of the existing hydrology and water quality conditions within the project site and vicinity, identifies the regulatory setting, and analyzes the potential impacts of the Project on hydrology and water quality.

3.8.1 Regulatory Setting

Federal Laws, Regulations, and Policies

Clean Water Act

The Project is within the jurisdiction of the Central Valley RWQCB, which oversees water quality protection in the region. Refer to Section 3.5.1 for a complete description of the CWA and CWA Section 402. In additional, CWA Section 301 prohibits the discharge of any pollutant into waters of the U.S. without authorization under provisions of the CWA.

Federal Power Act 16 U.S.C. §§ 797(e) and 808 (2000)

The Federal Power Act (FPA) is the primary federal statute governing the wholesale transmission and sale of electric power, as well as the regulation of hydroelectric power (Congressional Research Service, 2020). Under the FPA, the FERC licenses and regulates the construction and operation of non-federal hydropower projects. The District owns and operates the El Dorado Hydroelectric Project (Project No. 184) under a license issued by FERC. As the Licensee of Project No. 184, the District is responsible for complying with the articles and conditions contained in the FERC license.

State Laws, Regulations, and Policies

The SWRCB and the nine RWQCBs are responsible for the protection of water quality in California. The SWRCB establishes statewide policies and regulations mandated by Federal and State water quality statutes and regulations. The RWQCBs develop and implement Water Quality Control Plans (Basin Plans) that address regional beneficial uses, water quality characteristics, and water quality issues specific to their geographic areas. Additionally, the RWQCBs are responsible for implementing the Porter-Cologne Water Quality Control Act, which is discussed further below.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969 established the principal California program for water quality control. This act regulates discharges to surface and groundwater and directs the RWQCBs to develop regional Basin Plans. Basin Plans are required to designate beneficial uses for surface and ground waters, set narrative and numerical water quality objectives that must be attained or maintained to protect the designated beneficial uses and conform to the State's antidegradation policy, and describe implementation programs to protect all waters in the region. The development and triennial review of Basin Plans by the SWRCB are necessary to ensure compliance with Section 303 of the CWA (40 CFR 131).

State Antidegradation Policy

In accordance with the Federal Antidegradation Policy, the SWRCB adopted a state policy to maintain high-quality waters in California. This State policy, implemented by RWQCBs, restricts the degradation of surface and groundwater to support the goals and objectives of the CWA. Specifically, the policy protects bodies of water where the existing water quality is higher than necessary to support present and anticipated beneficial uses. Under this policy, any activity that generates waste or increases the amount of waste discharged into high-quality waters must comply with waste discharge requirements designed to control the discharge and ensure that degradation of existing water quality does not occur (SWRCB, 1968).

Construction General Permit

Refer to **Section 3.5.1** for a complete description of the Construction General Permit.

Local Laws, Regulations, and Requirements

El Dorado County General Plan

As a special district with equal authority, the District is exempt from following goals and policies within the County's General Plan and Zoning Ordinance. However, the District aims to comply with those goals and policies and use them as a metric for formulating an impact analysis (El Dorado County 2004, as amended).

Goal 5.1: Provision of Public Services: Provide and maintain a system of safe, adequate, and cost-effective public utilities and services; maintain an adequate level of service to existing development while allowing for additional growth in an efficient manner; and ensure a safe and adequate water supply, wastewater disposal, and appropriate public services for rural areas.

> **Objective 5.1.2**: Concurrency: Ensure through consultation with responsible service and utility purveyors that adequate public services and utilities, including water supply, wastewater treatment and disposal, solid waste disposal capacity, storm drainage, fire protection, police protection, and ambulance service are provided concurrent with discretionary development or through other mitigation measures provided, and ensure that adequate school facilities are provided concurrent with discretionary development to the maximum extent permitted by State law. It shall be the policy of the County to cooperate with responsible service and utility purveyors in ensuring the adequate provision of service. Absent evidence beyond a reasonable doubt, the County will rely on the information received from such purveyors and shall not substitute its judgment for that of the responsible purveyors on questions of capacity or levels of service.
>
> > **Policy 5.2.1.13:** The County shall encourage water purveyors to design water supply and infrastructure projects in a manner that avoids or reduces significant environmental effects to the maximum extent feasible in light of the water supply objectives of a given project.

Goal 5.4: Storm Drainage: Manage and control stormwater runoff to prevent flooding, protect soils from erosion, prevent contamination of surface waters, and minimize impacts to existing drainage infrastructure.

Goal 7.3: Water Quality and Quantity: Conserve, enhance, and manage water resources and protect their quality from degradation.

> **Objective 7.3.1**: Water Resource Protection: Preserve and protect the supply and quality of the County's water resources including the protection of critical watersheds, riparian zones, and aquifers.
>
> **Objective 7.3.2**: Water Quality: Maintenance of and, where possible, improvement of the quality of underground and surface water.
>
> > **Policy 7.3.2.2**: Projects requiring a grading permit shall have an erosion control program approved, where necessary.

El Dorado County Ordinance Code Chapter 8.79

Chapter 8.79 of the El Dorado County Ordinance Code ensures that the County is compliant with State and Federal laws related to stormwater quality. Chapter 8.79 is intended to enhance and protect the quality of waters of the State within El Dorado County by reducing pollutants in stormwater discharges to the maximum extent practicable, controlling non-stormwater discharges to a stormwater facility, and requiring the use of BMPs by the County and its residents to reduce the adverse effects of polluted runoff discharges. The Stormwater Quality Ordinance prohibits illicit discharges to a stormwater facility and establishes authority to adopt requirements for stormwater management; establishes authority to reduce stormwater pollution and erosion during construction and after project completion; and establishes the authority for the County to implement and enforce stormwater management plans.

El Dorado County Ordinance Code Chapter 110.14

Chapter 110.14, the Grading, Erosion, and Sediment Control Ordinance of the El Dorado County Code regulates grading within the unincorporated areas of El Dorado County in order to protect life, limb, health, property and public welfare; avoid pollution of watercourses. It also ensures that the intended use of a graded site is consistent with the General Plan and any specific adopted plans, including the Western El Dorado County Storm Water Management Plan, State Fire Safe Standards, and relevant El Dorado County ordinances. The ordinance establishes the procedures for the issuance of grading permits, approval of plans, and inspection of grading construction sites. The ordinance also requires that waterways and adjacent properties be protected from erosion, flooding, or sediment deposits that could result from grading activities.

3.8.2 Environmental Setting

Regional Setting

The Project is located within the 58-square-mile Plum Creek-South Fork American River sub-watershed (180201290304), which is a part of the larger 850-square-mile South Fork American River basin (18020129). The Plum-Creek watershed is a tributary of the South Fork American River watershed. The South Fork American River watershed encompasses the central region of the County, extending from the high Sierra in the El Dorado National Forest and flows west to the terminus at Folsom Reservoir (SacRiver, 2025). The major tributaries contributing flow directly into the South Fork American River are Silver Fork American River, Silver Creek, Slab Creek, Rock Creek, and Weber Creek (El Dorado County, 2003).

Local Setting

Elevations on the project site range from approximately 3,840 to 3,900 feet amsl. The climate is described as generally Mediterranean, with cool, wet winters and hot, dry summers. Precipitation occurs primarily in winter, generally between November and March, with low to no precipitation during the summer month (U.S. Climate Data, 2025).

The project site is located south of the South Fork American River Canyon. The South Fork American River is located downslope from Flume 48, approximately 1,500 feet below the flume. The river flows from east to west, with numerous tributaries entering from both sides of the canyon. Flows in the South Fork American River are highest from March through June (El Dorado County, 2003).

3.8.3 Environmental Impacts and Mitigation Measures

Criteria Evaluated in the IS

The following criteria evaluated in the IS were determined not to require additional analysis in the EIR (refer to **Appendix A**):

- Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?
- Would the Project be located in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?
- Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Thresholds of Significance

Resource areas in Appendix G of the CEQA Guidelines were assessed in the IS and the following criteria were determined to need further evaluation in this EIR:

- Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?
- Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    - Result in substantial erosion or siltation on- or off-site?
    - Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?
    - 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
    - Impede or redirect flood flows?

Analysis Methodology

Potential impacts to hydrology and water quality associated with the Project would be limited to those originating from construction activities. The Project would not involve the extraction of groundwater or a change in capacity and would therefore not deplete groundwater supplies. The project site is not located in a known groundwater recharge basin.

Impact Analysis

Impact HYD-1: Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? **(Less than Significant with Mitigation)**

Construction of the Project would include clearing and grubbing, grading, excavation, and other construction-related activities that could cause soil erosion at an accelerated rate during storm events, as discussed in Impact GEO-1 in **Section 3.5**.

These activities have the potential to affect water quality and contribute to localized violations of water quality standards if impaired stormwater runoff from construction activities were to enter downstream waterways.

Soils exposed by the aforementioned types of construction activities have the potential to affect water quality through either suspended soil particles and sediments transported through runoff, or through sediment transported as dust that eventually reaches local water bodies. Spills or leaks from heavy equipment and machinery, staging areas, or building sites also have the potential to enter runoff. Typical pollutants include, but are not limited to, petroleum and heavy metals from equipment and products such as paints, solvents, and cleaning agents, which could contain hazardous constituents. Sediment from erosion of graded or excavated surface materials or leaks or spills from equipment could result in water quality degradation if runoff containing the sediment or contaminants should enter receiving waters in sufficient quantities. Construction activities could also generate hazardous waste that, if improperly managed, could enter both surface and groundwater sources. Discharge of polluted stormwater or non-stormwater runoff could violate water quality waste discharge requirements. The potential impact from the Project on water quality from construction activities is considered significant. Therefore, Mitigation Measures GEO-1 and HAZ-1 would be implemented to reduce potential impacts to **less than significant with mitigation**.

Mitigation Measure GEO-1: Prepare and Implement a SWPPP and BMPs

Refer to Impact GEO-1 in **Section 3.5**.

Mitigation Measure HAZ-1: Prepare and Implement a Hazardous Materials Release Prevention Plan

Refer to Impact HAZ-1 in **Section 3.7**.

Significance after Mitigation

As a result of implementing Mitigation Measure GEO-1, impact HYD-1 would be reduced to less than significant through obtaining coverage under the NPDES Construction General Permit and implementing BMPs to prevent and control pollution and minimize and control runoff and erosion. Additionally, implementing Mitigation Measure HAZ-1 would reduce potential impacts to water quality from construction activities by requiring the District and its contractors to prepare and implement a Hazardous Materials Release Prevention Plan. This Mitigation Measure would reduce the risk of exposure to hazards as a result of handling of hazardous materials during construction. Therefore, the impact from the Project would be **less than significant with mitigation**.

Impact HYD-2: Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would (i) result in Substantial Erosion or Siltation on- or off-Site **(Less than Significant with Mitigation)**; (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite? **(Less than Significant)**; (iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff **(Less than Significant)**; or (iv) impede or redirect flood flows? **(Less than Significant)**

The Project would not require the relocation or modification of stormwater drainage facilities. As additional impervious surfaces would not be created, the capacity of existing drainages would not be exceeded as a result of the Project. The Project would include grading and soil excavation to facilitate the replacement of the flume. Additionally, as described in **Section 2.3**, the Project would include one permanent access road to the canal to facilitate the flume replacement and long-term operations and maintenance, and two temporary access roads to facilitate construction activities associated with the flume replacement. This would create approximately 0.17 acres of graded unpaved access roads within the project site, which could potentially contribute to the addition of erosion or siltation on and/or off-site. After construction, the two temporary access roads would be removed and the alignment and grade would be restored, which would result in similar post-drainage conditions as existing conditions. Site stabilization and restoration activities outlined in **Section 2.4.3** would be implemented after construction. Surface drainage improvements (e.g., water bars, filter barriers, surface drainage ditches) would also be implemented as necessary to reduce the potential for erosion. However, because the Project includes grading and excavation activities, which could result in substantial erosion onsite or offsite during construction, Mitigation Measure GEO-1 would be implemented to reduce these potential impacts. There would be a **less than significant impact with mitigation**.

Mitigation Measure GEO-1: Prepare and Implement a SWPPP and BMPs

Refer to Impact GEO-1 in **Section 3.5**.

Significance after Mitigation

Implementing Mitigation Measure GEO-1 would reduce potential impacts through obtaining coverage under the NPDES Construction General Permit and implementing BMPs to prevent and control pollution and minimize and control runoff and erosion. Therefore, the impact from the Project would be less than significant with mitigation incorporated. Surface drainage improvements would also be implemented as necessary to reduce the potential for erosion. Therefore, the Project would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite or impede or redirect flood flows. There would be a **less than significant impact with mitigation**.

3.9 TRIBAL CULTURAL RESOURCES

This section includes the environmental and regulatory setting for Tribal Cultural Resources (TCRs) and describes potential impacts on TCRs that could result from implementing the Project. Archaeological and historic resources are addressed in **Section 3.4**.

3.9.1 Regulatory Setting

Federal Laws, Regulations, and Policies

Native American Graves Protection and Repatriation Act of 1990

The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) (PL 101-601, 25 USC 3001 et seq., 104 Statute 3048) sets provisions for the inadvertent discovery and/or intentional removal of human remains and other cultural items from Federal and Tribal lands. It clarifies the ownership of human remains and sets forth a process for repatriation of human remains and associated funerary objects and sacred religious objects to the Native American groups claiming to be lineal descendants or culturally affiliated with the remains or objects.

It requires any Federally funded institution housing Native American remains or artifacts to compile an inventory of all cultural items within the museum or with its agency and to provide a summary to any Native American tribe claiming affiliation.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act of 1978 was enacted to protect and preserve the traditional religious rights and cultural practices of Native Americans. These rights include, but are not limited to, access of sacred sites, freedom to worship through ceremonial and traditional rights and use, and possession of objects considered sacred. The act requires that Federal agencies evaluate their actions and policies to determine if changes are needed to ensure that Native American religious rights and practices are not disrupted by agency practices. Such evaluations are made in consultation with native traditional religious leaders.

State Laws, Regulations, and Policies

Assembly Bill 52 (PRC Section 21084.2)

AB 52 changed the PRC Section 5097.94 to add consideration of Native American culture within CEQA (Sections 21073, 21074, 2108.3.1, 21082.3, 21084.2, and 21084.3). The goal of AB 52 is to promote the involvement of California Native American Tribes in the decision-making process when it comes to identifying and developing mitigation for impacts to resources of importance to their culture. To reach this goal, the bill establishes a formal role for tribes in the CEQA process. CEQA lead agencies are required to consult with tribes about potential TCR in the Project area, the potential significance of Project impacts, the development of Project alternatives, and the type of environmental document that should be prepared. AB 52 specifically states that a Project that may cause a substantial adverse change in the significance of a TCR is a Project that may have a significant effect on the environment. Native American outreach was conducted as described in **Section 3.9.3** below. Native American Heritage Commission

Section 5097.91 of the PRC established the Native American Heritage Commission (NAHC), whose duties include the inventory of places of religious or social significance to Native Americans and the identification of known graves and cemeteries of native American on private lands. Under PRC Section 5097.9, a State policy of noninterference with the free expression or exercise of Native American religion was articulated along with a prohibition of severe or irreparable damage to Native American sanctified cemeteries, places of worship, religious or ceremonial sites, or sacred shrines located on public property. Section 5097.98 of the PRC specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

Public Resources Code § 5097.98 (2010)

The California Public Resources Code outlines specific procedures and protections for the treatment of Native American human remains and associated grave goods discovered during ground-disturbing activities. These procedures are intended to ensure that such remains are handled with cultural sensitivity, dignity, and in accordance with the wishes of Native American descendants when they can be identified. Section 5097.98 of the PRC establishes the responsibilities of the NAHC, landowners, and other parties when such remains are encountered.

Whenever the NAHC receives notification from a county coroner regarding the discovery of Native American human remains (pursuant to subdivision (c) of Health and Safety Code § 7050.5), the NAHC must immediately notify those individuals it believes to be the most likely descendants of the deceased.

With permission from the landowner or their authorized representative, these descendants may inspect the site and recommend appropriate treatment of the remains and associated burial items. Their recommendations may include nondestructive removal and analysis, preservation in place, transfer of the remains to the descendants, or other culturally appropriate actions. Descendants must complete their inspection and submit recommendations within 48 hours of being notified by the NAHC.

Upon discovery, the responsible state or local agency or private landowner must ensure the remains and the immediate vicinity are not damaged or disturbed by development activities until consultation with the most likely descendants occurs. This process must include meaningful discussion that considers all parties' cultural values and seeks agreement, while also recognizing confidentiality needs. If multiple remains are discovered, parties may mutually agree to extend discussions to account for the possibility of additional treatment needs.

If the NAHC cannot identify a descendant, or if the descendants fail to make a recommendation, or if the landowner rejects the recommendation and mediation under Section 5097.94(k) is unsuccessful, then the landowner must inter the remains and associated items with appropriate dignity on the property in a location not subject to future subsurface disturbance. To protect these sites, the landowner must take one or more of the following actions: record the site with the NAHC or appropriate Information Center; apply an open-space conservation zoning designation or easement; or record a document with the county.

3.9.2 Environmental Setting

Ethnographic Setting

Refer to Section 3.4, "Cultural Resources," for a description of the Ethnographic setting of the project site and vicinity.

3.9.3 Environmental impacts and Mitigation Measures

Criteria Evaluated in the IS

All resource topics evaluated in the IS were determined to require additional analysis in the EIR; no topics were excluded from further evaluation (refer to **Appendix A**).

Thresholds of Significance

Resources areas in Appendix G of the CEQA Guidelines were assessed in the IS and the following criteria were determined to need further evaluation in this EIR:

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

Analysis Methodology

The analysis of Project impacts to TCRs is based on Native American consultation conducted for the Project in addition to the research conducted in **Appendix G**. For details on the records and literature review methodology, see **Section 3.4** and **Appendix G**.

Native American Consultation

The NAHC maintains two databases to assist cultural resources specialists in identifying places of concern to California Native Americans. The NAHC Sacred Lands File (SLF) database has records for places that Native Americans consider sacred or otherwise important, such as cemeteries and gathering places for traditional foods and materials. Piñon contacted the NAHC on April 7, 2025, to request a SLF search and a list of Native American contacts. A reply from the NAHC was received on April 14, 2025, indicating that the SLF search was negative. A list of 21 Native American contacts who may have knowledge of cultural resources in the project site and vicinity was provided (Appendix B of **Appendix G**). These 21 Native American contacts are associated with seven Native American groups, including the Colfax-Todds Valley Consolidated Tribe, the Shingle Springs Band of Miwok Indians, the Susanville Indian Rancheria, the Tsi Akim Maidu, the UAIC, the Washoe Tribe of Nevada and California, and the Wilton Rancheria of Northern California. The District initiated AB 52 consultation for the Project with these Tribes, and the results are described in **Section 1.2.4**. Of the letters sent, only UAIC provided a response indicating the project site area does not appear to be culturally sensitive and that they are unaware of any recorded sites on or near the project site. As of the date of publication of this EIR, no further responses requesting consultation under AB 52 have been received by the District.

Impact Analysis

Impact TRIB-1: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 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 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, 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 § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.) (**Less than Significant with Mitigation**)

The SLF search did not identify any TCRs within the project site. Furthermore, consultation with California Native American Tribes per AB 52 also did not result in the identification of TCRs within the project site. However, there could be possible undiscovered TCRs that could be revealed during construction work or through further consultation with culturally affiliated Tribes. Therefore, Mitigation Measures TRIB-1, TRIB-2, and TRIB-3 would be implemented to reduce potential impacts. There would be a **less than significant impact with mitigation.**

Mitigation Measure TRIB-1: BMPs to Reduce or Avoid Impacts on Tribal Cultural Resources

The District shall implement the following measure to reduce or avoid impacts on TCRs.

If interested Native American tribe(s) provide information demonstrating the significance of the project site and specific evidence supporting the determination that the site is sensitive for TCRs, the District will conduct a site visit with tribal representatives to evaluate the potential for TCRs at the project site. If tribal representatives and the District determine the site is sensitive for TCRs and that the Project may have a significant impact on TCRs, the District, in consultation with tribal representatives, will develop and implement BMPs to reduce or avoid impacts on TCRs. BMPs may include but are not limited to:

1) Modifying the Project to preserve the TCRs in place;
2) Establishing exclusion zones and/or minimize work activities in proximity to TCRs; or,
3) Implementing other recommendations developed in consultation with tribal representatives to minimize potential impacts to TCRs.

Timing: Prior to and during construction activities
Responsibility: The District and its construction contractor(s)

Mitigation Measure TRIB-2: Preconstruction Tribal Cultural Resource Awareness and Sensitivity Training

The District shall provide TCR awareness training for workers prior to beginning Project construction activities. The District shall utilize information provided by culturally affiliated tribal representatives to develop the training materials (i.e., printed handouts) that provide information on the following topics:

- How to recognize TCRs,
- What to do if TCRs are suspected or encountered in the Project area,
- Information on avoidance and other measures relevant to TCRs, and
- Confidentiality and culturally appropriate treatment of TCRs
- Information on regulations and applicable civil and criminal penalties for violations.

The training materials will be shared with tribal representatives and tribal representatives will be invited to participate in the training. The training shall be presented to personnel at the Project kickoff. Printed handouts shall be distributed and used for future reference by Project personnel. A roster of trained Project personnel shall be maintained in the Project construction office and made available for review by regulatory agencies and culturally affiliated tribal representatives if needed. This training may be conducted in coordination with the cultural resources awareness training (Mitigation Measure CUL-2).

Timing: Prior to construction activities
Responsibility: The District and its construction contractor(s)

Mitigation Measure TRIB-3: Address Previously Undiscovered Tribal Cultural Resources

The District shall implement the following measure to reduce or avoid impacts and address the evaluation and treatment of inadvertent/unanticipated discoveries of potential TCRs during the project's ground disturbing activities. If any suspected TCRs are discovered during ground disturbing construction activities, all work shall cease within the immediate vicinity of the discovery, or an agreed upon distance based on the project area and nature of the discovery. The District shall invite a Tribal Representative from culturally affiliated tribes to visit the site and examine the discovery to determine whether or not the discovery represents a TCR (PRC Section 21074). Tribal Representatives shall have 48 hours to respond to the District's notification and schedule a site visit. If the discovery represents a TCR, the District will work with Tribal Representatives or others to develop recommendations for culturally-appropriate treatment. The contractor shall implement any measures determined by the District to be necessary.

Work at the discovery location will not resume until the agreed upon treatment has been implemented to the satisfaction of the District.

Timing: Prior to and during construction activities
Responsibility: The District and its construction contractor(s)

Significance after Mitigation

Implementing Mitigation Measures TRIB-1, TRIB-2, and TRIB-3 would reduce potential impacts because BMPs, cultural resource awareness training, and proper handling of any inadvertent discoveries of TCRs would be required. Therefore, the impact from the Project would be **less than significant with mitigation**.

3.10 NOISE AND VIBRATION

This section characterizes the existing environmental setting, summarizes regulatory setting, and evaluates the potential noise impacts that could result from implementing the Project.

3.10.1 Regulatory Setting

Federal Laws, Regulations, and Policies

No federal plans, policies, regulations, or laws related to noise and vibration apply to the Project.

State Laws, Regulations, and Policies

The State government sets noise standards for transportation noise sources, such as automobiles, light trucks, and motorcycles. Noise sources associated with industrial, commercial, and construction activities are generally subject to local control through noise ordinances and general plan policies. Local general plans identify general principles intended to guide and influence development plans.

State of California General Plan Guidelines

The State of California General Plan Guidelines (Governor's Office of Planning and Research [OPR] 2017) establishes guidelines for the preparation of local general plan noise elements, including a sound level/land use compatibility chart that categorizes, by land use, outdoor day/night noise level (L_{dn}) ranges in four categories (normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable). For many land uses, there are overlapping L_{dn} ranges for two or more compatibility categories. **Table 3.10-1** lists the normally acceptable range and conditionally acceptable range of L_{dn} values in decibels (dB) for various types of land uses. These overlapping L_{dn} ranges are intended to indicate that local conditions (existing sound levels and community attitudes toward dominant sound sources) should be considered in evaluating land use compatibility at specific locations.

Table 3.10-1: State of California General Plan Acceptable Noise Range Guidelines

Land Use	Normally Acceptable Range	Conditionally Acceptable Range
Low-Density Residential	less than 60 dB	60–75 dB
High-Density Residential	less than 65 dB	65–75 dB
Educational and Medical Facilities	less than 60 dB	60–75 dB
Office and Commercial	less than 70 dB	70–80 dB

Source: Governor's OPR, 2017

California Department of Transportation

Caltrans' Transportation and Construction Vibration Guidance Manual provides guidelines that can be used as screening tools for assessing the potential for adverse vibration effects related to structural damage and human annoyance. This is meant to provide practical guidance to Caltrans engineers, planners, and consultants who must address vibration issues associated with the construction, operation, and maintenance of Caltrans projects. The vibration criteria established by Caltrans for assessing human annoyance and structural damage are shown in **Tables 3.10-2** and **3.10-3**, respectively.

Table 3.10-2: Vibration Annoyance Potential Criteria Guidelines (Maximum PPV (in/sec))

Human Response	Transient Sources	Continuous/Frequent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: Caltrans 2020
Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
in/sec = inches per second PPV = peak particle velocity

Table 3.10-3: Vibration Damage Potential Criteria Guidelines (PPV (in/sec))

Structures and Conditions	Transient Sources	Continuous/Frequent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structure	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Caltrans 2020
Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
in/sec = inches per second PPV = peak particle velocity

California Code, Government Code Sections 53091(D) and (E)

As a special district with equal authority, the District is exempt from the goals and policies within the County's General Plan and Zoning Ordinance. However, the District aims to comply with those goals and policies and use them as a metric for formulating an impact analysis (El Dorado County, 2004).

Local Laws, Regulations, and Policies

El Dorado County General Plan

Goal 6.5: Acceptable Noise Levels. Ensure that County residents are not subjected to noise beyond acceptable levels.

Objective 6.5.1: Protection Of Noise-Sensitive Development. Protect existing noise-sensitive developments (e.g., hospitals, schools, churches and residential) from new uses that would generate noise levels incompatible with those uses and, conversely, discourage noise-sensitive uses from locating near sources of high noise levels.

Policy 6.5.1.11: The standards outlined in Tables 6-3, 6-4, and 6-5 (Table HS-7 is reproduced as **Table 3.10-4**) shall not apply to those activities with construction as long as such construction occurs between the hours of 7 am and 7 pm, Monday through Friday, and 8 am and 5 pm on weekends and federally recognized holidays. Further, the standards outlined in Tables 6-3, 6-4, and 6-5 shall not apply to public projects to alleviate traffic congestion and safety standards.

Table 3.10-4: Maximum Allowable Noise Exposure for Non-Transportation Noise Sources in Rural Regions – Construction Noise (Table 6-5 from the General Plan)

Land Use Designation	Time Period	L_{eq}	L_{max}
All Residential (LDL)	7 am – 7 pm	50	60
	7 pm – 10 pm	45	55
	10 pm – 7 am	40	50
Commercial, Recreation, and Public Facilities (C, TR, PF)	7 am – 7 pm	65	75
	7pm – 7 am	60	70
Rural Land, Natural Resources, Open Space and Agricultural Lands (RR, NR, OS, AL)	7 am – 7 pm	65	75
	7pm – 7 am	60	70

Source: Table 6-5 from El Dorado County, 2004
Notes: L_{eq}= average sound level ; L_{max}=maximum sound level

Policy 6.5.1.12: When determining the significance of impacts and appropriate mitigation for new development projects, the following criteria shall be taken into consideration.

A. Where existing or projected future traffic noise levels are less than 60 dBA L_{dn} at the outdoor activity areas of residential uses, an increase of more than 5 dBA L_{dn} caused by a new transportation noise source will be considered significant;
B. Where existing or projected future traffic noise levels range between 60 and 65 dBA L_{dn} at the outdoor activity areas of residential uses, an increase of more than 3 dBA L_{dn} caused by a new transportation noise source will be considered significant; and
C. Where existing or projected future traffic noise levels are greater than 65 dBA L_{dn} at the outdoor activity areas of residential uses, an increase of more than 1.5 dBA L_{dn} caused by a new transportation noise will be considered significant.

Policy 6.5.1.13: When determining the significance of impacts and appropriate mitigation to reduce those impacts for new development projects, including ministerial development, the following criteria shall be taken into consideration:

A. In areas in which ambient noise levels are in accordance with the standards in Table 6-2, increases in ambient noise levels caused by new non-transportation noise sources that exceed 5 dBA shall be considered significant; and

B. In areas in which ambient noise levels are not in accordance with the standards in Table 6-2, increases in ambient noise levels caused by new non-transportation noise sources that exceed 3 dBA shall be considered significant.

El Dorado County Zoning Ordinance

The County has established maximum allowable noise exposure for non-transportation sources in rural regions as outlined in Table 130.37.060.1 in the El Dorado County Zoning Ordinance Chapter 130.37, reproduced as **Table 3.10-5**. However, Section 130.37.020 states that "noise sources associated with work performed by public or private utilities in the maintenance or modification of its facilities" are considered exempt from the Noise Standard set forth in Chapter 130.37 (El Dorado County, 2004). Additionally, the Zoning Ordinance also states that "construction (e.g., construction, alteration or repair activities) during daylight hours (i.e., 7 am to 7 pm on weekdays and 8 am to 5 pm on weekends) provided that all construction equipment shall be fitted with factory installed muffling devices and maintained in good working order" are also exempt from the Noise Standards per (El Dorado County, 2004).

Table 3.10-5: Noise Level Performance Standards for Noise Sensitive Land Uses Affected by Non-Transportation Sources (Table 130.37.060.1)

Land Use Designation	Time Period	L_{eq}	L_{max}
Rural Regions	7 am – 7 pm	50	60
	7 pm – 10 pm	45	55
	10 pm – 7 am	40	50
Community/Rural Centers	7 am – 7 pm	55	70
	7 pm – 10 pm	50	60
	10 pm – 7 am	45	55

As stated above, the District is exempt from the County's noise ordinance as a jurisdiction with equal authority. However, the District has incorporated these standards to help define the CEQA significance criteria and establish what would constitute a significant increase in ambient noise levels.

3.10.2 Environmental Setting

See **Table 3.10-6** for terminology and definitions used throughout this section.

Table 3.10-6: Definition of Acoustical Terms

Term	Definition
dB, Decibel	Unit of measurement of sound level.
dBA, Decibel A-Weighted	A unit of measurement of sound level corrected to the A–weighted scale, as defined in ANSI S1.4–1971 (R1976), using a reference level of 20 micropascals (0.00002 Newtons per square meter).
A – Weighted Scale	A sound measurement scale, which corrects the pressures of individual frequencies according to human sensitivities. The scale is based upon the fact that the region of highest sensitivity for the average ear is between 2,000 and 4,000 Hz. Sound levels are measured on a logarithmic scale in decibels, dB. The universal measure for environmental sound is the A– weighted sound level, dBA.
Hz, Hertz	Unit of measurement of frequency, numerically equal to cycles per second.
Loudness	A listener's perception of sound pressure incident in his or her ear.

Term	Definition
L_{01}, L_{10}, L_{50}, L_{90}	The A–weighted noise levels that are exceeded 1 percent, 10 percent, 50 percent, and 90 percent of the time during the measurement period.
L_{eq}, Equivalent Noise Level	Also, called the equivalent continuous noise level. It is the continuous sound level that is equivalent, in terms of noise energy content, to the actual fluctuating noise existing at the location over a given period, usually one hour. L_{eq} is usually measured in hourly intervals over long periods in order to develop 24–hour noise levels.
Community Noise Equivalent Level (CNEL)	The CNEL is a measure of the cumulative noise exposure in the community, with greater weights applied to evening and night time periods. This noise descriptor is the equivalent noise level over a 24–hour period mathematically weighted during the evening and night when residents are more sensitive to intrusive noise. The daytime period is from 7:00 am to 7:00 pm; evening from 7:00 pm to 10:00 pm; and nighttime from 10:00 pm to 7:00 am A weighting factor of 1 dB is added to the measured day levels defined as 7 am to 7 pm, evening levels (7 pm to 10 pm) have a weighting factor of three and 10 dB to the night time levels (10 pm to 7 am). The weighted levels over a 24–hour period are then averaged to produce the single number CNEL rating.
L_{dn}, Day/Night Noise Level	The same as CNEL except that the evening time period is not considered separately, but instead it is included as part of the daytime period. Measurements of both CNEL and L_{dn} in the same residential environments reveal that CNEL is usually slightly higher (by less than 1 dB) than L_{dn} due to the evening factor weighting.
L_{min}, L_{max}	The minimum and maximum A–weighted noise level during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

The existing noise environment in a project area is characterized by the area's general level of development, because the level of development and ambient noise levels tend to be closely correlated. Areas that are not urbanized are relatively quiet, while areas that are more urbanized are noisier because of roadway traffic, industrial activities, and other human activities. Existing ambient noise sources within the project site are primarily from vehicular traffic along Highway 50. Minor noise sources include limited residential and commercial uses in vicinity of the project site in addition to natural sounds, such as the wind and bird calls.

Vibration

Operation of heavy construction equipment, particularly pile driving and other impact devices such as pavement breakers, create seismic waves that radiate along the surface of the earth and downward into the earth. These surface waves can be felt as ground vibration. Vibration from operation of this equipment can result in effects ranging from annoyance of people to damage of structures. Varying geology and distance would result in different vibration levels containing different frequencies and displacements. In all cases, vibration amplitudes would decrease with increasing distance.

Perceptible groundborne vibration is generally limited to areas within a few hundred feet of construction activities. As seismic waves travel outward from a vibration source, they excite the particles of rock and soil through which they pass and cause them to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch.

The rate or velocity (in inches per second) at which these particles move is the commonly accepted descriptor of the vibration amplitude, referred to as the peak particle velocity. **Table 3.10-4** summarizes vibration annoyance potential criteria guidelines suggested by Caltrans. Existing groundborne vibration levels within the project site are due to the heavy-duty vehicular traffic on Highway 50, adjacent to the project site, but these vibration levels are generally not perceivable onsite.

Noise and Vibration Sensitive Receptors

There is one private residence located within the project site on land that is not owned by the District. Since residential units are stationary, these receptors are considered to have the highest degree of sensitivity to construction noise and vibration. Another residence is located approximately 650 feet west of the project site, with additional homes situated across Highway 50, approximately 800 feet to the south.

3.10.3 Environmental Impacts and Mitigation Measures

Criteria Evaluated in the IS

The following criteria evaluated in the IS were determined not to require additional analysis in the EIR (refer to **Appendix A**).

- 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?

Thresholds of Significance

Resources areas in Appendix G of the CEQA Guidelines were assessed in the IS and the following criteria were determined to need further evaluation in this EIR:

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

Impact Analysis

Impact NOISE-1: Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? **(Less than Significant)**

Construction

Construction would involve standard heavy construction equipment, such as bulldozers, backhoes, excavators, cranes, concrete trucks, tracked dump trucks, rotary drills, jackhammers, demolition hammers, compactors, generators, and other machinery (**Table 2-1**). Construction would typically occur during daylight hours for approximately 10 to 12 hours per day, six days per week, however, certain critical construction activities such as MSE construction may require 24 hours of work per day, seven days per week, to complete work within the scheduled outage.

Construction equipment generates noise levels that can vary depending on the type of equipment, duration and intensity of use, and distance to receptors. Typical maximum noise levels from heavy equipment range from approximately 80 to 88 dBA at 50 feet (Federal Transit Authority [FTA], 2018). At this distance, construction noise would attenuate by approximately 6 dBA per doubling of distance, resulting in estimated noise levels in the range of 58 to 66 dBA. In addition, noise from Highway 50, which runs adjacent to the project site, would continue to be the predominant noise source in the area throughout construction. For residences located farther to the south across Highway 50, intervening topography would likely block direct line of sight to construction activity, further reducing potential noise exposure.

Pursuant to El Dorado County Zoning Ordinance Section 130.37.020, noise generated by construction, maintenance, or modification activities conducted by public utilities (such as the District) is exempt from the noise standards in Chapter 130.37, provided the work occurs during daylight hours and construction equipment is equipped with factory-installed mufflers and maintained in good working condition. The Project would generally comply with the criteria for this noise exemption. Occasional deviations from these hours may occur under limited circumstances, but such instances would be short in duration and limited in scope. However, critical activities such as MSE wall construction may require extended work shifts of up to 24 hours per day and 7 days per week to meet the District's outage schedule. These extended work periods would be short in duration and are exempt from local noise standards under Government Code Sections 53091(D) and (E). Due to the temporary nature of construction activities, the absence of the nearest resident during construction, and the general compliance with Chapter 130.37, noise associated with construction would not result in a substantial increase above applicable thresholds. Therefore, construction-related noise impacts would be considered **less than significant**.

Operation

The Project would not introduce new mechanical equipment or long-term operational features that would permanently generate significant noise. Once construction is complete, the flume would return to its normal function with no increase in maintenance activities. No pumps, generators, or other powered infrastructure would be installed as part of the Project. Therefore, operational noise impacts would be **less than significant**.

Impact NOISE-2: Would the Project result in generation of excessive groundborne vibration or groundborne noise levels? **(Less than Significant)**

Common construction activities such as excavation and grading can generate varying degrees of groundborne vibration depending on equipment type, intensity of use, proximity to structures, and soil conditions. Caltrans identifies a PPV of 0.5 in/sec as the threshold for preventing structural damage to older residences (Caltrans, 2020). The Project would not involve the use of high-vibratory construction methods like pile driving or blasting, but it may involve the use of vibratory rollers and compactors during construction of the proposed access roads. Vibration levels of rollers and compactors vary by equipment type and usage. For example, vibratory rollers can generate 0.21 inch/sec PPV at 25 feet (**Table 3.10-7**). To exceed the 0.5 inch/sec PVV threshold for damage to older residences, this type of equipment would need to be operated closer than 25 feet. Construction of Access Road C would occur further than 25 feet from the on-site residence, while construction of minor segments of Access Road A and B would occur within 25 feet of the on-site residence. By comparison, construction of the flume itself would involve standard construction equipment, such as bulldozers, excavators, backhoes, tracked dump trucks, cranes, jackhammers, and concrete trucks.

Table 3.10-7: Vibration Levels for Construction Equipment

Equipment	Maximum Vibration Level at 25 feet [VdB (rms)]	Maximum Vibration Level at 25 feet in/sec PPV
Vibratory Roller	94	0.21
Large Bulldozers	87	0.089
Loaded Trucks	86	0.076
Jackhammer	79	0.035

Source: FTA, 2018

The highest expected vibration levels would result from large bulldozers and jackhammers, which could produce up to 0.089 inch/sec PPV at 25 feet (FTA, 2018). Vibration levels from flume construction would remain well below Caltrans' structural damage threshold of 0.5 inch/sec PVV for older residences; therefore, no significant impacts are anticipated. Construction of the proposed access roads would produce higher vibration levels than flume construction. However, the existing residence would be unoccupied during construction and a BMP described in **Section 2.4.3** includes limiting the use of high-vibratory equipment within 15 feet of the residence to the extent feasible. This practice would reduce the potential for vibration to exceed the structural damage threshold from the construction of the proposed access roads. Given this protective measure and the temporary nature of construction, vibration generated by the Project is not expected to result in structural damage or significant effects to nearby receptors. Therefore, potential impacts related to excessive groundborne vibration would be **less than significant**.

3.11 TRANSPORTATION

3.11.1 Regulatory Setting

Federal Laws, Regulations, and Policies

No federal plans, policies, regulations, or laws related to transportation apply to the Project.

State Laws, Regulations, and Policies

Updated CEQA Guidelines and Transportation Impact Evaluations

In December 2018, the California Natural Resources Agency certified and adopted the CEQA Guidelines update package, including the Guidelines section implementing Senate Bill 743. CEQA Guidelines Section 15064.3 states, "This section describes specific considerations for evaluating a project's transportation impacts. Generally, vehicle miles traveled is the most appropriate measure of transportation impacts. For the purposes of this section, vehicle miles traveled (VMT) refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision (b)(2) (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact." Specifically, Section 15064.3(b) of the CEQA Guidelines sets forth criteria for determining the significance of transportation impacts, including the following:

> **Land Use Projects:** VMT exceeding an applicable threshold of significance may indicate a significant impact. Projects that decrease VMT in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

Transportation Projects: Transportation projects that reduce, or have no impact on, VMT should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in CEQA Guidelines Section 15152.

Qualitative Analysis: If existing models or methods are not available to estimate the VMT for the particular project being considered, a lead agency may analyze the project's VMT qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.

Methodology: A lead agency has discretion to choose the most appropriate methodology to evaluate a project's VMT, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's VMT and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate VMT and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in CEQA Guidelines Section 15151 applies to the analysis described in this section.

From these updated CEQA Guidelines, the Governor's OPR developed a Technical Advisory on Evaluating Transportation Impacts in CEQA, which contains OPR's technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures (OPR, 2018). This Technical Advisory includes a screening threshold of small projects, which states that, "projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact" (OPR, 2018).

California Department of Transportation

Caltrans manages interregional transportation, including the management and construction of the California highway system. In addition, Caltrans is responsible for the permitting and regulation of State roadways and requires that permits be obtained for transportation of oversized loads and transportation of certain materials, and for construction-related traffic disturbance. Highway 50, located in Caltrans District 3, is the main traffic artery in the Project vicinity and would serve as the primary regional access route for construction traffic to and from the Project area. Caltrans completed the Transportation Concept Report and Corridor System Management Plan (CSMP) for Highway 50 in 2014 (Caltrans, 2014). The Transportation Concept Report and CSMP identifies long-range improvements for the Highway 50 corridor and establishes the "concept," or desired, level of service (LOS) for specific corridor segments. The report also identifies long-range improvements needed to bring the existing facility up to expected standards needed to adequately serve 20-year traffic forecasts. Additionally, the report identifies the ultimate design concept for conditions beyond the immediate 20-year design period.

Local Laws, Regulations, and Policies

El Dorado County General Plan

As a special district with equal authority, the District is exempt from following goals and policies within the County's General Plan and Zoning Ordinance. However, the District aims to comply with those goals and policies and use them as a metric for formulating an impact analysis (El Dorado County 2004, as amended).

Goal TC-1: To plan for and provide a unified, coordinated, and cost-efficient countywide road and highway system that ensures the safe, orderly, and efficient movement of people and goods.

> **Policy TC-1q:** The County shall utilize road construction methods that seek to reduce air, water, and noise pollution associated with road and highway development.

Goal TC-2: To promote a safe and efficient transit system that provides service to all residents, including senior citizens, youths, the disabled, and those without access to automobiles that also helps to reduce congestion, and improves the environment.

Goal TC-4: To provide a safe, continuous, and easily accessible non-motorized transportation system that facilitates the use of the viable alternative transportation modes.

Sacramento Area Council of Governments

The Sacramento Area Council of Governments (SACOG) is a cooperative organization representing the six counties comprising the Greater Sacramento metropolitan region (Sacramento, Yolo, El Dorado, Placer, Sutter, and Yuba Counties), that works to provide planning and funding for transportation within the region. This organization has been granted the responsibility of developing the federal- and State-mandated metropolitan transportation plan every four years. The Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) is the mandated transportation plan that includes the regional planning for roadway improvements and is crucial for receiving federal transportation funding (SACOG, 2019). The MTP/SCS also utilizes county-wide planning developed by the El Dorado County Transportation Commission. The current 2020 MTP/SCS was adopted in 2019 and is expected to be updated by the end of 2025.

El Dorado County Regional Transportation Plan

Regional transportation planning is conducted by several agencies at all levels of government in the County. The plans and programs related to the Regional Transportation Plan (RTP) include: local general plans, the short- and long-range transit plan, non-motorized and bicycle facilities plans, other agencies' RTPs, the SACOG MTP/SCS, the Regional Transportation Improvement Program, the State Transportation Improvement Program, the California Transportation Plan, the California Interregional Strategic Plan, the regional clean air plan, and Caltrans concept reports. The County RTP is designed to be consistent with the adopted plans and programs.

El Dorado County Code or Ordinances, Title 12 – Streets, Sidewalks and Public Places

Section 12.08.080. - Excavations

A. It is unlawful for any person to make any excavation on any portion of the right-of-way of any County highway without having first obtained an encroachment permit therefore, or in violation of any of the provisions or conditions of the permit or of the chapter.
B. A permit shall not be issued for the extraction, taking, conversion or recovery of gold, silver or other natural elements by means of, but not limited to, digging, dredging, sluicing, planning or electronic detection methods, from any portion of a County right-of-way, whether such right-of-way is created by an instrument of record or by prescription.

Section 12.08.090. - Obstructions

It is unlawful for any person to place or maintain any obstruction on any portion of the right- of-way of any County highway without having first obtained an encroachment permit therefore, or in violation of any of the provisions or conditions of the permit or of this chapter.

Section 12.08.180. - Issuance [of Encroachment Permit]

After receiving an application, accompanied by the required documents, payment of the required fees, and posting of the required deposit, the County Director of Transportation may issue an encroachment permit therefore upon standard forms prepared by the County Director of Transportation, provided all of the requirements of this chapter have been met.

3.11.2 Environmental Setting

Roadway Capacity and Level of Service

LOS is a general measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. The LOS grades are generally defined as follows (El Dorado County 2004, as amended):

LOS A represents free-flow travel with an excellent level of comfort and convenience and the freedom to maneuver.

LOS B has stable operating conditions, but the presence of other road users causes a noticeable, though slight, reduction in comfort, convenience, and maneuvering freedom.

LOS C has stable operating conditions, but the operation of individual users is significantly affected by the interaction with others in the traffic stream.

LOS D represents high-density, but stable flow. Users experience severe restriction in speed and freedom to maneuver, with poor levels of comfort and convenience.

LOS E represents operating conditions at or near capacity. Speeds are reduced to a low but relatively uniform value. Freedom to maneuver is difficult with users experiencing frustration and poor comfort and convenience. Unstable operation is frequent, and minor disturbances in traffic flow can cause breakdown conditions.

LOS F is used to define forced or breakdown conditions. This condition exists wherever the volume of traffic exceeds the capacity of the roadway. Long queues can form behind these bottleneck points with queued traffic traveling in a stop-and-go fashion.

Local Roadway Access

Access to the Project would occur directly from a residential driveway along Highway 50 approximately two miles east of the Sly Park Road interchange in Pollock Pines. Highway 50 is the primary transportation corridor extending through the County from west to east connecting Sacramento County and the State of Nevada and serves all of the County's major population centers, including El Dorado Hills, Cameron Park, Diamond Springs, Placerville, Camino, Pollock Pines, and South Lake Tahoe. Highway 50 is also the major commute route to employment locations in the greater Sacramento area and the major shipping route for goods movement by truck. Highway 50 is classified by Caltrans as a three-lane conventional highway adjacent to the project site with two westbound travel lanes and one eastbound travel lane.

Based on the latest available data available from Caltrans, the average annual daily traffic (AADT) on Highway 50 near the project site is approximately 14,300 vehicles (Caltrans, 2023), which falls within the LOS B-LOS C operating conditions range for a conventional highway in a rural setting (Caltrans, 2014).

Bicycle and Pedestrian System

Bikeways are classified as Class I, Class II, and Class III (bike paths, bike lanes, and bike routes respectively). Often bike paths are also used as pedestrian walkways. There are no Class I, II, or III bike routes or lanes in or near to the Project area (El Dorado County Transportation Commission, 2025). There are no pedestrian facilities located near the project site.

Public Transit

The County public transit services are provided by the El Dorado County Transit Authority. The Sacramento/South Lake Tahoe Connecting Bus operates along Highway 50 adjacent to the project site, but there are no bus stops serving the project site (El Dorado County Transit Authority, 2024). Student bussing services throughout the Project area are provided by the Pollock Pines Elementary School District, El Dorado Union High School District, and El Dorado County Office of Education.

3.11.3 Environmental Impacts and Mitigation Measures

Criteria Evaluated in the IS

The following criterion evaluated in the IS were determined not to require additional analysis in the EIR (refer to **Appendix A**):

- Would the Project conflict with or be inconsistent with CEQA Guidelines Section 15064.3(b)?

Thresholds of Significance

Resources areas in Appendix G of the CEQA Guidelines were assessed in the IS and the following criteria were determined to need further evaluation in this EIR:

- Would the Project conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?
- Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- Would the Project result in inadequate emergency access?

Analysis Methodology

Traffic associated with the Project would be limited to passenger vehicles and heavy trucks generated by construction workers and material hauling activities. Potential impacts on the environment related to transportation were evaluated based on the number of anticipated Project-related construction trips, and the ability of the transportation network to safely accommodate such trips. Analysis was based on the review of publicly available information and the construction details associated with the Project (**Section 2**). Once completed, maintenance and operation of the Project would be similar to that of existing conditions. However, the Project would likely result in less maintenance because the concrete conveyance structure would not be as susceptible to damage as the current wood flume structure. Since no increase in traffic would occur after construction is completed, there would be no impact during Project operation. For this reason, the impact analysis below is solely focused on construction-period impacts.

Impact Analysis

Impact TRA-1: Would the Project conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? (**Less than Significant**)

The County General Plan, as well as the SACOG MTP/SCS, guide regional mobility planning and development throughout their respective planning areas. These plans designate LOS standards and requirements relating to transportation operation and safety. During construction, the Project is expected to generate a relatively small amount of construction traffic relative to background traffic. Construction traffic would consist of workers commuting to and from the project site, as well as truck hauling trips transporting building materials/equipment to the project site and excavated material/debris from the project site. These materials and equipment hauling trips would be intermittent, with trips mainly focused on construction startup and shutdown, and would not conflict with any local or regional transportation plan, ordinance, or policy.

As described in **Section 2.4**, a maximum of 20 construction workers per day would be on the project site, which would generate approximately 40 one-way worker trips (one inbound trip and one outbound trip for each worker). The maximum number of truck hauling trips on any given day during Project construction would be 5 or 10 total one-way truck trips. Compared to the existing AADT on Highway 50 described above, the additional construction vehicle trips would increase AADT by less than 0.5 percent. Although traffic levels would slightly increase during construction of the Project, the additional construction traffic would not significantly alter the existing traffic flows or LOS of Highway 50 in the vicinity of the Project. Construction of the Project would not involve permanent changes to existing public roadways. Proposed access roadways, which are described in **Section 2.3.1**, would not be publicly accessible and would not be subject to State or local programs, ordinances, or policies related to the circulation system. Therefore, construction of the Project would result in a less than significant impact related to conflicts with a program, ordinance, or policy addressing the circulation system. Impacts would be a **less than significant.**

Impact TRA-2: Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (**Less than Significant with Mitigation**)

The non-public internal access roads to be used to access specific areas within the project site would be designed in accordance with the District's Project 184 Transportation System Management Plan (TSMP) (EID, 2017). Compliance with the TSMP would ensure that hazardous conditions are minimized on internal access roads. However, large trucks transporting equipment and materials to and from the project site have the potential to temporarily increase the risk of slow-moving vehicles or traffic hazards on Highway 50, which provides direct access to the project site. Highway 50 characteristics near the project site could exacerbate this risk, which include fast-moving vehicles, roadway grade and curves that may limit sight distance, and the required sharp turn into the private residential driveway for vehicles traveling westbound. This would be a significant impact. Therefore, Mitigation Measure TRA-1 would be implemented to reduce potential impacts. Impacts would be a **less than significant with mitigation.**

Mitigation Measure TRA-1: Prepare and Implement a Traffic Control Plan

A Traffic Control Plan shall be prepared and implemented during construction.

The Traffic Control Plan shall contain detailed measures to ensure acceptable levels of traffic flow, emergency response notification, and public and school bus transit coordination. At a minimum, the Traffic Control Plan shall include a discussion of the estimated construction schedule and construction location, traffic control measures, residential access procedures, and coordination with and notification of residents, emergency response agencies, relevant agencies, and school districts affected by potentially hazardous conditions on Highway 50 at the entrance to the project site to ensure the safe and efficient movement of traffic, and that emergency access remains possible at all times.

Timing: During construction activities.
Responsibility: The District shall ensure the Traffic Control Plan is implemented in accordance with applicable guidelines and approved by relevant agencies.

Significance after Mitigation

Implementation of Mitigation Measure TRA-1 would minimize potential hazards by requiring that a site-specific Traffic Control Plan be prepared for the Project. The Traffic Control Plan would include elements to minimize the risk from slow-moving construction vehicles affecting traffic flow and safety on Highway 50. Such elements may include, but are not limited to, the following: variable message signs, temporary traffic controls, personnel directing traffic, and/or speed limit reductions. There would be a less than significant impact with mitigation. Therefore, with implementation of Mitigation Measure TRA-1 and compliance with standard regulatory requirements to reduce hazards caused by construction vehicles turning into and out of the project site during construction, impacts would be **less than significant with mitigation**.

Impact TRA-3: Would the Project result in inadequate emergency access? **(Less than Significant with Mitigation)**

As noted previously, access to the project site is limited to Highway 50. Emergency access could be hindered by a significant increase in traffic congestion or temporary road closures along the highway. Neither of these conditions are anticipated during construction of the Project. However, similar to the discussion above for Impact TRA-2, emergency vehicles traveling on Highway 50 would also be subject to potentially hazardous conditions caused by slow-moving construction vehicles making turns into and out of the project site via the private residential driveway. As such, Mitigation Measure TRA-1 would be required to address this potentially significant emergency access impact. Mitigation Measure TRA-1 requires the preparation and implementation of a Traffic Control Plan that would allow for adequate ingress and egress of traffic, including for emergency vehicles. Therefore, with implementation of Mitigation Measure TRA-1, potential impacts from construction of the Project related to emergency services would be less than significant. Impacts would be a **less than significant with mitigation.**

Mitigation Measure TRA-1: Prepare and Implement a Traffic Control Plan

Refer to Mitigation Measure TRA-1 above.

Timing: During construction activities.
Responsibility: The District shall ensure the Traffic Control Plan is implemented in accordance with applicable guidelines and approved by relevant agencies.

Significance after Mitigation

Implementation of Mitigation Measure TRA-1 would minimize potential impacts to emergency access by requiring that a site-specific Traffic Control Plan be prepared for the Project.

The Traffic Control Plan would ensure clear emergency ingress and egress is feasible during construction and would also specify allowances for residential driveway access. Therefore, with implementation of Mitigation Measure TRA-1 and compliance with standard regulatory requirements to reduce hazards caused by construction vehicles turning into and out of the project site during construction, impacts would be less than significant. Impacts would be **less than significant with mitigation.**

3.12 WILDFIRE

This section characterizes the existing environmental setting, summarizes regulatory setting, and evaluates the potential wildfire impacts that could result from implementing the Project.

3.12.1 Regulatory Setting

Federal Laws, Regulations, and Policies

CFR 36, Chapter II, Part 261

CFR Title 36, Chapter II, Part 261 discusses actions that are prohibited and could result in fire damages to Federal lands. These include (a) carelessly or negligently throwing or placing any ignited substance or other substance that may cause a fire, (b) firing any tracer bullet or incendiary ammunition; (c) causing timber, trees, slash, brush, or grass to burn except as authorized by permit; (d) leaving fire without completely extinguishing it; (e) causing and failing to maintain control of a fire that is not a prescribed fire that damages forest lands; (f) building, attending, maintaining, or using a campfire without removing all flammable material from around the campfire adequate to prevent its escape; and (g) negligently failing to maintain control of a prescribed fire on Federal lands that damages the land.

Executive Oder 13855

Executive Order 13855 promotes active management of U.S. forests, rangelands, and other Federal lands to improve conditions and reduce wildfire risk. The executive order emphasizes that Federal agencies must collaborate with State and local institutions and incorporate active management principles into land management planning efforts to address the challenges of wildland fire.

State Laws, Regulations, and Policies

California Public Resources Code

Section 4201-4204

The purpose of PRC Section 4201-4204 is to provide for the classification of land within state responsibility areas in accordance with the severity of the fire hazard present for the purpose of identifying measures to be taken to retard the rate of spreading and to reduce the potential intensity of uncontrolled fires that threaten to destroy resources, life, or property. Land within state responsibility areas is classified into fire hazard severity zones. The classifications are based on fuel loading, slope, fire weather, and other relevant factors present, including areas where winds have been identified as a major cause of wildfire spread.

Section 4427

PRC Section 4427 limits the use of any motor, engine, boiler, stationary equipment, welding equipment, cutting torches, tarpots, or grinding devices from which a spark, fire, or flame may originate, when the equipment is located on or near land covered by forest, brush, or grass.

Before such equipment may be used, flammable material, including snags, is required to be cleared away from within ten feet of the area around such operations. A shovel and a backpack water-type fire extinguisher, fully equipped and ready for use, must be maintained in the immediate area during the operation.

Section 4428

PRC Section 4428 limits industrial operations on or near any land covered by forest, brush, or grass between April 1 and December 1 of any year, or other times when ground litter and vegetation will sustain combustion permitting the spread of fire. Such operations must provide and maintain, for firefighting purposes only, suitable and serviceable tools in the following amounts, manner, and locations:

- A sealed box of tools must be located in the operating area, at a point accessible in the event of fire. The fire toolbox must contain a backpack pump-type fire extinguisher filled with water, two axes, two McLeod fire tools, and enough shovels for each employee at the operation to be equipped to fight fire.
- Each passenger vehicle used must be equipped with a shovel and an ax, and any other vehicle used must be equipped with a shovel. Each tractor used must also be equipped with a shovel.

Section 4431

PRC Section 4431 requires users of gasoline-fueled internal combustion-powered equipment operating within 25 feet of flammable material on or near land covered by forest, brush, or grass to have a tool for firefighting purposes at the immediate location of use. This requirement is limited to periods when burn permits are necessary. Under Section 4431, the Director of Forestry and Fire Protection specifies the type and size of fire extinguisher necessary to provide at least a minimum assurance of controlling fire caused by use of portable power tools during various climatic and fuel conditions.

Section 4442

PRC Section 4442 prohibits the use of internal combustion engines running on hydrocarbon fuels on any land covered by forest, brush, or grass unless the engine is equipped with a spark arrestor and is constructed, equipped, and maintained in good working order when traveling on any such land.[3]

Local Laws, Regulations, and Policies

El Dorado County General Plan

As a special district with equal authority, the District is exempt from following goals and policies within the County's General Plan and Zoning Ordinance. However, the District aims to comply with those goals and policies and use them as a metric for formulating impact analysis (El Dorado County, 2004 as amended).

Goal 6.1: Coordination. A coordinated approach to hazard and disaster response planning.

> **Objective 6.1.1**: El Dorado County Multi-Jurisdictional Local Hazard Mitigation Plan. The El Dorado County Multi-Jurisdictional Local Hazard Mitigation Plan shall serve as the implementation program for this Goal.

[3] A spark arrester is a device constructed of nonflammable materials specifically for the purpose of removing and retaining carbon and other flammable particles larger than 0.0232 inch from the exhaust flow of an internal combustion engine that uses hydrocarbon fuels, or which is qualified and rated by the U.S. Forest Service.

Policy 6.1.1.1: The El Dorado County Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) shall serve as the implementation program for the coordination of hazard planning and disaster response efforts within the County and is incorporated by reference to this Element. The County will ensure that the LHMP is updated on a regular basis to keep pace with the growing population.

Goal 6.2: Fire Hazards. Minimize fire hazards and risks in both wildland and developed areas.

Objective 6.2.1: Defensible Space. All new development and structures shall meet "defensible space" requirements and adhere to fire code building requirements to minimize wildland fire hazards.

3.12.2 Environmental Setting

This section describes wildfire conditions and wildfire behavior, identifies the relevant CAL FIRE fire hazard severity zones, and describes first response to wildfires. As discussed below, areas in the vicinity of the project site are within CAL FIRE's State Responsibility Area (SRA). The project site is under State jurisdiction, and CAL FIRE is responsible for fire prevention and suppression. The nearest fire station to the project site is the El Dorado County Fire Protection District - Station 17. Station 17 operates around the clock, seven days a week, with both an Engine Company and a Medic Unit on duty (El Dorado County Fire Protection District, 2025). Station 17 is approximately 1.9 miles west of the project site.

Wildfires occur nearly every year in this region, and over the past decade, three major fires—the King Fire (97,685 acres), Caldor Fire (221,786 acres), and Mosquito Fire (76,771 acres)—have ravaged El Dorado County, damaging critical infrastructure and destroying thousands of structures (El Dorado Water Agency, n.d.; California Natural Resources Agency, 2025). Areas north of the project site are within the Eldorado National Forest, and the area surrounding the project site is forested primarily with conifers interspersed with deciduous trees and shrubs. The adjacent forest within the Eldorado National Forest still shows burn scars and a sparse understory from the 2014 King Fire. Given the wooden nature of the existing flume, there is a high risk of infrastructure damage due to wildfires in the region.

Wildfire Classification and Behavior

Fires are classified by where in the fuel strata they burn: surface fires, understory fires, and crown fires (California Forest Stewardship Program, 2015). Surface fires are most common. Depending on the fuels, weather, and topography, these fires can be low to high intensity. Understory fires have flame lengths of up to 10 feet. They consume surface fuels, small trees, brush, and lower branches of overstory trees. Crown fires reach into the crowns of trees with flame lengths of more than 10 feet. Wildland fire behavior is based on three primary factors: topography, weather, and fuels. The following discussion briefly describes how each of these factors influences wildfire behavior (California Forest Stewardship Program, 2015):

- **Topography** - Topographic features such as slope and aspect influence a fire's intensity, direction, and rate of spread. Fires burning in flat or gently sloping areas tend to burn more slowly and spread in wider ellipses than fires on steep slopes. Streams, rivers, and canyons can channel local diurnal and general winds, which can accelerate a fire's speed and affect its direction, especially during foehn (warm, dry, and unusually strong) wind events.
- **Weather** - Weather conditions influence the potential for fire ignition, rates of spread, intensity, and the direction(s) toward which a fire burns. Temperature, relative humidity, and wind are the variables used to predict fire behavior.

- **Fuels** - Fuel, in the context of wildland fire, refers to all combustible material available to burn on an area of land. Each fuel has its own burning characteristics based on factors such as moisture content, volume, arrangement, crown cover, size, and the plants genetic makeup.

Fire Hazard Severity Zones

Fire hazard severity zones are measured qualitatively, based on vegetation, topography, weather, crown fire potential (a fire's tendency to burn upward into trees and tall brush), and ember production and movement within the area in question.

Fire prevention areas considered to be under State jurisdiction are referred to as SRAs, and CAL FIRE is responsible for vegetation fires within SRA lands.[4] In general, SRA lands contain trees producing, or capable of producing, forest products; timber, brush, undergrowth, and grass, whether of commercial value or not, that provide watershed protection for irrigation or for domestic or industrial use; or lands in areas that are principally used, or are useful for, range or forage purposes.

California PRC Sections 4201–4204 and Government Code Sections 51175– 51189 require identification of fire hazard severity zones within the State of California. In SRAs, CAL FIRE is required to delineate three wildfire hazard ranges: moderate, high, and very high.[5]

The Project is under State jurisdiction and is located with a very high fire hazard severity zone (CAL FIRE, 2025). The areas immediately surrounding the project site are SRA designated as very high fire hazard severity zones. North of the project site there is Federal Responsibility Area (CAL FIRE, 2025).

3.12.3 Environmental Impacts and Mitigation Measures

Criteria Evaluated in the IS

The following criteria evaluated in the IS were determined not to require additional analysis in the EIR (refer to **Appendix A**).

- For a Project located in or near SRAs or lands classified as very high fire hazard severity zones, would the Project substantially impair an adopted emergency response plan or emergency evacuation plan.
- For a Project located in or near SRAs or lands classified as very high fire hazard severity zones, would the Project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts on the environment?
- For a Project located in or near SRAs or lands classified as very high fire hazard severity zones, would the Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

[4] California PRC Sections 4125–4127 define an SRA as lands in which the financial responsibility for preventing and suppressing wildland fire resides with the State of California.

[5] CAL FIRE has developed a Fire and Resource Assessment Program that uses a series of computer models to assess fire hazard. Fire and Resource Assessment Program's data collection and models provide detailed analysis and mapping of fuels, fire weather, historical fire occurrences, and ignition location and frequency, all of which they have analyzed and modeled to develop fire hazard severity rankings for lands throughout California.

Thresholds of Significance

Resources areas in Appendix G of the CEQA Guidelines were assessed in the IS and the following criteria were determined to need further evaluation in this EIR.

- For a Project located in or near SRAs or lands classified as very high fire hazard severity zones, would the Project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Impact Analysis

Impact WILD-1: For a Project located in or near SRAs or lands classified as very high fire hazard severity zones, would the Project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? **(Less than Significant with Mitigation)**

The project site is located within an SRA designated as a Very High Fire Hazard Severity Zone by CAL FIRE (CAL FIRE, 2025). The immediate area surrounding the project site also falls within very high hazard classifications, with land just north being under federal jurisdiction of the USFS. Areas surrounding the project site are primarily forested with conifers and interspersed deciduous vegetation, and the surrounding terrain is steeply sloped, increasing the potential intensity and spread of wildfire. The project site's topography, fuel conditions, and dry summer climate are consistent with elevated wildfire risk. The Project's primary objective is to increase the flume's resiliency to and protection against future wildfires given the current vulnerability of the existing wooden flume and the regional history of damaging wildfires such as the King Fire. The King Fire burned 97,685 acres, including areas directly adjacent to Flume 48.

Construction would occur during the annual canal maintenance period, typically from October through December, which generally coincides with cooler weather; however, wildfire risk may still be present due to residual dry vegetation, steep terrain, and proximity to flammable forested areas. In addition, the pre-outage construction would occur during the late summer months (August through early October), when fire danger may be elevated due to hot and dry conditions. Construction activities involving diesel- and gasoline-powered equipment operated near dry vegetation during vegetation clearing, rock excavation, and demolition of the existing wooden flume can pose ignition risks from hot surfaces or sparks. Equipment used on-site would include bulldozers, excavators, tracked dump trucks, generators, concrete trucks, jackhammers, and various other machinery (**Table 2.4-1**), which involve flammable fuels and may pose ignition risks if not properly maintained. Wildfire risks would be reduced by compliance with applicable fire safety regulations identified in **Section 3.12.1**, including but not limited to:

- **PRC Section 4427:** Identifies appropriate fire suppression equipment and stipulates removal of flammable materials to a distance of 10 feet from any equipment that could produce a spark, fire, or flame on days when burning permits are required;
- **PRC Section 4428:** Identifies additional firefighting equipment requirements during the period of highest fire danger (April 1–December 1);
- **PRC Section 4431:** Prohibits the use of portable tools powered by gasoline-fueled internal combustion engines within 25 feet of flammable materials when burning permits are required;
- **PRC Section 4442:** Requires engines to be equipped with a spark arrestor;

- **El Dorado County Ordinance Code Chapter 8.38:** Requires disclosure of hazardous materials release, possible hazardous materials inspection, and prevention of possible environmental impacts due to hazardous material; and
- **CAL FIRE and El Dorado County Fire Protection District guidelines**: Includes defensible space and equipment safety standards for work in high fire hazard areas.

The contractor would also implement a Health and Safety Plan and follow BMPs, including erosion control and hazardous materials handling. Materials such as diesel, gasoline, motor oil, and hydraulic fluid would be stored, labeled, and transported per hazardous materials regulations, and spill prevention measures would be employed. However, the presence of these flammable materials still contributes to overall fire risk. Furthermore, while the existing regulations reduce the likelihood of fire ignition, the steep slopes and vegetative cover at the site warrant additional protection to ensure prompt response and containment if a fire were to occur. This would be a significant impact. Therefore, Mitigation Measure WILD-1 would be implemented to reduce potential impacts to less than significant with mitigation.

Mitigation Measure WILD-1: Prepare and Implement a Fire Safety Plan

Prior to the start of construction activities, the District shall prepare a Fire Safety Plan consistent with CAL FIRE and El Dorado County Fire Protection District guidelines. The plan shall include, but not be limited to, the following:

- Identification and maintenance of fire suppression equipment, including fire extinguishers, water tanks, and shovels at all active work sites.
- Installation and inspection of spark arrestors on all combustion engines.
- Use of non-sparking hand tools and fire-safe practices during vegetation removal, demolition, and excavation.
- Site-specific procedures to evaluate fire weather conditions, red flag warnings, and restrictions on equipment use during elevated fire risk.
- Training for construction personnel on fire prevention, detection, and emergency response protocols.
- Coordination with CAL FIRE and/or El Dorado County Fire Protection District for site inspection and compliance.

The Fire Safety Plan shall be approved by the District and shared with CAL FIRE and/or the El Dorado County Fire Protection District for informational purposes prior to the start of construction.

Timing: Prior to construction and throughout all phases of construction.
Responsibility: The District and its construction contractor(s)

Significance after Mitigation

Implementation of Mitigation Measure WILD-1 would reduce the risk of wildfire ignition and spread by ensuring that proper fire prevention practices and emergency response procedures are in place throughout construction. Therefore, the Project's impact related to wildfire risk would be **less than significant with mitigation**.

Section 4 | Other CEQA Considerations

This section addresses other CEQA required topics including growth inducing impacts, significant and unavoidable impacts, and significant irreversible environmental changes relative to the Project. It also provides an assessment of potential cumulative impacts resulting from the Project in conjunction with recent past, current, and reasonably foreseeable future projects.

4.1 GROWTH INDUCING IMPACTS

CEQA Guidelines Section 15126.2(e) requires that an EIR evaluate potential growth-inducing impacts of a project. CEQA Guidelines describe the required growth inducement analysis as follows:

> Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this definition are projects which would remove obstacles to population growth. Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristics of some projects that may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

A project could result in a direct growth-inducing impact if a project were to facilitate the construction of new housing, therefore contributing to population growth in an area. Indirect or secondary growth-inducing impacts could occur if a project were to facilitate substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises) or involve a substantial construction effort with long-term employment opportunities that could indirectly stimulate the need for additional housing and services to support the new employment demand. Similarly, a project could indirectly induce growth if it were to remove a physical obstacle to additional growth and development, such as removing a physical or land use constraint to development or adding a required public service. Examples of removing a physical obstacle would include construction of a new roadway into an undeveloped area or construction of a wastewater treatment plant with sufficient capacity to serve additional new development. Construction of these types of infrastructure projects cannot be considered isolated from the immediate development that they facilitate and serve. Projects that physically remove obstacles to growth, or projects that indirectly induce growth, are those that may provide a catalyst for future unrelated development in the area. The growth-inducing potential of a project could also be considered significant if it fosters growth in excess of what is assumed in local master plans and land use plans, or in projections made by regional planning agencies.

4.1.1 Direct Growth Inducement

The project site does not include any developed uses, and the land on which construction would occur is not designated for developed use by the County. Generally, environmental impacts from community population growth and community development are addressed through local and community planning/management documents that allow for strategic planning and address future growth. Current planning documents applicable to the Project include the District's 2020 Urban Water Management Plan, the District's 2024 Water and Recycled Water Master Plan, and the County General Plan.

Any future growth that would utilize the District's water supplies would be required to comply and be developed in a manner consistent with these plans.

4.1.2 Indirect Growth Inducement

The Project would be constructed in two phases in addition to pre-outage construction activities (**Section 2.4.1**), and would occur over the course of two outage seasons from October through December, which is the typical annual canal maintenance outage period for the District. Construction would be completed by a 10-to-20-person construction crew. The source of the construction labor force is expected to come from the local labor pool and would not require permanent relocation from other areas for the relatively short construction period. Even if some construction workers were to temporarily relocate to the Project area to work on the Project, the small size of the construction crew would not constitute a substantial increase in population.

The Project would not result in changes to the operation of the El Dorado Canal system, and therefore the Project would not result in an increase in permanent employees associated with operation. Additionally, the Project would not change the capacity of the El Dorado Canal system or include individual treated water connections, treatment capacity changes, or sewer service connections. Therefore, the Project would not directly foster significant population growth or housing demands in the area through employment opportunities.

One permanent access road and two temporary access roads would be constructed to allow access to the flume segment for construction and long-term maintenance. These roads would not provide public access. The Project would not directly or indirectly facilitate additional development in the region. Therefore, the Project would not remove key obstacles to population growth in the area.

4.2 SIGNIFICANT AND IRREVERSIBLE ENVIRONMENTAL CHANGES

Commitments regarding resources may be irreversible and irretrievable when the use or consumption of such resources is neither renewable nor recoverable for use in the future. CEQA Guidelines Section 15126.2(d) describes irreversible environmental changes as follows:

> Uses of nonrenewable resources during the initial and continued phases of a project may be irreversible if it requires a large commitment of such resources or makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

CEQA Guidelines refer to the need to evaluate and justify the consumption of nonrenewable resources and the extent to which a project may commit future generations to similar uses of nonrenewable resources. In addition, CEQA requires that irreversible damage that could result from an environmental accident associated with a project be evaluated. Energy used during Project construction would be expended in the form of electricity, gasoline, and diesel fuel, which would be used primarily by construction equipment, trucks delivering equipment and supplies to the project site, and construction workers driving to and from the project site.

There are no unusual Project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in other parts of the region. In addition, the Project would comply with applicable federal, State, and local policies and regulations pertaining to energy standards. Therefore, it is not expected that construction fuel consumption associated with the Project would be more inefficient, wasteful, or unnecessary than at other construction sites in the region.

Other nonrenewable and slowly-renewable resources consumed as a result of Project development would include, but not necessarily be limited to, gravel, concrete, and water. The use of these nonrenewable resources would account for only a small portion of the region's resources and would not affect the availability of these resources for other needs in the region.

The Project would not result in irreversible damage from environmental accidents, such as an accidental spill of a hazardous material. During construction, equipment would use various types of fuel and materials that may be classified as hazardous. In the State of California, the storage and use of potentially hazardous substances is strictly regulated and enforced by various local, regional, and State agencies to prevent impacts related to environmental accidents. The nature of construction would not involve unusual amounts or types of hazardous materials that could result in irreversible damage from an accidental release. In addition, **Mitigation Measure HAZ-1** would include implementation of the Project 184 Hazardous Substances Plan to reduce the risk of exposure to hazards due to the handling of hazardous materials during construction. The plan would require the District to comply with appropriate regulatory agency standards designed to avoid and respond to hazardous waste releases.

4.3 CUMULATIVE IMPACTS

As defined in CEQA Guidelines Section 15355, a cumulative impact is an environmental impact that is created as a result of the combination of the incremental contribution of a project in consideration of other projects that may result in related impacts. CEQA requires that an EIR discuss cumulative impacts of a project when a project's incremental effect is cumulatively considerable (CEQA Guidelines Section 15130(a)).

"Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past, current, and probable future projects (CEQA Guidelines Section 15065(a)(3), though it should be noted that the effects of past projects are encompassed in the baseline environmental conditions, as described in the environmental setting, consistent with CEQA Guidelines Section 15125(a). If an incremental effect is not cumulatively considerable, then the lead agency does not need to consider that effect significant and must briefly describe the reason why (CEQA Guidelines Section 15130(a)). CEQA Guidelines Section 15130(b) states that the discussion of cumulative impacts need not provide as much detail as the discussion of the effects attributable to the project. The level of detail should be guided by what is practical and reasonable. The elements provided below are necessary for an adequate discussion of significant cumulative impacts (CEQA Guidelines Section 15130(b)).

- A list of past, present, and reasonably foreseeable probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact.

Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.

- A defined geographic scope of the area affected by the cumulative effect and a reasonable explanation for the geographic limits identified.
- A summary of expected environmental effects that might be produced by those projects with specific reference to additional information stating where that information is available.
- A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

4.3.1 Approach to Analysis

The analysis of cumulative impacts focuses on whether the impacts of the project are cumulatively considerable within the context of impacts resulting from the project together with other past, present, or reasonably foreseeable probable future projects. The cumulative impact analysis considers other projects proposed within the area defined for each resource that have the potential to contribute to significant cumulative impacts.

This EIR uses the 'list approach' for analyzing cumulative impacts described by CEQA Guidelines Section 15130 and described in the previous section. Activities related to the project that are included in the cumulative analysis were determined using several factors, including the location and type of activity and the characteristics of the activity related to resources with the potential to be affected by the Project. In addition, regional or statewide conditions that might lead to cumulative impacts (e.g., GHG emissions) are also described. Cumulative impact analysis includes the following three steps:

1. Define and present the geographic scope of cumulative impacts by resource topic.
2. List and summarize past, present, and reasonably foreseeable probable projects to include in the cumulative analysis.
3. Conduct cumulative impact analyses.

In addition, the following factors were used to determine an appropriate list of projects for consideration in this cumulative analysis:

- **Similar Environmental Impacts**. A relevant project contributes effects on resources also affected by the project. The project could have either less-than-significant impacts or significant impacts that could contribute to cumulative impacts. Relevant projects in this cumulative analysis are those that could contribute impacts to the same environmental resources.
- **Geographic Location**. A relevant project is located within a defined geographic location for the cumulative effect. The potential for the Project to contribute to a cumulative impact arises if projects are located within the same geographic area.

4.3.2 Geographic Scope

The geographic area included in the cumulative impact analysis is dependent on the resource being analyzed. The geographic area associated with a proposed project's environmental impacts defines the boundaries of the area used for compiling the list of past, present, and probable future projects considered in the cumulative impact analysis. The geographic area that could be affected by implementation of the Project in combination with other projects varies depending on the type of environmental resource being considered.

For example, the regional context of air quality issues considers the potential effects of projects occurring in immediate project vicinity and the air basin while biological resources have both site-specific and regional geographic scopes, dependent upon the individual resource evaluated. The general geographic area associated with different types of environmental effects of the Project defines the scope of the area considered in the cumulative impact analysis, as outlined in **Table 4.3-1**.

Table 4.3-1: Geographic Scope of Cumulative Impacts

Resource Topic	Geographic Area
Air Quality	Mountain Counties Air Basin
Biological Resources	The project site and areas within El Dorado County with similar special-status species and habitats
Cultural Resources	Areas of ground disturbance within the project site and other locations that are part of the El Dorado Rock Wall Discontiguous District that includes the historic rock wall in the project site
Geology and Soils	The project site and vicinity
Greenhouse Gas Emissions	Global
Hazards and Hazardous Materials	The project site and vicinity
Hydrology and Water Quality	South Fork American River watershed
Tribal Cultural Resources	Areas of ground disturbance within and nearby the project site
Noise and Vibration	The project site and sensitive receptors in the immediate vicinity
Transportation	Public roadways within the immediate vicinity of the project site
Wildfire	The project site and adjacent areas with very high fire risk

4.3.3 List of Related Plans and Projects

A list of past, current, and reasonably foreseeable future projects was compiled using information from the County Transportation Department, the County (including the El Dorado County General Plan), and the District. The past, present and reasonably foreseeable future projects proposed by these agencies within or directly adjacent to the Project area, consist of water utility projects and a transportation project. Agencies and development projects that could result in a cumulatively considerable impact were searched. For the purposes of this discussion, these projects that may have a cumulative effect on the resources of the Project area are often referred to as the "cumulative projects." These projects are described in **Table 4.3-2**. Because the Project would not result in changes to the capacity of the El Dorado Canal system or changes in flume maintenance and operations, operation of the Project would not be cumulatively considerable.

4.3.1 Cumulative Impact Analysis

Cumulative Impact AIR-1: Cumulative Impacts on Criteria Air Pollutant Emissions. **(Less than Significant)**

The project site is located in the MCAB, which is designated as nonattainment for the federal 8-hour ozone standard, and State ozone and PM_{10} standards. By its nature, air pollution is largely a cumulative impact. No single project by itself is sufficient in size to result in nonattainment of ambient air quality standards.

Table 4.3-2: List of Related Past, Present, and Reasonably Anticipated Future Projects in the Region

Lead Agency	Project Name	Date of Construction	Distance from Project Site	Project Description	Potential Cumulative Impacts
El Dorado Irrigation District	Multiple – Capital Improvement Plan Projects	2025 – 2029	0.5-30 miles	The District's five-year CIP is updated annually and describes various infrastructure improvement projects planned for implementation throughout the District's service area.	The Multiple – Capital Improvement Plan Projects and the Project are all addressed in the CIP. Therefore, these projects have been considered and planned for, would necessitate mitigation measures during construction to reduce any potential impacts, and would be implemented in accordance with federal, State, and local regulatory requirements. The Multiple – Capital Improvement Plan Projects and the Project would not occur adjacent to each other. There would not be a cumulatively considerable impact.
El Dorado County Department of Transportation	Pony Express Trail Recessed Edge-Lines Project	Unknown	2.5 miles west	The project would include installation of 65,000 linear feet of recessed edge-lines along various segments of Sly Park Road and Pony Express Trail.	The Pony Express Trail Recessed Edge-Lines Project would involve modifications to roadways, whereas the Project involves modifications to a canal system, which are not the same in scope. Additionally, the two projects are more than 2.5 miles apart, would necessitate mitigation measures during construction to reduce any potential impacts, and would be implemented in accordance with federal, State, and local regulatory requirements. There would not be a cumulatively considerable impact.
El Dorado Irrigation District	Flume 45 Utility and Infrastructure Replacement Project	2027-2028	3.8 miles east	The project would replace approximately 1,140 linear feet of an existing wooden flume (i.e., Flume 45), which is highly susceptible to damage from wildfire and other natural hazards, with a more durable ignition resistant concrete conveyance structure (i.e., U-shaped concrete canal).	The Flume 45 Utility and Infrastructure Replacement Project and the Project are both addressed in the CIP. Therefore, both projects have been considered and planned for, would necessitate mitigation measures during construction to reduce any potential impacts, and would be implemented in accordance with federal, State, and local regulatory requirements. Additionally, the two projects are over 3.8 miles apart. There would not be a cumulatively considerable impact, with the exception of the historic rock wall, which is part of the El Dorado Rock Wall Discontiguous District, of which portions of the wall would be removed under both projects.
El Dorado Irrigation District	El Dorado Canal Fuel Break Project	2025 - 2026	0 miles	The District proposes to implement hazardous fuels treatments to protect four wood-constructed flumes	The El Dorado Canal Fuel Break Project would result in further wildfire protection to local wooden flumes, including Flume 48. The El Dorado Canal

Lead Agency	Project Name	Date of Construction	Distance from Project Site	Project Description	Potential Cumulative Impacts
				that are part of the El Dorado Canal, including Flume 48. The District is proposing to utilize a combination of hand treatments, mechanical mastication, and chipping equipment to reduce the hazardous fuels and establish a 600-foot fuel break, up to 300 feet on each side of the canal, on the steep slopes and rugged terrain of the project area.	Fuel Break Project and the Project would both necessitate mitigation measures during construction to reduce any potential impacts and would be implemented in accordance with federal, State, and local regulatory requirements. There would not be a cumulatively considerable impact.
El Dorado Irrigation District	Modification of Water Right Permit 21112	Unknown	Within 2 miles	The District proposes to amend Water Right Permit 21112 to add a new upstream point of diversion at El Dorado Diversion Dam, authorize storage in Jenkinson Lake, and allow re-diversion at Sly Park Dam. No changes to the water right's existing use, season, or diversion limits are proposed. While no new infrastructure is required to begin diversions at El Dorado Diversion Dam, future canal and channel improvements would be needed to support the full 156 cfs re-diversion capacity to Jenkinson Lake.	The Modification of Water Right Permit 21112 and the Project are addressed in the CIP. Therefore, these projects have been considered and planned for. Construction and permitting associated with actual buildout of any infrastructure required to implement the water right modification would be addressed under a separate approval process, which would require implementation of mitigation measures during construction to reduce any potential impacts, and which would be implemented in accordance with federal, State, and local regulatory requirements. There would not be a cumulatively considerable impact

Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. The EDAQMD is the agency primarily responsible for monitoring NAAQS and CAAQS exceedances and ensuring that air quality conditions are maintained within the County. EDAQMD developed regional air quality thresholds as allowable project-level emissions limits to enable the region to attain and maintain ambient air quality standards. Therefore, if a project exceeds its identified project-level significance thresholds, the project's cumulative impact would be cumulatively considerable.

As discussed in **Section 3.2**, anticipated construction emissions of ROG and NO_X are less than applicable EDAQMD thresholds of significance (see **Table 3.2-2**).[6] However, because the County is designated nonattainment for PM_{10} and the Project would generate fugitive dust during grading and excavation, Mitigation Measure AIR-1 would be implemented to reduce potential dust impacts.

[6]PM10 emissions are shown in Table 3.2-1 for disclosure purposes, since EDAQMD does not have an established threshold for PM10.

Mitigation Measure AIR-1 requires preparation and implementation of a Dust and Emissions Control Plan that meets EDAQMD standards, including measures such as watering disturbed surfaces, limiting on-site vehicle speeds, suspending earthmoving during high winds, covering haul trucks, and reestablishing ground cover at the end of construction. These measures would minimize dust emissions and ensure the Project's contribution to cumulative PM_{10} levels would not be cumulatively considerable. Therefore, the Project would not result in cumulatively considerable net increase in any criteria pollutant from construction activities, and this impact would be less than significant.

Cumulative Impact BIO-1: Cumulative Impacts on Special-Status Species. **(Less than Significant with Mitigation)**

Cumulative impacts on biological resources are considered within areas of El Dorado County with similar special-status species and their related habitat. Cumulative impacts to special-status species could occur if the Project and the cumulative projects identified in **Table 4.3-2** involve concurrent activities that would have a substantial adverse effect. An adverse effect could occur either directly, or indirectly such as through habitat modifications, on species listed as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW. Most of the cumulative projects identified in **Table 4.3-2** have the potential to result in cumulative impacts on special-status species, depending on the project location and timing, as well as the specific construction, operations, and maintenance activities, and the use of BMPs.

Special-status plant species do not have the potential to occur on the project site. As discussed in **Section 3.3**, construction would occur outside the majority of the general nesting bird and raptor seasons. Implementation of Mitigation Measure BIO-1 would reduce potential impacts on nesting birds and raptors, including special-status raptors, by requiring pre-construction surveys, establishing appropriate no-disturbance buffers around active nests, and monitoring by a qualified biologist to ensure construction activities do not disturb or harm nesting birds. These measures avoid direct mortality or nest abandonment, thereby reducing the impact to less than significant with mitigation. Additionally, Mitigation Measure BIO-2 would provide workers with informational training regarding special-status species. Although special-status bat species such as pallid bat and Townsend's big-eared bat were determined unlikely to occur on-site, Mitigation Measure BIO-3 requires pre-demolition surveys of structures and trees for bat roosts. If active roosts are found, work would be delayed until the bats have voluntarily left or phased removal must be conducted outside sensitive periods to prevent roost abandonment or direct harm. These measures minimize the risk of disturbing roosting bats and prevent loss of individuals. In addition, adverse impacts of the related cumulative projects would likely be mitigated in a similar manner to the Project. Therefore, the Project would result in a less-than-considerable contribution to significant cumulative impacts on special-status species. This cumulative impact is less than significant with mitigation.

Cumulative Impact CUL-1: Cumulative Impacts on Built Environment Historic Resources. **(Significant and Unavoidable)**

The Project would contribute to cumulative impacts on other built environmental historic resources if the Project and other cumulative projects listed in **Table 4.3-2** were to adversely affect the same resources. As described in **Section 3.4**, the Flume 48 rock wall (cultural resource P-09-000599/CA-ELD-000511H) is eligible for the NRHP as a contributing resource to the El Dorado Rock Wall Discontiguous District and is thus considered a historical resource.

Under the Project, the proposed demolition of the rock wall will cause a direct adverse effect to the El Dorado Rock Wall Discontiguous District under 36 CFR 800.5 (a)(2)(i) and the replacement with an MSE wall, constructed with modern methods, would be an adverse effect under 36 CFR Part 800.5 (2)(i) and (ii).

In addition to the Project, this historic rock wall district may be adversely impacted by other flume replacement projects. Specifically, EID's Flume 45 replacement project would remove approximately 690 feet of wall that is part of the El Dorado Rock Wall Discontiguous District. The demolition of the historic portion of the wall would substantially alter physical- and character-defining features of the structure and the use of modern replacement materials that do not reflect the historic character of the rock wall would diminish the overall integrity of the resource. The Flume 45 replacement project activities would alter the Flume 45 rock wall to such a degree that the ability of the structure to retain its historical significance would be materially impaired and the integrity of the historic district would be diminished.

As described in **Section 3.4**, implementing Mitigation Measure CUL-1 would not entirely mitigate the Project's impact to this historic resource. Therefore, the impact would be significant and unavoidable, and the Project would result in a considerable contribution to a significant cumulative impact on cultural resources. Thus, the cumulative impact would be significant and unavoidable.

Cumulative Impact CUL-2: Cumulative Impacts on Other (Non-Built Environment Historic Resources) Cultural Resources. **(Less than Significant with Mitigation)**

The Project would contribute to cumulative impacts on other (referring to non-built environmental historic resources) cultural resources, including archeological resources and human remains, if the Project and other cumulative projects listed in **Table 4.3-2** were to adversely affect the same resources. The Project has the potential to disturb and/or adversely impact unknown archeological resources and human remains during project construction activities. Therefore, cumulative impacts related to disturbing and/or adversely impacting archeological resources and human remains during construction would be significant, and the Project's contribution to other cumulative cultural resource impacts would be cumulatively considerable.

However, as described in **Section 3.4**, implementation of Mitigation Measures CUL-2 through CUL-4 would reduce this impact by requiring actions such as construction worker training to identify cultural resources, proper treatment and assessment of any cultural resources unexpectedly discovered during construction, and coordination with the County Coroner and appropriate authorities for the assessment and treatment of any human remains, in accordance with State law. With the implementation of these mitigation measures, the Project would result in a less than cumulatively considerable incremental contribution to a significant cumulative impact related to other cultural resources. This cumulative impact would be less than significant with mitigation.

Cumulative Impact GEO-1: Cumulative Impacts on Soil Erosion. **(Less than Significant with Mitigation)**

Impacts to soil and geology are generally site-specific and are dependent on development location, local conditions, and the potential for a project to result in an adverse effect. Cumulative geology and soil impacts could occur if the Project and cumulative projects identified in **Table 4.3-2** were to involve concurrent and adjacent ground-disturbing activities that would result in substantial loss of topsoil (soil erosion). However, cumulative projects that would involve concurrent/adjacent ground disturbance would be limited to the El Dorado Canal Fuel Break Project.

Both the El Dorado Canal Fuel Break Project and the Project would necessitate mitigation measures during construction to reduce any potential impacts associated with soil and erosion, and would be implemented in accordance with federal, State, and local regulatory requirements, including filing for coverage under the NPDES Construction General Permit if more than one acre of ground disturbance occurs. Additionally, conditions of the Construction General Permit would be tailored for each project.

As discussed in **Section 3.5**, disturbance of existing vegetation and soil during construction activities could cause an increase in loss of exposed soil from wind and stormwater runoff, which in turn could result in erosion and sedimentation. To reduce this impact, the Project would implement Mitigation Measure GEO-1, which requires preparation of a SWPPP and implementation of BMPs such as earth berms, diversion ditches, straw wattles, and temporary covers to control runoff and prevent soil loss during and after construction. Therefore, the Project's contribution to impacts related to soil erosion would be reduced and would not be cumulatively considerable. This cumulative impact would be less than significant with mitigation.

Cumulative Impact GHG-1: Cumulative Impacts on Greenhouse Gas Emissions. **(Less than Significant)**

The geographic scope for cumulative projects considered in the cumulative effects analysis for GHG emissions is global, as impacts of climate change are experienced on a global scale regardless of the location of GHG emission sources. It is unlikely that a single project would contribute significantly to climate change, but cumulative emissions from many projects could affect global GHG concentrations and the climate system, which is considered a significant cumulative effect. Therefore, the analysis of GHG emissions is by nature a cumulative analysis focused on whether an individual project's contribution to the significant impact of global climate change is cumulatively considerable.

As discussed in **Section 3.6**, the Project would result in temporary construction-related GHG emissions that would cease following completion of construction. The SMAQMD has adopted CEQA thresholds for GHG emissions. In the absence of a local threshold, SMAQMD thresholds were used to evaluate the significance of GHG emissions from construction activities. The Project would not generate construction-related GHG emissions exceeding the SMAQMD's construction threshold of 1,100 MT of CO_2e per year during any construction year. Therefore, the Project's incremental contribution to the cumulative impact of increasing atmospheric levels of GHGs would be less than cumulatively considerable. This cumulative impact would be less than significant.

Cumulative Impact HAZ-1: Cumulative Impacts from Hazards and Hazardous Materials. **(Less than Significant with Mitigation)**

Hazards and hazardous materials impacts associated with the past or current uses of a project site usually occur on a project-by-project basis and are generally limited to the specific project site during time of project implementation. Cumulative impacts associated with hazards and hazardous materials could occur if cumulative projects were to involve concurrent and adjacent construction activities that could result in a significant hazard to the public or environment through the transport, use, or disposal of hazardous materials; or release hazardous materials into the environment. However, cumulative projects that would involve concurrent/adjacent ground disturbance would be limited to the El Dorado Canal Fuel Break Project. Both the El Dorado Canal Fuel Break Project and the Project would necessitate mitigation measures during construction to reduce any potential impacts associated with hazards and hazardous materials, and would be implemented in accordance with federal, State, and local regulatory requirements.

There is an established, comprehensive federal, State, and local framework independent of the CEQA process that is intended to reduce the risks associated with the use, transport, and disposal of hazardous materials. The use and disposal of hazardous materials is heavily regulated at both the federal and State level, and these regulations are promulgated and enforced by agencies such as the EPA, SWRCB, DTSC, and Cal/OSHA. Cumulative projects would be required to comply with appropriate regulatory agency standards designed to avoid hazardous waste releases.

As discussed in **Section 3.7**, Project construction would require handling of small quantities of hazardous materials used in construction equipment (e.g., fuels, oils, lubricants) and could result in accidental spills of these materials. Implementation of Mitigation Measure HAZ-1, as described in **Section 3.7**, would reduce this Project's contribution to impacts related to hazardous materials. Mitigation Measure HAZ-1 would require the construction contractor to comply with the Project 184 Hazardous Substances Plan, which includes spill prevention measures and an action plan to respond to hazardous materials releases in compliance with applicable regulations. The plan outlines procedures for storage, handling, and cleanup of hazardous substances to reduce the risk of environmental contamination and exposure. Therefore, the Project's contribution to cumulative impacts would be less than cumulatively considerable. This cumulative impact would be less than significant with mitigation.

See **Cumulative Impact WILD-1** for cumulative impacts related to the potential to exacerbate wildfire risks.

Cumulative Impact HYD-1: Cumulative Impacts on Hydrology and Water Quality. **(Less than Significant with Mitigation)**

Cumulative impacts to hydrology and water quality could occur if the Project and cumulative projects identified in **Table 4.3-2** involve concurrent/adjacent activities that could result in the following: violate water quality standards, waste discharge requirements or otherwise substantially degrade surface or ground water quality; or substantially alter the existing drainage pattern of the project site or area, including through the alteration of the course of a stream or river, through the addition of impervious surfaces, or in a manner which would result in substantial erosion, siltation, or flooding on- or offsite. However, cumulative projects that would involve concurrent/adjacent ground disturbance would be limited to the El Dorado Canal Fuel Break Project. Both the El Dorado Canal Fuel Break Project and the Project would necessitate mitigation measures during construction to reduce any potential impacts associated with impacts on hydrology and water quality, and would be implemented in accordance with federal, State, and local regulatory requirements, including filing for coverage under the NPDES Construction General Permit if more than one acre of ground disturbance occurs. Additionally, conditions of the Construction General Permit would be tailored for each project.

The Project would not result in significant new impervious surfaces that could result in a substantial increase in runoff downstream of the Project, nor otherwise substantially increase the rate or amount of surface runoff. Therefore, the Project would not result in a considerable incremental contribution to a significant cumulative impact related to flooding onsite or offsite or impede or redirect flood flows.

As discussed in **Section 3.8**, the Project could degrade stormwater quality from erosion of graded or excavated surface materials or leaks or spills from equipment. Mitigation Measure GEO-1, as described in **Section 3.5**, and Mitigation Measure HAZ-1, as described in **Section 3.7**, would reduce the Project's contribution to impacts related to hydrology and water quality.

Under Mitigation Measure GEO-1, the Project would obtain coverage under the NPDES Construction General Permit and implement a SWPPP with BMPs to prevent erosion, manage runoff, and control sedimentation during construction. In addition, Mitigation Measure HAZ-1 would require preparation and implementation of a Hazardous Materials Release Prevention Plan to reduce the risk of water contamination from fuel, oil, and other hazardous materials used during construction. Together, these measures would minimize pollutant discharges and erosion into nearby water resources. Therefore, the Project would result in a less than considerable contribution to a cumulative impact on hydrology and water quality. Therefore, this cumulative impact is less than significant with mitigation.

Cumulative Impact NOISE-1: Cumulative Impacts on Noise and Vibration. **(Less than Significant)**

Cumulative impacts associated with noise and vibration could occur if the Project and cumulative projects identified in **Table 4.3-2** involve concurrent/adjacent activities that could result in significant noise and vibration impacts to nearby sensitive receptors. However, cumulative projects that would involve concurrent/adjacent ground disturbance would be limited to the El Dorado Canal Fuel Break Project. Both the El Dorado Canal Fuel Break Project and the Project would necessitate mitigation measures during construction to reduce any potential impacts associated with noise and vibration, and would be implemented in accordance with federal, State, and local regulatory requirements. As discussed in **Section 3.10**, construction of the Project would result in temporary increases in ambient noise levels due to the use of heavy equipment such as bulldozers, excavators, and concrete trucks. These activities would primarily occur during the District's annual canal outage and would generally comply with the County's noise exemption for public utility projects. While some activities may require extended work hours, including up to 24-hour shifts, such work would be short in duration and exempt from local noise standards under El Dorado County Municipal Code Chapter 130.37.

While other construction projects in the region may also generate temporary noise (particularly during peak construction seasons), the Project's rural location, limited proximity to sensitive receptors, the temporary and linear nature of construction, and the absence of operational noise would result in a minimal contribution to cumulative noise levels.

Cumulative vibration impacts could also result from regional construction projects that involve high-vibration equipment near buildings. The Project could contribute to this impact through use of compactors and rollers during access road construction within 15 feet of the on-site residence. A BMP has been included in **Section 2.4.3** to minimize the potential for damage to the on-site residence through minimizing the use of high-vibration equipment during construction within 15 of the structure to the extent feasible. Given that other projects would similarly be subject to CEQA review and site-specific measures, the Project's incremental contribution to cumulative vibration impacts would be less than considerable. Therefore, cumulative impacts related to noise and vibration would not be significant, and the Project's contribution would not be cumulatively considerable with mitigation.

Cumulative Impact TCR-1: Cumulative Impacts on Tribal Cultural Resources. **(Less than Significant with Mitigation)**

The Project would contribute to cumulative impacts on TCRs if the Project and other cumulative projects listed in **Table 4.3-2** were to adversely affect the same resources. The SLF search did not identify TCRs within the Project Site or vicinity. Furthermore, consultation conducted by the District with California Native American Tribes pursuant to AB 52 has not resulted in the identification of any TCRs within the Project Site or its vicinity as of the publication date of this EIR. However, it is possible that unknown TCRs may be discovered during construction activities.

Therefore, cumulative impacts related to disturbing and/or adversely impacting TCRs during construction would be significant, and the project's contribution to cumulative TCR impacts would be cumulatively considerable. Implementation of Mitigation Measures TRIB-1 through TRIB-3, as described in **Section 3.9**, would reduce impacts by requiring such measures as cultural resource awareness training and proper handling of any inadvertent discoveries of TCRs. Therefore, the Project would result in a less than considerable contribution to significant cumulative impacts on TCRs. This cumulative impact is less than significant with mitigation.

Cumulative Impact TRA-1: Cumulative Impacts on Transportation. **(Less than Significant with Mitigation)**

Cumulative impacts to transportation could occur if the Project and cumulative projects identified in **Table 4.3-2** involve concurrent/adjacent activities that could result in traffic congestion or hazardous conditions. As discussed in **Section 3.11**, construction of the Project would result in a temporary increase of vehicle trips. The cumulative projects identified in **Table 4.3-2** that involve generation of additional vehicle trips or roadway closures may have the potential to contribute to the cumulatively considerable impacts. However, cumulative projects that would involve concurrent/adjacent construction would be limited to the El Dorado Canal Fuel Break Project. Both the El Dorado Canal Fuel Break Project and the Project would necessitate mitigation measures during construction to reduce any potential impacts associated with construction traffic access on Highway 50.

As described in **Section 3.11**, large trucks transporting equipment and materials to and from the project site have the potential to temporarily increase the risk of slow-moving vehicles or traffic hazards on Highway 50, which provides direct access to the project site. Implementation of Mitigation Measure TRA-1 would reduce potential impacts on Highway 50 by requiring preparation and implementation of a Traffic Control Plan. The Traffic Control Plan would identify measures such as temporary signage, personnel directing traffic, and coordination with emergency responders to ensure safe entry and exit of construction vehicles at the project access point and minimize traffic disruption along Highway 50. Therefore, cumulative impacts related to traffic would not be significant, and the Project's contribution would not be cumulatively considerable with mitigation.

Cumulative Impact WILD-1: Cumulative Impacts on Wildfire. **(Less than Significant with Mitigation)**

Cumulative effects related to wildfire hazards are driven by the factors of climate, vegetation, human influences, and changes in land use that influence the three first factors. Cumulative wildfire impacts could occur if the project and cumulative projects identified in **Table 4.3-2** were to involve concurrent activities that would exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Wildfire risks resulting from construction of the Project and cumulative projects would be offset by compliance with fire safety and wildfire suppression measures identified in the regulatory setting in **Section 3.12.1**, including, but not limited to:

- **PRC Section 4427:** Identifies appropriate fire suppression equipment and stipulates removal of flammable materials to a distance of 10 feet from any equipment that could produce a spark, fire, or flame on days when burning permits are required;
- **PRC Section 4428:** Identifies additional firefighting equipment requirements during the period of highest fire danger (April 1–December 1);
- **PRC Section 4431:** Prohibits the use of portable tools powered by gasoline-fueled internal combustion engines within 25 feet of flammable materials when burning permits are required;

- **PRC Section 4442:** Requires engines to be equipped with a spark arrestor;
- **El Dorado County Ordinance Code Chapter 8.38:** Requires disclosure of hazardous materials release, possible hazardous materials inspection, and prevention of possible environmental impacts due to hazardous material; and
- **CAL FIRE and El Dorado County Fire Protection District guidelines**: Includes defensible space and equipment safety standards for work in high fire hazard areas.

As discussed in **Section 3.12**, the Project is located within an SRA and is designated as a Very High Fire Hazard Severity Zone by CAL FIRE (CAL FIRE, 2025). The surrounding area, including steep terrain and dense forest cover, contributes to elevated fire risk. Construction activities would occur during the District's annual canal outage period, generally coinciding with cooler weather, but pre-outage work would begin as early as August, when wildfire conditions may be heightened. Use of heavy equipment, presence of flammable materials, and limited emergency access in remote areas could result in a temporary increase in wildfire risk.

Implementing Mitigation Measure WILD-1, as described in **Section 3.12,** would reduce the Project's contribution to impacts related to wildfire risks. Mitigation Measure WILD-1 requires the preparation and implementation of a Fire Safety Plan that includes site-specific fire prevention practices, such as maintaining fire suppression equipment at work areas, using spark arrestors on combustion engines, restricting high-risk activities during red flag warnings, and training personnel in fire prevention and emergency response. These measures would substantially reduce the likelihood of fire ignition and ensure rapid containment in the event of an incident. Therefore, the Project would result in a less than considerable contribution to a significant cumulative impact on wildfires with mitigation.

4.4 SIGNIFICANT AND UNAVOIDABLE IMPACTS

CEQA Guidelines Section 15126(b) requires an EIR to "describe any significant impacts, including those which can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications, and the reasons why the Project is being proposed, notwithstanding their effect, should be described."

Section 3 of this EIR provides a detailed analysis of all significant and potentially significant environmental impacts related to implementing the Project; identifies feasible mitigation measures, where available, that could avoid or reduce these significant and potentially significant impacts; and presents a determination whether these mitigation measures would reduce these impacts to less-than-significant levels.

Section 4.3 identifies the significant cumulative impacts resulting from the combined effects of the Project and cumulative projects and identifies if the Project would result in a considerable contribution to a significant cumulative impact. If a specific impact in either of these sections cannot be fully reduced to a less-than-significant level, it is considered a significant and unavoidable impact. After implementation of feasible and available mitigation measures, the following impacts were determined to be significant and unavoidable for the project:

- **Impact CUL-1: The Project would cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.** The Flume 48 rock wall is eligible for the NRHP as a contributing resource to the El Dorado Rock Wall Discontiguous District and is thus considered a historical resource for the purposes of CEQA.

The Project would remove the Flume 48 rock wall and therefore the historical significance of the El Dorado Rock Wall Discontiguous District would be materially impaired and the integrity of the historic district would be diminished. The rationale for this conclusion and lack of feasible mitigation measures to reduce this impact to a less-than-significant level is described in **Section 3.4**.

- **Cumulative Impact CUL-1: Cumulative Impacts on Built Environment Historic Resources.** The Project and potentially other EID flume replacement projects would alter the rock walls that are part of the El Dorado Rock Wall Discontiguous District to such a degree that the ability of the structure to convey its historical significance would be materially impaired and the integrity of the historic district would be diminished. The rationale for this conclusion and lack of feasible mitigation measures to reduce this impact to a less-than-significant level is described in **Section 4.3.4**.

Section 5 | Alternatives

5.1 INTRODUCTION

The purpose of the alternatives analysis in an EIR is to describe and evaluate the No Project alternative and a reasonable range of alternatives to the Project that can feasibly attain most of the identified project objectives but would reduce or avoid one or more of the project's significant impacts. This section presents the project objectives, summarizes the potential significant effects of the project, including those that cannot be avoided or reduced to a less than significant level, and describes the process used to develop alternatives, including alternatives that were considered but dismissed from further evaluation. The section then describes alternatives considered and evaluates the impacts of each of the alternatives considered relative to those of the project and evaluates the relationship of the alternatives to the project objectives. An environmentally superior alternative is identified at the end of this section.

5.2 CEQA REQUIREMENTS

Section 15126.6 of the CEQA Guidelines requires that an EIR "…describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives." Additionally, the CEQA Guidelines state the following:

- The "no project" alternative shall be evaluated along with its impact. If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives [CEQA Guidelines Section 15126.6(e)(1)(2)].
- An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. An EIR is not required to consider alternatives that are infeasible. The range of potential alternatives to the Project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly discuss the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts [CEQA Guidelines Section 15126.6(a)(c)].
- The "range of alternatives" is governed by the "rule of reason," which requires the EIR to describe and consider only those alternatives necessary to permit informed public participation, and an informed and reasoned choice by the decision-making body [CEQA Guidelines Sections 15126.6(a) and (f)]. The description or evaluation of alternatives does not need to be exhaustive, and an EIR need not consider alternatives for which the effects cannot be reasonably determined and for which implementation is remote or speculative. An EIR need not describe or evaluate the environmental effects of alternatives in the same level of detail as the Project, but must include enough information to allow meaningful evaluation, analysis, and comparison with the Project [CEQA Guidelines Section 15126.6(d)].

Regarding the feasibility of alternatives, feasible means "capable of being accomplished in a reasonable period of time taking into account economic, environmental, legal, social and technological factors" (CEQA Guidelines Section 15364). The concept of feasibility also encompasses whether a particular alternative promotes the project's underlying goals and objectives, and whether an alternative is impractical or undesirable from a policy standpoint. (See City of Del Mar v. City of San Diego [1982] 133 Cal. App. 3d 410 and California Native Plant Society v. City of Santa Cruz [2009] 177 Cal. App. 4th 957). Also, CEQA does not require EIRs to include multiple variations of the alternatives it considers in detail (Village Laguna of Laguna Beach v. Board of Supervisors [1982] 134 Cal. App. 3d 1022).

5.3 ALTERNATIVES DEVELOPMENT PROCESS

The development of alternatives is informed and directed by the project objectives and significant environmental impacts of the project, which are identified below.

5.3.1 Project Objectives

As described in **Section 2.2**, the purpose of the Project is to meet current safety standards, improve durability and reliability, and thereby improve the safety, durability, and reliability of Project 184 overall. The Project is designed to meet the following additional objectives:

- Provide a facility that is resistant to damage from catastrophic wildfires;
- Provide continued water supply and hydroelectric generation;
- Improve the safety and reliance of the El Dorado Canal system;
- Ensure continued operational reliability of the El Dorado Canal system; and
- Improve access to the El Dorado Canal system.

5.3.2 Significant Environmental Impacts of the Proposed Project

Resource topics found to have significant impacts resulting from the Project, as analyzed in **Section 3**, are summarized below. For a complete summary of project impacts and mitigation measures, see **Table ES.1**.

Significant but Mitigable Impacts

The following impacts were determined to be potentially significant for the Project but have been reduced to less-than-significant levels with incorporation of mitigation measures.

- Impact AIR-1: Conflicts with Applicable Air Quality Plan for Construction Activities
- Impact BIO-1: Impacts, either Directly or through Habitat Modifications, to any Species Identified as a Candidate, Sensitive, or Special-Status Species
- Impact CUL-2: Cause a Substantial Adverse Change in the Significance of an Archaeological Resource
- Impact CUL-3: Potential to Disturb Human Remains, including those Interred Outside of Formal Cemeteries
- Impact GEO-1: Result in Substantial Soil Erosion or the Loss of Topsoil from Construction Activities
- Impact HAZ-1: Create a Significant Hazard to the Public or the Environment through the Routine Transport, Use, or Disposal of Hazardous Materials During Construction Activities
- Impact HAZ-2: Create a Significant Hazard to the Public or the Environment through Reasonably Foreseeable Upset and/or Accident Conditions Involving the Release of Hazardous Materials into the Environment During Construction Activities

- Impact HAZ-3: Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires During Construction Activities
- Impact HYD-1: Violate any Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface or Ground Water Quality from Construction Activities
- Impact HYD-2: Substantially Alter the Existing Drainage Pattern of the Project Site in a Manner Which Would Result in Substantial Erosion or Siltation On- or Off-Site
- Impact TRIB-1: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource
- Impact NOISE-2: Generation of Excessive Groundborne Vibration or Groundborne Noise Levels
- Impact TRA-2: Substantially Increase Hazards due to Geometric Design Features (e.g., Sharp Curves or Dangerous Intersections) or Incompatible Uses (e.g., Farm Equipment)
- Impact TRA-3: Result in Inadequate Emergency Access
- Impact WILD-1: Due to Slope, Prevailing Winds, and Other Factors, Exacerbate Wildfire Risks, and Thereby Expose Project Occupants to Pollutant Concentrations from a Wildfire or the Uncontrolled Spread of a Wildfire
- Cumulative Impact BIO-1: Cumulative Impacts on Special-Status Species
- Cumulative Impact CUL-2: Cumulative Impacts on Other (Non-Built Environment Historic Resources) Cultural Resources
- Cumulative Impact GEO-1: Cumulative Impacts on Soil Erosion
- Cumulative Impact HAZ-1: Cumulative Impacts from Hazards and Hazardous Materials
- Cumulative Impact HYD-1: Cumulative Impacts on Hydrology and Water Quality
- Cumulative Impact NOISE-1: Cumulative Impacts on Noise and Vibration
- Cumulative Impact TCR-1: Cumulative Impacts on Tribal Cultural Resources
- Cumulative Impact TRA-1: Cumulative Impacts on Transportation
- Cumulative Impact WILD-1: Cumulative Impacts on Wildfire

Significant and Unavoidable Project Impacts

The following impacts were determined to be significant and unavoidable for the Project, even with implementation of all feasible mitigation measures.

- Impact CUL-1: Cause a Substantial Adverse Change in the Significance of a Built Environment Historical Resource.
- Cumulative Impact CUL-1: Cumulative Impacts on Built Environment Historic Resources.

5.3.3 Alternative Development and Screening

The District in coordination with their design consultant for the Project has identified and evaluated alternatives that would satisfy the District's requirements for longevity and flow, engineering design standards required by FERC, and requirements for the preservation of historic architectural resources related to the historic rock wall (KGS Group, 2025). In addition, the District has prepared a Finding of Effect (Adverse Effect) for the California State Historic Preservation Officer to begin the Section 106 consultation process required under the NHPA.

Alternatives Considered and Dismissed

Various alternatives to the Project were developed that could meet project objectives and/or reduce significant impacts of the Project. Those alternatives carried forward for detailed evaluation are described below in this chapter. Alternatives to the Project were eliminated for the following reasons:

- They were not substantially different from one of the considered alternatives;
- They failed to meet most of the basic Project objectives;
- They would be infeasible to implement or operate; and/or
- They would not avoid or lessen one or more significant environmental impacts.

Alternatives that were considered and dismissed from further consideration are discussed below.

Replacement of the Flume with a Precast Flume Supported on an Elevated Steel Structure

This alternative would involve the replacement of the existing wooden conveyance structure with new precast flume sections supported by a steel structure. No MSE retaining wall would be constructed under this alternative. This alternative was determined to be infeasible because the existing hand-stacked rock wall and bench are not sufficient to support a steel structure and new concrete flume without stabilization. Also, removal of the bench to accommodate a steel substructure would still require means to stabilize the land behind the wall. A steel solution would be poorly suited due to the existing flume alignment, ground topography, and varying foundation conditions. It would be highly complex and likely not constructable during annual outages.

Construction of a Tunnel Bypassing Flume 48

This alternative would involve the construction of an approximately 426-foot-long 10-foot by 10-foot arched tunnel with canal transitions at both ends and the removal and replacement of approximately 100 feet of the wooden flume between the spillway structure and the downstream end of the flume. The tunnel would serve to bypass the existing flume and would be excavated by drill and blast methods using handheld tools and light equipment. However, this alternative would still require the demolition and removal or stabilization of the existing rock wall to mitigate stability. Because this alternative would not avoid significant impacts and would have other constructability concerns, it was eliminated from further consideration.

5.4 ALTERNATIVES CONSIDERED AND EVALUATED

The following alternative has been determined to be feasible, further discussed below.

5.4.1 Alternatives Description

No Project Alternative

CEQA Guidelines Section 15126.6(e)(1) requires that the No Project alternative be described and analyzed, "to allow decision makers to compare the impacts of approving the project with the impacts of not approving the project." The No Project alternative analysis is required to discuss "the existing conditions at the time the notice of preparation is published… as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services" (CEQA Guidelines Section 15126.6(e)(2)).

Under the No Project alternative, the Project would not be implemented, and the existing wood flume would remain in its current condition. There would be no construction of an MSE retaining wall or access improvements and the existing historic rock wall would still not meet current factors of safety due to loose fill and voids. The existing wooden flume would remain highly susceptible to damage and destruction by natural hazards including wildfires, landslides, and falling trees and rocks.

Alternative 1: Stabilization of the Existing Rock Wall and Supporting Bench and Replacement Concrete Flume

Under Alternative 1, the existing wooden flume would be removed and the existing rock wall would be stabilized in place to provide a wildfire-hardened facility and meet current code requirements. The rock wall and bench stabilization would consist of installing tieback anchors and a structurally reinforced shotcrete wall. Once the bench is complete, a concrete flume would be constructed to meet current code requirements. A typical section is shown on **Figure 11**. Access improvements under Alternative 1 would be the same as those outlined for the Project and would include permanent Access Road A and temporary Access Roads B and C (**Section 2.3.1**).

Alternative 1 would require complex construction performed by highly specialized subcontractors. The stability of the existing hand-stacked rock wall and bench is not currently adequate to support drilling activities from the top of the bench and would require hand-operated equipment from scaffolding in front of the wall. Hand-operated core drilling is limited in the depth that can be practically drilled and has a slow advancement rate. Based on observations from an initial geotechnical exploration of the flume, the hand-stacked rock wall is likely retaining soil comprised of silty sand with gravel and cobbles, which are prone to caving during drilling and not readily stabilized by permeation grouting. Alternative 1 would require up to 100 tieback anchors in unfavorable ground conditions, correlating to an anticipated construction duration of more than 11 months to install the tieback anchors, and is not constructable within two outages.

Alternative 1 would require a reinforced concrete flume on top of the existing bench, which would be more susceptible to damage from wildfires and impacts from trees and rocks than the recessed concrete flume provided by the proposed MSE construction. Final stability under Alternative 1 would be more uncertain than that of MSE construction due to the inability to verify foundation conditions and engineering properties of the existing retained bench. Transitions between wall types often require additional maintenance due to differential stiffness and thermal properties of the differing wall types. Drainage of the retained bench behind the tieback wall would be limited to discrete drilled horizontal drains as opposed to the continuous subdrain of MSE and is less capable of preventing saturated earth pressures from developing behind the wall.

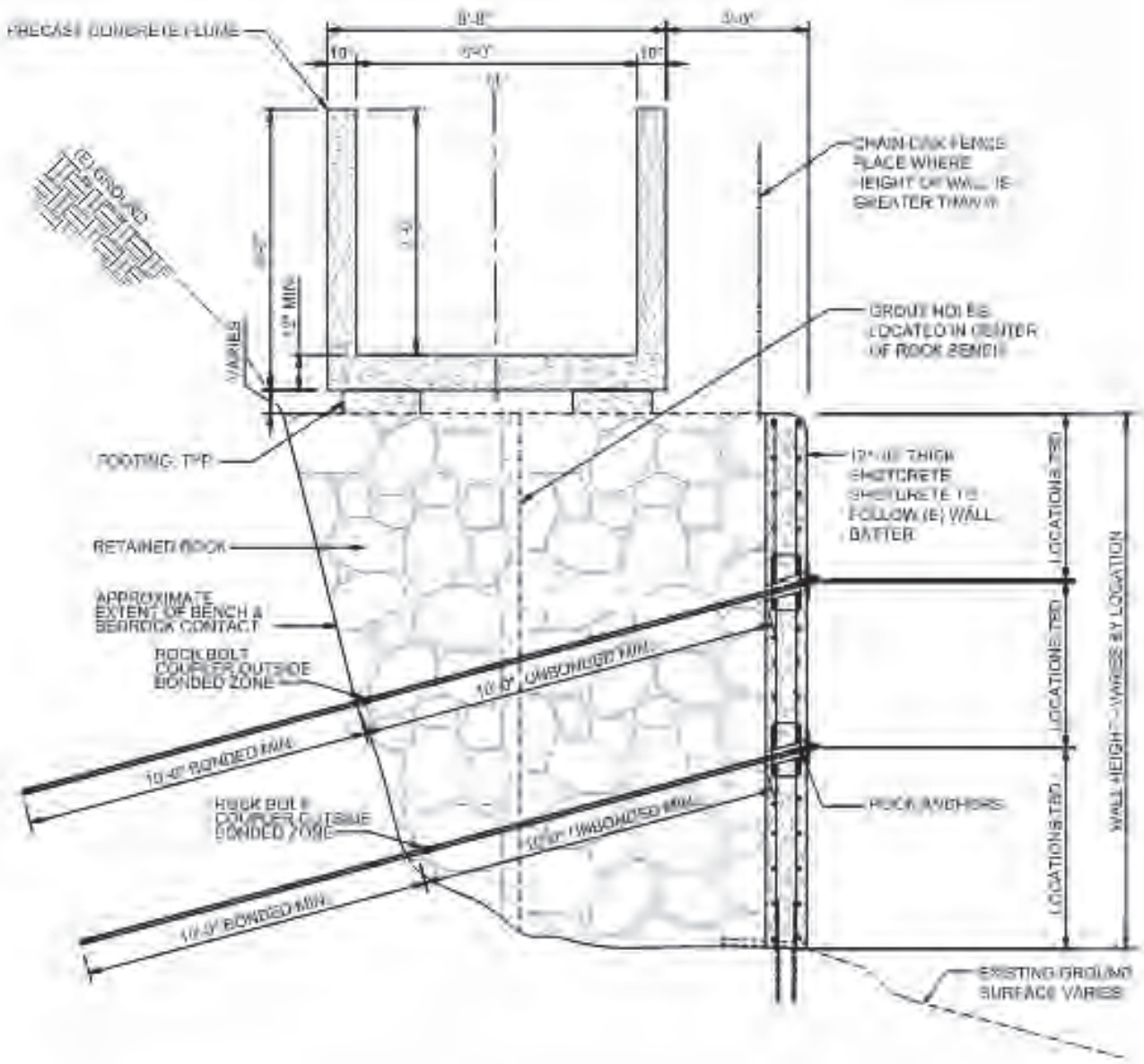
5.4.2 Ability to Meet Basic Project Objectives

As required by CEQA, to be considered as a viable alternative to the Project, an alternative must meet all or most of the following Project objectives. The Project objectives were developed based on engineering requirements and District planning needs. **Table 5-1** presents an analysis of the identified alternatives' ability to meet the Project objectives.

5.4.3 Ability to Lessen One or More Environmental Impacts

Pursuant to the CEQA Guidelines, potentially significant effects include both those that are significant and unavoidable and those that are less than significant with mitigation.

The alternatives considered within this section aim to provide a means of reducing the level of impact that would otherwise result from implementation of the Project. The alternatives were reviewed for their ability to reduce one or more significant effects of the Project, as shown in the evaluation in **Table 5-2**.



SOURCE: KGS, 5/2025; Acorn Environmental, 7/29/2025

Figure 11

Alternative 1 Typical Cross-Section

Table 5-1: Ability of Alternatives to Meet Project Objectives

Project Objective	No Project Alternative	Alternative 1
Provide a facility that is resistant to damage from catastrophic wildfires	**No:** The existing wood flume would remain in its current condition and would be susceptible to wildfires.	**Partially**: Alternative 1 would provide improved resistance to wildfires and natural disasters, however, the elevated flume would be exposed to damage.
Provide continued water supply and hydroelectric generation	**No:** The existing wood flume would remain in its current condition and would be susceptible to damage and destruction by natural hazards.	**Yes:** Alternative 1 would ensure a reliable water supply for drinking water and hydroelectric generation by stabilizing the rock wall and bench and replacing the wooden flume.
Improve the safety and reliance of the El Dorado canal system	**No:** The existing facility does not meet current factors of safety for long-term continued operation.	**No:** Alternative 1 may not meet current safety factors for long-term continued operation due to potential unknowns of the final stability due to the inability to verify the foundation conditions and engineering properties of the existing retained bench.
Ensure continued operational reliability of the El Dorado canal system	**No:** The existing wood flume would remain in its current condition and would be susceptible to damage and destruction by natural hazards.	**Partially:** The concrete canal would replace the wooden flume and the system would be less susceptible to natural hazards, however, not as much as that of the Project.
Improve access to the El Dorado Canal system	**No:** The existing access roads do not provide sufficient access to the canal for the facilitation of maintenance.	**Yes:** Access improvements would be implemented under Alternative 1 to facilitate the flume replacement.
Total Objectives Satisfied	0 Satisfied	2 Satisfied, 2 Partially Satisfied

Table 5-2: Comparison of Alternative Impacts to the Project

Resource Area	No Project Alternative	Alternative 1
Air Quality	**Lesser:** No construction activities would occur; therefore, there would be no impact related to air quality.	**Greater:** Alternative 1 would result in greater air quality emissions from increased level of construction activities and extended duration of construction schedule as compared to the Project. Similar to the Project, Alternative 1's construction activities could conflict with or obstruct implementation of an applicable air quality plan, which could result in a cumulatively considerable net increase of criteria pollutants. Alternative 1 would have similar potential to expose sensitive receptors to substantial pollutant concentrations. Mitigation Measure AIR-1 as described for the Project, would be required for Alternative 1.
Biological Resources	**Lesser:** No construction activities would occur; therefore, there would be no impact related to biological resources.	**Greater:** Similar to the Project, construction activities have the potential to impact nesting migratory birds and raptors. The majority of Project construction would occur outside the general nesting season, including the nesting season for northern spotted owl, which would not be possible for Alternative 1. Mitigation Measure BIO-1 as described for the Project would be required for Alternative 1, and additional measures would be needed under Alternative 1 to reduce impacts to northern spotted owl.
Cultural Resources	**Lesser:** No construction activities would occur; therefore, this alternative would avoid the significant and unavoidable impacts associated with removal of the historic rock wall.	**Similar:** Alternative 1 would partially maintain the historic character of the rock wall thereby lessening the impact compared to the Project. However, Alternative 1 would still result in a significant and unavoidable impact to the rock wall. Mitigation Measures CUL-1 through CUL-4, as described for the Project, would be required for Alternative 1.

Resource Area	No Project Alternative	Alternative 1
Geology and Soils	**Lesser:** No construction activities would occur; therefore, there would be no impact related to geology and soils.	**Greater:** Similar to the Project, construction of Alternative 1 could result in substantial erosion or loss of topsoil, but at a greater level, as prolonged construction could cause additional geologic impacts. Mitigation Measure GEO-1 as described for the Project, would be required for Alternative 1.
Greenhouse Gas Emissions	**Lesser:** No construction activities would occur; therefore, there would be no impact related to greenhouse gas emissions.	**Greater:** Alternative 1 would result in greater GHG emissions from the increased level of construction activities and extended duration of the construction schedule as compared to the Project. Construction would generate GHG emissions in exceedance of the SMAQMD construction threshold, while the Project would not exceed this threshold. Additional mitigation measures that are not included in the Project would be required for Alternative 1.
Hazards and Hazardous Materials	**Lesser:** No construction activities would occur; therefore, there would be no impact related to hazards and hazardous materials. See Wildfire below for impacts on hazardous wildfires.	**Greater:** Similar to the Project, construction would require the use, transport, and disposal of hazardous materials and could exacerbate the risk of wildfires. Alternative 1 would provide improved resistance to wildfires and natural disasters, however, not as much as that of the Project. Mitigation Measures GEO-1, HAZ-1, and WILD-1 as described for the Project, would be required for Alternative 1.
Hydrology and Water Quality	**Lesser:** No construction activities would occur; therefore, there would be no impact related to hydrology and water quality.	**Greater:** Similar to the Project, construction activities have the potential to result in changes to drainage patterns and violation of water quality standards. The extended construction schedule under Alternative 1 may result in additional impacts, especially during the rainy season. Mitigation Measures GEO-1 and HAZ-1, as described for the Project, would be required for Alternative 1.
Tribal Cultural Resources	**Lesser:** No construction activities would occur; therefore, there would be no impact related to tribal cultural resources.	Similar: Similar to the Project, construction activities could result in an adverse change in the significance of tribal cultural resources. Mitigation Measures TRIB-1, TRIB-2, and TRIB-3 as described for the Project, would be required for Alternative 1.
Noise and Vibration	**Lesser:** No construction activities would occur; therefore, there would be no impact to noise and vibration.	**Greater:** Alternative 1 would result in greater noise and vibration from increased level of construction activities and extended duration of construction schedule as compared to the Project. Additional mitigation measures that are not included in the Project would be required for Alternative 1.
Transportation	**Lesser:** No construction activities would occur; therefore, there would be no impact to transportation.	**Greater:** Alternative 1 would result in greater traffic impacts from increased level of construction activities and extended duration of construction schedule as compared to the Project. Mitigation Measure TRA-1 as described for the Project, would be required for Alternative 1.
Wildfire	**Lesser:** No construction activities would occur; therefore, construction-related wildfire risks would not be exacerbated. It should be noted that under the No Project Alternative the existing wood flume would remain susceptible to wildfires.	**Greater:** Similar to the Project, construction could exacerbate wildfire risks. Alternative 1 would provide improved resistance to wildfires and natural disasters, however, not as much as that of the Project. Mitigation Measure WILD-1 as described for the Project would be required for Alternative 1.

5.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA Guidelines Section 15126.6(e)(2) requires an EIR to identify an "environmentally superior alternative." If the environmentally superior alternative is the No Project alternative, CEQA Guidelines Section 15126.6(e)(2) requires identification of an environmentally superior alternative among other feasible alternatives. In general, the environmentally superior alternative is the alternative that would result in the fewest or least severe adverse impacts. The No Project alternative is environmentally superior to the proposed Project because it would avoid the significant and unavoidable impact to historical resources and other significant impacts evaluated in this EIR that are reduced to less than significant with mitigation. While the No Project alternative would eliminate the significant adverse effect of the Project, it would achieve none of the Project objectives.

When the No Project alternative is the environmentally superior alternative, CEQA requires that an additional alternative be identified. In comparing potential environmental impacts of the Project to Alternative 1, Alternative 1 would result in greater construction air quality impacts, GHG emissions, transportation, and noise and vibration impacts due to a longer construction schedule and more construction equipment. The Project and Alternative 1 would still alter portions of the historic rock wall such that the integrity would be diminished and would result in a significant and unavoidable impact. Therefore, the Project would be the environmentally superior alternative, since it would meet all project objectives and would result in fewer impacts.

Section 6 | Report Preparers

As required by CEQA, this chapter identifies the preparers and reviewers of this EIR.

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Appendix A

IS/NOP and Comments Received

Attachment 1

FLUME 48 UTILITY AND INFRASTRUCTURE REPLACEMENT PROJECT

Notice of Preparation of a Draft Environmental Impact Report and Initial Study

Prepared By:

El Dorado Irrigation District
2890 Mosquito Road
Placerville, California 95667

December 2024

Notice of Preparation of a Draft Environmental Impact Report and Initial Study

El Dorado Irrigation District
Flume 48 Utility and Infrastructure Replacement Project

Prepared By:

El Dorado Irrigation District
2890 Mosquito Road
Placerville, CA, 95667

Contact:

Brian Deason
Environmental Resources Supervisor
(530) 642-4064
bdeason@eid.org

December 2024

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NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT AND INITIAL STUDY

Project title:	Flume 48 Utility and Infrastructure Replacement Project
Lead Agency name and address:	El Dorado Irrigation District 2890 Mosquito Road Placerville, California 95667
Contact person and phone number:	Brian Deason Environmental Resources Supervisor phone: (530) 642-4064 email to: bdeason@eid.org
Project location:	U.S. Geological Survey 7.5 Quadrangle, Pollock Pines, California, Sections 32 and 33, Township 11N, Range 13E (See Figure 2.2-1)
Project sponsor's name and address:	El Dorado Irrigation District 2890 Mosquito Road Placerville, California 95667
Land Use designation:	Rural Lands – El Dorado County General Plan
Zoning:	Residential Estate
Description of Project:	The Project would replace approximately 448 linear feet of an existing wooden flume (i.e., Flume 48), which is highly susceptible to damage from wildfire and other natural hazards, with a more durable ignition resistant concrete conveyance structure (i.e., cast-in-place or precast concrete flume). The Project would include mobilization, access improvements and site preparation, demolition and disposal of the existing wood structure, clearing and grubbing vegetation within the work area, stabilization of the existing rock wall foundation or construction of a new foundation using mechanically stabilized earth wall, and construction of the new concrete conveyance structure. The Project would also include retrofitting an existing spillway structure into the new concrete conveyance, installation of metal walkways and handrails to facilitate future maintenance and inspection along the flume, and implementation of permanent slope stabilization measures (e.g., hazard tree removal, slope/rock scaling, rock fall protection) as necessary to stabilize areas upslope of the new structure.

Surrounding Land Uses and Setting:	The Project area is east of the town of Pollock Pines in an unincorporated area of El Dorado County, north of U.S. Highway 50 and west of Fresh Pond, on private lands and lands owned by the El Dorado Irrigation District; The Project area is located partially within the El Dorado Hydroelectric Project-FERC Project 184 license boundary and the water conveyance infrastructure to be replaced (i.e., Flume 48) is part of EID's El Dorado Federal Energy Regulatory Commission Project 184, which consists of a series of dams, canals, flumes, siphons, a penstock, and a powerhouse to deliver water from the South Fork of the American River for drinking water and power generation.
Other Public Agencies whose approval may be required or requested (e.g., permits, financing approval, or participation agreement.):	The Project may be subject to further approval from the Federal Emergency Management Agency (FEMA), Federal Energy Regulatory Commission (FERC), and the California Office of Historic Preservation (SHPO)

1. INTRODUCTION

1.1 Notice of Preparation of a Draft Environmental Impact Report and Initial Study

The El Dorado Irrigation District (EID or District) has prepared this Notice of Preparation (NOP) of a Draft Environmental Impact Report (Draft EIR) and Initial Study (IS) in compliance with the California Environmental Quality Act (CEQA) to address the potentially significant environmental impacts of the proposed Flume 48 Utility and Infrastructure Replacement Project (Project). (Public Resources Code, Section 21000 et seq.) and the State CEQA Guidelines (Title 14, California Code of Regulations, Section 15000 et seq.).

Based on the analysis provided in the IS, the District, as Lead Agency under CEQA, has determined that the Project may result in potentially significant environmental effects and, consequently, an EIR is required. Therefore, the purpose of this NOP/IS is to provide an opportunity for the public, interested parties, and public agencies to comment on the scope and proposed content of the Draft EIR. The Draft EIR will address the potential environmental effects of the Project for the relevant environmental issues outlined by CEQA. The District will use the Draft EIR when considering approval of the Project.

1.2 Public Review Process

The NOP/IS is available for public review from December 19, 2024 through January 30, 2025. During this review period, the public is encouraged to provide written comments on the scope and proposed content of the Draft EIR. Comments may be submitted to EID at Flume48NOP@eid.org or by U.S. mail to: El Dorado Irrigation District 2890 Mosquito Road, Placerville, California 95667; Attention: Brian Deason.

2. PROJECT DESCRIPTION

2.1 Project Context and Summary

The El Dorado Irrigation District (EID or District) owns and operates the El Dorado Hydroelectric Project, which is licensed by the Federal Energy Regulatory Commission (FERC) as Project 184. One component of Project 184 is the El Dorado Canal, which consists of various conveyance structures (e.g., flumes, canals, tunnels, siphons) that help convey approximately 1/3 of the District's total drinking water supply to over 125,000 residents in El Dorado County, CA and also provides clean renewable energy through a 21-megawatt hydroelectric generation facility. Flume 48 is a component of this critical water delivery system. Flume 48 is constructed of wood and highly susceptible to damage and destruction by natural hazards including wildfires, landslides, and falling trees and rocks. Therefore, the District is proposing to implement the Flume 48 Utility and Infrastructure Replacement Project (Project).

The Project would replace approximately 448 linear feet of the existing wooden flume with a more durable ignition resistant concrete conveyance structure (i.e., cast-in-place or precast concrete flume). The Project would include mobilization, access improvements and site preparation, demolition and disposal of the existing wood structure, clearing and grubbing vegetation within the work area, stabilization of the existing rock wall foundation or construction of a new foundation using mechanically stabilized earth wall, and construction of the new concrete conveyance structure. The Project would also include retrofitting an existing spillway structure into the new concrete conveyance, installation of metal walkways and handrails to facilitate future maintenance and inspection along the flume, and implementation of permanent slope stabilization measures (e.g., hazard tree removal, slope/rock scaling, rock fall protection) as necessary to stabilize areas upslope of the new structure. The Project would incorporate nature-based solutions with the use of bioengineered natural and manmade materials to stabilize disturbed areas within the Project footprint. Representative photos of Flume 48 are provided (Photos 1 and 2).



Photo 1: Section of Flume 48



Photo 2: Flume 48 existing rock wall foundation

2.2 Project Location

The Project area is east of the town of Pollock Pines in El Dorado County. The Project area is north of US 50 and west of Fresh Pond and is located on steep terrain on a north-facing slope upslope from the South Fork American River in a heavily forested area. The Project area is located on private land and land owned by the District. The elevation of the Project area ranges from approximately 3,840–3,900 feet above mean sea level. The total Project area is approximately 5 acres and the anticipated construction footprint is approximately 2 acres. The Project location is shown in Figure 1 and the Project site is shown in Figures 2a and 2b.

Most work would be conducted within the existing Project 184 boundary. Some temporary staging and access routes may occur outside of the Project 184 boundary (see Figures 2a and 2b).

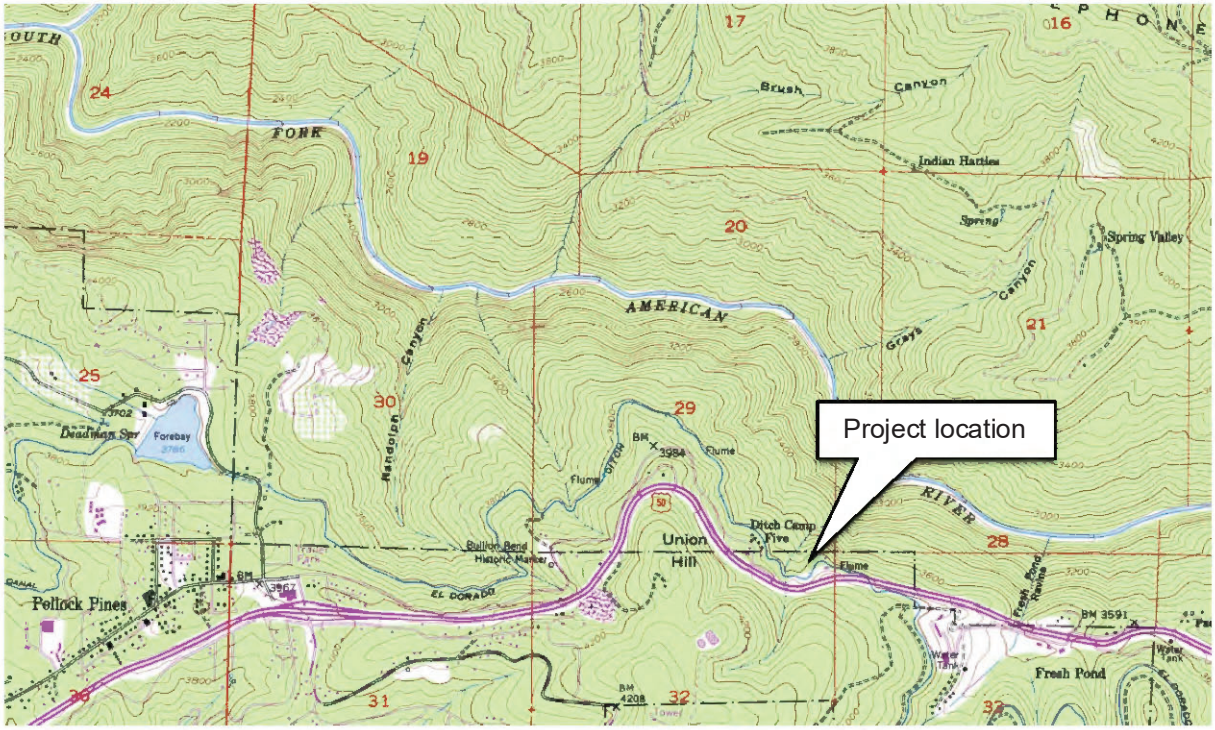


Figure 1: Project Location – Township 11 north, Range 13 east, Sections 32 and 33 of U.S. Geological Survey 7.5-minute Pollock Pines quadrangle

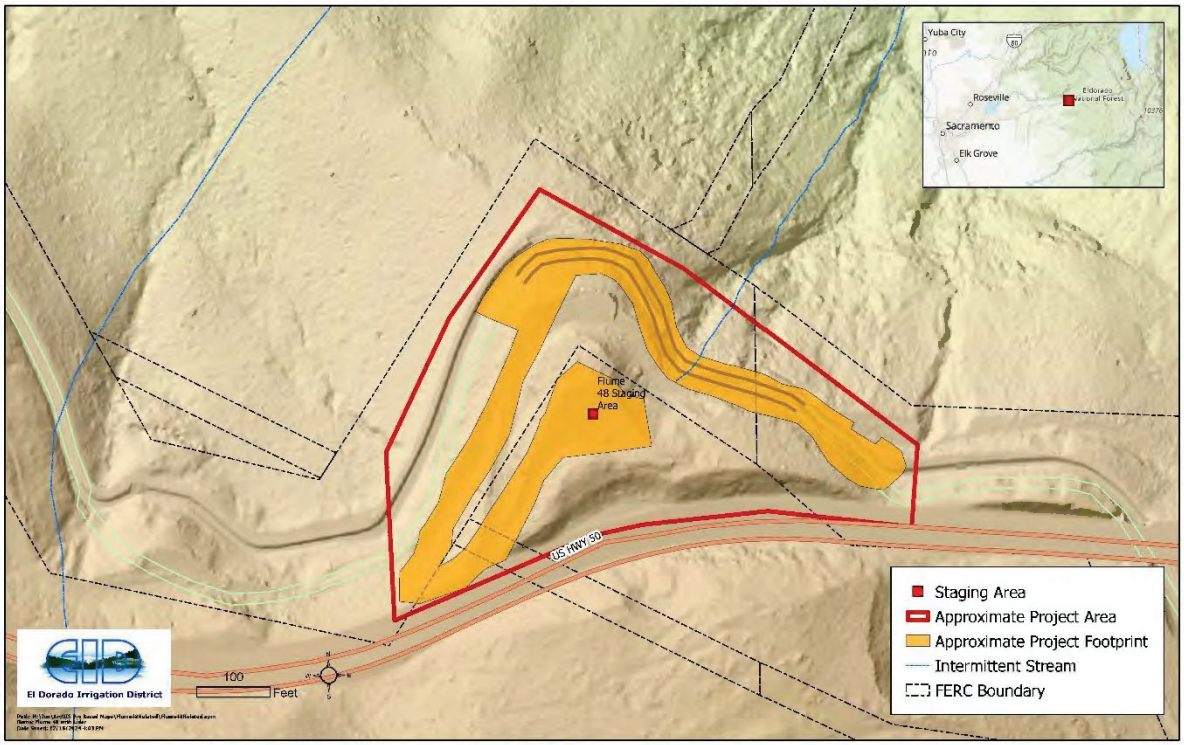


Figure 2a: Project Site - LiDAR

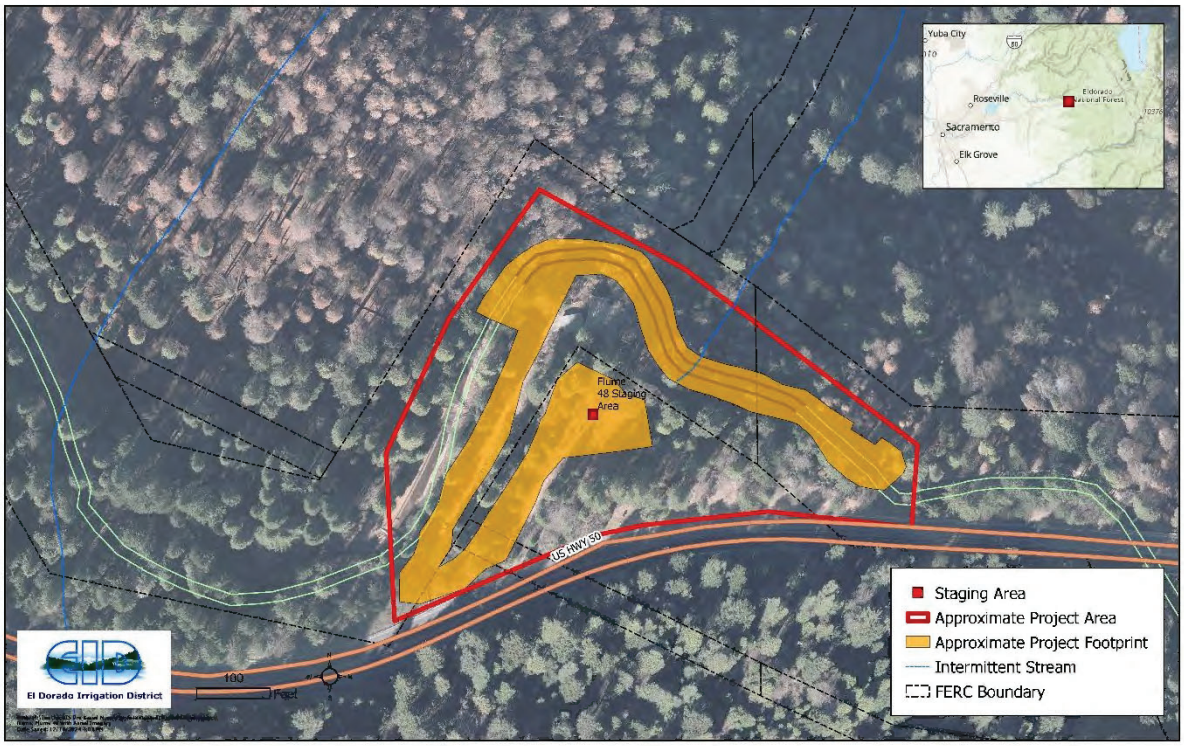


Figure 2b: Project Site – Aerial Photo

2.3 Objectives

The Project objectives include:

- Increase protection of Flume 48 and Project 184 overall from potential future catastrophic wildfire;
- Ensure a reliable water supply for drinking water and hydroelectric generation;
- Improve the safety of the El Dorado canal system;
- Ensure continued operational reliability of the El Dorado canal system.

2.4 Project Components and Details

The main components of Project construction would include mobilization and site preparation, foundation work, construction of the new concrete conveyance, retrofitting of the existing spillway structure, and slope stabilization and erosion control. Additional details for these Project components are as follows:

- Mobilization, access improvements and site preparation includes mobilization of construction equipment to the site, establishing access and staging areas, and demolition of the existing wooden flume. Vegetation and hazard trees within the limits of work area would be cleared. Hazardous rocks in the immediate vicinity of the work area would be either removed or stabilized in place.

- Foundation work includes either stabilization of the existing rock wall foundation or construction of a new foundation using mechanically stabilized earth (MSE) wall

    - In-place stabilization of the rock wall involves the placement of reinforced shotcrete facing over the exposed face of the rock wall and installation of rock anchors through the wall to secure it into competent bedrock.

    - Construction of an MSE wall involves the demolition of the existing rock wall, excavation to native competent material to accommodate a footing or leveling pad, installation of appropriate drains within the new foundation, rock anchors to stabilize sections of the embankment, and construction of the MSE wall.

- Construction of the new concrete conveyance structure includes new cast-in-place or precast flume that will be constructed atop the new foundation and tied in to the upstream and downstream canal sections with cast-in-place concrete transition structures. The new concrete conveyance will have metal walkways and handrails to facilitate future maintenance and inspection.

- Replacement of the spillway structure involves retrofitting the existing concrete spillway into the new concrete conveyance by tying in the upstream and downstream canal sections with cast-in-place concrete transition structures.

- Installation of permanent slope stabilization measures (e.g., slope/rock scaling, anchoring/pinning, rock fall protection) will be performed as necessary to stabilize areas upslope of the new structure. The Project would also incorporate nature-based solutions with the use of

bioengineered natural and manmade materials to stabilize disturbed areas within the Project footprint.

The Project would not change operation or capacity of the El Dorado Canal. No changes or temporary variances to FERC license requirements would be required to implement the Project.

2.5 Construction Equipment

The following equipment is anticipated to be used during Project activities:

- Bulldozer
- Backhoe
- Excavator
- Dump truck
- Transfer truck
- Crane
- Concrete Truck
- Concrete Pumper
- Roller
- Compactor
- Personal pick-up trucks
- Air compressor
- All-terrain vehicle
- Jack hammer
- Demolition hammer
- Rotary drill
- Generator
- Chainsaw
- Miscellaneous hand and power tools

2.6 Construction Schedule

Construction of the Project is scheduled to occur during the District's annual canal maintenance outage, which typically occurs from October through December each year. It is anticipated that the Project will be completed over the course of two annual outages, with work being suspended during the regular operational period of the canal (mid-December through September). The earliest work would begin is during the maintenance outage of 2026; however, work may not begin until a subsequent maintenance outage depending on funding, weather conditions, and/or operational considerations.

Construction would be completed by a 10-20 person construction crew and typically would occur 12-hours per day and 5 to 7-days per week, although limited construction activities could occur up to 24-hours per day if necessary.

2.7 Permitting and Agency Requirements

The District and its contractor would be required to comply with all terms and conditions of any permits, applicable plans, and agency approvals required for the Project. It is anticipated that the Project could be subject to the approvals, permits and plans identified in Table 2-1, below.

Table 2-1. Approvals/Permits/Plan Compliance

Responsible/Trustee Agency	Approvals/Permits
State Water Resources Control Board, Sacramento Region	Section 402, National Pollutant Discharge Elimination System (NPDES) Permit Compliance - Notice of Intent; Storm Water Pollution Prevention Plan (SWPPP)
California Office of Historic Preservation	National Historic Preservation Act Consultation
Project 184 Plans	Compliance with the following Project 184 Plans • Hazardous Substances Plan • Noxious Weed Prevention and Control Plan • Visual Resource Management Plan

3. INITIAL STUDY CHECKLIST

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this Project:

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

Determination

On the basis of this initial evaluation:

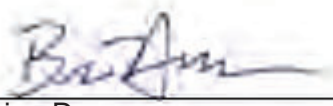
☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ 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 project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

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

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

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



December 18, 2024

Brian Deason
Environmental Resources Supervisor
El Dorado Irrigation District

Date

Evaluation of Environmental Impacts

This IS is structured to provide reviewers with a clear understanding of what environmental factors will and will not be subject to further review in the Draft EIR. Where it is determined that one or more significant impacts could result from implementation of the Project, further analysis would be provided in the Draft EIR and mitigation measures would be developed to reduce or eliminate the significant impacts when feasible. Where it is determined that there would be no impact or an impact would be less than significant for an environmental factor, the rationale to support those determinations is provided herein and no further analysis is provided in the Draft EIR. Therefore, this IS utilizes the following response headings to identify potential environmental effects:

1. **Impact to be analyzed in EIR:** This response is selected for an effect that will be subject to further analysis in the Draft EIR. In this IS, this response applies to effects that may be "Potentially Significant" or "Less Than Significant with Mitigation Incorporated" under CEQA criteria.

2. **No Additional Analysis Required:** This response is selected for effects that will not be analyzed in the Draft EIR. In this IS, this response applies when implementation of the Project would clearly result in "No Impact" or in a "Less Than Significant Impact" under CEQA criteria.

3.1 Aesthetics

ENVIRONMENTAL ISSUES	Impacts to be Analyzed in EIR	No Additional Analysis Required (Less Than Significant Impact/No Impact)
I. Aesthetics. Except as provided in Public Resources Code Section 21099, would the project:		
a) Have a substantial adverse effect on a scenic vista?	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☒
c) 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?	☐	☒

3.1.1 Environmental Setting

The Project area is east of the town of Pollock Pines in El Dorado County on private property and District land. The Project area is characterized by steep slopes and granite outcroppings on a northeast-facing slope, approximately 0.3-miles upslope from the South Fork American River. Most of the Project area and surrounding terrain is heavily forested, primarily with conifers, interspersed with deciduous trees and shrubs. Substantial portions of the surrounding area have standing dead trees that burned during the King Fire in 2014. The Project area is located immediately north of U.S. Highway 50, which is an officially designated State Scenic Highway. Land uses in the surrounding area include other infrastructure associated with Project 184, commercial development, undeveloped forest, and private land.

3.1.2 Discussion

a) No Impact. The Project would not have a substantial adverse effect on a scenic vista. No scenic vistas are located at or in proximity to the Project Site. Therefore, no impact would occur, and this environmental factor will not be analyzed in the EIR.

b) Less than Significant Impact. The Project would not substantially damage scenic resources within view of a state scenic highway. U.S. Highway 50 is identified by Caltrans as an Officially Designated State Scenic Highway (Caltrans 2019) and is located immediately south of the Project area. Motorists traveling on U.S. Highway 50 in the vicinity of the Project experience

momentary views of the South Fork American River canyon, granite outcroppings and peaks, and surrounding forested areas. Flume 48 and most of the Project area are not visible to motorists from U.S. Highway 50 due to terrain and densely forested areas located between U.S. Highway 50 and the Project area. Therefore, the Project would not substantially damage scenic resources within view of a state scenic highway and this environmental topic will not be analyzed in the EIR.

c) **Less than Significant Impact.** The Project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. El Dorado County General Plan identifies views of rivers, large water bodies, and views through scenic corridors as significant scenic resources (EDC 2004). U.S. Highway 50, which is located immediately south of the Project area, is a designated State Scenic Highway and would be considered a scenic corridor. Motorists traveling on U.S. Highway 50 in the vicinity of the Project experience brief views of the South Fork American River canyon, granite outcroppings and peaks, and surrounding forested areas. Flume 48 and most of the Project area are not visible to motorists due to terrain and densely forested areas located between U.S. Highway 50 and the Project area. One private residence is located within the Project area and adjacent to the Project site. This residence has full view of the South Fork American River Canyon and Flume 48. Occupants of this residence would experience varying degrees of temporary changes to views during construction. However, construction activities would only be temporary and are not anticipated to completely obstruct views. Following completion of the Project, the new concrete flume would resemble the overall appearance of the replaced wooden flume and would be is the same location as the previous structure. Additionally, the new conveyance structure and appurtenances would follow prescriptions in the Project 184 Visual Resources Management Plan (EID 2008) to help blend the infrastructure into the surrounding viewshed (e.g., use of gray materials against rock outcrop backgrounds, use of flat black non-reflective coatings on visible metal surfaces like handrails). Because the Project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings, this environmental factor will not be analyzed in the Draft EIR.

d) **Less than Significant Impact.** The Project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. Project construction activities may occur on a 24-hour basis at various times, if necessary. However, nighttime lighting for these activities would be shielded and directed downward to reduce light spillover and would be limited to Project areas where the lighting would not present a substantial source of nighttime light to surrounding areas. No nighttime lighting would be required during the Project's operational phase. The new infrastructure associated with the Project would follow prescriptions in the Project 184 Visual Resources Management Plan (EID 2008) to help blend the infrastructure into the surrounding viewshed (e.g., use of gray materials against rock outcrop backgrounds, use of flat black non-reflective coatings on visible metal surfaces like handrails). These measures would ensure the Project would not result in a new source of substantial glare. Since the Project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area, this environmental factor will not be analyzed in the EIR.

3.2 Agriculture and Forestry Resources

ENVIRONMENTAL ISSUES	Impacts to be Analyzed in EIR	No Additional Analysis Required (Less Than Significant Impact/No Impact)
II. Agriculture and Forestry Resources.		
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997, as updated) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.		
Would the project:		
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☒
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☒
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☒

3.2.1 ENVIRONMENTAL SETTING

The Project area is located on private land and land owned by the District. The Project area is bordered by lands managed by the U.S. Forest Service to the north and U.S. Highway 50 to the south. Portions of the Project area that are not developed and lands adjacent to the Project area are forested, primarily with conifers, interspersed with deciduous trees and shrubs. Most work would be conducted within the existing Project 184 boundary. Some temporary staging and access routes may occur outside of the Project 184 boundary.

3.2.2 DISCUSSION

a) & e)

No Impact. According to the California Department of Conservation's Farmland Mapping and Monitoring Program map for El Dorado County, the Project area is not designated Prime Farmland, Farmland of Statewide Importance, or Unique Farmland (DOC 2018). No active agricultural land uses are in or adjacent to the Project area. There are no agricultural uses at or near the Project area. Additionally, the Project would not result in the conversion of Farmland to non-agricultural use or conversion of forest land to non-forest uses. Therefore, no impact would occur and these environmental factors will not be analyzed in the Draft EIR.

b) **No Impact.** The Project area and adjacent land are not zoned for agricultural uses. No parcels in or adjacent to the Project area are under Williamson Act contracts (EDC 2018). Therefore, the Project would not conflict with existing zoning for agricultural uses or a Williamson Act contract and this environmental factor will not be analyzed in the Draft EIR.

c) & d)

No Impact. The Project area is zoned Residential Estate in the El Dorado County General Plan (EDC 2004). The Project site is located within an existing canal alignment on steep slopes in areas not typically used for commercial timber harvesting. Therefore, the Project would not conflict with existing zoning or cause rezoning of forest land or conversion of forest land to non-forest uses and these environmental factors will not be analyzed in the Draft EIR.

3.3 Air Quality

ENVIRONMENTAL ISSUES	Impacts to be Analyzed in EIR	No Additional Analysis Required (Less Than Significant Impact/No Impact)
III. Air Quality.		
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied on to make the following determinations.		
Would the project:		
a) Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☒

3.3.1 ENVIRONMENTAL SETTING

The Project area is located in the Mountain Counties Air Basin (MCAB), in the northern Sierra Nevada, close to or contiguous with the Nevada border, which covers an area of approximately 11,000 square miles. The terrain in El Dorado County transitions from rolling hills in the western portion of the county to steep mountainous terrain in the eastern half. The various changes in the terrain affect airflow patterns throughout the county that direct surface air flows, cause shallow vertical mixing, and create areas of high pollutant concentrations by hindering dispersion. Because of their proximity to the Sacramento Valley, the MCAB and El Dorado County are prone to receiving pollutant transported from more populated and heavy traffic areas (EDCAQMD 2002).

3.3.2 DISCUSSION

a) **Impacts to be analyzed in EIR.** The Project is located within the MCAB and the western portions of El Dorado County are located in a nonattainment area for ozone and particulate matter (EDCAQMD 2002). Analysis for this environmental factor will be provided in the Draft EIR.

b) **Impacts to be analyzed in EIR.** Construction activities associated with the Project would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and reactive organic gases (ROG) off-gassing)

and off-site sources (i.e., on-road haul trucks, vendor trucks, and worker vehicle trips). Analysis for this environmental factor will be provided in the Draft EIR.

c) **Impacts to be analyzed in EIR.** Project construction may result in emissions of diesel particulate matter (DPM) from heavy construction equipment and trucks working on-site. DPM is characterized as a Toxic Air Contaminants (TACs) by the State of California. TACs emissions may also be generated from other activities (welding, sand blasting application of architectural coatings, etc.) (CARB 2016). Analysis for this environmental factor will be provided in the Draft EIR.

d) **Less than Significant Impact.** The Project is located in a rural area with low-density residential development and undeveloped forested land. Construction and operation of the Project would not result in other emissions, such as those leading to odors that would adversely affect a substantial number of people. This environmental factor will not be analyzed in the Draft EIR.

3.4 Biological Resources

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

3.4.1 Environmental Setting

A combination of desktop analysis and field studies were conducted to identify existing biological resources in the Project area and evaluate the potential to support sensitive biological resources and/or their habitat (e.g., special-status plant and animal species; sensitive natural communities; and jurisdictional wetlands and drainages). The methodology and results of the desktop analysis and field studies are included in Attachment A: Biological Resources Report (GEI 2022) and Attachment B: Wetland Assessment for Flume 48 (GEI 2023).

3.4.2 DISCUSSION

a) **Impacts to be analyzed in EIR.** The biological resources report (GEI 2022) prepared for the Project site determined that nine special-status plant species have the potential to occur at the Project site. However, no special-status plant species were observed during the floristic survey. Twenty-three special-status wildlife species were evaluated for potential occurrences. The report concluded that the habitat on the Project site is unsuitable or only marginally suitable for all special-status wildlife species that were evaluated except California spotted owl (Strix occidentalis occidentalis). Therefore, potential for many of the species to occur on the Project site is unlikely. Further discussion and analysis will be provided in the Draft EIR for the potential impacts that could occur as a result of the Project on special-status plants and wildlife species.

b) **No Impact.** The biological resources report concluded that no riparian habitat or other sensitive natural community is within the Project area. Therefore, the Project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS). Therefore, no impact would occur and this environmental factor will not be analyzed in the Draft EIR.

c) **No Impact.** The Project would not have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means as there are no jurisdictional or non-jurisdictional wetlands mapped or identified within the Project area (GEI 2023). No impact would occur and therefore this environmental factor will not be analyzed in the Draft EIR.

d) **Less than Significant Impact.** Project construction would temporarily impede wildlife use of the Project site. These temporary impediments would be localized and would not substantially affect wildlife movements. The Project would not result in any new impediment to wildlife movement and would not impede the use of any established or known native wildlife nursery sites. In addition, the Project would not substantially alter the path of a stream or drainage channel and would not interfere substantially with the movement of any native resident or migratory fish. Therefore, no significant impact would occur and this topic will not be analyzed in the Draft EIR.

e) **No Impact.** The Project is not located within an important biological corridor or rare plant preserve. The Project would not conflict with any local policies or ordinances protecting biological resources. Therefore, no impact would occur and this environmental factor will not be analyzed in the Draft EIR.

f) **No Impact.** The Project area does not overlap with an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan, or other approved local, regional, or State HCP. No impact would occur and therefore this environmental factor will not be analyzed in the Draft EIR.

3.5 Cultural Resources

ENVIRONMENTAL ISSUES	Impacts to be Analyzed in EIR	No Additional Analysis Required (Less Than Significant Impact/No Impact)
V. Cultural Resources. Would the project:		
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☒	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☒	☐

3.5.1 Environmental Setting

Most of the Project area is located within the Area of Potential Effect (APE) of the Project 184 Historic Properties Management Plan (HPMP; EID 2003) and has been completely surveyed for cultural resources. No previously recorded prehistoric, archaeological, or Native American resources have previously been identified within the Project area. However, Flume 48 is located on a segment of rock wall that is a contributing element to the National Register of Historic Properties Discontinuous Rock Wall District (CA-ELD-511-H). The Project would require removal and/or stabilization of this rock wall. Additionally, abandoned segments of Highway 50 may also be present in the Project area. A cultural resource study/evaluation and finding of effect will be prepared for review by the State Historic Preservation Office (SHPO).

3.5.2 Discussion

a) & b)

Impacts to be analyzed in EIR. The potential for the Project to cause a substantial adverse change to an existing cultural or archaeological resource pursuant to Section 15064.5 will be evaluated in the Draft EIR.

c) **Impacts to be analyzed in EIR.** No indication or previous evidence from past studies of the El Dorado Canal has shown that the area has been used for human burials in the recent or distant past. While unlikely, there is some potential that earth disturbance associated with the Project could disturb or uncover previously unknown human remains. Therefore, this environmental factor will be provided in the Draft EIR.

3.6 Energy

ENVIRONMENTAL ISSUES	Impacts to be Analyzed in EIR	No Additional Analysis Required (Less Than Significant Impact/No Impact)
VI. Energy. Would the project:		
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☒
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☒

3.6.1 Environmental Setting

Flume 48 is a segment of the El Dorado Canal that is a component of the District's hydroelectric project, which is licensed by the Federal Energy Regulatory Commission (FERC) as Project 184. Project 184 consists of a series of dams, canals, flumes, siphons, a penstock, and a powerhouse to deliver water from the South Fork of the American River for power generation. The Project 184 FERC license allows the District to generate up to 21 megawatts of hydroelectric power for distribution (EID 2024).

3.6.2 Discussion

a) **Less than Significant Impact**. The Project would not substantially affect energy consumption or conservation. The Project would require a minimal amount of temporary electrical power for temporary construction lighting, power tools, and electronic equipment. Petroleum fuel consumed by the use of heavy equipment, generators, dump trucks, and other material haul trucks would be the primary energy resource expended over the course of Project construction. Workers would also likely travel to and from the Project area in gasoline-powered vehicles. Construction of the Project is scheduled to occur during the District's annual canal maintenance outage, which typically occurs from October through December each year. It is anticipated that the Project will be completed over the course of two annual outages, with work being suspended during the regular operational period of the canal (mid-December through September). The earliest work would begin is during the maintenance outage of 2026; however, work may not begin until a subsequent maintenance outage depending on funding, weather conditions, and/or operational considerations. Because work would occur during scheduled annual maintenance outages, power generation would not be affected. Once construction activities are completed, petroleum use from heavy equipment, generators, dump trucks, and other material haul trucks would cease. Continued operation of the water conveyance system would not increase energy consumption or increase inefficient energy use beyond the current energy consumption required for normal operation of the facility. Because the Project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during construction or operation, this environmental factor will not be analyzed in the Draft EIR.

b) **No Impact.** The Project would not include an increased need for additional energy resources or change the source of energy in use during regular operation of the water conveyance system. No impact would occur and this topic will not be analyzed in the EIR.

3.7 Geology and Soils

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

3.7.1 Environmental Setting

El Dorado County does not contain any known Alquist-Priolo Earthquake Fault Zones, as listed by the California Geological Survey. According to the Fault Activity Map of California and Adjacent Areas, no active faults are located on the Project site (CGS 2023). The Project area is on a northeast-facing slope approximately 0.3 miles upslope from the South Fork American River. Elevations range from 3,840 to 3,900 feet above mean sea level. The majority is the Project occurs on previously disturbed land located on steep slopes.

3.7.2 DISCUSSION

a)

i) **No Impact.** As determined by the California Department of Conservation Division of Mines and Geology, there are no Alquist-Priolo fault zones within the west slope of El Dorado County (DOC 2023). Therefore, no impact would occur, and this environmental factor will not be analyzed in the Draft EIR.

ii) **No Impact.** The potential for seismic ground shaking in the Project area would be considered remote since there are no fault zones within the west slope of El Dorado County (DOC 2023). Therefore, no impact would occur, and this environmental factor will not be analyzed in the Draft EIR.

iii) **No Impact.** El Dorado County is considered an area with low potential for seismic activity. There are no landslide, liquefaction, or fault zones within the area (DOC 2023). Therefore, no impact would occur, and this environmental factor will not be analyzed in the Draft EIR.

iv) **No Impact.** Project design and construction would be in accordance with Uniform Building Code standards, which take into account local conditions. Additionally, the Project construction and design will be prepared with recommendations from a geotechnical investigation prepared by a qualified engineering geologist. Therefore, no impact would occur, and this environmental factor will not be analyzed in the Draft EIR.

b) **Impacts to be analyzed in EIR.** The Project would require grubbing existing vegetation, removing hazard trees, grading, installing mechanical stabilization and concrete at the flume, as well as road and slope stabilization. Disturbance of existing vegetation and soil could cause an increase in stormwater runoff, particularly during the winter months, which in turn could result in erosion and sedimentation. Due to the potential for an increase in soil erosion or the loss of topsoil, further analysis will be provided in the Draft EIR.

c) **Less than Significant Impact.** See Section a) i) above. This environmental factor will not be analyzed in the Draft EIR.

d) **No impact.** See Section a) iv) above. This environmental factor will not be analyzed in the Draft EIR.

e) **No impact.** The construction workers will be provided portable temporary restrooms and the Project would not require the installation of a wastewater treatment system. Therefore, no impact would occur, and this environmental factor will not be analyzed in the Draft EIR.

f) **Less than Significant Impact.** Construction activities would primarily occur on previously disturbed land within the same alignment of existing conveyance facilities. Because ground disturbing activities in previously disturbed areas are not expected to result in accidental damage to or destruction of unique paleontological resources, this environmental factor will not be analyzed in the Draft EIR.

3.8 Greenhouse Gas Emissions

ENVIRONMENTAL ISSUES	Impacts to be Analyzed in EIR	No Additional Analysis Required (Less Than Significant Impact/No Impact)
VIII. Greenhouse Gas Emissions. Would the project:		
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☒	☐

3.8.1 Environmental Setting

Cumulative greenhouse gases (GHG) emissions are believed to contribute to an increased greenhouse effect and global climate change, which may result in sea level rise, changes in precipitation, habitat, temperature, wildfires, air pollution levels, and changes in the frequency and intensity of weather-related events. While criteria pollutants and toxic air contaminants are pollutants of regional and local concern; GHG are global pollutants. The primary land-use related GHGs are carbon dioxide (CO2), methane (CH4) and nitrous oxides (N2O). For the purposes of evaluating GHG emissions, the amount of energy that an individual pollutant will absorb over a given amount of time is expressed relative to the amount of energy trapped by an equivalent amount of CO2, or the CO2 equivalents (CO2e). The CO2e of a pollutant is known as its global warming potential. CO2 is the benchmark having a global warming potential of 1. Methane (CH4) has a global warming potential of 21 and thus would be considered equivalent to 21 times the GHG emissions contribution of an equivalent amount of CO2. Nitrous Oxide has a global warming potential of 310. Emissions are expressed in annual metric tons of CO2e units of measure (i.e., MTCO2e/yr). The three other main GHGs are Hydroflourocarbons, Perflourocarbons, and Sulfur Hexaflouride. While these compounds have significantly higher global warming potentials (ranging in the thousands), all three typically are not a concern in land-use development projects and are usually only used in specific industrial processes.

GHG Sources

The primary man-made source of CO2 is the burning of fossil fuels; the two largest sources being coal burning to produce electricity and petroleum burning in combustion engines. The primary sources of man-made CH4 are natural gas systems losses (during production, processing, storage, transmission and distribution), enteric fermentation (digestion from livestock) and landfill off-gassing. The primary source of man-made N2O is agricultural soil management (fertilizers), with fossil fuel combustion a very distant second. In El Dorado County, the primary source of GHG is fossil fuel combustion mainly in the transportation sector (estimated at 70% of countywide GHG emissions). A distant second are residential sources (approximately 20%), and commercial/industrial sources are third (approximately 7%). The remaining sources are waste/landfill (approximately 3%) and agricultural (<1%).

3.8.2 DISCUSSION

a) **Impacts to be analyzed in EIR.** The Draft EIR will assess whether the construction and operation of the Project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

b) **Impacts to be analyzed in EIR.** The Draft EIR will assess the potential for the construction and operation of the Project to conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

3.9 Hazards and Hazardous Materials

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

3.9.1 Environmental Setting

A search of publicly available databases maintained under Section 65962.5 of the Public Resources Code (i.e., the “Cortese List”), was conducted to determine whether any known hazardous material spills have occurred either at or within 0.25 mile of the Project site. These databases include EnviroStor, maintained by the California Department of Toxic Substances Control (DTSC 2019), and GeoTracker, maintained by the State Water Resources Control Board (SWRCB 2024). The results of these records searches indicated that no open cases are active within the Project site.

There are no schools within 0.25-miles of the Project area and there are no airports within 2 miles of the Project area.

According to the California Department of Forestry and Fire Protection (CALFIRE) fire hazard severity zone map, the Project site is in an area designated as very fire hazard severity (CALFIRE 2024). Portions of the Project that are not developed are forested, primarily with conifers, interspersed with deciduous trees and shrubs.

3.9.2 DISCUSSION

a) **Impacts to be analyzed in EIR.** During the Project construction phase hazardous materials such as fuel, oil and lubricants would likely be transported, used, and stored within the Project area. Off-site transportation of hazardous materials is regulated by the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans). All construction waste materials would be disposed of in compliance with state and federal hazardous waste requirements and at appropriate facilities. The Project would also be required to implement measures to appropriately manage hazardous substances including requirements for storage, spill prevention and response and reporting procedures, and by implementing spill prevention measures included in a SWPPP and the Project 184 Hazardous Substances Plan (EID, 2008). Additional analysis will be provided in the Draft EIR due to the need for implementation of protection measures involving the management of hazardous materials.

b) **Impacts to be analyzed in EIR.** Project construction would require use of fuel, hydraulic oil, motor oil, and small amounts of solvents, coatings, glues, and adhesives all in which are hazardous materials. Due to the potential for accidental release of hazardous materials into the environment during Project construction, further analysis for this environmental factor will be provided in the Draft EIR.

c) **No Impact.** There are no schools within 0.25-miles of the Project site. Therefore, no impact would occur, and this environmental factor will not be analyzed in the Draft EIR.

d) **No Impact.** The Project site is not within 0.25-miles of a hazardous materials site. Therefore, no impact would occur, and this environmental factor will not be analyzed in the Draft EIR.

e) **No Impact.** There are no airports within two miles of the Project site and the Project area is not within an area covered by an airport land use plan. Therefore, no impact would occur, and this environmental factor will not be analyzed in the Draft EIR.

f) **No Impact.** Access to the Project area would be from U.S. Highway 50. There is one private residence located within the Project area and adjacent to the Project site. The Project area is not in an area that is subject to an adopted emergency response or evacuation plan. Vehicles on access roads would not impede access for emergency response vehicles or evacuation access. Therefore, no impact would occur, and this environmental factor will not be analyzed in the EIR.

g) **Impacts to be analyzed in EIR.** The Project site is located in an area with steep topography that is heavily forested, primarily with conifers, interspersed with deciduous trees and shrubs. The Project site is in an area designated as very fire hazard severity (CALFIRE 2024). Unintended ignitions from Project-related construction equipment or tools could result in a

wildland fire. Additional analysis will be provided in the Draft EIR due to the high-risk potential for wildfire during construction of the Project.

3.10 Hydrology and Water Quality

ENVIRONMENTAL ISSUES	Impacts to be Analyzed in EIR	No Additional Analysis Required (Less Than Significant Impact/No Impact)
X. Hydrology and Water Quality. Would the project:		
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that there the project may impede sustainable groundwater management of the basin?	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:		
i) Result in substantial erosion or siltation on- or off-site;	☒	☐
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; 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?	☐	☒

3.10.1 Environmental Setting

The elevation at the Project site is approximately 3,840 – 3,900 feet above mean sea level. The climate is described as generally Mediterranean, with cool, wet winters and hot, dry summers. Precipitation occurs primarily in winter, generally between November and April, with almost no precipitation during the summer, except for occasional thunderstorms. The Project area is within the 850-square-mile South Fork American River watershed. Flume 48 is located upslope on steep terrain north of US 50 above the South Fork of the American River. The river flows from east to west, with numerous tributaries entering from both sides of the canyon. There are no other wetland or water features located in close proximity to the Project site.

The Project site is not located within a 100-year flood zone (FEMA 2008), and is not located in a dam inundation zone (EDC 2016).

3.10.2 DISCUSSION

a) **Impacts to be analyzed in the EIR.** The Project would require the use of fuel, hydraulic oil, motor oil, and small amounts of solvents, coatings, glues, and adhesives all in which are hazardous materials with potential to degrade surface or ground water quality resulting from unintentional spills during Project construction. Therefore, further analysis with regard to potential impacts to water quality will be provided in the Draft EIR.

b) **No Impact.** The Project would not involve extraction of groundwater and would not deplete groundwater supplies. The Project area is not located in a known groundwater recharge basin, and the existing facilities would not interfere substantially with groundwater recharge. Therefore, no impact would occur and this environmental factor will not be analyzed in the Draft EIR.

c), i), ii), iii)

Impacts to be analyzed in the EIR. Construction of the Project has the potential to cause excessive runoff, erosion, or siltation off-site during construction activities (e.g. excavation, grading, equipment use, and hazard tree removal). Temporary construction has the potential to increase flows and cause impacts to the existing drainage patterns. Due to the potential for the Project to substantially impact existing drainage patterns further analysis will be provided in the Draft EIR.

d) **No Impact.** The Project site has been designated by FEMA within Flood Zone D, which is an area of undetermined flood hazards (FEMA 2008), however the Project site is located upslope of the South Fork of the American River on steep terrain where flooding would not be considered a hazard. The Project site is not located in an area subject to seiche or tsunami. The Project site does not pose a risk to release pollutants associated with inundation. Therefore, no impact would occur, and this environmental factor will not be analyzed in the Draft EIR.

e) **No Impact.** The Project would not result in other effects that would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Therefore, no impact would occur and this environmental factor will not be analyzed in the Draft EIR.

3.11 Land Use and Planning

ENVIRONMENTAL ISSUES	Impacts to be Analyzed in EIR	No Additional Analysis Required (Less Than Significant Impact/No Impact)
XI. Land Use and Planning. Would the project:		
a) Physically divide an established community?	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☒

3.11.1 ENVIRONMENTAL SETTING

The Project area is located on private land and land owned by the District. The Project area is bordered by lands managed by the U.S. Forest Service to the north and U.S. Highway 50 to the south. Portions of the Project area that are not developed and lands adjacent to the Project area are forested, primarily with conifers, interspersed with deciduous trees and shrubs. Most work would be conducted within the existing Project 184 boundary. Some temporary staging and access routes may occur outside of the Project 184 boundary.

3.11.2 DISCUSSION

a) **No Impact.** The Project area contains one private residence; however, the Project area is not located within or adjacent to an established community. The Project involves replacement of existing facilities where the new facilities will be located in the same location as the existing facilities. No impact would occur and this environmental factor will not be analyzed in the Draft EIR.

b) **No Impact.** The Project would reconstruct an existing facility and increase protection of Flume 48 from potential damage due to future catastrophic wildfire. This activity would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect Therefore, no impact would occur and this environmental factor will not be analyzed in the Draft EIR.

3.12 Mineral Resources

ENVIRONMENTAL ISSUES	Impacts to be Analyzed in EIR	No Additional Analysis Required (Less Than Significant Impact/No Impact)
XII. Mineral Resources. Would the project:		
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☒

3.12.2 Environmental Setting

The Project area is not known to contain mineral resources and there no active mining claims or activities that are within or adjacent to the Project area (EDC 2004 and 2017). The Project involves replacement of existing facilities associated with Project 184. The Project area is on private property and land owned by the District with Project activities occurring primarily within the Project 184 boundary.

3.12.3 Discussion

a) & b)

No Impact. Mineral resources are not known to exist in or near the Project site, no mining operations occur within the Project site, and the Project site does not contain a locally important mineral resource recovery site. No impact would occur and these environmental factors will not be analyzed in the Draft EIR.

3.13 Noise

ENVIRONMENTAL ISSUES	Impacts to be Analyzed in EIR	No Additional Analysis Required (Less Than Significant Impact/No Impact)
XIII. Noise. Would the project result in:		
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☒

3.13.1 Environmental Setting

The Project area is located on private land and land owned by the District. The Project area is bordered by lands managed by the U.S. Forest Service to the north and U.S. Highway 50 to the south. Portions of the Project area that are not developed and lands adjacent to the Project area are forested. There is one private residence located within the Project area and adjacent to the Project site.

3.13.2 Discussion

a) **Impacts to be analyzed in the EIR.** The El Dorado County General Plan identifies noise level limits for sensitive land uses (i.e., schools, hospitals, churches, and residential). The non-transportation noise source maximum level identified for these receptors is 75 decibels (dB), and the highest hourly average noise level (L_{eq}) is 55 dB (EDC 2004). The nearest noise sensitive receptor is the private residence located within the Project area. Project construction activities may result in temporary noise level increases from operation of heavy construction equipment that would vary throughout a typical workday, depending on the equipment being used, operations being performed and proximity to a noise sensitive receptor. Therefore, the potential for Project activities to generate noise in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, will be further analyzed in the Draft EIR.

b) **Impacts to be analyzed in the EIR.** The vibration generated by heavy equipment may cause temporary groundborne vibration or noise levels that may result in a potentially significant impact on sensitive noise receptors. Therefore, the potential for Project activities to result in exposure of individuals to, or generation of, excessive groundborne noise or vibration levels will be further analyzed in the Draft EIR.

c) **No Impact.** The Project area is not in the vicinity of a private airstrip or part of an airport land use plan and the Project would not expose people within the area to excessive noise levels. No impact would occur and this environmental factor will not be analyzed in the Draft EIR.

3.14 Population and Housing

ENVIRONMENTAL ISSUES	Impacts to be Analyzed in EIR	No Additional Analysis Required (Less Than Significant Impact/No Impact)
XIV. Population and Housing. Would the project:		
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☒

3.14.1 Environmental Setting

The Project area is located on private land and land owned by the District. The Project area is bordered by lands managed by the U.S. Forest Service to the north and U.S. Highway 50 to the south. Portions of the Project area that are not developed and lands adjacent to the Project area are forested. There is one private residence located within the Project area and adjacent to the Project site.

3.14.2 Discussion

a) **No Impact.** The Project would not include construction of new homes or businesses that would directly induce population growth or extension of infrastructure that would indirectly induce population growth. The Project would replace an existing wooden flume with a concrete conveyance in order to mitigate the potential loss of the structure as a result of catastrophic wildfire. The Project would not change the authorized capacity of the water conveyance system or result in changes in its operation. Therefore, no impact would occur and this environmental factor will not be analyzed in the Draft EIR.

b) **Less than Significant.** The Project would not permanently displace substantial numbers of people or housing. There is one private residence that is located within the Project area and the District would obtain landowner authorization for any work to occur on their property. Any inconveniences associated with the Project would be temporary and limited to periods of construction. Therefore, this impact would be less than significant and this environmental factor will not be analyzed in the Draft EIR.

3.15 Public Services

ENVIRONMENTAL ISSUES	Impacts to be Analyzed in EIR	No Additional Analysis Required (Less Than Significant Impact/No Impact)
XV. Public Services. Would the project:		
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:		
Fire protection?	☐	☒
Police protection?	☐	☒
Schools?	☐	☒
Parks?	☐	☒
Other public facilities?	☐	☒

3.15.1 Environmental Setting

Fire Protection

According to the CALFIRE fire hazard severity zone map, the Project site is in an area designated as very fire hazard severity (CALFIRE 2024). Portions of the Project that are not developed are forested, primarily with conifers, interspersed with deciduous trees and shrubs.

Police Protection

Local law enforcement is provided to the Project area by the El Dorado County Sheriff's Department with headquarters located in Placerville and also substations located in South Lake Tahoe, El Dorado Hills, and Georgetown. The nearest substation is in Pollock Pines, approximately 8-miles west of the Project area (EDCSO, 2021).

Schools

The Project area is located in a rural area east of Pollock Pines and west of Fresh Pond. There are no schools located in the vicinity of the Project area.

Parks

The Project area is located in a rural area east of Pollock Pines and west of Fresh Pond. There are no parks located in the vicinity of the Project site.

OTHER

The Project area is located in a rural area east of Pollock Pines and west of Fresh Pond. Other public services (libraries, churches, community centers) are not located in close proximity to the Project.

3.15.2 DISCUSSION

a) **No Impact.** The Project involves replacement of an existing wooden water conveyance structure, rather than construction of new facilities. The Project would not result in additional population in the area and thus would not require new or expanded facilities to support adequate fire or police protection, schools, parks or other public facilities. Therefore, no impact would occur and these environmental factors will not be analyzed in the Draft EIR.

3.16 Recreation

ENVIRONMENTAL ISSUES	Impacts to be Analyzed in EIR	No Additional Analysis Required (Less Than Significant Impact/No Impact)
XVI. Recreation.		
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☒

3.16.1 Environmental Setting

The Project area is east of the town of Pollock Pines in El Dorado County. The Pollock Pines community region and surrounding area provide various opportunities for outdoor recreation with activities ranging from hiking, skiing, to aquatic recreation on rivers and lakes (EDC 2004). However, there is no public access to the Project area and public access to the canal facilities is not encouraged due to hazardous conditions associated with flowing water through the various conveyances (e.g., flumes, canals, siphons, tunnels) managed by the District.

3.16.2 Discussion

a) **No Impact.** The Project would not construct new homes or businesses, increase capacity of existing facilities, or extend public roads or other public infrastructure into areas where these facilities do not currently exist. As such, the Project would not induce population growth, and consequently would not increase the use of existing neighborhood parks or recreational facilities. Therefore, no impact would occur and this environmental factor will not be analyzed in the Draft EIR.

b) **No Impact.** The Project does not include recreational facilities and would not result in population growth that would require the construction or expansion of recreational facilities. No impact would occur and this environmental factor will not be analyzed in the Draft EIR.

3.17 Transportation

ENVIRONMENTAL ISSUES	Impacts to be Analyzed in EIR	No Additional Analysis Required (Less Than Significant Impact/No Impact)
XVII. Transportation. Would the project:		
a) Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☒	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☒	☐
d) Result in inadequate emergency access?	☒	☐

3.17.1 Environmental Setting

The Project area is located immediately north of U.S. Highway 50. Vehicle access to the Project site would be from U.S. Highway 50 to an existing driveway and access road.

3.17.2 Discussion

a) **Impacts to be analyzed in the EIR.** Traffic generation associated with the Project would involve equipment/materials hauling and worker commute trips to and from the Project area. These trips generally would occur on U.S. Highway 50. Increased construction traffic would be temporary, would occur seasonally over a two-year period between approximately August to the end of December. Typical traffic patterns during construction of the Project could occur 12-hours per day and 5- to 7-days per week, although construction activities could occur up to 24-hours a day if required. Potential traffic increases would be limited to temporary construction-related activities. However, because ingress and egress of construction traffic associated with the Project would be directly from U.S. Highway 50, these activities could temporarily affect the performance of the local circulation system due to traffic delays and roadway obstructions, which could conflict with a program, plan, ordinance or policy addressing this system. Therefore, further analysis on this environmental factor will be provided in the Draft EIR.

b) **Less than Significant Impact.** Project construction would be temporary and would not result in a substantial increase in traffic that could degrade any roadway or intersection. No increase in traffic would occur after Project construction is completed. The Project is not anticipated to cause an increase in traffic that would be substantial in relation to the existing traffic load and capacity of the roadways. Therefore, no significant impact would occur and this environmental factor will not be analyzed in the Draft EIR.

c) **Impacts to be analyzed in the EIR.** The Project would not result in any permanent changes to public roadways and would not substantially increase hazards due to incompatible uses. However, because ingress and egress of construction traffic associated with the Project would be directly from U.S. Highway 50, these activities could temporarily cause hazards to motorists on U.S. Highway 50. Therefore, this environmental factor will be further analyzed in the Draft EIR.

d) **Impacts to be analyzed in the EIR.** Emergency access to the Project area could be temporarily affected by activities associated with the Project. Slow-moving trucks entering and exiting the Project site from U.S. Highway 50 could delay the movement of emergency vehicles between U.S. Highway 50 and the Project site. Therefore, this environmental factor will be further analyzed in the Draft EIR.

3.18 Tribal Cultural Resources

ENVIRONMENTAL ISSUES	Impacts to be Analyzed in EIR	No Additional Analysis Required (Less Than Significant Impact/No Impact)
XVIII. Tribal Cultural Resources. Would the project:		
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geologically 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 listed in the California Register of Historical Resources, or in local register of historical resources as defined in Public Resources Code section 5020.1(k)?	☒	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☒	☐

3.18.1 Environmental Setting

The presence of tribal cultural resources (TCRs) are generally identified through consultation with California Native American Tribes. Under AB 52 a TCR must have tangible, geographically defined properties that could be impacted by implementation of a project. Tribal cultural resources are defined in CEQA as a site, feature, place, cultural landscape, sacred place, or object with cultural value to a California Native American tribe, which may include non-unique archaeological resources previously subject to limited review under CEQA. In accordance with AB 52, concurrent with the release of this NOP/IS, the District will send written notices of the Project to Tribes that have requested notification from the District. The District will also provide notification to other tribal groups based on a contact list provided by the Native American Heritage Commission (NAHC).

3.18.2 Discussion

a) i) & ii)

Impacts to be analyzed in EIR. No indication or previous evidence from past studies of the El Dorado Canal has shown that TCRs are known to be present in the Project area in the recent or

distant past. While unlikely, there is some potential that earth disturbance associated with the Project could disturb or uncover previously unknown TCRs. Due to the potential for the Project to disturb unknown TCRs, further analysis on this topic will be provided in the Draft EIR.

3.19 Utilities and Service Systems

ENVIRONMENTAL ISSUES	Impacts to be Analyzed in EIR	No Additional Analysis Required (Less Than Significant Impact/No Impact)
XIX. Utilities and Service Systems. Would the project:		
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☒
c) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	☐	☒
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?	☐	☒

3.19.1 Environmental Setting

The Project site is within the boundaries of the District's Project 184, which encompasses the El Dorado Canal and associated facilities that are operated for safe and reliable delivery of water to downstream users and for hydroelectric power generation to meet the water and energy demands in El Dorado County. No water or sewer service is provided within the Project site. Drainage resulting from stormwater in the Project area is by natural drainages or roadside ditches.

3.19.2 Discussion

a) **No Impact.** The Project would not include new development that would require relocation or construction of new or expanded municipal wastewater treatment, storm water drainage, natural gas, or telecommunications facilities. No impact would occur and this environmental factor will not be analyzed in the Draft EIR.

b) **No Impact.** The Project would not include new development that would increase water supply demand. No impact would occur and this environmental factor will not be analyzed in the Draft EIR.

c) **No Impact.** The Project does not include elements that would generate wastewater flows and therefore would not exceed a wastewater treatment provider's capacity. No impact would occur and this environmental factor will not be analyzed in the Draft EIR.

d) **No Impact.** The existing wooden flume and its substructure would be demolished and disposed at an off-site disposal area with permitted capacity to except construction debris, in accordance with applicable federal, state, and local regulations. Therefore, no impact would occur and this environmental factor will not be analyzed in the Draft EIR.

e) **No Impact.** As discussed in item d), disposal of the wooden flume structure, or waste associated with paint, solvent, or other chemical containers that potentially contained hazardous materials associated with the Project would be disposed of in accordance with applicable federal, state, and local regulations. Therefore, no impact would occur and this environmental factor will not be analyzed in the Draft EIR.

3.20 Wildfire

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

3.20.1 Environmental Setting

According to the CALFIRE fire hazard severity zone map, the Project site is in an area designated as very fire hazard severity (CALFIRE 2024). Portions of the Project that are not developed are forested, primarily with conifers, interspersed with deciduous trees and shrubs.

3.20.2 Discussion

a) **No Impact.** The Project area is not in an area that is subject to an adopted emergency response or evacuation plan. Therefore, this environmental factor will not be analyzed in the Draft EIR.

b) **Impacts to be analyzed in EIR.** The Project area is located in an area designated as very fire hazard severity (CALFIRE 2024). During construction, heavy equipment and on-site fueling could pose a risk for wildfire, from potential ignition sources (e.g., internal combustion engines, gasoline-powered tools, and equipment) that could produce a spark, fire, or flame. However, once the Project work is completed, the risk to people from wildland fires would remain the same as the pre-Project risk conditions. Due to the surrounding topography and potential for wildfire causes associated with Project construction, additional analysis of this topic will be provided in the Draft EIR.

c) **No Impact.** The Project would not require installation of fuel breaks, emergency water sources, power lines, or other utilities that could exacerbate fire risk. No impact would occur and this environmental factor will not be analyzed in the Draft EIR.

d) **No Impact.** The Project will not significantly change the slope of the Project site. Project implementation would not expose people or structures to significant risks because of runoff, post-fire slope instability, or changes to drainage patterns. Therefore, no impact would occur and this environmental factor will not be analyzed in the Draft EIR.

3.21 Mandatory Findings of Significance

	ENVIRONMENTAL ISSUES	Impacts to be Analyzed in EIR	No Additional Analysis Required (Less Than Significant Impact/No Impact
XXI.	***Mandatory Findings of Significance.***		
	a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☒	☐
	b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☒	☐
	c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐

Authority: Public Resources Code Sections 21083, 21083.5.

Reference: Government Code Sections 65088.4.
Public Resources Code Sections 21080(c), 21080.1, 21080.3, 21083, 21083.3, 21083.5, 21093, 21094, 21095, 21151; *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296*; Leonoff v. Monterey Board of Supervisors* (1990) 222 Cal.App.3d 1337; *Eureka Citizens for Responsible Govt. v. City of Eureka* (2007) 147 Cal.App.4th 357; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th at 1109; *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

3.21.1 DISCUSSION

a) **Impacts to be analyzed in the EIR.** This NOP/IS provides an analysis of potential environmental impacts of the Project, including the potential to degrade the quality of the environment, impact fish, wildlife, or plant species, or harm important examples of major historical periods. As demonstrated in the discussions above, the Project has the potential to result in significant biological and cultural resource impacts, and substantially degrade the quality of the environment. The Draft EIR will evaluate the potential for the Project to result in significant biological and cultural resource impacts, and substantially degrade the quality of the environment or provide adequate mitigation measure to avoid, minimize, or compensate for potential impacts.

b) **Impacts to be analyzed in the EIR.** Cumulative impacts are defined in Section 15355 of the CEQA Guidelines as *two or more individual effects, which when considered together, would be considerable or which would compound or increase other environmental impacts.* The EIR will evaluate whether the potential impacts of the Project in combination with other current projects in the region and construction activities near the Project area could be cumulatively considerable.

c) **Impacts to be analyzed in the EIR.** As suggested in the discussions for each environmental topic above, the Project has the potential to result in significant impacts. The EIR will evaluate whether any of those impacts have the potential to result in substantial adverse effects on human beings either directly or indirectly.

4. REFERENCES

4.1 Aesthetics

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None

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None.

4.18 Tribal Cultural Resources

None

4.19 Utilities and Service Systems

None

4.20 Wildfire

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4.21 Mandatory Findings

None

ATTACHMENT A

BIOLOGICAL RESOURCE ASSESSMENT

December 16, 2022

GEI Consultants

Geotechnical
Environmental
Water Resources
Ecological

Michael Baron
Environmental Review Analyst
El Dorado Irrigation District
2890 Mosquito Road
Placerville, CA 95667

Subject: Biological Resources Survey Report for the Flume 48 Project

Dear Mr. Baron:

The El Dorado Irrigation District (District) is proposing to replace the existing flume structure at Flume 48 along the El Dorado Canal. The Flume 48 project is located in central El Dorado County, north of U.S. Highway 50 and west of Fresh Pond (**Attachment A, Figure 1**). The proposed project is situated south of the South Fork American River at elevations ranging from approximately 3,840–3,900 feet (**Attachment A, Figure 2**). The project site includes the flume, staging area, access road and buffer zone of approximately 50 feet downslope of the flume (**Attachment A, Figure 3**). GEI Consultants, Inc. (GEI) biologists conducted a biological resource survey on the project site on June 21, 2022. This report describes the methods and results of these surveys and the potential for implementation of the proposed project to impact sensitive biological resources.

Pre-field Investigation and Field Survey

Before conducting the field survey, reviews of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2022a), California Native Plant Society (CNPS) online Inventory of Rare and Endangered Vascular Plants of California (CNPS 2022a), U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) website (USFWS 2022a), U.S. Forest Service (USFS) Region 5 Sensitive Plant Species (USFS 2013a) and Sensitive Animal Species Lists (USFS 2013b) were conducted. These reviews were centered on the Pollock Pines U.S. Geological Survey (USGS) 7.5-minute quadrangle and included the eight surrounding quadrangles. Species lists generated during the reviews are provided in **Attachment B**.

Aerial imagery on Google Earth®, the USGS Pollock Pines 7.5-minute quadrangles, USFWS National Wetlands Inventory (USFWS 2022b) and the Natural Resources Conservation Service *Soil Survey of El Dorado National Forest Area, Parts of Alpine, Amador, El Dorado, and Placer Counties, California* (NRCS 2019) were also reviewed before and after conducting the field survey.

A floristic survey of the project site was conducted by GEI botanist Lasthenia Michele Lee and biologist Devin Barry on June 21, 2022. This floristic survey included pedestrian visual surveys within the boundaries of the project site for target special-status plant species, mapping vegetation and habitat types, an evaluation of habitat suitability for special-status plants and recording plant species that were observed.

During the June 21, 2022 survey, biologist Devin Barry also conducted constraints-level mapping of aquatic resources and an evaluation of habitat suitability on or adjacent to the project site for special-status wildlife species, and documented observations of wildlife species. Photographs representative of the project sites are provided in **Attachment C**.

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Environmental Setting

Elevation at the 3.8-acre project site is approximately 3,840 to 3,900 feet above mean sea level. The access road and staging area of the project site are located immediately north of CA-50. The staging area is a flat opening in the tree canopy. The flume located in the northern portion of the project site slopes gradually east to west, with north-facing slopes on both sides of the flume.

Habitat and Land Cover Types

The project site is composed primarily of Douglas fir (*Pseudotsuga menziesii*) forest (**Attachment A, Figure 3**). This habitat is characteristic of mixed coniferous forests that occur in El Dorado County between 2,000 and 6,000 feet (CNPS 2022b). Dominant tree species in this forest type in the project site include Douglas fir, black oak (*Quercus kelloggii*), and incense cedar (*Calocedrus decurrens*). Canyon live oak (*Quercus chrysolepis*) and Ponderosa pine (*Pinus ponderosa*) are occasional species that co-occur with big-leaf maple (*Acer macrophyllum*). Understory species density ranged from sparse due to the contiguous tree canopy that limits light penetration to denser areas in openings and along the forest edges bordering grassland and ruderal habitats. In addition, vegetation immediately adjacent to the flume appears disturbed and managed to reduce vegetation cover and supports more ruderal, non-native plant species. Understory species and species observed in small canopy openings along the access road and staging area include wax leaf raspberry (*Rubus glaucifolius*), feathery false lily of the valley (*Maianthemum racemosum*), western thimbleberry (*Rubus parviflora*), blue wildrye (*Elymus glaucus* ssp. *glaucus*), Bolander's blue grass (*Poa bolanderi*), tincture plant (*Collinsia tinctoria*), variable-leaf collomia (*Collomia heterophylla*), violet draperia (*Draperia systyla*), and chickweed (*Stellaria media*).

Two small ephemeral drainages were identified within the project site. The two drainages flow from rocky slopes north of the Eldorado Ditch below the elevated flume, and then south towards the South Fork American River (**Attachment A, Figure 3)**. At the time of the field survey, the drainages exhibited some evidence of ephemeral water flow but lacked vegetation and riparian trees species in the overstory.

One small intermittent drainage was identified north of the Eldorado Ditch below the elevated flume (**Attachment C**). Surface water originated from below the flume and trickled over concrete abutments. The area supported riparian species such as arroyo willow (*Salix lasiolepis.*) and alumroot (*Heuchera micrantha*) in proximity to the drainage.

Soil Types

Soils in the survey area are classified by the Natural Resources Conservation Service was entirely Josephine very rocky loam derived from metamorphic rock, schist or slate parent material (NRCS 2019). Josephine silt loam soils are sometimes associated with known occurrences of Pleasant valley mariposa-lily (*Calochortus clavatus* ssp. *avius*), a California Rare Plant Rank (CRPR) 1B.2 species. Soils in the project site are not serpentinite or volcanic soils that could support special-status plants endemic to these soil types.

Sensitive Biological Resources

Sensitive biological resources addressed in this section include those that are afforded consideration or protection under the California Environmental Quality Act (CEQA), California Fish and Game Code (FGC), California Endangered Species Act (CESA), Federal Endangered Species Act (ESA), Clean Water Act (CWA), and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act).

Special-status Species

Special-status species are plant and animal taxa (taxonomic categories or populations) that fall into any of the following categories:

- taxa officially listed by the Federal government or the State of California as endangered, threatened, or rare;
- candidate taxa for Federal or State listing as endangered or threatened;
- taxa proposed for Federal or State listing as endangered or threatened;
- taxa that meet the criteria for listing;
- taxa considered sensitive by USFS
- wildlife identified by CDFW as species of special concern and plants considered by CDFW to be "rare, threatened, or endangered in California;" (CRPR 1A through 2B)
- species listed as Fully Protected under the FGC; or
- taxa afforded protection under local or regional planning documents.

Plant taxa are assigned by CDFW to one of the following six California Rare Plant Ranks (CRPRs):

- CRPR 1A—Plants presumed to be extinct in California;
- CRPR 1B—Plants that are rare, threatened, or endangered in California and elsewhere;
- CRPR 2A—Plants that are presumed extirpated in California, but are more common elsewhere;
- CRPR 2B—Plants that are rare, threatened, or endangered in California but more common elsewhere;
- CRPR 3—Plants about which more information is needed (a review list); or
- CRPR 4—Plants of limited distribution (a watch list).

All plants with a CRPR are considered "special plants" by CDFW. The term "special plants" is a broad term used by CDFW to refer to all plant taxa inventoried in the CNDDB, regardless of their legal or protection status. CDFW applies the term "California species of special concern" to wildlife species that are not listed under federal or state endangered species acts but that are nonetheless declining at a rate that could result in listing, or that historically occurred in low numbers and are subject to current known threats to their persistence.

Figure 4 in **Attachment A** shows all CNDDB occurrences of plant and wildlife species that meet the definition of special-status species described above and have been documented within 5 miles of the project site. Results of the CNDDB search yielded occurrences of a total of 59 special-status plants and animals within the USGS 9-quadrangle search area; only six of these species have been documented within 5 miles of the project site, and many of the occurrences are historical (**Attachment B**). (Note: Not all species tracked in the CNDDB and included in the search results in Attachment B meet the definition of a special-status species described above).

Special-status Plants

Table 1 provides information on special-status plants that were evaluated for their potential to occur on the project site based on the CNDDB query, CNPS Inventory of Rare and Endangered Vascular Plants of California, and USFS list of Sensitive Plant Species for the El Dorado National Forest. A total of 36

special-status plant species were evaluated. Nine species, including Pleasant Valley mariposa-lily (*Calochortus clavatus* var. *avius*), could potentially occur on the project site. There is potentially limited suitable habitat for these species on the project site. Several of these nine species occur in wetland habitats, and the site lacks natural wetland habitats. As described above, there are areas where moisture from water leaking from the flume creates small patches with hydrophytic plants. The June 21, 2022, survey was conducted during the blooming period of all nine of these species and no special-status plants were observed during these surveys.

Pleasant Valley mariposa-lily was determined to have the potential to occur on the project site prior to conducting the June 21, 2022, floristic survey. A reference population for this species approximately 8 miles west along the El Dorado Powerhouse Penstock was visited on June 16, 2022. Most of these 100 individual plants were blooming were readily identifiable and within view of the survey area. Only a few individual plants contained fruit at the time of the survey.

Although the June 21, 2022, floristic survey was conducted during the blooming period of the nine plant species with a potential to occur on the project site, no special-status plant species were observed during this floristic survey.

Table 1. Special-status Plants Evaluated for Potential to Occur on the Project Site

Species	Blooming Period	Status[1]		Habitat Associations	Potential to Occur on the Project Site[2]
		Federal	State		
Three-bracted onion *Allium tribracteatum*	March–May	FSS	1B.2	Volcanic slopes in chaparral and lower and upper montane forests. Elevation: 3,610-9,845 feet	No potential to occur; no volcanic slopes present on the project site.
Nissenan manzanita *Arctostaphylos nissenana*	February–March	FSS	1B.2	Open, rocky shale ridges in closed-cone coniferous forest and chaparral. Elevation: 1,475- 5,410 feet	No potential to occur; no suitable habitat is present on the project site.
Big-scale balsamroot *Balsamorhiza macrolepis*	March–June	FSS	1B.2	Chaparral, cismontane woodland, valley and foothill grassland; sometimes on serpentinite. Elevation: below 4,500 feet	Could occur; grassland and woodland limited on project site.
Upswept moonwort *Botrychium ascendens*	July–August	FSS	2B.3	Lower montane coniferous forest, meadows and seeps; grassy fields, coniferous woods near springs and creeks. Elevation: 6,900- 15,000 feet.	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range.
Scalloped moonwort *Botrychium crenulatum*	June–September	FSS	2B.2	Bogs, fens, meadows, seeps, marshes, stream margins in lower and upper montane coniferous forest; typically in areas with hard water. Elevation: 4,900 – 11,800 feet.	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range.

Table 1. Special-status Plants Evaluated for Potential to Occur on the Project Site

Species	Blooming Period	Status[1]		Habitat Associations	Potential to Occur on the Project Site[2]
		Federal	State		
Common moonwort *Botrychium lunaria*	August	FSS	–	Meadows and seeps, subalpine coniferous forest, upper montane coniferous forest. Elevation: 6,500 – 11,200 feet	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Mingan moonwort *Botrychium minganense*	July–September	FSS	2B.2	Open areas in bogs, fens, meadows, seeps, marshes; stream margins in lower and upper montane coniferous forest; yellow pine forest. Elevation: 4,920- 10,100 feet	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Western goblin *Botrychium montanum*	July–September	FSS	2B.1	Creek banks in old growth forest in lower and upper montane coniferous forest. Elevation: 4,920- 10,100 feet.	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Pardox moonwort *Botrychium paradoxum*	August	FSS	2B.1	Moist meadows and shady slopes in lower and upper montane coniferous forest. Elevation: above 13,000 feet	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Stalked moonwort *Botrychium pedunculosum*	August	FSS	2B.1	Moist or dry meadows, springs, stream terraces, in lower and upper montane coniferous forest of Tuolumne County. Elevation: 3,000- 6,300 feet.	No potential to occur; no suitable habitat present on project site
Bolander's bruchia *Bruchia bolanderi*	NA	FSS	4.2	Mesic soils in upper montane coniferous forest. Elevation: 5,000 – 6,640 feet.	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Pleasant valley mariposa-lily *Calochortus clavatus* var. *avius*	May-July	FSS	1B.2	Open areas in pine-oak habitats in lower montane coniferous forest; sometimes on Josephine silt loam and volcanic soils	Could occur; marginally suitable habitat is present on the project site; suitable Josephine soils present on the project site; dense tree canopy limits open areas; nearby documented occurrences within 5 miles of the project site.
Flagella-like atractylocarpus *Campylopodiella stenocarpa*	NA	–	2B.2	Seeping metamorphic rock. Elevation: 330 – 1,640 feet.	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range

Table 1. Special-status Plants Evaluated for Potential to Occur on the Project Site

Species	Blooming Period	Status[1]		Habitat Associations	Potential to Occur on the Project Site[2]
		Federal	State		
Sierra arching sedge *Carex cyrtostachya*	May–August	–	1B.2	Mesic sites in lower montane coniferous forest, riparian forest, marshes and swamps, meadows and seeps. Elevation: 2,000- 4,460	Could occur; project site lacks natural wetland habitats; marginally suitable habitat present in north-facing upper slopes that border the flume and that are moist from flume leaks, species not observed during June 2022 survey.
Red Hills soaproot *Chlorogalum grandiflorum*	March–June	–	1B.2	Chaparral, cismontane woodland, lower montane coniferous forest on serpentinite and gabbroic soils. Elevation: 980- 1,640 feet.	No potential to occur; serpentine and gabbroic soils are not present on project site and project site is outside the species' known elevation range
Mountain lady's slipper *Cypripedium montanum*	March–August	FSS	4.2	Moist areas, dry slopes, cismontane woodland, broadleaf forest, lower montane coniferous forest. Elevation: 1,600- 6,900 feet.	Could occur; potential suitable habitat present in undisturbed areas of the Study Area, but many areas adjacent to flume are disturbed, species not observed during June 2022 survey
Tahoe draba *Draba asterophora* var. *asterophora*	July–August	FSS	1B.2	Alpine boulder rock fields and subalpine coniferous forest. Elevation: above 8,500 feet.	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Cup Lake draba *Draba asterophora* var. *macrocarpa*	July–August	FSS	1B.1	Rocky substrates in subalpine coniferous forest. Elevation: above 8,500 feet	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Jack's wild buckwheat *Eriogonum luteolum* var. *saltuarium*	July–September	FSS	1B.2	Granitic sand in Great Basin scrub and upper montane coniferous forest. Elevation: 5,575- 7,785	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Tripod buckwheat *Eriogonum tripodum*	May–July	FSS	4.2	Chaparral and cismontane woodland in serpentinite soils. Elevation: 655-5,250 feet	No potential to occur; serpentinite soils are not present on project site
Blandow's bog moss *Helodium blandowii*	NA	FSS	–	Montane bogs, fens, mires, and seeps. Elevation: 5,000-6,000 feet	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Parry's horkelia *Horkelia parryi*	April–September	FSS	1B.2	Chaparral and cismontane woodland. Elevation: 260-2,952	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range

Table 1. Special-status Plants Evaluated for Potential to Occur on the Project Site

Species	Blooming Period	Status[1]		Habitat Associations	Potential to Occur on the Project Site[2]
		Federal	State		
Finger rush *Juncus digitatus*	May–June	–	1B.1	Openings in cismontane woodland, lower montane coniferous forest, and vernal pools. Elevation: 2,130-2,625 feet	No potential to occur; no natural wetlands present on project site for this obligate wetland species and project site is outside the species' known elevation range
Hutchison's lewisia *Lewisia kelloggii* ssp. *hutchisonii*	May–August	FSS	3.2	Upper montane coniferous forest in openings, often on ridgetops composed of slate or rhyolite tuff Elevation: 4,915- 6,910 feet	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Kellogg's lewisia *Lewisia kelloggii* ssp. *kelloggii*	May–August	FSS	3.2	Upper montane coniferous forest in openings, often on ridgetops composed of slate or rhyolite tuff. Elevation: 5,100-7,000 feet	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Long-petaled lewisia *Lewisia longipetala*	July–August	FSS	1B.3	Alpine boulder and rock fields in subalpine coniferous forest in mesic substrates Elevation: above 8,000 feet.	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Saw-toothed lewisia *Lewisia serrata*	May–June	FSS	1B.1	North-facing, mostly shaded, moss-covered and metamorphic rock cliffs and ledges in steep gorges along relatively permanent streams in broadleafed upland forest, lower montane coniferous forest, riparian forest. Known from El Dorado and Placer counties. Elevation: 2,525-4,710 feet	Could occur; site lacks natural seeps and wetlands; marginally suitable moist, rocky north-facing upper slopes that border the flume where moisture occurs from flume structures; no gorges on or adjacent to the project site; species not observed during June 2022 survey
Broad-nerved hump-moss *Meesia uliginosa*	NA	FSS	2B.2	Mesic soils in meadows, seeps, and lower and upper coniferous forests Elevation: 5,000-6,000 feet	No potential to occur; project site is outside the species' known elevation range
Tehachapi monardella *Monardella linoides* ssp. *oblonga*	June–August	FSS	1B.3	Dry, gravelly slopes and flats in chaparral, conifer woodland, and pinyon and juniper woodlands in Tulare and Kern County. Elevation: 5,000-8,200 feet.	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range.
Yellow bur navarretia *Navarretia prolifera* ssp. *lutea*	May–July	FSS	4.3	Chaparral and cismontane woodland, often in dry rocky flats near drainage channels. Elevation: 2,300- 6,560 feet	Could occur; open habitat is limited on project site; species not observed during June 2022 floristic survey.

Table 1. Special-status Plants Evaluated for Potential to Occur on the Project Site

Species	Blooming Period	Status[1]		Habitat Associations	Potential to Occur on the Project Site[2]
		Federal	State		
Northern adder's tongue *Ophioglossum pusillum*	July	FSS	2B.2	Marshes and swamps; marsh edges, low pastures, and grassy roadside ditches in acidic soils. Elevation: 40-3,200 feet	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range.
Veined water lichen *Peltigera gowardii*	NA	FSS	4.2	On rocks in cold-water creeks with little or no sediment or disturbance. Elevation: 2,500- 7,000 feet.	No potential to occur; no suitable habitat present on project site.
Stebbins' phacelia *Phacelia stebbinsii*	May–July	FSS	1B.2	Shady, moss-covered metamorphic rock outcrops or meadows with rocky soil in lower montane coniferous forest, cismontane woodland, meadows and seeps. Elevation: 3,000-6,900 feet	Could occur; potential suitable habitat present on project site is limited; species not observed during June 2022 floristic survey.
Whitebark pine *Pinus albicaulis*	NA	FSS	–	Upper red fir forest to timberline, especially subalpine forest. Elevation: above 7,300 feet	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range.
Sierra blue grass *Poa sierrae*	April–July	FSS	1B.3	Shady north-facing, often moist, rocky slopes in lower montane coniferous forest; often in canyons. Elevation: 1,200- 4,900 feet	Could occur; understory habitat present on project site; species not observed during June 2022 floristic survey.
Brownish beaked rush *Rhynchospora capitella*	June–August	–	2B.2	Lower and upper montane coniferous forest, meadows, seeps, marsh, and swamps; mesic sites. Elevation: below 6,500 feet	Could occur; project site lacks natural wetland habitats; marginally suitable habitat present in north-facing upper slopes that border the flume and that are moist from flume leaks, species not observed during June 2022 survey

Table 1. Special-status Plants Evaluated for Potential to Occur on the Project Site

Species	Blooming Period	Status[1] Federal	Status[1] State	Habitat Associations	Potential to Occur on the Project Site[2]

[1] Status Definitions

Federal Status

FSS = U.S. Forest Service Region 5 Sensitive Species

– = No status

State/California Rare Plant Rank (CRPR)

1B = Considered rare or endangered in California and elsewhere

2B = Considered rare or endangered in California but more common elsewhere

3 = Species for which limited information is available

4 = Limited distribution or infrequent throughout a broader area in California

– = No status

California Rare Plant Rank (CRPR) Extensions

.1 = Seriously endangered in California (greater than 80 percent of occurrences are threatened and/or have a high degree and immediacy of threat)

.2 = Fairly endangered in California (20 to 80 percent of occurrences are threatened and/or have a moderate degree and immediacy of threat)

.3 = Not very endangered in California

[2] Potential to Occur

- No potential to occur: Potentially suitable habitat is not present
- Unlikely to occur: Potentially suitable habitat present but species unlikely to be present because of very restricted distribution
- Could occur: Suitable habitat is available; however, there are few or no other indicators that the species may be present
- Likely to occur: Habitat conditions, behavior of the species, known occurrences in the vicinity, or other factors indicate a relatively high likelihood that the species would occur
- Known to occur: The species, or evidence of its presence, was observed during reconnaissance-level surveys or was reported by others

Sources: CDFW 2022a; CNPS 2022a; USFS 2013a; data compiled by GEI Consultants, Inc. 2022

Special-status Wildlife

Table 2 provides information on special-status wildlife species that were evaluated for potential to occur on the project site based on review of the CNDDB, IPaC, and the USFS list of Sensitive Animal Species for the El Dorado National Forest. A total of 23 species were evaluated.

Based on the review of existing documentation and observations made during field surveys, habitat on the project site is unsuitable or only marginally suitable for all special-status wildlife species that were evaluated except California spotted owl (*Strix occidentalis occidentalis*). Therefore, potential for many of the species to occur on the project site is unlikely. Only species that are highly mobile and distributed in a variety of habitat types have potential to occur on the project site.

Table 2. Special-status Wildlife Evaluated for Potential to Occur on the Project Site

Species	Status[1] Federal	State	Habitat Associations	Potential to Occur on the Project Site[2]
Invertebrates				
Western bumble bee *Bombus occidentalis*	FSS	C	Wide variety of habitats, primarily flower-rich montane meadows; nests in abandoned rodent burrows and other cavities.	Unlikely to occur; no suitable meadow habitat in or adjacent to the project site; drainage areas in project site supports few flowering plants in the understory; nearest CNDDB occurrence approximately 23 miles northeast of project site.
Fishes				
Pacific lamprey *Entosphenus tridentalus*	FSS	–	Found in gravelly streams, including tributaries of the San Francisco Estuary and the Central Valley.	No potential to occur; no suitable habitat is present on or adjacent to the project site.
Delta smelt *Hypomesus transpacificus*	T	E	Endemic to the Sacramento-San Joaquin Delta, occurring primarily below Isleton on the Sacramento River	No potential to occur; project site is outside this species' range.
Hardhead *Mylopharodon conocephalus*	FSS	–	Typically found in small to large streams in a low to mid-elevation, but can inhabit lakes and reservoirs too. Can be found in warm water streams and spawns in gravel and rocky substrates.	No potential to occur; no suitable habitat is present on or adjacent to the project site.
Amphibians				
Southern long-toed salamander *Ambystoma macrodactylum sigillatum*	–	SSC	Montane meadows and lakes surrounded by coniferous forest; in non-breeding season, adults use mammal burrows and moist areas under litter, logs, and rocks	No potential to occur; no suitable habitat is present on or adjacent to the project site.
Yosemite Toad *Anaxyrus canorus*	T FSS	C –	High elevation wet meadows in central Sierra Nevada; also occurs in seasonal ponds in subalpine coniferous forest	No potential to occur; project site is outside this species' range.
Foothill yellow-legged frog *Rana boylii*	FSS	E	Rocky streams and rivers with open, sunny banks, in forests, chaparral, and woodlands	No potential to occur; no suitable habitat is present on or adjacent to the project site.
California red-legged frog *Rana draytonii*	T	SSC	Lowlands and foothill streams, pool, and marshes in or near permanent or late season sources of deep water with dense, shrubby, riparian, or emergent vegetation	No potential to occur; no suitable habitat is present on or adjacent to the project site.

Table 2. Special-status Wildlife Evaluated for Potential to Occur on the Project Site

Species	Status[1] Federal	Status[1] State	Habitat Associations	Potential to Occur on the Project Site[2]
Sierra Nevada yellow-legged frog *Rana sierrae*	E FSS	T	Montane ponds, lakes, and streams, typically with shallow, exposed, and gently sloping shorelines	No potential to occur; no suitable habitat is present on or adjacent to the project site.
Reptiles				
Western pond turtle *Emys marmorata*	FSS	SSC	Ponds, lakes, rivers, streams, etc. with abundant vegetation, rocks, and logs for basking	No potential to occur; no suitable habitat is present on or adjacent to the project site.
Birds				
Northern goshawk *Accipiter gentilis*	FSS	SSC	Coniferous and montane riparian forest; typically nests on north-facing slopes near water	Unlikely to occur; site provides poor-quality nesting habitat, but transient and other non-breeding individuals could occur in the area. Nearest CNDDB occurrence approximately 7 miles east of the project site.
Willow flycatcher *Empidonax traillii*	FSS	–	Dense willow thickets associated with wet meadows, ponds, and streams	No potential to occur; no suitable habitat is present on or adjacent to the project site.
Bald eagle *Haliaeetus leucocephalus*	FSS	E FP	Coastal shorelines and wetlands, lakes, reservoirs, and rivers. Nests in large trees, typically in mountain and foothill forests and woodlands near reservoirs, lakes, and rivers	Unlikely to occur; unlikely to nest in the immediate vicinity, but transient and other non-breeding individuals could occur in the area. Nearest CNDDB occurrence approximately 8 miles north of project site.
Great gray owl *Strix nebulosi*	FSS	E	High elevation coniferous forest, close to large meadows	No potential to occur; no suitable habitat is present on or adjacent to the project site (EID 2002a).
California spotted owl *Strix occidentalis occidentalis*	FSS	SSC	In the Sierra Nevada, primarily coniferous and montane hardwood forests at middle elevations; also occurs in red fir forest at high elevations	Likely to occur; suitable habitat present on and adjacent to the project site; species was observed 8 during surveys completed by GEI biologists 3 miles west at Flume 47A in 2021.
Mammals				
Pallid bat *Antrozous pallidus*	FSS	SSC	Variety of habitats, including woodland, forest, grassland, and desert; roosts in tree cavities, rock crevices, mines, caves, and human structures	Unlikely to occur; visible tree cavities were not observed at the project site. nearest documented CNDDB occurrence approximately 15 miles southwest of project site.

Table 2. Special-status Wildlife Evaluated for Potential to Occur on the Project Site

Species	Status[1] Federal	Status[1] State	Habitat Associations	Potential to Occur on the Project Site[2]
Sierra Nevada mountain beaver *Aplodontia rufa californica*	FSS –	SSC	Found in dense riparian-deciduous and open, brushy stages of forests, in the Sierra Nevada mostly found in maintain riparian habitats	No potential to occur; no suitable habitat is present on or adjacent to the project site.
Townsend's big-eared bat *Corynorhinus townsendii*	FSS	SSC	Variety of habitats, but prefers mesic habitats; roosts in caves, mines, tunnels, buildings, or other human-made structures	Unlikely to occur; no suitable roost sites occur on the project site; nearest CNDDB documented occurrence approximately 17 miles northwest of project site.
California wolverine *Gulo gulo*	FSS –	T FP	Various montane habitats; uses caves, logs, and burrows for cover and den sites; hunts in open areas.	No potential to occur; project site is outside this species' range.
Pacific marten *Martes caurina*	FSS	–	Mixed coniferous forest in the Olympic mountain range; high canopy closure, including old-growth trees and snags for denning.	No potential to occur; project site is outside this species' range.
Fringed myotis *Myotis thysanodes*	FSS	–	Wide variety of habitats, but most often in woodland and forest; roosts in caves, mines, buildings and other crevices	Unlikely to occur; suitable roost locations are absent onsite; has been documented approximately 3.5 miles south the project site.
Fisher *Pekania pennanti*	FSS	SSC	Large areas of mature, dense conifer forest and deciduous riparian areas with high canopy closure; uses cavities, snags, logs, and rocky areas for cover and den sites	No potential to occur; project site is outside this species' range.
Sierra Nevada red fox *Vulpes vulpes necator*	C	T	Variety of montane habitats; prefers forest interspersed with meadows and other open areas and requires dense vegetation and rocky areas for cover and den sites	No potential to occur; project site is outside this species' range.

Table 2. Special-status Wildlife Evaluated for Potential to Occur on the Project Site

Species	Status[1] Federal	Status[1] State	Habitat Associations	Potential to Occur on the Project Site[2]

Notes: CNDDB = California Natural Diversity Database

[1] Status Definitions

E = Listed as Endangered under the Federal or State Endangered Species Act
T = Listed as Threatened under the Federal or State Endangered Species Act
C = Candidate for listing as Threatened or Endangered under the State Endangered Species Act
FSS = U.S. Forest Service Region 5 Sensitive Species
FP = Fully Protected under the California Fish and Game Code
SSC = California Species of Special Concern
– = No status

[2] Potential to Occur

- No potential to occur: Potentially suitable habitat is not present
- Unlikely to occur: Potentially suitable habitat present but species unlikely to be present because of very restricted distribution
- Could occur: Suitable habitat is available; however, there are few or no other indicators that the species may be present
- Likely to occur: Habitat conditions, behavior of the species, known occurrences in the vicinity, or other factors indicate a relatively high likelihood that the species would occur
- Known to occur: The species, or evidence of its presence, was observed during reconnaissance-level surveys or was documented.

Sources: USFS 2013b, CDFW 2022a; data compiled by GEI Consultants, Inc. in 2022

Sensitive Habitats

Sensitive habitats include those that are of special concern to resource agencies or are afforded specific consideration through CEQA, ESA, Section 1602 of the FGC, Section 404 of the CWA, CDFW, and the Porter-Cologne Act. Sensitive habitats may be of special concern for a variety of reasons, including their locally or regionally declining status, or because they provide important habitat to special-status species.

Critical Habitat

Critical habitat is a geographic area containing features determined to be essential to the conservation of a species listed as threatened or endangered under the ESA. The project site is not within designated or proposed critical habitat for any species.

Other Habitats Protected under Federal and State Regulations

Under Section 404 of the CWA, the U.S. Army Corps of Engineers (USACE) regulates discharge of dredged or fill material into aquatic features that qualify as waters of the United States; wetlands that support hydrophytic vegetation, hydric soil types, and wetland hydrology may also qualify for USACE jurisdiction under Section 404 of the CWA. Under Section 401 of the CWA, the Central Valley Regional Water Quality Control Board (RWQCB) regulates discharge of dredged or fill material into waters of the State, to ensure such activities do not violate State or Federal water quality standards and in compliance with the Porter-Cologne Act. In addition, all diversions, obstruction, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources is subject to the regulatory approval of CDFW pursuant to Section 1602 of the FGC. The project site contains two ephemeral drainages and one intermittent drainage that are potentially subject to these regulations.

Sensitive Natural Communities

CDFW maintains a *List of Natural Communities* that are native to California (CDFW 2022b). CDFW identifies and ranks subsets of these natural communities as sensitive natural communities that are considered to be highly imperiled. CDFW publishes and frequently updates a list of *Sensitive Natural*

Communities (CDFW 2022b). Many riparian plant communities are included as sensitive natural communities because of habitat loss and their value to a diverse community of plant and wildlife species. No sensitive natural community occur on the project site.

If you have any questions or concerns regarding this biological assessment report, please contact me by phone at (916) 912-4940 or e-mail at ehtain@geiconsultants.com.

Sincerely,



Eric Htain
Project Manager/Senior Regulatory Specialist

Attachment A: Figures 1-5
Attachment B: Special-status Species Lists
Attachment C: Representative Photographs
Attachment D: Lists of Plant and Wildlife Species Observed during the Field Survey

References

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Attachment A

Figure 1. Regional Location

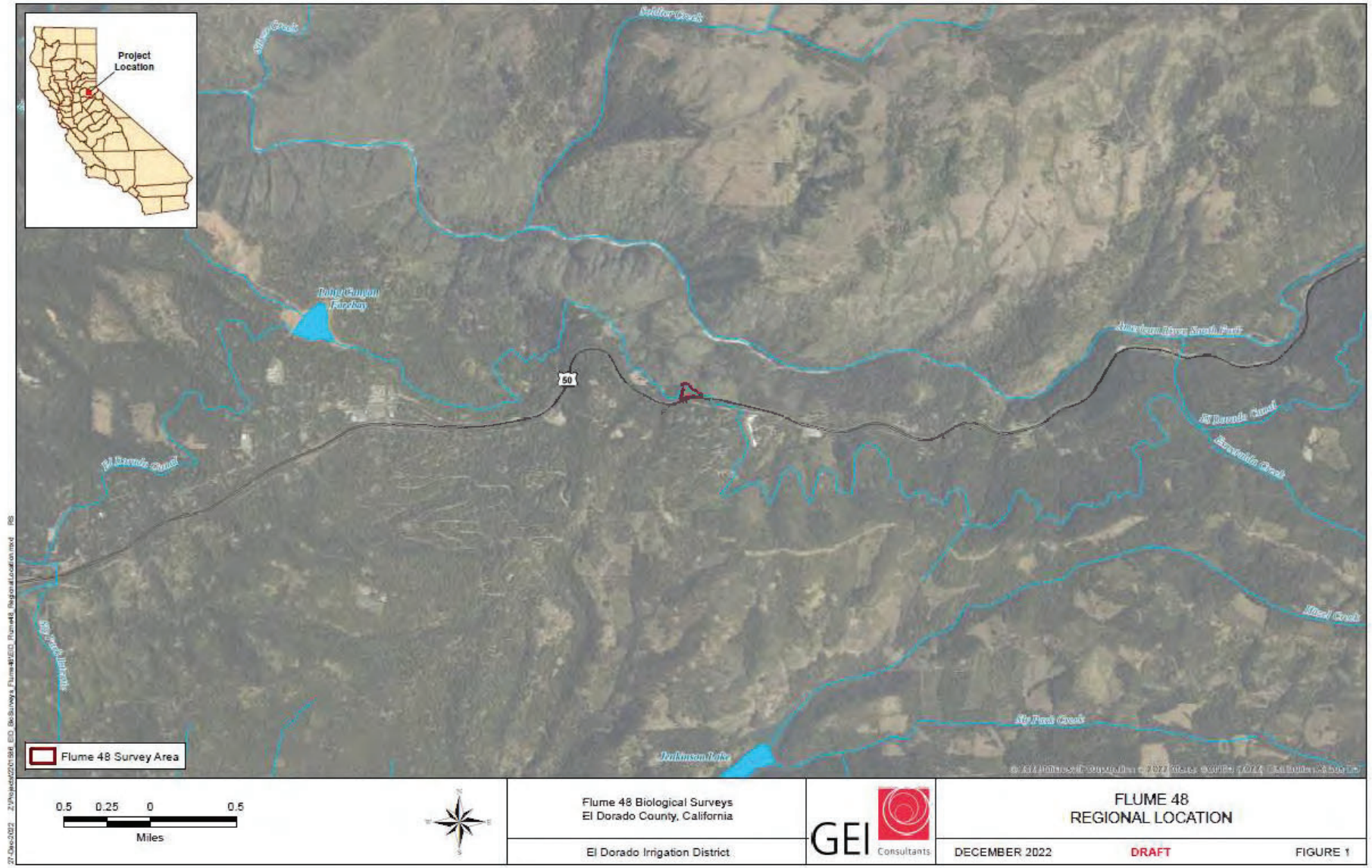
Figure 2. Topographic Map

Figure 3. Habitat Types on the Project Site

Figure 4. California Natural Diversity Database Occurrences within 5 Miles of the Project Site

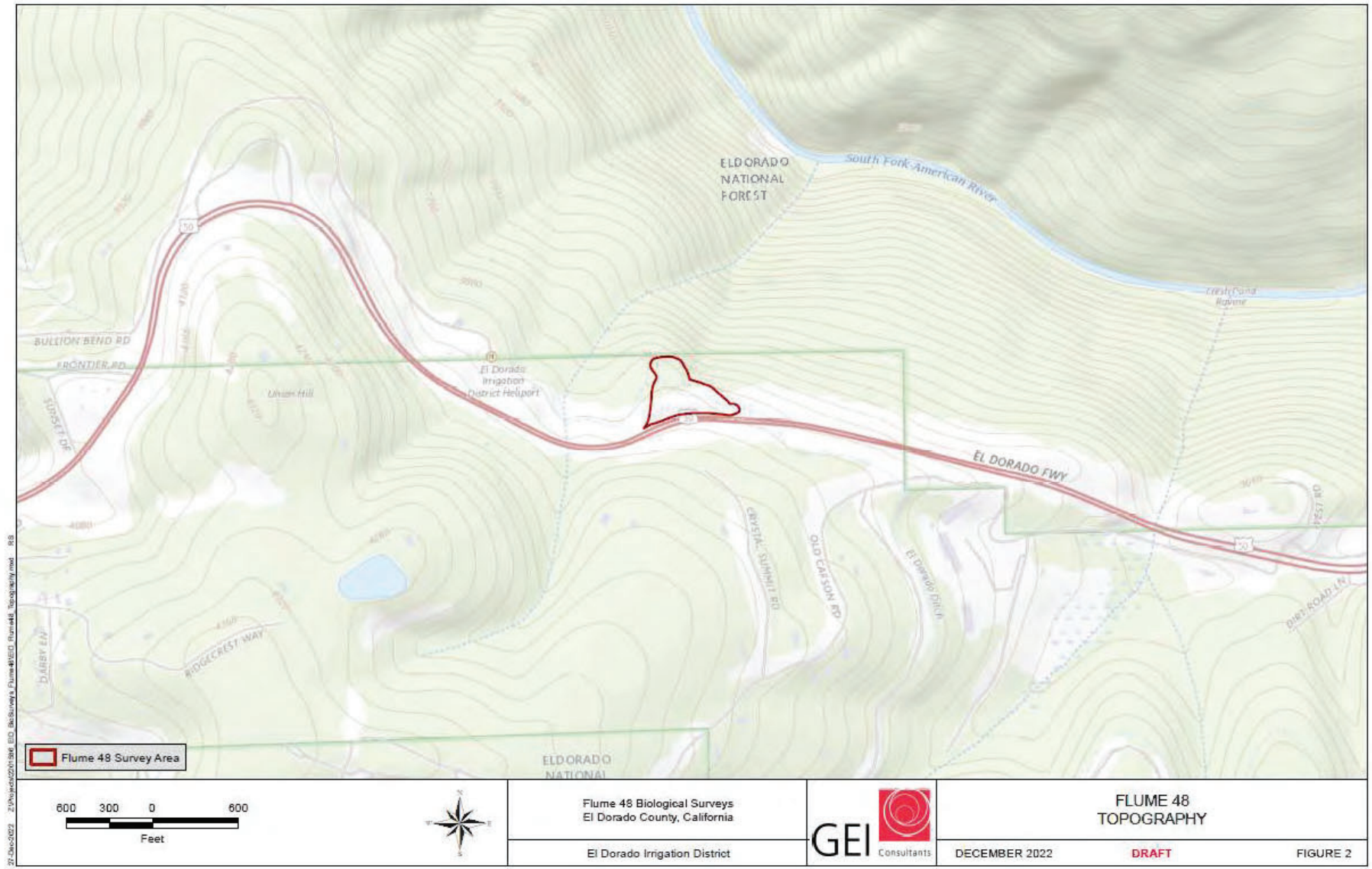
Figure 5. California Natural Diversity Database Occurrences of Spotted Owl within 5 Miles of the Project Site

Figure 1. Regional Location



Source: GEI Consultants, Inc. 2022

Figure 2. Topographic Map



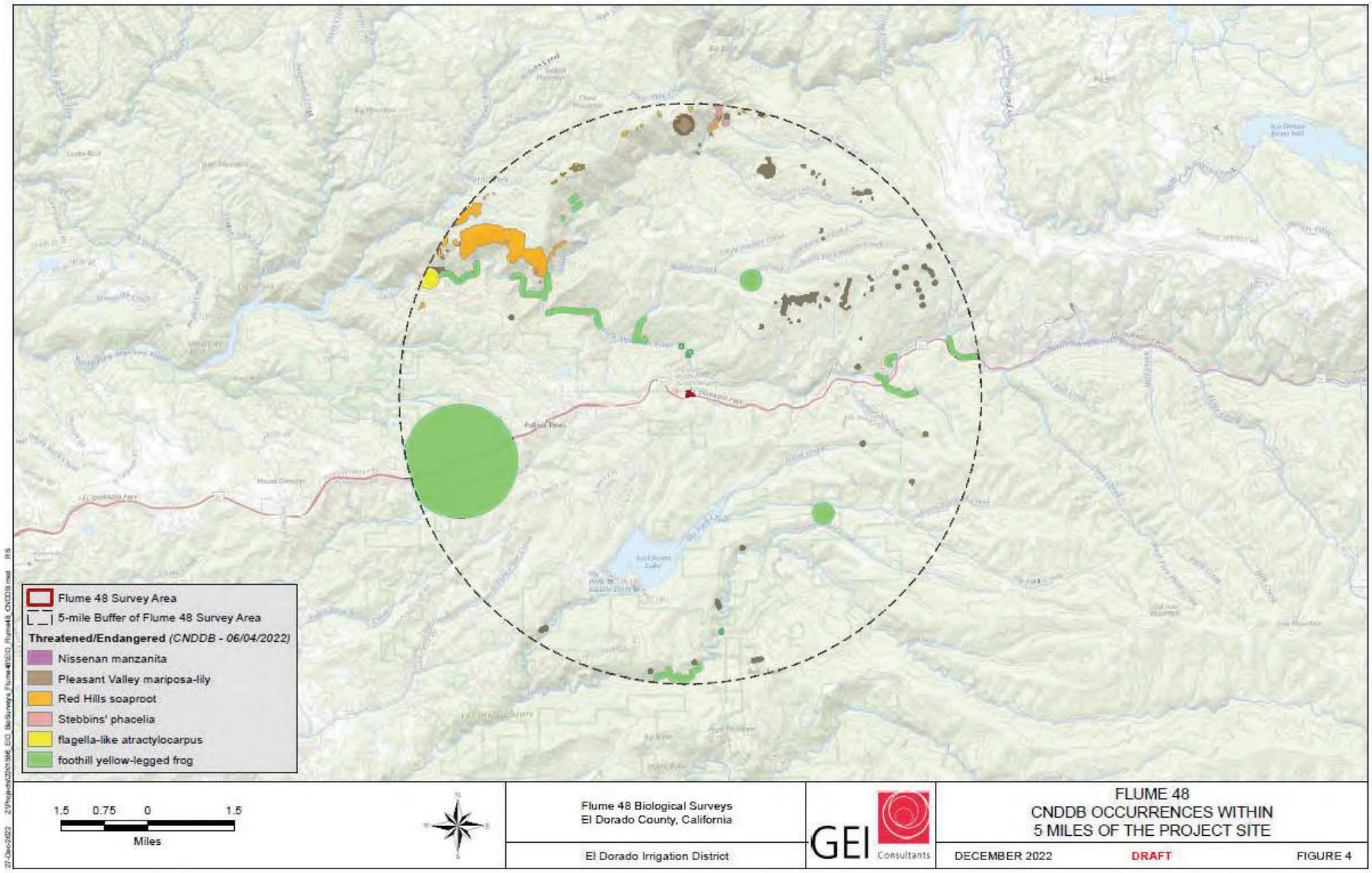
Source: GEI Consultants, Inc. 2022

Figure 3. Habitat Types on the Project Site



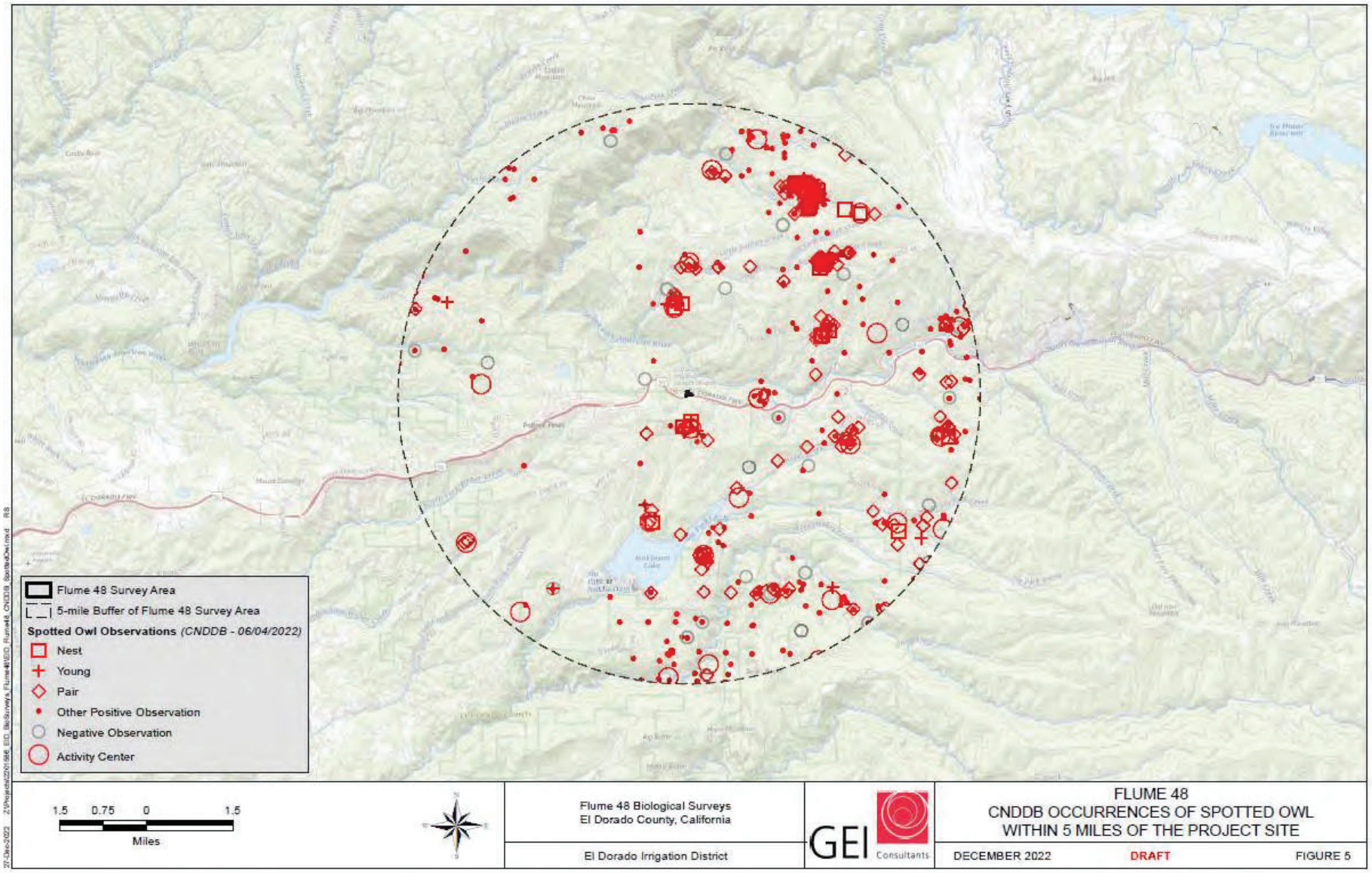
Source: GEI Consultants, Inc. 2022

Figure 4. California Natural Diversity Database Occurrences within 5 Miles of Project Site



Source: GEI Consultants, Inc. 2022

Figure 5. California Natural Diversity Database Occurrences of Spotted Owl within 5 Miles of Project Site



Source: GEI Consultants, Inc. 2022

Attachment B

Special-status Species Lists

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:
Project Code: 2022-0079365
Project Name: Flume 48

August 26, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Project Summary

Project Code: 2022-0079365
Project Name: Flume 48
Project Type: Irrigation
Project Description: water conveyence
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.7641822,-120.5433615410092,14z



Counties: El Dorado County, California

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Pollock Pines (3812075) OR Slate Mtn. (3812076) OR Tunnel Hill (3812086) OR Devil Peak (3812085) OR Robbs Peak (3812084) OR Riverton (3812074) OR Old Iron Mountain (3812064) OR Sly Park (3812065) OR Camino (3812066))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter gentilis northern goshawk	ABNKC12060	None	None	G5	S3	SSC
Ambystoma macrodactylum sigillatum southern long-toed salamander	AAAAA01085	None	None	G5T4	S3	SSC
Aplodontia rufa californica Sierra Nevada mountain beaver	AMAFA01013	None	None	G5T3T4	S2S3	SSC
Arctostaphylos nissenana Nissenan manzanita	PDERI040V0	None	None	G1	S1	1B.2
Atractelmis wawona Wawona riffle beetle	IICOL58010	None	None	G3	S1S2	
Bombus occidentalis western bumble bee	IIHYM24250	None	None	G2G3	S1	
Botrychium ascendens upswept moonwort	PPOPH010S0	None	None	G3G4	S2	2B.3
Botrychium crenulatum scalloped moonwort	PPOPH010L0	None	None	G4	S3	2B.2
Botrychium minganense Mingan moonwort	PPOPH010R0	None	None	G4G5	S3	2B.2
Calochortus clavatus var. avius Pleasant Valley mariposa-lily	PMLIL0D095	None	None	G4T2	S2	1B.2
Campylopodiella stenocarpa flagella-like atractylocarpus	NBMUS84010	None	None	G5	S1?	2B.2
Carex cyrtostachya Sierra arching sedge	PMCYP03M00	None	None	G2	S2	1B.2
Central Valley Drainage Hardhead/Squawfish Stream Central Valley Drainage Hardhead/Squawfish Stream	CARA2443CA	None	None	GNR	SNR	
Central Valley Drainage Resident Rainbow Trout Stream Central Valley Drainage Resident Rainbow Trout Stream	CARA2421CA	None	None	GNR	SNR	
Central Valley Drainage Spring Stream Central Valley Drainage Spring Stream	CARA2413CA	None	None	GNR	SNR	
Chlorogalum grandiflorum Red Hills soaproot	PMLIL0G020	None	None	G3	S3	1B.2
Clarkia biloba ssp. brandegeeae Brandegee's clarkia	PDONA05053	None	None	G4G5T4	S4	4.2
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Cosumnoperla hypocrena Cosumnes stripetail	IIPLE23020	None	None	G2	S2	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Haliaeetus leucocephalus bald eagle	ABNKC10010	Delisted	Endangered	G5	S3	FP
Horkelia parryi Parry's horkelia	PDROS0W0C0	None	None	G2	S2	1B.2
Lasionycteris noctivagans silver-haired bat	AMACC02010	None	None	G3G4	S3S4	
Lasiurus cinereus hoary bat	AMACC05030	None	None	G3G4	S4	
Lewisia serrata saw-toothed lewisia	PDPOR040E0	None	None	G2	S2	1B.1
Monadenia mormonum buttoni Button's Sierra sideband	IMGASC7071	None	None	G2T1	S1S2	
Myotis thysanodes fringed myotis	AMACC01090	None	None	G4	S3	
Myotis volans long-legged myotis	AMACC01110	None	None	G4G5	S3	
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Nebria darlingtoni South Forks ground beetle	IICOL6L100	None	None	G1	S1	
Orobittacus obscurus gold rush hanging scorpionfly	IIMEC07010	None	None	G1	S1	
Pekania pennanti Fisher	AMAJF01020	None	None	G5	S2S3	SSC
Phacelia stebbinsii Stebbins' phacelia	PDHYD0C4D0	None	None	G3	S3	1B.2
Poa sierrae Sierra blue grass	PMPOA4Z310	None	None	G3	S3	1B.3
Rana boylii foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Rana sierrae Sierra Nevada yellow-legged frog	AAABH01340	Endangered	Threatened	G1	S1	WL
Rhynchospora capitellata brownish beaked-rush	PMCYP0N080	None	None	G5	S1	2B.2
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Sacramento-San Joaquin Foothill/Valley Ephemeral Stream	CARA2130CA	None	None	GNR	SNR	
Sacramento-San Joaquin Foothill/Valley Ephemeral Stream						
Sphagnum Bog	CTT51110CA	None	None	G3	S1.2	
Sphagnum Bog						
Stygobromus grahami	ICMAL05920	None	None	G2	S2	
Graham's Cave amphipod						
Viola tomentosa	PDVIO04280	None	None	G3	S3	4.2
felt-leaved violet						
Vulpes vulpes necator pop. 2	AMAJA03017	Endangered	Threatened	G5TNR	S1	
Sierra Nevada red fox - Sierra Nevada DPS						

Record Count: 44

CNPS Rare Plant Inventory

CALIFORNIA NATIVE PLANT SOCIETY

Search Results

38 matches found. Click on scientific name for details

Search Criteria: Quad is one of [3812075:3812076:3812086:3812085:3812084:3812074:3812064:3812065:3812066]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	FED LIST	STATE LIST	CA RARE PLANT RANK
Allium sanbornii var. congdonii	Congdon's onion	Alliaceae	perennial bulbiferous herb	None	None	4.3
Allium sanbornii var. sanbornii	Sanborn's onion	Alliaceae	perennial bulbiferous herb	None	None	4.2
Arctostaphylos nissenana	Nissenan manzanita	Ericaceae	perennial evergreen shrub	None	None	1B.2
Bolandra californica	Sierra bolandra	Saxifragaceae	perennial herb	None	None	4.3
Botrychium ascendens	upswept moonwort	Ophioglossaceae	perennial rhizomatous herb	None	None	2B.3
Botrychium crenulatum	scalloped moonwort	Ophioglossaceae	perennial rhizomatous herb	None	None	2B.2
Botrychium minganense	Mingan moonwort	Ophioglossaceae	perennial rhizomatous herb	None	None	2B.2
Calochortus clavatus var. avius	Pleasant Valley mariposa-lily	Liliaceae	perennial bulbiferous herb	None	None	1B.2
Campylopodiella stenocarpa	flagella-like atractylocarpus	Dicranaceae	moss	None	None	2B.2
Carex cyrtostachya	Sierra arching sedge	Cyperaceae	perennial herb	None	None	1B.2
Ceanothus fresnensis	Fresno ceanothus	Rhamnaceae	perennial evergreen shrub	None	None	4.3
Chlorogalum grandiflorum	Red Hills soaproot	Agavaceae	perennial bulbiferous herb	None	None	1B.2
Clarkia biloba ssp. *brandegeeae*	Brandegee's clarkia	Onagraceae	annual herb	None	None	4.2
Clarkia virgata	Sierra clarkia	Onagraceae	annual herb	None	None	4.3
Claytonia palustris	marsh claytonia	Montiaceae	perennial herb	None	None	4.3
Claytonia parviflora ssp. *grandiflora*	streambank spring beauty	Montiaceae	annual herb	None	None	4.2
Erigeron petrophilus var. sierrensis	northern Sierra daisy	Asteraceae	perennial rhizomatous herb	None	None	4.3
Eriogonum ovalifolium var. eximium	brown-margined buckwheat	Polygonaceae	perennial herb	None	None	4.3
Eriophorum gracile	slender cottongrass	Cyperaceae	perennial rhizomatous herb (emergent)	None	None	4.3
Githopsis pulchella ssp. *serpentinicola*	serpentine bluecup	Campanulaceae	annual herb	None	None	4.3
Horkelia parryi	Parry's horkelia	Rosaceae	perennial herb	None	None	1B.2
Jensia yosemitana	Yosemite tarplant	Asteraceae	annual herb	None	None	3.2
Juncus digitatus	finger rush	Juncaceae	annual herb	None	None	1B.1
Lewisia kelloggii ssp. *hutchisonii*	Hutchison's lewisia	Montiaceae	perennial herb	None	None	3.2
Lewisia serrata	saw-toothed lewisia	Montiaceae	perennial herb	None	None	1B.1
Lilium humboldtii	Humboldt lily	Liliaceae	perennial bulbiferous herb	None	None	4.2

Lilium humboldtii ssp. *humboldtii*	Humboldt lily	Liliaceae	perennial bulbiferous herb	None	None	4.2
Myrica hartwegii	Sierra sweet bay	Myricaceae	perennial deciduous shrub	None	None	4.3
Navarretia prolifera ssp. *lutea*	yellow bur navarretia	Polemoniaceae	annual herb	None	None	4.3
Peltigera gowardii	western waterfan lichen	Peltigeraceae	foliose lichen (aquatic)	None	None	4.2
Phacelia stebbinsii	Stebbins' phacelia	Hydrophyllaceae	annual herb	None	None	1B.2
Piperia colemanii	Coleman's rein orchid	Orchidaceae	perennial herb	None	None	4.3
Poa sierrae	Sierra blue grass	Poaceae	perennial rhizomatous herb	None	None	1B.3
Primula pauciflora	beautiful shootingstar	Primulaceae	perennial herb	None	None	4.2
Pseudostellaria sierrae	Sierra starwort	Caryophyllaceae	perennial rhizomatous herb	None	None	4.2
Rhynchospora capitellata	brownish beaked-rush	Cyperaceae	perennial herb	None	None	2B.2
Stellaria obtusa	obtuse starwort	Caryophyllaceae	perennial rhizomatous herb	None	None	4.3
Streptanthus longisiliquus	long-fruit jewelflower	Brassicaceae	perennial herb	None	None	4.3
Viola tomentosa	felt-leaved violet	Violaceae	perennial herb	None	None	4.2

Showing 1 to 38 of 38 entries

Suggested Citation:
California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website https://www.rareplants.cnps.org [accessed 16 May 2022].

CONTACT US

Send questions and comments to rareplants@cnps.org.

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CONTRIBUTORS

The Calflora Database
The California Lichen Society
California Natural Diversity Database
The Jepson Flora Project
The Consortium of California Herbaria
CalPhotos

Developed by Rincon Consultants, Inc.

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USDA Forest Service, Pacific Southwest Region
El Dorado Forest Sensitive Plant Species List

2013 FS R5 RF Sensitive Plant Species List	Eldorado NF
Scientific Name (Common Name)	
Allium tribracteatum (three-bracted onion)	X
Arctostaphylos nissenana (Nissenan manzanita)	X
Balsamorhiza macrolepis (big-scale balsamroot)	X
Botrychium ascendens (upswept moonwort)	X
Botrychium crenulatum (scalloped moonwort)	X
Botrychium lunaria (common moonwort)	X
Botrychium minganense (mingan moonwort)	X
Botrychium montanum (western goblin)	X
Botrychium paradoxum (paradox moonwort)	X
Botrychium pedunculosum (stalked moonwort)	X
Bruchia bolanderi (Bolander's bruchia)	X
Calochortus clavatus var. *avius* (Pleasant Valley mariposa-lily)	X
Cypripedium montanum (mountain lady's-slipper)	X
Draba asterophora var. *asterophora* (Tahoe draba)	X
Draba asterophora var. *macrocarpa* (Cup Lake draba)	X
Eriogonum luteolum var. *saltuarium* (Jack's wild buckwheat)	X
Eriogonum tripodum (tripod buckwheat)	X
Helodium blandowii (Blandow's bog moss)	X
Horkelia parryi (Parry's horkelia)	X
Lewisia kelloggii ssp. *hutchisonii* (Hutchison's lewisia)	X
Lewisia kelloggii ssp. *kelloggii* (Kellogg's lewisia)	X
Lewisia longipetala (long-petaled lewisia)	X
Lewisia serrata (saw-toothed lewisia)	X
Meesia uliginosa (broad-nerved hump-moss)	X
Monardella linoides ssp. *oblonga* (Tehachapi monardella)	X
Navarretia prolifera ssp. *lutea* (yellow bur navarretia)	X
Ophioglossum pusillum (northern adder's tongue)	X
Peltigera gowardii (veined water lichen)	X
Phacelia stebbinsii (Stebbins' phacelia)	X
Pinus albicaulis (whitebark pine)	X
Poa sierrae (Sierra blue grass)	X

Source: U.S. Forest Service. September 9, 2013a.

USDA Forest Service, Pacific Southwest Region El Dorado Forest Sensitive Wildlife Species List	
INVERTEBRATES, TERRESTRIAL (1)	
Bombus occidentalis	Western bumble bee
BIRDS (5)	
Accipiter gentilis	Northern goshawk
Empidonax traillii	Willow flycatcher
Haliaeetus leucocephalus	Bald eagle
Strix nebulosa	Great gray owl
Strix occidentalis occidentalis	California spotted owl
AMPHIBIANS (4)	
Anaxyrus canorus	Yosemite toad
Rana boylii	Foothill yellow-legged frog
Rana sierrae	Sierra Nevada yellow-legged frog
Emys marmorata	Western pond turtle
MAMMALS (6)	
Antrozous pallidus	Pallid bat
Corynorhinus townsendii	Townsend's big-eared bat
Gulo gulo luscus	North American wolverine
Martes caurina	Pacific marten
Pekania pennanti	Fisher
Myotis thysanodes	Fringed myotis
FISHES (2)	
Entosphenus tridentatus	Pacific lamprey
Mylopharodon conocephalus	Hardhead

Source: U.S. Forest Service. September 9, 2013b.

Attachment C

Representative Photographs



View of Flume 48 project site from below, facing west.



View of access road to project site, facing northeast.



View of staging area in project site, facing east.



View of north-facing intermittent drainage in the project site below Flume 48, facing east.



View of ephemeral drainage in project site, facing northeast toward South Fork American River.



View of steep, rocky slopes of ephemeral drainage in eastern portion of project site, facing northeast.

Attachment D

Lists of Plant and Wildlife Species Observed during the Field Survey

Plant Species Observed at the Flume 48 Project Site (June 21, 2022)		
Scientific Name[1]	**Common Name**	**Native?**
APIACEAE		
Lomatium californicum	California lomatium	yes
Osmorhiza berteroi	Sweet cicely	yes
Torilis arvensis	Field hedge parsley	no
ASTERACEAE		
Adenocaulon bicolor	Trail plant	yes
Agoseris grandiflora var. *grandiflora*	Giant mountain dandelion	yes
Artemisia douglasiana	Mugwort	yes
Eriophyllum lanatum	Common woolly sunflower	yes
Madia gracilis	Grassy tarweed	yes
Sonchus oleraceus	Sow thistle	no
BETULACEAE		
Corylus cornuta ssp. *californica*	Beaked hazelnut	yes
BORAGINACEAE		
Draperia systyla	Violet draperia	yes
Hydrophyllum occidentale	California waterleaf	yes
Nemophila heterophylla	Variable leaved nemophila	yes
BRASSICACEAE		
Erysimum capitatum	Western wallflower	yes
CARYOPHYLLACEAE		
Cerastium glomeratum	Large mouse ears	no
Stellaria media	Chickweed	no
CUPRESSACEAE		
Calocedrus decurrens	Incense cedar	yes
CYPERACEAE		
Carex sp. (Group 10)[2]	Sedge	yes
Carex sp. (Group 11)[3]	Sedge	yes
DRYOPTERIDACEAE		
Polystichum munitum	Western sword fern	yes
FAGACEAE		
Quercus chrysolepis	Canyon live oak	yes
Quercus kelloggii	California black oak	yes
HYDROPHYLLACEAE		
Nemophila heterophylla	Variable leaved nemophila	yes
Phacelia heterophylla var. *virgata*	Varied leaf phacelia	yes
MONTIACEAE		
Claytonia parviflora	Narrow leaved miner's lettuce	yes
ONAGRACEAE		
Clarkia rhomboidea	Diamond clarkia	yes
PINACEAE		
Pinus ponderosa	Ponderosa pine	yes
Pseudotsuga menziesii	Douglas fir	yes
PHRYMACEAE		

Plant Species Observed at the Flume 48 Project Site (June 21, 2022)		
Scientific Name[1]	**Common Name**	**Native?**
Erythranthe guttata	Seep monkey flower	yes
PLANTAGINACEAE		
Collinsia parviflora	Few flowered blue eyed mary	yes
Collinsia tinctoria	Tincture plant	yes
POACEAE		
Elymus glaucus ssp. *glaucus*	Blue wildrye	yes
Poa bolanderi	Bolander's blue grass	yes
POLEMONIACEAE		
Gilia capitata ssp. *mediomontana*	Blue field gilia	yes
Collomia grandiflora	Large flowered collomia	yes
Collomia heterophylla	Variableleaf collomia	yes
ROSACEAE		
Drymocallis glandulosa	Sticky cinquefoil	yes
Rubus glaucifolius	Wax leaf raspberry	yes
Rubus parviflorus	Western thimbleberry	yes
RUBIACEAE		
Galium aparine	Common bedstraw	yes
RUSCACEAE		
Maianthemum racemosum	Feathery false lily of the valley	yes
SAPINDACEAE		
Acer macrophyllum	Bigleaf maple	yes
SAXIFRAGACEAE		
Heuchera micrantha	Alum root	yes
SCROPHULARIACEAE		
Verbascum thapsus	Woolly mullein	no
WOODSIACEAE		
Cystopteris fragilis	Bladder fern	yes

Notes:

[1]Scientific name is based on: Jepson Flora Project. 2022. *Jepson eFlora*, The Jepson Herbarium, University of California, Berkeley. Available at https://ucjeps.berkeley.edu/eflora/. Accessed July 2022.

[2]Several sedge (*Carex* sp.) were observed growing in moist areas on and under the flume structure near the southern half of the project site. This sedge belongs to Group 10, so it is not the special-status target species, Sierra arching sedge (*Carex cyrtostachya*), which is in Group 1 and 4.

[3]This sedge (*Carex* sp.) was observed growing on a dry upland slope in the project site. This sedge belongs to Group 11, so it is not the special-status target species, Sierra arching sedge (*Carex cyrtostachya*), which is in Group 1 and 4.

Wildlife Species Observed – June 21, 2022	
Scientific Name	**Common Name**
Invertebrates	
Adelpha californica	California sister
Birds	
Colaptes auratus	Norther flicker
Corvus brachyrhynchos	American crow
Cyanocitta stelleri	Steller's jay
Dryocopus pileatus	Pileated woodpecker
Junco hyemalis	Dark-eyed junco
Pipilo maculatus	Spotted towhee
Poecile rufescens	Chestnut-backed chickadee
Psaltriparus minimus	Bushtit
Zenaida macroura	Mourning dove

ATTACHMENT B

Wetland Assessment

Memorandum

To: Michael Baron, El Dorado Irrigation District

From: Eric Htain

cc:

Date: July 11, 2023

Re: Wetland Assessment for Flume 48

Introduction

GEI, Inc. (GEI) has been supporting the El Dorado Irrigation District (District) with biological resources surveys along the El Dorado Canal in the location of Flume 48. GEI conducted a constraints-level mapping survey at the Flume 48 project site in June 2022. During the 2022 surveys, GEI biologists observed and noted three areas downslope of Flume 48 that appeared to be potential drainages that convey water. Based on this observation, the District has requested GEI to conduct a wetland assessment of the potential drainage to determine if the feature has the potential to be subject to jurisdiction by resources agencies.

Methodology

GEI biologists Devin Barry and Summer Pardo conducted a wetland assessment in the project site on May 19, 2023. The wetland assessment consisted of walking the project site, taking photographs of any potential drainage feature, and conducting a vegetative and hydrologic assessment of the features. For the vegetative assessment, observation and characterization of vegetation within potential drainage features was conducted. Vegetative species were identified to specific epithet and compared to the 2020 National Wetland Plant List (USACE 2022) to determine if the plants were hydrophytic, which would meet the U.S. Army Corps of Engineers (USACE) definition for wetland plants. For the hydrologic assessment, potential drainage features were examined for evidence of flow, erosion and drainage patterns in the soil, and a defined drainage channel.

Results

The flume located in the northern portion of the project site slopes gradually east to west, with steep north-facing slopes on both sides of the flume. No potential drainages were identified in the project site during the May 2023 site visit. The potential drainages previously observed as surface waters during 2022 surveys was determined to originate from a leak in the elevated flume. Moisture from water leaking from the flume created a small patch downslope with riparian species such as arroyo willow (*Salix lasiolepis*) and alumroot (*Heuchera rubescens*). Additionally, there was no evidence of a flow or water conveyance from a drainage upslope of the flume. Representative photographs of the area provided below.

Conclusion

Based on the wetland assessment, GEI considers the potential drainage features identified in the Flume 48 project site to not be jurisdictional waterbodies subject to regulation by the regulatory agencies. These features that were observed may be the result of small landslides on the steep slopes, or as a result of leaks from the canal. No evidence of a swale, drainage, or seep was observed above

the flume. Therefore, there is no contributing water or flow from above the flume that would be providing the conditions of moisture and vegetation growth to the downstream potential drainage feature. It is GEI's assessment that the moisture and vegetation observed comes from periodic spillage or leaks of water from the El Dorado Canal.

References Cited:

U.S. Army Corps of Engineers (USACE). 2020. National Wetland Plant List, version 3.5. U.S. Army Corps of Engineers Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH. *Available:* http://wetland-plants.usace.army.mil/.

Attachments:

Representative Photographs

REPRESENTATIVE PHOTOGRAPHS



Photograph 1: View looking downslope flume abutment elevated above the area of the leak.



Photograph 2: View facing northeast looking at the moisture originating from a leak in the flume.

El Dorado Irrigation District

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT AND INITIAL STUDY FOR THE FLUME 48 UTILITY AND INFRASTRUCTURE REPLACEMENT PROJECT

In accordance with the provisions of the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq., and the State CEQA Guidelines, California Code of Regulations, Title 15, Section 15000 et seq., the El Dorado Irrigation District (District) will be preparing a Draft Environmental Impact Report (EIR) for the proposed Flume 48 Utility and Infrastructure Replacement Project (Project). The purpose of this Notice of Preparation and Initial Study (NOP/IS) is to provide an opportunity for the public, interested parties, and public agencies to comment on the scope and proposed content of the Draft EIR. If you are a Responsible or Trustee Agency with jurisdiction by law over natural resources held in public trust, the District requests that you identify any relevant environmental information related to your statutory responsibilities that should be included in the Draft EIR.

The Project would replace approximately 448 linear feet of an existing wooden flume (i.e., Flume 48), which is highly susceptible to damage from wildfire and other natural hazards, with a more durable ignition resistant concrete conveyance structure (i.e., cast-in-place or precast concrete flume). Flume 48 is part of District's Federal Energy Regulatory Commission Project 184, which consists of a series of dams, canals, flumes, siphons, a penstock, and a powerhouse that deliver water from the South Fork of the American River for drinking water and power generation.

The Project would include mobilization, access improvements and site preparation, demolition and disposal of the existing wood structure, clearing and grubbing vegetation within the work area, stabilization of the existing rock wall foundation or construction of a new foundation using mechanically stabilized earth wall, and construction of the new concrete conveyance structure. The Project would also include retrofitting an existing spillway structure into the new concrete conveyance, installation of metal walkways and handrails to facilitate future maintenance and inspection along the flume, and implementation of permanent slope stabilization measures (e.g., hazard tree removal, slope/rock scaling, rock fall protection) as necessary to stabilize areas upslope of the new structure. A complete description of the Project and an identification of probable environmental effects of the Project are provided in the NOP/IS.

Based on the results of the IS, the District has determined that the Project may result in potentially significant environmental effects and, consequently, an EIR is required. The Draft EIR will address the full range of potentially significant environmental effects of the Project and feasible alternatives to the Project that meet CEQA requirements.

DOCUMENT REVIEW AND AVAILABILITY: The public review period begins on Thursday, December 19, 2024 and ends on Thursday, January 30, 2025 at 5:00 P.M. A copy of the NOP/IS is available for public review at 2890 Mosquito Road, Placerville, CA 95667, or online at **www.EID.org/CEQA**.

COMMENTS: Submit comments by email to **Flume48NOP@EID.org, include "Flume 48 NOP-Comment" in the subject line**. If applicable, also include the name of a contact person in your agency. Comments may also be submitted to El Dorado Irrigation District, FLUME 48 NOP, ATTN: Brian Deason, Environmental Resources Supervisor, 2890 Mosquito Road, Placerville, CA 95667 **Comments must be received no later than 5:00 P.M. on January 30, 2025**.

In accordance with the Americans with Disabilities Act (ADA) and California law, it is the policy of the El Dorado Irrigation District (EID) to offer its public programs, services and meetings in a manner that is readily accessible to everyone, including individuals with disabilities. If you are a person with a disability and require information or materials in an appropriate alternative format; or if you require any other accommodation for this notice, please contact the EID ADA coordinator at 530-642-4045 or e-mail at adacoordinator@eid.org. Advance notification within this guideline will enable the District to make reasonable accommodations to ensure accessibility.

California Department of Transportation

DISTRICT 3
703 B STREET | MARYSVILLE, CA 95901-5556
(530) 821-8401
www.dot.ca.gov/dist3

January 17, 2025

GTS# 03-ED-2024-00381
SCH#2024120943

Mr. Brian Deason
Environmental Resources Supervisor
El Dorado Irrigation District
2890 Mosquito Road
Placerville, CA 95667

Flume 48 Utility and Infrastructure Replacement Project

Dear Mr. Deason:

Thank you for including the California Department of Transportation (Caltrans) in the review process for the project referenced above. We reviewed this local development for impacts to the State Highway System (SHS) in keeping with our mission, vision, and goals, some of which includes addressing equity, climate change, and safety, as outlined in our statewide plans such as the California Transportation Plan, Caltrans Strategic Plan, and Climate Action Plan for Transportation Infrastructure.

The project is located on U.S. Geological Survey 7.5 Quadrangle, next to US 50 in Pollock Pines, California, Sections 32 and 33, Township 11N, Range 13E. The Project would replace approximately 448 linear feet of an existing wooden flume, which is highly susceptible to damage from wildfire and other natural hazards, with a more durable ignition resistant concrete conveyance structure. The Project would include mobilization, access improvements and site preparation, demolition, and disposal of the existing wood structure, clearing and grubbing vegetation within the work area, stabilization of the existing rock wall foundation or construction of a new foundation using mechanically stabilized earth wall, and construction of the new concrete conveyance structure. The Project would also include retrofitting an existing spillway structure into the new concrete conveyance, installation of metal walkways and handrails to facilitate future maintenance and inspection along the flume, and implementation of permanent slope stabilization measures (e.g., hazard tree removal, slope/rock scaling, rock fall protection) as necessary to stabilize areas upslope of the new structure. Based on the Notice of Preparation of a Draft Environmental Impact Report (EIR) and Initial Study provided, Caltrans has the following requests and recommendations:

Right of Way

The planned improvements seem well outside state right of way (ROW), if future plans need to show Caltrans ROW, maps have been provided, if further mapping is needed, please contact District 3 ROW Front Map Counter: d3rwmaprequest@dot.ca.gov.

Hydraulics

At this stage, a comprehensive project plan for US 50 has not been submitted. As a result, we are unable to provide detailed comments on hydraulics at this time. Once the complete plan is available, we will conduct a thorough review and provide feedback on any potential hydraulic impacts on the highway.

Encroachment Permit

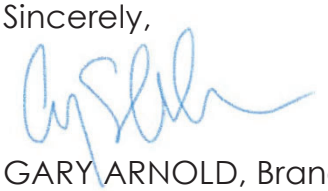
Any project or work, including access modification and drainage work, that takes place along or within the State's ROW requires an encroachment permit issued by Caltrans. To apply, a completed encroachment permit application, environmental documentation, and five sets of plans clearly indicating State ROW must be submitted to Encroachment Permits Offices as indicated below:

Hikmat Bsaibess
California Department of Transportation
District 3, Office of Permits
703 B Street
Marysville, CA 95901
D3encpermit@dot.ca.gov

Please provide our office with copies of any further actions regarding this proposal. We would appreciate the opportunity to review and comment on any changes related to this development.

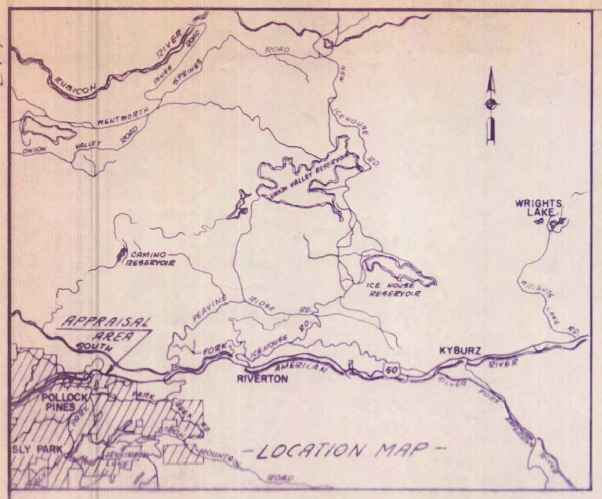
If you have any question regarding these comments or require additional information, please contact Satwinder Dhatt, Local Development Review Coordinator, by phone (530) 821-8261 or via email at D3.Local.Development@dot.ca.gov.

Sincerely,



GARY ARNOLD, Branch Chief
Local Development Review and Complete Streets
Division of Planning, Local Assistance, and Sustainability
California Department of Transportation, District 3

T.11N.-R.13E.-M.D.B.&M.



SECTION LINE

A.J. RUPLEY
5889

5889-A

29 28
32 33

Old R/W Line

℄ of Survey

S76°18'E - 1259.22'

PM 33+50

N89°30'40"E

S83°52'E - 394.11'

028933

028932

028934

127+85.27 PRS

125+82.46 PCS

Δ=51°46'
Ts=442.18'
Δc=35°10'
Rc=700'
Lc=429.64'
Δs=8°18'
Ls=202.81'

R/W Line

137+54.01 PC

Δ=7°34'
R=2800'
T=185.16'
L=369.78'

141+33.49 PT BK
141+23.79 PT AH
EQUATION

133+59.90 PT.

131+57.09 PCS

129+88.08 PSC

Δ=30°26'
Ts=394.21'
Δc=135°
Rc=700'
Lc=169.01'
Ds=8°18'
Ls=202.81'

5889

A.J. RUPLEY

5883-A

PG&E CAMP NO. 5

6078-A

19+56.61 PS

Δ=8°18'
L=202.81'

S62°34'E Bk
S62°32'E Ahd
BEARING EQUATION
E06.97'

Ch=S66°18'E-202.02'

Old R/W Line

001041R

APPRAISAL PARCEL	GRANTOR	AREA	REMARKS
028932	R.L. HERRINGTON	0.37 AC	TEMP ACCESS ESMT
028933	B.N. CREAGMILE	1.73 AC	"
028934	K.A. BURGER	0.32 AC	

STATE OF CALIFORNIA
BUSINESS, TRANSPORTATION AND HOUSING AGENCY
DEPARTMENT OF TRANSPORTATION
DISTRICT 3
RIGHT OF WAY ENGINEERING

RIGHT OF WAY MAP

DISTRICT R/W ENGINEER

APPROVED

100 0 100 200

CO.	RTE	P.M.	DRAWING NUMBER
ED	50	33.8	4-32230-1

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January 2, 2025

Brian Deason
El Dorado Irrigation District
2890 Mosquito Road
Placerville CA 95667

Re: 2024120943 Flume 48 Utility and Infrastructure Replacement Project, El Dorado County

Dear Mr. Deason:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
   a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
   b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
   a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
   b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
   c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Pricilla.Torres-Fuentes@NAHC.ca.gov.

Sincerely,

Pricilla Torres-Fuentes

Pricilla Torres-Fuentes
Cultural Resources Analyst

cc: State Clearinghouse

29 January 2025

Brian Deason
El Dorado Irrigation District
2890 Mosquito Road
Placerville, CA 95667
bdeason@eid.org

COMMENTS TO REQUEST FOR REVIEW FOR THE NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, FLUME 48 UTILITY AND INFRASTRUCTURE REPLACEMENT PROJECT, SCH#2024120943, EL DORADO COUNTY

Pursuant to the State Clearinghouse's 19 December 2024 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Notice of Preparation for the Draft Environmental Impact Report* for the Flume 48 Utility and Infrastructure Replacement Project, located in El Dorado County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as

required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues. For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Implementation Policy is available on page 74 at:
https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.pdf

In part it states:

Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.

This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), Construction General Permit Order No. 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention

Plan (SWPPP). For more information on the Construction General Permit, visit the State Water Resources Control Board website at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACE). If a Section 404 permit is required by the USACE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements. If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications. For more information on the Water Quality Certification, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/

Waste Discharge Requirements – Discharges to Waters of the State

If USACE determines that only non-jurisdictional waters of the State (i.e., “non-federal” waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation. For more information on the Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at:https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/

Projects involving excavation or fill activities impacting less than 0.2 acre or 400 linear feet of non-jurisdictional waters of the state and projects involving dredging activities impacting less than 50 cubic yards of non-jurisdictional waters of the state may be eligible for coverage under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ (General Order 2004-0004). For more

information on the General Order 2004-0004, visit the State Water Resources Control Board website at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2004/wqo/wqo2004-0004.pdf

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Threat General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Threat Waiver) R5-2018-0085. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Threat Waiver and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2018-0085.pdf

Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Limited Threat Discharges to Surface Water* (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order. For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf

NPDES Permit

If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit. For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/help/permit/

If you have questions regarding these comments, please contact me at (916) 464-4684 or Peter.Minkel2@waterboards.ca.gov.



Peter G. Minkel
Engineering Geologist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

From: Deason, Brian
To: "Anna Starkey"
Subject: RE: FLUME 48 Utility and Replacement
Date: Tuesday, January 21, 2025 8:22:05 AM

Good morning, Anna,

The area provided in the notification is the extent of the project.

Thank you,

Brian Deason
Environmental Resources Supervisor
El Dorado Irrigation District
2890 Mosquito Road
Placerville, CA 95667
530-642-4064
bdeason@eid.org

From: Anna Starkey <astarkey@auburnrancheria.com>
Sent: Friday, January 17, 2025 3:38 PM
To: Deason, Brian <bdeason@eid.org>
Subject: FLUME 48 Utility and Replacement

Good afternoon,
Thank you for the notification and opportunity to consult. Will this project be part of a larger project or is the project area that was provided in the notification the extent?
This specific project area does not appear to be culturally sensitive for tribal resources and we show no recorded sites in or near it. However if there will be additional work done in other areas, we would want to consult due to the general cultural sensitivity of the area.

Thank you,
Anna

Anna M. Starkey, M.A., RPA
Cultural Regulatory Manager
Tribal Historic Preservation Department
United Auburn Indian Community of the Auburn Rancheria
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Nothing in this e-mail is intended to constitute an electronic signature for purposes of the Electronic Signatures in Global and National Commerce Act (E-Sign Act), 15, U.S.C. §§ 7001 to 7006 or the Uniform Electronic Transactions Act of any state or the federal government unless a specific statement to the contrary is included in this e-mail.

Appendix B

CalEEMod Output Files

Flume 48 v2 Detailed Report

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4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.2.2. Mitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.3.2. Mitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Flume 48 v2
Construction Start Date	8/3/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	55.8
Location	38.764096933530055, -120.54346592493548
County	El Dorado-Mountain County
City	Unincorporated
Air District	El Dorado County AQMD
Air Basin	Mountain Counties
TAZ	423
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Linear	0.09	Mile	2.00	0.00	—	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.24	1.22	9.56	56.5	0.10	0.20	26.7	26.9	0.20	2.95	3.14	—	11,054	11,054	0.43	0.12	1.80	11,103
Mit.	1.24	1.22	9.56	56.5	0.10	0.20	26.3	26.5	0.20	2.77	2.97	—	11,054	11,054	0.43	0.12	1.80	11,103
% Reduced	—	—	—	—	—	—	1%	1%	—	6%	5%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.85	3.81	33.4	203	0.38	0.72	108	109	0.72	31.4	32.1	—	40,920	40,920	1.53	0.86	0.18	41,215
Mit.	3.85	3.81	33.4	203	0.38	0.72	78.4	79.2	0.72	15.9	16.7	—	40,920	40,920	1.53	0.86	0.18	41,215
% Reduced	—	—	—	—	—	—	28%	27%	—	49%	48%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	0.66	0.65	5.29	33.1	0.06	0.11	13.5	13.6	0.11	3.05	3.17	—	6,490	6,490	0.25	0.10	0.42	6,526
Mit.	0.66	0.65	5.29	33.1	0.06	0.11	11.0	11.1	0.11	1.78	1.90	—	6,490	6,490	0.25	0.10	0.42	6,526
% Reduced	—	—	—	—	—	—	18%	18%	—	42%	40%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.12	0.12	0.96	6.03	0.01	0.02	2.46	2.48	0.02	0.56	0.58	—	1,074	1,074	0.04	0.02	0.07	1,080
Mit.	0.12	0.12	0.96	6.03	0.01	0.02	2.01	2.03	0.02	0.32	0.35	—	1,074	1,074	0.04	0.02	0.07	1,080
% Reduced	—	—	—	—	—	—	18%	18%	—	42%	40%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.24	1.22	9.56	56.5	0.10	0.20	26.7	26.9	0.20	2.95	3.14	—	11,054	11,054	0.43	0.12	1.80	11,103
2027	1.02	1.00	4.93	45.7	0.08	0.16	25.2	25.3	0.16	2.57	2.73	—	9,315	9,315	0.37	0.09	1.50	9,353
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.85	3.81	33.4	203	0.38	0.72	108	109	0.72	31.4	32.1	—	40,920	40,920	1.53	0.86	0.18	41,215
2027	2.94	2.93	16.9	148	0.26	0.51	69.9	70.4	0.51	15.2	15.7	—	28,473	28,473	1.14	0.27	0.08	28,581
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.66	0.65	5.29	33.1	0.06	0.11	13.5	13.6	0.11	3.05	3.17	—	6,490	6,490	0.25	0.10	0.42	6,526
2027	0.45	0.45	2.51	20.9	0.04	0.07	9.00	9.08	0.07	1.08	1.15	—	4,212	4,212	0.17	0.04	0.26	4,229
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.12	0.12	0.96	6.03	0.01	0.02	2.46	2.48	0.02	0.56	0.58	—	1,074	1,074	0.04	0.02	0.07	1,080
2027	0.08	0.08	0.46	3.82	0.01	0.01	1.64	1.66	0.01	0.20	0.21	—	697	697	0.03	0.01	0.04	700

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.24	1.22	9.56	56.5	0.10	0.20	26.3	26.5	0.20	2.77	2.97	—	11,054	11,054	0.43	0.12	1.80	11,103
2027	1.02	1.00	4.93	45.7	0.08	0.16	25.2	25.3	0.16	2.57	2.73	—	9,315	9,315	0.37	0.09	1.50	9,353
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.85	3.81	33.4	203	0.38	0.72	78.4	79.2	0.72	15.9	16.7	—	40,920	40,920	1.53	0.86	0.18	41,215
2027	2.94	2.93	16.9	148	0.26	0.51	57.9	58.4	0.51	9.06	9.57	—	28,473	28,473	1.14	0.27	0.08	28,581
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.66	0.65	5.29	33.1	0.06	0.11	11.0	11.1	0.11	1.78	1.90	—	6,490	6,490	0.25	0.10	0.42	6,526
2027	0.45	0.45	2.51	20.9	0.04	0.07	8.77	8.85	0.07	0.96	1.03	—	4,212	4,212	0.17	0.04	0.26	4,229
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.12	0.12	0.96	6.03	0.01	0.02	2.01	2.03	0.02	0.32	0.35	—	1,074	1,074	0.04	0.02	0.07	1,080
2027	0.08	0.08	0.46	3.82	0.01	0.01	1.60	1.61	0.01	0.17	0.19	—	697	697	0.03	0.01	0.04	700

3. Construction Emissions Details

3.1. Pre-Outage: A (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.69	0.69	6.77	36.5	0.07	0.13	—	0.13	0.13	—	0.13	—	6,972	6,972	0.28	0.06	—	6,996
Dust From Material Movement	—	—	—	—	—	—	0.55	0.55	—	0.28	0.28	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.10	0.10	0.95	5.10	0.01	0.02	—	0.02	0.02	—	0.02	—	974	974	0.04	0.01	—	977
Dust From Material Movement	—	—	—	—	—	—	0.08	0.08	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.02	0.02	0.17	0.93	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	161	161	0.01	< 0.005	—	162
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.12	2.36	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	440	440	0.01	0.02	1.59	447
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.20	0.02	< 0.005	< 0.005	1.32	1.32	< 0.005	0.14	0.14	—	131	131	< 0.005	0.02	0.21	138
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.26	0.00	0.00	2.94	2.94	0.00	0.30	0.30	—	56.6	56.6	< 0.005	< 0.005	0.10	57.4
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.03	< 0.005	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	18.3	18.3	< 0.005	< 0.005	0.01	19.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.54	0.54	0.00	0.05	0.05	—	9.37	9.37	< 0.005	< 0.005	0.02	9.50
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	3.04	3.04	< 0.005	< 0.005	< 0.005	3.18

3.2. Pre-Outage: A (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.69	0.69	6.77	36.5	0.07	0.13	—	0.13	0.13	—	0.13	—	6,972	6,972	0.28	0.06	—	6,996

Dust From Material Movement	—	—	—	—	—	—	0.21	0.21	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.10	0.95	5.10	0.01	0.02	—	0.02	0.02	—	0.02	—	974	974	0.04	0.01	—	977
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.17	0.93	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	161	161	0.01	< 0.005	—	162
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.12	2.36	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	440	440	0.01	0.02	1.59	447

Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.20	0.02	< 0.005	< 0.005	1.32	1.32	< 0.005	0.14	0.14	—	131	131	< 0.005	0.02	0.21	138
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.26	0.00	0.00	2.94	2.94	0.00	0.30	0.30	—	56.6	56.6	< 0.005	< 0.005	0.10	57.4
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.03	< 0.005	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	18.3	18.3	< 0.005	< 0.005	0.01	19.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.54	0.54	0.00	0.05	0.05	—	9.37	9.37	< 0.005	< 0.005	0.02	9.50
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	3.04	3.04	< 0.005	< 0.005	< 0.005	3.18

3.3. Pre-Outage: B (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	2.47	17.6	0.03	0.07	—	0.07	0.07	—	0.07	—	3,511	3,511	0.14	0.03	—	3,523
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.68	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	135	135	0.01	< 0.005	—	135
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	22.3	22.3	< 0.005	< 0.005	—	22.4
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.4. Pre-Outage: B (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	2.47	17.6	0.03	0.07	—	0.07	0.07	—	0.07	—	3,511	3,511	0.14	0.03	—	3,523
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.01	0.01	0.09	0.68	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	135	135	0.01	< 0.005	—	135
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	22.3	22.3	< 0.005	< 0.005	—	22.4
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.5. Pre-Outage: C (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.31	1.64	16.4	0.03	0.06	—	0.06	0.06	—	0.06	—	3,334	3,334	0.14	0.03	—	3,345
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.03	0.31	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	63.9	63.9	< 0.005	< 0.005	—	64.2
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.6	10.6	< 0.005	< 0.005	—	10.6
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.6. Pre-Outage: C (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.31	1.64	16.4	0.03	0.06	—	0.06	0.06	—	0.06	—	3,334	3,334	0.14	0.03	—	3,345
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.03	0.31	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	63.9	63.9	< 0.005	< 0.005	—	64.2
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.01	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.6	10.6	< 0.005	< 0.005	—	10.6
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.7. Phase 1 Construction: A (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.77	0.77	4.83	43.4	0.07	0.15	—	0.15	0.15	—	0.15	—	8,023	8,023	0.33	0.07	—	8,051
Dust From Material Movement	—	—	—	—	—	—	9.83	9.83	—	5.05	5.05	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.83	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	154	154	0.01	< 0.005	—	154
Dust From Material Movement	—	—	—	—	—	—	0.19	0.19	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.5	25.5	< 0.005	< 0.005	—	25.6

Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.14	0.01	< 0.005	< 0.005	0.87	0.87	< 0.005	0.09	0.09	—	86.9	86.9	< 0.005	0.01	< 0.005	91.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	1.67	1.67	< 0.005	< 0.005	< 0.005	1.75
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.28	0.28	< 0.005	< 0.005	< 0.005	0.29

3.8. Phase 1 Construction: A (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.77	0.77	4.83	43.4	0.07	0.15	—	0.15	0.15	—	0.15	—	8,023	8,023	0.33	0.07	—	8,051
Dust From Material Movement	—	—	—	—	—	—	3.83	3.83	—	1.97	1.97	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.83	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	154	154	0.01	< 0.005	—	154
Dust From Material Movement	—	—	—	—	—	—	0.07	0.07	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.5	25.5	< 0.005	< 0.005	—	25.6
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—

Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.14	0.01	< 0.005	< 0.005	0.87	0.87	< 0.005	0.09	0.09	—	86.9	86.9	< 0.005	0.01	< 0.005	91.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	1.67	1.67	< 0.005	< 0.005	< 0.005	1.75
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.28	0.28	< 0.005	< 0.005	< 0.005	0.29

3.9. Phase 1 Construction: B (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	1.19	1.19	15.0	61.3	0.12	0.21	—	0.21	0.21	—	0.21	—	11,954	11,954	0.48	0.10	—	11,995
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.05	0.05	0.58	2.35	< 0.005	0.01	—	0.01	0.01	—	0.01	—	459	459	0.02	< 0.005	—	460
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.01	0.01	0.11	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	75.9	75.9	< 0.005	< 0.005	—	76.2
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.16	0.16	1.85	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	396	396	0.01	0.02	0.04	401
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.81	0.81	0.00	0.08	0.08	—	15.5	15.5	< 0.005	< 0.005	0.03	15.8
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.15	0.15	0.00	0.02	0.02	—	2.57	2.57	< 0.005	< 0.005	< 0.005	2.61
Vendor	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	0.00
Hauling	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	0.00

3.10. Phase 1 Construction: B (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.19	1.19	15.0	61.3	0.12	0.21	—	0.21	0.21	—	0.21	—	11,954	11,954	0.48	0.10	—	11,995

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.05	0.58	2.35	< 0.005	0.01	—	0.01	0.01	—	0.01	—	459	459	0.02	< 0.005	—	460
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	75.9	75.9	< 0.005	< 0.005	—	76.2
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.16	0.16	1.85	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	396	396	0.01	0.02	0.04	401

Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.81	0.81	0.00	0.08	0.08	—	15.5	15.5	< 0.005	< 0.005	0.03	15.8
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.15	0.15	0.00	0.02	0.02	—	2.57	2.57	< 0.005	< 0.005	< 0.005	2.61
Vendor	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	0.00
Hauling	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	0.00

3.11. Phase 1 Construction: C (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.19	1.19	10.3	62.8	0.12	0.22	—	0.22	0.22	—	0.22	—	12,177	12,177	0.49	0.10	—	12,219
Dust From Material Movement	—	—	—	—	—	—	9.84	9.84	—	5.05	5.05	—	—	—	—	—	—	—
Onsite truck	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	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.07	0.59	3.61	0.01	0.01	—	0.01	0.01	—	0.01	—	701	701	0.03	0.01	—	703
Dust From Material Movement	—	—	—	—	—	—	0.57	0.57	—	0.29	0.29	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.66	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	116	116	< 0.005	< 0.005	—	116
Dust From Material Movement	—	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	0.05	0.04	2.99	0.31	0.02	0.02	18.2	18.2	0.02	1.88	1.90	—	1,813	1,813	0.01	0.29	0.07	1,899
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00

Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.17	0.02	< 0.005	< 0.005	0.89	0.89	< 0.005	0.09	0.09	—	104	104	< 0.005	0.02	0.07	109
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.03	< 0.005	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	17.3	17.3	< 0.005	< 0.005	0.01	18.1

3.12. Phase 1 Construction: C (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.19	1.19	10.3	62.8	0.12	0.22	—	0.22	0.22	—	0.22	—	12,177	12,177	0.49	0.10	—	12,219
Dust From Material Movement	—	—	—	—	—	—	3.84	3.84	—	1.97	1.97	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.07	0.59	3.61	0.01	0.01	—	0.01	0.01	—	0.01	—	701	701	0.03	0.01	—	703

Dust From Material Movement	—	—	—	—	—	—	0.22	0.22	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.66	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	116	116	< 0.005	< 0.005	—	116
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	0.05	0.04	2.99	0.31	0.02	0.02	18.2	18.2	0.02	1.88	1.90	—	1,813	1,813	0.01	0.29	0.07	1,899
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.17	0.02	< 0.005	< 0.005	0.89	0.89	< 0.005	0.09	0.09	—	104	104	< 0.005	0.02	0.07	109
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00

Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.03	< 0.005	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	17.3	17.3	< 0.005	< 0.005	0.01	18.1

3.13. Phase 1 Construction: D (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.00	1.00	5.87	53.2	0.10	0.20	—	0.20	0.20	—	0.20	—	10,597	10,597	0.43	0.09	—	10,634
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.11	1.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	203	203	0.01	< 0.005	—	204
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.19	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	33.6	33.6	< 0.005	< 0.005	—	33.8
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.16	0.16	1.85	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	396	396	0.01	0.02	0.04	401
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.40	0.40	0.00	0.04	0.04	—	7.77	7.77	< 0.005	< 0.005	0.01	7.88
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.07	0.07	0.00	0.01	0.01	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.30
Vendor	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	0.00
Hauling	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	0.00

3.14. Phase 1 Construction: D (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.00	1.00	5.87	53.2	0.10	0.20	—	0.20	0.20	—	0.20	—	10,597	10,597	0.43	0.09	—	10,634
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.11	1.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	203	203	0.01	< 0.005	—	204
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.19	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	33.6	33.6	< 0.005	< 0.005	—	33.8

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.16	0.16	1.85	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	396	396	0.01	0.02	0.04	401
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.40	0.40	0.00	0.04	0.04	—	7.77	7.77	< 0.005	< 0.005	0.01	7.88
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.07	0.07	0.00	0.01	0.01	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.30
Vendor	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	0.00
Hauling	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	0.00

3.15. Phase 1 Construction: E (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.39	2.39	17.4	137	0.23	0.46	—	0.46	0.46	—	0.46	—	24,931	24,931	1.01	0.20	—	25,016
Dust From Material Movement	—	—	—	—	—	—	39.3	39.3	—	20.2	20.2	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.20	1.43	11.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,049	2,049	0.08	0.02	—	2,056
Dust From Material Movement	—	—	—	—	—	—	3.23	3.23	—	1.66	1.66	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.26	2.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	339	339	0.01	< 0.005	—	340
Dust From Material Movement	—	—	—	—	—	—	0.59	0.59	—	0.30	0.30	—	—	—	—	—	—	—

Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.16	0.16	1.85	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	396	396	0.01	0.02	0.04	401
Vendor	< 0.005	< 0.005	0.13	0.02	< 0.005	< 0.005	1.02	1.02	< 0.005	0.11	0.11	—	82.5	82.5	< 0.005	0.01	< 0.005	86.3
Hauling	0.04	0.03	2.51	0.26	0.02	0.02	15.3	15.3	0.02	1.58	1.59	—	1,521	1,521	0.01	0.24	0.06	1,593
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.15	0.00	0.00	1.73	1.73	0.00	0.18	0.18	—	33.3	33.3	< 0.005	< 0.005	0.06	33.8
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	6.78	6.78	< 0.005	< 0.005	0.01	7.10
Hauling	< 0.005	< 0.005	0.20	0.02	< 0.005	< 0.005	1.07	1.07	< 0.005	0.11	0.11	—	125	125	< 0.005	0.02	0.09	131
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.32	0.32	0.00	0.03	0.03	—	5.51	5.51	< 0.005	< 0.005	0.01	5.59
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	1.12	1.12	< 0.005	< 0.005	< 0.005	1.18
Hauling	< 0.005	< 0.005	0.04	< 0.005	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	20.7	20.7	< 0.005	< 0.005	0.01	21.7

3.16. Phase 1 Construction: E (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	2.39	2.39	17.4	137	0.23	0.46	—	0.46	0.46	—	0.46	—	24,931	24,931	1.01	0.20	—	25,016
Dust From Material Movement	—	—	—	—	—	—	15.3	15.3	—	7.88	7.88	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.20	0.20	1.43	11.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,049	2,049	0.08	0.02	—	2,056
Dust From Material Movement	—	—	—	—	—	—	1.26	1.26	—	0.65	0.65	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.04	0.04	0.26	2.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	339	339	0.01	< 0.005	—	340
Dust From Material Movement	—	—	—	—	—	—	0.23	0.23	—	0.12	0.12	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.16	0.16	1.85	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	396	396	0.01	0.02	0.04	401
Vendor	< 0.005	< 0.005	0.13	0.02	< 0.005	< 0.005	1.02	1.02	< 0.005	0.11	0.11	—	82.5	82.5	< 0.005	0.01	< 0.005	86.3
Hauling	0.04	0.03	2.51	0.26	0.02	0.02	15.3	15.3	0.02	1.58	1.59	—	1,521	1,521	0.01	0.24	0.06	1,593
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.15	0.00	0.00	1.73	1.73	0.00	0.18	0.18	—	33.3	33.3	< 0.005	< 0.005	0.06	33.8
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	6.78	6.78	< 0.005	< 0.005	0.01	7.10
Hauling	< 0.005	< 0.005	0.20	0.02	< 0.005	< 0.005	1.07	1.07	< 0.005	0.11	0.11	—	125	125	< 0.005	0.02	0.09	131
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.32	0.32	0.00	0.03	0.03	—	5.51	5.51	< 0.005	< 0.005	0.01	5.59
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	1.12	1.12	< 0.005	< 0.005	< 0.005	1.18
Hauling	< 0.005	< 0.005	0.04	< 0.005	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	20.7	20.7	< 0.005	< 0.005	0.01	21.7

3.17. Phase 1 Construction: F (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.19	0.98	9.83	0.02	0.04	—	0.04	0.04	—	0.04	—	2,000	2,000	0.08	0.02	—	2,007

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.4	16.4	< 0.005	< 0.005	—	16.5
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.72	2.72	< 0.005	< 0.005	—	2.73
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00

Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.18. Phase 1 Construction: F (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.19	0.98	9.83	0.02	0.04	—	0.04	0.04	—	0.04	—	2,000	2,000	0.08	0.02	—	2,007
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.4	16.4	< 0.005	< 0.005	—	16.5
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.72	2.72	< 0.005	< 0.005	—	2.73
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00

Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.19. Phase 1 Construction: G (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	1.11	7.81	61.2	0.11	0.22	—	0.22	0.22	—	0.22	—	11,514	11,514	0.47	0.09	—	11,553
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	1.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	221	221	0.01	< 0.005	—	222

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	36.6	36.6	< 0.005	< 0.005	—	36.7
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00

Vendor	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	0.00
Hauling	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	0.00

3.20. Phase 1 Construction: G (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	1.11	7.81	61.2	0.11	0.22	—	0.22	0.22	—	0.22	—	11,514	11,514	0.47	0.09	—	11,553
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	1.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	221	221	0.01	< 0.005	—	222
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	36.6	36.6	< 0.005	< 0.005	—	36.7
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.21. Phase 1 Construction: H (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.54	1.54	11.0	85.7	0.15	0.30	—	0.30	0.30	—	0.30	—	15,858	15,858	0.64	0.13	—	15,913
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.09	0.63	4.93	0.01	0.02	—	0.02	0.02	—	0.02	—	912	912	0.04	0.01	—	916
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.12	0.90	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	151	151	0.01	< 0.005	—	152

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.16	0.16	1.85	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	396	396	0.01	0.02	0.04	401
Vendor	0.01	0.01	0.32	0.06	< 0.005	< 0.005	2.55	2.55	< 0.005	0.26	0.26	—	207	207	< 0.005	0.03	0.01	216
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	1.21	1.21	0.00	0.12	0.12	—	23.3	23.3	< 0.005	< 0.005	0.04	23.6
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	11.9	11.9	< 0.005	< 0.005	0.01	12.4
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.22	0.22	0.00	0.02	0.02	—	3.86	3.86	< 0.005	< 0.005	0.01	3.91
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.97	1.97	< 0.005	< 0.005	< 0.005	2.06
Hauling	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	0.00

3.22. Phase 1 Construction: H (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.54	1.54	11.0	85.7	0.15	0.30	—	0.30	0.30	—	0.30	—	15,858	15,858	0.64	0.13	—	15,913
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.09	0.63	4.93	0.01	0.02	—	0.02	0.02	—	0.02	—	912	912	0.04	0.01	—	916
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.12	0.90	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	151	151	0.01	< 0.005	—	152
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.16	0.16	1.85	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	396	396	0.01	0.02	0.04	401
Vendor	0.01	0.01	0.32	0.06	< 0.005	< 0.005	2.55	2.55	< 0.005	0.26	0.26	—	207	207	< 0.005	0.03	0.01	216
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	1.21	1.21	0.00	0.12	0.12	—	23.3	23.3	< 0.005	< 0.005	0.04	23.6
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	11.9	11.9	< 0.005	< 0.005	0.01	12.4
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.22	0.22	0.00	0.02	0.02	—	3.86	3.86	< 0.005	< 0.005	0.01	3.91
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.97	1.97	< 0.005	< 0.005	< 0.005	2.06
Hauling	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	0.00

3.23. Phase 1 Construction: I (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	1.00	1.00	7.22	52.8	0.10	0.19	—	0.19	0.19	—	0.19	—	10,316	10,316	0.42	0.08	—	10,352
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.02	0.02	0.14	1.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	198	198	0.01	< 0.005	—	199
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	< 0.005	< 0.005	0.03	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	32.8	32.8	< 0.005	< 0.005	—	32.9
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.24. Phase 1 Construction: I (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.00	1.00	7.22	52.8	0.10	0.19	—	0.19	0.19	—	0.19	—	10,316	10,316	0.42	0.08	—	10,352

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.14	1.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	198	198	0.01	< 0.005	—	199
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	32.8	32.8	< 0.005	< 0.005	—	32.9
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00

Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.25. Phase 2 Construction: A (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.19	1.19	7.01	66.1	0.12	0.23	—	0.23	0.23	—	0.23	—	12,560	12,560	0.51	0.10	—	12,603
Dust From Material Movement	—	—	—	—	—	—	9.83	9.83	—	5.05	5.05	—	—	—	—	—	—	—
Onsite truck	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	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.13	1.27	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	241	241	0.01	< 0.005	—	242
Dust From Material Movement	—	—	—	—	—	—	0.19	0.19	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	39.9	39.9	< 0.005	< 0.005	—	40.0
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.16	0.15	1.73	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	390	390	0.01	0.02	0.04	395
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.10	0.01	< 0.005	< 0.005	0.62	0.62	< 0.005	0.06	0.07	—	60.8	60.8	< 0.005	0.01	< 0.005	63.7
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.40	0.40	0.00	0.04	0.04	—	7.64	7.64	< 0.005	< 0.005	0.01	7.75

Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	1.17	1.17	< 0.005	< 0.005	< 0.005	1.22
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.07	0.07	0.00	0.01	0.01	—	1.26	1.26	< 0.005	< 0.005	< 0.005	1.28
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20

3.26. Phase 2 Construction: A (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.19	1.19	7.01	66.1	0.12	0.23	—	0.23	0.23	—	0.23	—	12,560	12,560	0.51	0.10	—	12,603
Dust From Material Movement	—	—	—	—	—	—	3.83	3.83	—	1.97	1.97	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.13	1.27	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	241	241	0.01	< 0.005	—	242

Dust From Material Movement	—	—	—	—	—	—	0.07	0.07	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	39.9	39.9	< 0.005	< 0.005	—	40.0
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.16	0.15	1.73	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	390	390	0.01	0.02	0.04	395
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.10	0.01	< 0.005	< 0.005	0.62	0.62	< 0.005	0.06	0.07	—	60.8	60.8	< 0.005	0.01	< 0.005	63.7
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.40	0.40	0.00	0.04	0.04	—	7.64	7.64	< 0.005	< 0.005	0.01	7.75
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	1.17	1.17	< 0.005	< 0.005	< 0.005	1.22
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.07	0.07	0.00	0.01	0.01	—	1.26	1.26	< 0.005	< 0.005	< 0.005	1.28

Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20

3.27. Phase 2 Construction: B (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.19	0.98	9.83	0.02	0.04	—	0.04	0.04	—	0.04	—	2,000	2,000	0.08	0.02	—	2,006
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.19	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.3	38.3	< 0.005	< 0.005	—	38.5
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.35	6.35	< 0.005	< 0.005	—	6.37
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.16	0.15	1.73	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	390	390	0.01	0.02	0.04	395
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.40	0.40	0.00	0.04	0.04	—	7.64	7.64	< 0.005	< 0.005	0.01	7.75
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.07	0.07	0.00	0.01	0.01	—	1.26	1.26	< 0.005	< 0.005	< 0.005	1.28
Vendor	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	0.00
Hauling	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	0.00

3.28. Phase 2 Construction: B (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.19	0.98	9.83	0.02	0.04	—	0.04	0.04	—	0.04	—	2,000	2,000	0.08	0.02	—	2,006
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.19	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.3	38.3	< 0.005	< 0.005	—	38.5
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.35	6.35	< 0.005	< 0.005	—	6.37

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.16	0.15	1.73	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	390	390	0.01	0.02	0.04	395
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.40	0.40	0.00	0.04	0.04	—	7.64	7.64	< 0.005	< 0.005	0.01	7.75
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.07	0.07	0.00	0.01	0.01	—	1.26	1.26	< 0.005	< 0.005	< 0.005	1.28
Vendor	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	0.00
Hauling	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	0.00

3.29. Phase 2 Construction: C (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.24	1.24	8.48	68.3	0.12	0.24	—	0.24	0.24	—	0.24	—	13,073	13,073	0.53	0.11	—	13,118
Dust From Material Movement	—	—	—	—	—	—	9.83	9.83	—	5.05	5.05	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	1.31	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	251	251	0.01	< 0.005	—	252
Dust From Material Movement	—	—	—	—	—	—	0.19	0.19	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.24	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	41.5	41.5	< 0.005	< 0.005	—	41.7
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—

Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.30. Phase 2 Construction: C (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	1.24	1.24	8.48	68.3	0.12	0.24	—	0.24	0.24	—	0.24	—	13,073	13,073	0.53	0.11	—	13,118
Dust From Material Movement	—	—	—	—	—	—	3.83	3.83	—	1.97	1.97	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.02	0.02	0.16	1.31	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	251	251	0.01	< 0.005	—	252
Dust From Material Movement	—	—	—	—	—	—	0.07	0.07	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	< 0.005	< 0.005	0.03	0.24	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	41.5	41.5	< 0.005	< 0.005	—	41.7
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.31. Phase 2 Construction: D (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.12	1.12	9.87	61.8	0.11	0.21	—	0.21	0.21	—	0.21	—	11,345	11,345	0.46	0.09	—	11,384

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.19	1.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	218	218	0.01	< 0.005	—	218
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	36.0	36.0	< 0.005	< 0.005	—	36.1
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.16	0.15	1.73	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	390	390	0.01	0.02	0.04	395

Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.40	0.40	0.00	0.04	0.04	—	7.64	7.64	< 0.005	< 0.005	0.01	7.75
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.07	0.07	0.00	0.01	0.01	—	1.26	1.26	< 0.005	< 0.005	< 0.005	1.28
Vendor	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	0.00
Hauling	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	0.00

3.32. Phase 2 Construction: D (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.12	1.12	9.87	61.8	0.11	0.21	—	0.21	0.21	—	0.21	—	11,345	11,345	0.46	0.09	—	11,384
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.19	1.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	218	218	0.01	< 0.005	—	218
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	36.0	36.0	< 0.005	< 0.005	—	36.1
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.16	0.15	1.73	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	390	390	0.01	0.02	0.04	395
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.40	0.40	0.00	0.04	0.04	—	7.64	7.64	< 0.005	< 0.005	0.01	7.75

Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.07	0.07	0.00	0.01	0.01	—	1.26	1.26	< 0.005	< 0.005	< 0.005	1.28
Vendor	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	0.00
Hauling	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	0.00

3.33. Phase 2 Construction: E (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.28	9.39	66.9	0.13	0.25	—	0.25	0.25	—	0.25	—	13,568	13,568	0.55	0.11	—	13,615
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.07	0.54	3.85	0.01	0.01	—	0.01	0.01	—	0.01	—	781	781	0.03	0.01	—	783

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.70	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	129	129	0.01	< 0.005	—	130
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.16	0.15	1.73	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	390	390	0.01	0.02	0.04	395
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	1.21	1.21	0.00	0.12	0.12	—	22.9	22.9	< 0.005	< 0.005	0.04	23.2
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.22	0.22	0.00	0.02	0.02	—	3.79	3.79	< 0.005	< 0.005	0.01	3.85

Vendor	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	0.00
Hauling	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	0.00

3.34. Phase 2 Construction: E (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.28	9.39	66.9	0.13	0.25	—	0.25	0.25	—	0.25	—	13,568	13,568	0.55	0.11	—	13,615
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.07	0.54	3.85	0.01	0.01	—	0.01	0.01	—	0.01	—	781	781	0.03	0.01	—	783
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.70	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	129	129	0.01	< 0.005	—	130
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.16	0.15	1.73	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	390	390	0.01	0.02	0.04	395
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	1.21	1.21	0.00	0.12	0.12	—	22.9	22.9	< 0.005	< 0.005	0.04	23.2
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.22	0.22	0.00	0.02	0.02	—	3.79	3.79	< 0.005	< 0.005	0.01	3.85
Vendor	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	0.00
Hauling	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	0.00

3.35. Phase 2 Construction: F (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	1.11	8.48	58.6	0.11	0.21	—	0.21	0.21	—	0.21	—	11,325	11,325	0.46	0.09	—	11,364
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	1.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	217	217	0.01	< 0.005	—	218
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	36.0	36.0	< 0.005	< 0.005	—	36.1

Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.16	0.15	1.73	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	390	390	0.01	0.02	0.04	395
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.08	0.01	< 0.005	< 0.005	0.50	0.50	< 0.005	0.05	0.05	—	48.7	48.7	< 0.005	0.01	< 0.005	50.9
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.40	0.40	0.00	0.04	0.04	—	7.64	7.64	< 0.005	< 0.005	0.01	7.75
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.93	0.93	< 0.005	< 0.005	< 0.005	0.98
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.07	0.07	0.00	0.01	0.01	—	1.26	1.26	< 0.005	< 0.005	< 0.005	1.28
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.16

3.36. Phase 2 Construction: F (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	1.11	8.48	58.6	0.11	0.21	—	0.21	0.21	—	0.21	—	11,325	11,325	0.46	0.09	—	11,364
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	1.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	217	217	0.01	< 0.005	—	218
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	36.0	36.0	< 0.005	< 0.005	—	36.1
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.16	0.15	1.73	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	390	390	0.01	0.02	0.04	395
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.08	0.01	< 0.005	< 0.005	0.50	0.50	< 0.005	0.05	0.05	—	48.7	48.7	< 0.005	0.01	< 0.005	50.9
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.40	0.40	0.00	0.04	0.04	—	7.64	7.64	< 0.005	< 0.005	0.01	7.75
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.93	0.93	< 0.005	< 0.005	< 0.005	0.98
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.07	0.07	0.00	0.01	0.01	—	1.26	1.26	< 0.005	< 0.005	< 0.005	1.28
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.16

3.37. Phase 2 Construction: G (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	1.24	1.24	8.07	64.9	0.12	0.24	—	0.24	0.24	—	0.24	—	13,026	13,026	0.53	0.11	—	13,071
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.07	0.07	0.46	3.74	0.01	0.01	—	0.01	0.01	—	0.01	—	749	749	0.03	0.01	—	752
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.01	0.01	0.08	0.68	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	124	124	0.01	< 0.005	—	125
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.16	0.15	1.73	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	390	390	0.01	0.02	0.04	395
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	1.21	1.21	0.00	0.12	0.12	—	22.9	22.9	< 0.005	< 0.005	0.04	23.2
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.22	0.22	0.00	0.02	0.02	—	3.79	3.79	< 0.005	< 0.005	0.01	3.85
Vendor	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	0.00
Hauling	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	0.00

3.38. Phase 2 Construction: G (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.24	1.24	8.07	64.9	0.12	0.24	—	0.24	0.24	—	0.24	—	13,026	13,026	0.53	0.11	—	13,071

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.07	0.46	3.74	0.01	0.01	—	0.01	0.01	—	0.01	—	749	749	0.03	0.01	—	752
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.68	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	124	124	0.01	< 0.005	—	125
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.16	0.15	1.73	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	390	390	0.01	0.02	0.04	395

Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	1.21	1.21	0.00	0.12	0.12	—	22.9	22.9	< 0.005	< 0.005	0.04	23.2
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.22	0.22	0.00	0.02	0.02	—	3.79	3.79	< 0.005	< 0.005	0.01	3.85
Vendor	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	0.00
Hauling	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	0.00

3.39. Phase 2 Construction: H (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.76	0.76	3.93	39.3	0.07	0.15	—	0.15	0.15	—	0.15	—	7,999	7,999	0.32	0.06	—	8,026
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.75	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	153	153	0.01	< 0.005	—	154
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.4	25.4	< 0.005	< 0.005	—	25.5
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.16	0.15	1.73	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	390	390	0.01	0.02	0.04	395
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.40	0.40	0.00	0.04	0.04	—	7.64	7.64	< 0.005	< 0.005	0.01	7.75

Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.07	0.07	0.00	0.01	0.01	—	1.26	1.26	< 0.005	< 0.005	< 0.005	1.28
Vendor	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	0.00
Hauling	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	0.00

3.40. Phase 2 Construction: H (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.76	0.76	3.93	39.3	0.07	0.15	—	0.15	0.15	—	0.15	—	7,999	7,999	0.32	0.06	—	8,026
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.75	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	153	153	0.01	< 0.005	—	154

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.4	25.4	< 0.005	< 0.005	—	25.5
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.16	0.15	1.73	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	390	390	0.01	0.02	0.04	395
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.40	0.40	0.00	0.04	0.04	—	7.64	7.64	< 0.005	< 0.005	0.01	7.75
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.07	0.07	0.00	0.01	0.01	—	1.26	1.26	< 0.005	< 0.005	< 0.005	1.28

Vendor	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	0.00
Hauling	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	0.00

3.41. Site Restoration: A (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.47	0.47	2.46	24.6	0.05	0.09	—	0.09	0.09	—	0.09	—	5,129	5,129	0.21	0.04	—	5,146
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.09	0.48	4.85	0.01	0.02	—	0.02	0.02	—	0.02	—	1,012	1,012	0.04	0.01	—	1,015
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.09	0.88	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	168	168	0.01	< 0.005	—	168
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.18	0.12	2.21	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	433	433	0.01	0.02	1.45	439
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.35	0.00	0.00	4.15	4.15	0.00	0.42	0.42	—	78.6	78.6	< 0.005	< 0.005	0.12	79.7
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.76	0.76	0.00	0.08	0.08	—	13.0	13.0	< 0.005	< 0.005	0.02	13.2
Vendor	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	0.00
Hauling	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	0.00

3.42. Site Restoration: A (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.47	0.47	2.46	24.6	0.05	0.09	—	0.09	0.09	—	0.09	—	5,129	5,129	0.21	0.04	—	5,146
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.09	0.48	4.85	0.01	0.02	—	0.02	0.02	—	0.02	—	1,012	1,012	0.04	0.01	—	1,015
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.09	0.88	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	168	168	0.01	< 0.005	—	168

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.18	0.12	2.21	0.00	0.00	24.8	24.8	0.00	2.53	2.53	—	433	433	0.01	0.02	1.45	439
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.35	0.00	0.00	4.15	4.15	0.00	0.42	0.42	—	78.6	78.6	< 0.005	< 0.005	0.12	79.7
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.76	0.76	0.00	0.08	0.08	—	13.0	13.0	< 0.005	< 0.005	0.02	13.2
Vendor	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	0.00
Hauling	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	0.00

3.43. Site Restoration: B (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.36	0.36	2.30	18.9	0.03	0.07	—	0.07	0.07	—	0.07	—	3,718	3,718	0.15	0.03	—	3,730
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.62	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	122	122	< 0.005	< 0.005	—	123
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.2	20.2	< 0.005	< 0.005	—	20.3
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.36	0.36	< 0.005	0.04	0.04	—	35.5	35.5	< 0.005	0.01	0.05	37.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	1.17	1.17	< 0.005	< 0.005	< 0.005	1.22
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20

3.44. Site Restoration: B (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.36	0.36	2.30	18.9	0.03	0.07	—	0.07	0.07	—	0.07	—	3,718	3,718	0.15	0.03	—	3,730
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.62	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	122	122	< 0.005	< 0.005	—	123
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.2	20.2	< 0.005	< 0.005	—	20.3
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.36	0.36	< 0.005	0.04	0.04	—	35.5	35.5	< 0.005	0.01	0.05	37.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	1.17	1.17	< 0.005	< 0.005	< 0.005	1.22
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20

3.45. Site Restoration: C (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	2.24	18.0	0.03	0.07	—	0.07	0.07	—	0.07	—	3,598	3,598	0.15	0.03	—	3,610

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.59	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	118	118	< 0.005	< 0.005	—	119
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.6	19.6	< 0.005	< 0.005	—	19.7
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00

Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.46. Site Restoration: C (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	2.24	18.0	0.03	0.07	—	0.07	0.07	—	0.07	—	3,598	3,598	0.15	0.03	—	3,610
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.59	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	118	118	< 0.005	< 0.005	—	119
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.6	19.6	< 0.005	< 0.005	—	19.7
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.47. Site Restoration: D (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.31	1.64	16.4	0.03	0.06	—	0.06	0.06	—	0.06	—	3,333	3,333	0.14	0.03	—	3,344
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.01	0.01	0.07	0.72	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	146	146	0.01	< 0.005	—	147
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	24.2	24.2	< 0.005	< 0.005	—	24.3
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.48. Site Restoration: D (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.31	1.64	16.4	0.03	0.06	—	0.06	0.06	—	0.06	—	3,333	3,333	0.14	0.03	—	3,344
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.72	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	146	146	0.01	< 0.005	—	147
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	24.2	24.2	< 0.005	< 0.005	—	24.3
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Pre-Outage: A	Linear, Grading & Excavation	8/3/2026	9/30/2026	6.00	51.0	Construction Access Improvements: Before the Phase 1 outage begins, complete the construction of the soil nail retaining wall near private residence for Access Road A to create a minimum 14-foot-wide road. Place precast barrier rail near the residence to prevent damage to the structure.
Pre-Outage: B	Linear, Grading & Excavation	9/7/2026	9/22/2026	6.00	14.0	Moisture condition, mix, and cover the stockpiled import fill material.

Pre-Outage: C	Linear, Grading & Excavation	9/23/2026	9/30/2026	6.00	7.00	Establish temporary BMP's at the import fill source and within the Phase 1 Construction Limits.
Phase 1 Construction: A	Linear, Grading & Excavation	10/1/2026	10/8/2026	6.00	7.00	Demolish the old Highway 50 stacked rock wall providing access for tracked equipment to the washout area and the upstream transition. Infill the upstream transition area and grade to allow truck access to bench.
Phase 1 Construction: B	Linear, Grading & Excavation	10/1/2026	10/16/2026	6.00	14.0	Demolish the existing wooden flume and supports.
Phase 1 Construction: C	Linear, Grading & Excavation	10/17/2026	11/10/2026	6.00	21.0	Beginning at the washout area and working out in both the upstream and downstream directions, excavate the existing hand-stacked rock wall and bench, placing boulders on the toe slope as rip-rap erosion mitigation. Excavated soil is screened to 4-inch minus, if the resulting gradation does not meet requirements for MSE backfill, the excavated material is blended with the SPI stockpile at the ratio determined by the geotechnical engineer.
Phase 1 Construction: D	Linear, Grading & Excavation	10/17/2026	10/24/2026	6.00	7.00	Concrete leveling pads are doweled into and cast on weathered bedrock.

Phase 1 Construction: E	Linear, Grading & Excavation	10/25/2026	11/28/2026	6.00	30.0	Construct the MSE wall and bench beginning at the tallest portion of the wall in the washout area working out in both directions.
Phase 1 Construction: F	Linear, Grading & Excavation	11/29/2026	12/2/2026	6.00	3.00	Construct a handrail at the top of the MSE wall.
Phase 1 Construction: G	Linear, Grading & Excavation	12/3/2026	12/10/2026	6.00	7.00	Construct a temporary transition to the existing spillway.
Phase 1 Construction: H	Linear, Grading & Excavation	11/29/2026	12/23/2026	6.00	21.0	Construct the cast-in-place canal working upstream from the temporary transition at the spillway.
Phase 1 Construction: I	Linear, Grading & Excavation	12/16/2026	12/23/2026	6.00	7.00	Construct the upstream transition and re-establish the footbridge.
Phase 2 Construction: A	Linear, Grading & Excavation	10/1/2027	10/8/2027	6.00	7.00	Grade Access Road B and infill the downstream transition with backfill to establish access to the bench.
Phase 2 Construction: B	Linear, Grading & Excavation	10/6/2027	10/13/2027	6.00	7.00	Install temporary BMP’s within Phase 2 construction limits.
Phase 2 Construction: C	Linear, Grading & Excavation	10/6/2027	10/13/2027	6.00	7.00	Demolish the flume section downstream of the spillway.
Phase 2 Construction: D	Linear, Grading & Excavation	10/14/2027	10/21/2027	6.00	7.00	Demolish the existing spillway.
Phase 2 Construction: E	Linear, Grading & Excavation	10/22/2027	11/15/2027	6.00	21.0	Construct new spillway and install ancillary equipment.
Phase 2 Construction: F	Linear, Grading & Excavation	11/16/2027	11/23/2027	6.00	7.00	Construct strip footings doweled and cast on bedrock or engineered fill.

Phase 2 Construction: G	Linear, Grading & Excavation	11/24/2027	12/17/2027	6.00	21.0	Construct cast-in-place flume starting at the spillway working downstream.
Phase 2 Construction: H	Linear, Grading & Excavation	12/18/2027	12/25/2027	6.00	7.00	Construct the downstream transition.
Site Restoration: A	Linear, Grading & Excavation	4/1/2027	6/23/2027	6.00	72.0	Complete any contracted construction/install “punch-list items remaining after watering up the system such as:
Site Restoration: B	Linear, Grading & Excavation	5/11/2027	5/24/2027	6.00	12.0	Restore the temporary construction Access Road B.
Site Restoration: C	Linear, Grading & Excavation	5/25/2027	6/7/2027	6.00	12.0	Restore temporary construction Access Road C.
Site Restoration: D	Linear, Grading & Excavation	6/8/2027	6/25/2027	6.00	16.0	Install permanent erosion control mitigation.

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Pre-Outage: A	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	0.67	367	0.40
Pre-Outage: A	Air Compressors	Diesel	Tier 4 Final	1.00	4.00	37.0	0.48
Pre-Outage: A	Excavators	Diesel	Tier 4 Final	1.00	4.00	36.0	0.38
Pre-Outage: A	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	4.00	84.0	0.37
Pre-Outage: A	Air Compressors	Diesel	Tier 4 Final	2.00	1.33	37.0	0.48
Pre-Outage: A	Off-Highway Trucks	Diesel	Tier 4 Final	6.00	4.00	38.0	0.44
Pre-Outage: A	Generator Sets	Diesel	Tier 4 Final	1.00	8.00	14.0	0.74
Pre-Outage: A	Cement and Mortar Mixers	Diesel	Tier 4 Final	1.00	4.00	10.0	0.56

Pre-Outage: A	Concrete/Industrial Saws	Diesel	Tier 4 Final	3.00	0.50	33.0	0.73
Pre-Outage: A	Rollers	Diesel	Tier 4 Final	1.00	1.33	36.0	0.38
Pre-Outage: A	Plate Compactors	Diesel	Tier 4 Final	1.00	1.33	8.00	0.43
Pre-Outage: A	Off-Highway Trucks	Diesel	Tier 4 Final	4.00	8.00	376	0.38
Pre-Outage: B	Excavators	Diesel	Tier 4 Final	1.00	10.0	36.0	0.38
Pre-Outage: B	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	10.0	376	0.38
Pre-Outage: C	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	10.0	376	0.38
Phase 1 Construction: A	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	12.0	367	0.40
Phase 1 Construction: A	Excavators	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 1 Construction: A	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	12.0	84.0	0.37
Phase 1 Construction: A	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 1 Construction: B	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 1 Construction: B	Excavators	Diesel	Tier 4 Final	2.00	12.0	36.0	0.38
Phase 1 Construction: B	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 1 Construction: B	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	12.0	16.0	0.38
Phase 1 Construction: B	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	12.0	84.0	0.37
Phase 1 Construction: B	Air Compressors	Diesel	Tier 4 Final	2.00	12.0	37.0	0.48
Phase 1 Construction: B	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 1 Construction: B	Generator Sets	Diesel	Tier 4 Final	2.00	12.0	14.0	0.74
Phase 1 Construction: B	Concrete/Industrial Saws	Diesel	Tier 4 Final	2.00	12.0	33.0	0.73

Phase 1 Construction: B	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 1 Construction: C	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	12.0	367	0.40
Phase 1 Construction: C	Excavators	Diesel	Tier 4 Final	2.00	12.0	36.0	0.38
Phase 1 Construction: C	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 1 Construction: C	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	12.0	84.0	0.37
Phase 1 Construction: C	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 1 Construction: C	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 1 Construction: C	Rollers	Diesel	Tier 4 Final	1.00	4.00	36.0	0.38
Phase 1 Construction: C	Plate Compactors	Diesel	Tier 4 Final	4.00	12.0	8.00	0.43
Phase 1 Construction: C	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 1 Construction: D	Excavators	Diesel	Tier 4 Final	1.00	10.0	36.0	0.38
Phase 1 Construction: D	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	10.0	376	0.38
Phase 1 Construction: D	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	10.0	84.0	0.37
Phase 1 Construction: D	Off-Highway Trucks	Diesel	Tier 4 Final	4.00	4.30	376	0.38
Phase 1 Construction: D	Generator Sets	Diesel	Tier 4 Final	1.00	10.0	14.0	0.74
Phase 1 Construction: D	Cement and Mortar Mixers	Diesel	Tier 4 Final	1.00	4.30	10.0	0.56
Phase 1 Construction: D	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	10.0	376	0.38

Phase 1 Construction: E	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	24.0	367	0.40
Phase 1 Construction: E	Excavators	Diesel	Tier 4 Final	1.00	24.0	36.0	0.38
Phase 1 Construction: E	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	24.0	376	0.38
Phase 1 Construction: E	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	6.00	24.0	84.0	0.37
Phase 1 Construction: E	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	24.0	84.0	0.37
Phase 1 Construction: E	Rollers	Diesel	Tier 4 Final	2.00	24.0	36.0	0.38
Phase 1 Construction: E	Plate Compactors	Diesel	Tier 4 Final	4.00	24.0	8.00	0.43
Phase 1 Construction: F	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	12.0	376	0.38
Phase 1 Construction: G	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 1 Construction: G	Excavators	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 1 Construction: G	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 1 Construction: G	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	12.0	84.0	0.37
Phase 1 Construction: G	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	2.00	84.0	0.37
Phase 1 Construction: G	Off-Highway Trucks	Diesel	Tier 4 Final	4.00	1.70	376	0.38
Phase 1 Construction: G	Cement and Mortar Mixers	Diesel	Tier 4 Final	4.00	1.70	10.0	0.56
Phase 1 Construction: G	Rollers	Diesel	Tier 4 Final	1.00	1.70	36.0	0.38
Phase 1 Construction: G	Plate Compactors	Diesel	Tier 4 Final	1.00	1.70	8.00	0.43

Phase 1 Construction: G	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 1 Construction: H	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 1 Construction: H	Excavators	Diesel	Tier 4 Final	2.00	12.0	36.0	0.38
Phase 1 Construction: H	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 1 Construction: H	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	6.00	12.0	84.0	0.37
Phase 1 Construction: H	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	12.0	84.0	0.37
Phase 1 Construction: H	Off-Highway Trucks	Diesel	Tier 4 Final	6.00	4.00	376	0.38
Phase 1 Construction: H	Cement and Mortar Mixers	Diesel	Tier 4 Final	1.00	4.00	10.0	0.56
Phase 1 Construction: H	Rollers	Diesel	Tier 4 Final	1.00	4.00	36.0	0.38
Phase 1 Construction: H	Plate Compactors	Diesel	Tier 4 Final	1.00	4.00	8.00	0.43
Phase 1 Construction: H	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 1 Construction: I	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 1 Construction: I	Excavators	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 1 Construction: I	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 1 Construction: I	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	3.40	84.0	0.37
Phase 1 Construction: I	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	3.40	84.0	0.37
Phase 1 Construction: I	Off-Highway Trucks	Diesel	Tier 4 Final	4.00	1.70	376	0.38

Phase 1 Construction: I	Cement and Mortar Mixers	Diesel	Tier 4 Final	4.00	1.70	10.0	0.56
Phase 1 Construction: I	Rollers	Diesel	Tier 4 Final	1.00	1.70	36.0	0.38
Phase 1 Construction: I	Plate Compactors	Diesel	Tier 4 Final	1.00	1.70	8.00	0.43
Phase 1 Construction: I	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: A	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	12.0	367	0.40
Phase 2 Construction: A	Excavators	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 2 Construction: A	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: A	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	12.0	84.0	0.37
Phase 2 Construction: A	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	12.0	84.0	0.37
Phase 2 Construction: A	Plate Compactors	Diesel	Tier 4 Final	2.00	12.0	8.00	0.43
Phase 2 Construction: A	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: B	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	12.0	376	0.38
Phase 2 Construction: C	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	12.0	367	0.40
Phase 2 Construction: C	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 2 Construction: C	Excavators	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 2 Construction: C	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: C	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	12.0	84.0	0.37

Phase 2 Construction: C	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	12.0	84.0	0.37
Phase 2 Construction: C	Air Compressors	Diesel	Tier 4 Final	1.00	1.70	37.0	0.48
Phase 2 Construction: C	Generator Sets	Diesel	Tier 4 Final	2.00	12.0	14.0	0.74
Phase 2 Construction: C	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: D	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 2 Construction: D	Excavators	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 2 Construction: D	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: D	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	12.0	84.0	0.37
Phase 2 Construction: D	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	12.0	84.0	0.37
Phase 2 Construction: D	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 2 Construction: D	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 2 Construction: D	Generator Sets	Diesel	Tier 4 Final	1.00	12.0	14.0	0.74
Phase 2 Construction: D	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: E	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 2 Construction: E	Excavators	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 2 Construction: E	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: E	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	12.0	84.0	0.37

Phase 2 Construction: E	Off-Highway Trucks	Diesel	Tier 4 Final	6.00	4.00	376	0.38
Phase 2 Construction: E	Generator Sets	Diesel	Tier 4 Final	2.00	12.0	14.0	0.74
Phase 2 Construction: E	Cement and Mortar Mixers	Diesel	Tier 4 Final	1.00	4.00	10.0	0.56
Phase 2 Construction: E	Rollers	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 2 Construction: E	Plate Compactors	Diesel	Tier 4 Final	2.00	12.0	8.00	0.43
Phase 2 Construction: E	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: F	Excavators	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 2 Construction: F	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: F	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	12.0	84.0	0.37
Phase 2 Construction: F	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	12.0	84.0	0.37
Phase 2 Construction: F	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 2 Construction: F	Off-Highway Trucks	Diesel	Tier 4 Final	6.00	1.70	376	0.38
Phase 2 Construction: F	Cement and Mortar Mixers	Diesel	Tier 4 Final	1.00	1.70	10.0	0.56
Phase 2 Construction: F	Rollers	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 2 Construction: F	Plate Compactors	Diesel	Tier 4 Final	1.00	12.0	8.00	0.43
Phase 2 Construction: F	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: G	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48

Phase 2 Construction: G	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Phase 2 Construction: G	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: G	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	12.0	84.0	0.37
Phase 2 Construction: G	Off-Highway Trucks	Diesel	Tier 4 Final	6.00	4.00	376	0.38
Phase 2 Construction: G	Generator Sets	Diesel	Tier 4 Final	1.00	12.0	14.0	0.74
Phase 2 Construction: G	Cement and Mortar Mixers	Diesel	Tier 4 Final	1.00	4.00	10.0	0.56
Phase 2 Construction: G	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: H	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: H	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Site Restoration: A	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	10.0	376	0.38
Site Restoration: A	Generator Sets	Diesel	Tier 4 Final	1.00	10.0	14.0	0.74
Site Restoration: A	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	10.0	376	0.38
Site Restoration: B	Excavators	Diesel	Tier 4 Final	1.00	6.60	36.0	0.38
Site Restoration: B	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	3.30	84.0	0.37
Site Restoration: B	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	3.30	84.0	0.37
Site Restoration: B	Plate Compactors	Diesel	Tier 4 Final	1.00	6.60	8.00	0.43
Site Restoration: B	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	10.0	376	0.38
Site Restoration: C	Excavators	Diesel	Tier 4 Final	1.00	6.60	36.0	0.38
Site Restoration: C	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	3.30	84.0	0.37
Site Restoration: C	Plate Compactors	Diesel	Tier 4 Final	1.00	6.60	8.00	0.43
Site Restoration: C	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	10.0	376	0.38

Site Restoration: D	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	10.0	376	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Pre-Outage: A	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	0.67	367	0.40
Pre-Outage: A	Air Compressors	Diesel	Tier 4 Final	1.00	4.00	37.0	0.48
Pre-Outage: A	Excavators	Diesel	Tier 4 Final	1.00	4.00	36.0	0.38
Pre-Outage: A	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	4.00	84.0	0.37
Pre-Outage: A	Air Compressors	Diesel	Tier 4 Final	2.00	1.33	37.0	0.48
Pre-Outage: A	Off-Highway Trucks	Diesel	Tier 4 Final	6.00	4.00	38.0	0.44
Pre-Outage: A	Generator Sets	Diesel	Tier 4 Final	1.00	8.00	14.0	0.74
Pre-Outage: A	Cement and Mortar Mixers	Diesel	Tier 4 Final	1.00	4.00	10.0	0.56
Pre-Outage: A	Concrete/Industrial Saws	Diesel	Tier 4 Final	3.00	0.50	33.0	0.73
Pre-Outage: A	Rollers	Diesel	Tier 4 Final	1.00	1.33	36.0	0.38
Pre-Outage: A	Plate Compactors	Diesel	Tier 4 Final	1.00	1.33	8.00	0.43
Pre-Outage: A	Off-Highway Trucks	Diesel	Tier 4 Final	4.00	8.00	376	0.38
Pre-Outage: B	Excavators	Diesel	Tier 4 Final	1.00	10.0	36.0	0.38
Pre-Outage: B	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	10.0	376	0.38
Pre-Outage: C	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	10.0	376	0.38
Phase 1 Construction: A	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	12.0	367	0.40
Phase 1 Construction: A	Excavators	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 1 Construction: A	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	12.0	84.0	0.37
Phase 1 Construction: A	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38

Phase 1 Construction: B	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 1 Construction: B	Excavators	Diesel	Tier 4 Final	2.00	12.0	36.0	0.38
Phase 1 Construction: B	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 1 Construction: B	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	12.0	16.0	0.38
Phase 1 Construction: B	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	12.0	84.0	0.37
Phase 1 Construction: B	Air Compressors	Diesel	Tier 4 Final	2.00	12.0	37.0	0.48
Phase 1 Construction: B	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 1 Construction: B	Generator Sets	Diesel	Tier 4 Final	2.00	12.0	14.0	0.74
Phase 1 Construction: B	Concrete/Industrial Saws	Diesel	Tier 4 Final	2.00	12.0	33.0	0.73
Phase 1 Construction: B	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 1 Construction: C	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	12.0	367	0.40
Phase 1 Construction: C	Excavators	Diesel	Tier 4 Final	2.00	12.0	36.0	0.38
Phase 1 Construction: C	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 1 Construction: C	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	12.0	84.0	0.37
Phase 1 Construction: C	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 1 Construction: C	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 1 Construction: C	Rollers	Diesel	Tier 4 Final	1.00	4.00	36.0	0.38

Phase 1 Construction: C	Plate Compactors	Diesel	Tier 4 Final	4.00	12.0	8.00	0.43
Phase 1 Construction: C	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 1 Construction: D	Excavators	Diesel	Tier 4 Final	1.00	10.0	36.0	0.38
Phase 1 Construction: D	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	10.0	376	0.38
Phase 1 Construction: D	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	10.0	84.0	0.37
Phase 1 Construction: D	Off-Highway Trucks	Diesel	Tier 4 Final	4.00	4.30	376	0.38
Phase 1 Construction: D	Generator Sets	Diesel	Tier 4 Final	1.00	10.0	14.0	0.74
Phase 1 Construction: D	Cement and Mortar Mixers	Diesel	Tier 4 Final	1.00	4.30	10.0	0.56
Phase 1 Construction: D	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	10.0	376	0.38
Phase 1 Construction: E	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	24.0	367	0.40
Phase 1 Construction: E	Excavators	Diesel	Tier 4 Final	1.00	24.0	36.0	0.38
Phase 1 Construction: E	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	24.0	376	0.38
Phase 1 Construction: E	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	6.00	24.0	84.0	0.37
Phase 1 Construction: E	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	24.0	84.0	0.37
Phase 1 Construction: E	Rollers	Diesel	Tier 4 Final	2.00	24.0	36.0	0.38
Phase 1 Construction: E	Plate Compactors	Diesel	Tier 4 Final	4.00	24.0	8.00	0.43
Phase 1 Construction: F	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	12.0	376	0.38

Phase 1 Construction: G	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 1 Construction: G	Excavators	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 1 Construction: G	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 1 Construction: G	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	12.0	84.0	0.37
Phase 1 Construction: G	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	2.00	84.0	0.37
Phase 1 Construction: G	Off-Highway Trucks	Diesel	Tier 4 Final	4.00	1.70	376	0.38
Phase 1 Construction: G	Cement and Mortar Mixers	Diesel	Tier 4 Final	4.00	1.70	10.0	0.56
Phase 1 Construction: G	Rollers	Diesel	Tier 4 Final	1.00	1.70	36.0	0.38
Phase 1 Construction: G	Plate Compactors	Diesel	Tier 4 Final	1.00	1.70	8.00	0.43
Phase 1 Construction: G	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 1 Construction: H	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 1 Construction: H	Excavators	Diesel	Tier 4 Final	2.00	12.0	36.0	0.38
Phase 1 Construction: H	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 1 Construction: H	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	6.00	12.0	84.0	0.37
Phase 1 Construction: H	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	12.0	84.0	0.37
Phase 1 Construction: H	Off-Highway Trucks	Diesel	Tier 4 Final	6.00	4.00	376	0.38
Phase 1 Construction: H	Cement and Mortar Mixers	Diesel	Tier 4 Final	1.00	4.00	10.0	0.56

Phase 1 Construction: H	Rollers	Diesel	Tier 4 Final	1.00	4.00	36.0	0.38
Phase 1 Construction: H	Plate Compactors	Diesel	Tier 4 Final	1.00	4.00	8.00	0.43
Phase 1 Construction: H	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 1 Construction: I	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 1 Construction: I	Excavators	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 1 Construction: I	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 1 Construction: I	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	3.40	84.0	0.37
Phase 1 Construction: I	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	3.40	84.0	0.37
Phase 1 Construction: I	Off-Highway Trucks	Diesel	Tier 4 Final	4.00	1.70	376	0.38
Phase 1 Construction: I	Cement and Mortar Mixers	Diesel	Tier 4 Final	4.00	1.70	10.0	0.56
Phase 1 Construction: I	Rollers	Diesel	Tier 4 Final	1.00	1.70	36.0	0.38
Phase 1 Construction: I	Plate Compactors	Diesel	Tier 4 Final	1.00	1.70	8.00	0.43
Phase 1 Construction: I	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: A	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	12.0	367	0.40
Phase 2 Construction: A	Excavators	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 2 Construction: A	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: A	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	12.0	84.0	0.37

Phase 2 Construction: A	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	12.0	84.0	0.37
Phase 2 Construction: A	Plate Compactors	Diesel	Tier 4 Final	2.00	12.0	8.00	0.43
Phase 2 Construction: A	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: B	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	12.0	376	0.38
Phase 2 Construction: C	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	12.0	367	0.40
Phase 2 Construction: C	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 2 Construction: C	Excavators	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 2 Construction: C	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: C	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	12.0	84.0	0.37
Phase 2 Construction: C	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	12.0	84.0	0.37
Phase 2 Construction: C	Air Compressors	Diesel	Tier 4 Final	1.00	1.70	37.0	0.48
Phase 2 Construction: C	Generator Sets	Diesel	Tier 4 Final	2.00	12.0	14.0	0.74
Phase 2 Construction: C	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: D	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 2 Construction: D	Excavators	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 2 Construction: D	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: D	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	12.0	84.0	0.37

Phase 2 Construction: D	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	12.0	84.0	0.37
Phase 2 Construction: D	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 2 Construction: D	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 2 Construction: D	Generator Sets	Diesel	Tier 4 Final	1.00	12.0	14.0	0.74
Phase 2 Construction: D	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: E	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 2 Construction: E	Excavators	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 2 Construction: E	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: E	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	12.0	84.0	0.37
Phase 2 Construction: E	Off-Highway Trucks	Diesel	Tier 4 Final	6.00	4.00	376	0.38
Phase 2 Construction: E	Generator Sets	Diesel	Tier 4 Final	2.00	12.0	14.0	0.74
Phase 2 Construction: E	Cement and Mortar Mixers	Diesel	Tier 4 Final	1.00	4.00	10.0	0.56
Phase 2 Construction: E	Rollers	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 2 Construction: E	Plate Compactors	Diesel	Tier 4 Final	2.00	12.0	8.00	0.43
Phase 2 Construction: E	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: F	Excavators	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 2 Construction: F	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38

Phase 2 Construction: F	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	12.0	84.0	0.37
Phase 2 Construction: F	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	12.0	84.0	0.37
Phase 2 Construction: F	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 2 Construction: F	Off-Highway Trucks	Diesel	Tier 4 Final	6.00	1.70	376	0.38
Phase 2 Construction: F	Cement and Mortar Mixers	Diesel	Tier 4 Final	1.00	1.70	10.0	0.56
Phase 2 Construction: F	Rollers	Diesel	Tier 4 Final	1.00	12.0	36.0	0.38
Phase 2 Construction: F	Plate Compactors	Diesel	Tier 4 Final	1.00	12.0	8.00	0.43
Phase 2 Construction: F	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: G	Air Compressors	Diesel	Tier 4 Final	1.00	12.0	37.0	0.48
Phase 2 Construction: G	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Phase 2 Construction: G	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: G	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	12.0	84.0	0.37
Phase 2 Construction: G	Off-Highway Trucks	Diesel	Tier 4 Final	6.00	4.00	376	0.38
Phase 2 Construction: G	Generator Sets	Diesel	Tier 4 Final	1.00	12.0	14.0	0.74
Phase 2 Construction: G	Cement and Mortar Mixers	Diesel	Tier 4 Final	1.00	4.00	10.0	0.56
Phase 2 Construction: G	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Phase 2 Construction: H	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38

Phase 2 Construction: H	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	12.0	376	0.38
Site Restoration: A	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	10.0	376	0.38
Site Restoration: A	Generator Sets	Diesel	Tier 4 Final	1.00	10.0	14.0	0.74
Site Restoration: A	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	10.0	376	0.38
Site Restoration: B	Excavators	Diesel	Tier 4 Final	1.00	6.60	36.0	0.38
Site Restoration: B	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	3.30	84.0	0.37
Site Restoration: B	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	3.30	84.0	0.37
Site Restoration: B	Plate Compactors	Diesel	Tier 4 Final	1.00	6.60	8.00	0.43
Site Restoration: B	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	10.0	376	0.38
Site Restoration: C	Excavators	Diesel	Tier 4 Final	1.00	6.60	36.0	0.38
Site Restoration: C	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	3.30	84.0	0.37
Site Restoration: C	Plate Compactors	Diesel	Tier 4 Final	1.00	6.60	8.00	0.43
Site Restoration: C	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	10.0	376	0.38
Site Restoration: D	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	10.0	376	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Pre-Outage: A	—	—	—	—
Pre-Outage: A	Worker	40.0	14.3	LDA,LDT1,LDT2
Pre-Outage: A	Vendor	0.00	8.80	HHDT,MHDT
Pre-Outage: A	Hauling	1.51	20.0	HHDT
Pre-Outage: A	Onsite truck	—	—	HHDT
Pre-Outage: B	—	—	—	—
Pre-Outage: B	Worker	0.00	14.3	LDA,LDT1,LDT2

Pre-Outage: B	Vendor	0.00	8.80	HHDT,MHDT
Pre-Outage: B	Hauling	0.00	20.0	HHDT
Pre-Outage: B	Onsite truck	—	—	HHDT
Pre-Outage: C	—	—	—	—
Pre-Outage: C	Worker	0.00	14.3	LDA,LDT1,LDT2
Pre-Outage: C	Vendor	0.00	8.80	HHDT,MHDT
Pre-Outage: C	Hauling	0.00	20.0	HHDT
Pre-Outage: C	Onsite truck	—	—	HHDT
Phase 1 Construction: A	—	—	—	—
Phase 1 Construction: A	Worker	0.00	14.3	LDA,LDT1,LDT2
Phase 1 Construction: A	Vendor	0.00	8.80	HHDT,MHDT
Phase 1 Construction: A	Hauling	1.00	20.0	HHDT
Phase 1 Construction: A	Onsite truck	—	—	HHDT
Phase 1 Construction: B	—	—	—	—
Phase 1 Construction: B	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 1 Construction: B	Vendor	0.00	8.80	HHDT,MHDT
Phase 1 Construction: B	Hauling	0.00	20.0	HHDT
Phase 1 Construction: B	Onsite truck	—	—	HHDT
Phase 1 Construction: C	—	—	—	—
Phase 1 Construction: C	Worker	0.00	14.3	LDA,LDT1,LDT2
Phase 1 Construction: C	Vendor	0.00	8.80	HHDT,MHDT
Phase 1 Construction: C	Hauling	20.9	20.0	HHDT
Phase 1 Construction: C	Onsite truck	—	—	HHDT
Phase 1 Construction: D	—	—	—	—
Phase 1 Construction: D	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 1 Construction: D	Vendor	0.00	8.80	HHDT,MHDT
Phase 1 Construction: D	Hauling	0.00	20.0	HHDT
Phase 1 Construction: D	Onsite truck	—	—	HHDT

Phase 1 Construction: E	—	—	—	—
Phase 1 Construction: E	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 1 Construction: E	Vendor	2.66	8.80	HHDT,MHDT
Phase 1 Construction: E	Hauling	17.5	20.0	HHDT
Phase 1 Construction: E	Onsite truck	—	—	HHDT
Phase 1 Construction: F	—	—	—	—
Phase 1 Construction: F	Worker	0.00	14.3	LDA,LDT1,LDT2
Phase 1 Construction: F	Vendor	0.00	8.80	HHDT,MHDT
Phase 1 Construction: F	Hauling	0.00	20.0	HHDT
Phase 1 Construction: F	Onsite truck	—	—	HHDT
Phase 1 Construction: G	—	—	—	—
Phase 1 Construction: G	Worker	0.00	14.3	LDA,LDT1,LDT2
Phase 1 Construction: G	Vendor	0.00	8.80	HHDT,MHDT
Phase 1 Construction: G	Hauling	0.00	20.0	HHDT
Phase 1 Construction: G	Onsite truck	—	—	HHDT
Phase 1 Construction: H	—	—	—	—
Phase 1 Construction: H	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 1 Construction: H	Vendor	6.66	8.80	HHDT,MHDT
Phase 1 Construction: H	Hauling	0.00	20.0	HHDT
Phase 1 Construction: H	Onsite truck	—	—	HHDT
Phase 1 Construction: I	—	—	—	—
Phase 1 Construction: I	Worker	0.00	14.3	LDA,LDT1,LDT2
Phase 1 Construction: I	Vendor	0.00	8.80	HHDT,MHDT
Phase 1 Construction: I	Hauling	0.00	20.0	HHDT
Phase 1 Construction: I	Onsite truck	—	—	HHDT
Phase 2 Construction: A	—	—	—	—
Phase 2 Construction: A	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 2 Construction: A	Vendor	0.00	8.80	HHDT,MHDT

Phase 2 Construction: A	Hauling	0.71	20.0	HHDT
Phase 2 Construction: A	Onsite truck	—	—	HHDT
Phase 2 Construction: B	—	—	—	—
Phase 2 Construction: B	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 2 Construction: B	Vendor	0.00	8.80	HHDT,MHDT
Phase 2 Construction: B	Hauling	0.00	20.0	HHDT
Phase 2 Construction: B	Onsite truck	—	—	HHDT
Phase 2 Construction: C	—	—	—	—
Phase 2 Construction: C	Worker	0.00	14.3	LDA,LDT1,LDT2
Phase 2 Construction: C	Vendor	0.00	8.80	HHDT,MHDT
Phase 2 Construction: C	Hauling	0.00	20.0	HHDT
Phase 2 Construction: C	Onsite truck	—	—	HHDT
Phase 2 Construction: D	—	—	—	—
Phase 2 Construction: D	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 2 Construction: D	Vendor	0.00	8.80	HHDT,MHDT
Phase 2 Construction: D	Hauling	0.00	20.0	HHDT
Phase 2 Construction: D	Onsite truck	—	—	HHDT
Phase 2 Construction: E	—	—	—	—
Phase 2 Construction: E	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 2 Construction: E	Vendor	0.00	8.80	HHDT,MHDT
Phase 2 Construction: E	Hauling	0.00	20.0	HHDT
Phase 2 Construction: E	Onsite truck	—	—	HHDT
Phase 2 Construction: F	—	—	—	—
Phase 2 Construction: F	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 2 Construction: F	Vendor	0.00	8.80	HHDT,MHDT
Phase 2 Construction: F	Hauling	0.57	20.0	HHDT
Phase 2 Construction: F	Onsite truck	—	—	HHDT
Phase 2 Construction: G	—	—	—	—

Phase 2 Construction: G	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 2 Construction: G	Vendor	0.00	8.80	HHDT,MHDT
Phase 2 Construction: G	Hauling	0.00	20.0	HHDT
Phase 2 Construction: G	Onsite truck	—	—	HHDT
Phase 2 Construction: H	—	—	—	—
Phase 2 Construction: H	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 2 Construction: H	Vendor	0.00	8.80	HHDT,MHDT
Phase 2 Construction: H	Hauling	0.00	20.0	HHDT
Phase 2 Construction: H	Onsite truck	—	—	HHDT
Site Restoration: A	—	—	—	—
Site Restoration: A	Worker	40.0	14.3	LDA,LDT1,LDT2
Site Restoration: A	Vendor	0.00	8.80	HHDT,MHDT
Site Restoration: A	Hauling	0.00	20.0	HHDT
Site Restoration: A	Onsite truck	—	—	HHDT
Site Restoration: B	—	—	—	—
Site Restoration: B	Worker	0.00	14.3	LDA,LDT1,LDT2
Site Restoration: B	Vendor	0.00	8.80	HHDT,MHDT
Site Restoration: B	Hauling	0.42	20.0	HHDT
Site Restoration: B	Onsite truck	—	—	HHDT
Site Restoration: C	—	—	—	—
Site Restoration: C	Worker	0.00	14.3	LDA,LDT1,LDT2
Site Restoration: C	Vendor	0.00	8.80	HHDT,MHDT
Site Restoration: C	Hauling	0.00	20.0	HHDT
Site Restoration: C	Onsite truck	—	—	HHDT
Site Restoration: D	—	—	—	—
Site Restoration: D	Worker	0.00	14.3	LDA,LDT1,LDT2
Site Restoration: D	Vendor	0.00	8.80	HHDT,MHDT
Site Restoration: D	Hauling	0.00	20.0	HHDT

Site Restoration: D	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Pre-Outage: A	—	—	—	—
Pre-Outage: A	Worker	40.0	14.3	LDA,LDT1,LDT2
Pre-Outage: A	Vendor	0.00	8.80	HHDT,MHDT
Pre-Outage: A	Hauling	1.51	20.0	HHDT
Pre-Outage: A	Onsite truck	—	—	HHDT
Pre-Outage: B	—	—	—	—
Pre-Outage: B	Worker	0.00	14.3	LDA,LDT1,LDT2
Pre-Outage: B	Vendor	0.00	8.80	HHDT,MHDT
Pre-Outage: B	Hauling	0.00	20.0	HHDT
Pre-Outage: B	Onsite truck	—	—	HHDT
Pre-Outage: C	—	—	—	—
Pre-Outage: C	Worker	0.00	14.3	LDA,LDT1,LDT2
Pre-Outage: C	Vendor	0.00	8.80	HHDT,MHDT
Pre-Outage: C	Hauling	0.00	20.0	HHDT
Pre-Outage: C	Onsite truck	—	—	HHDT
Phase 1 Construction: A	—	—	—	—
Phase 1 Construction: A	Worker	0.00	14.3	LDA,LDT1,LDT2
Phase 1 Construction: A	Vendor	0.00	8.80	HHDT,MHDT
Phase 1 Construction: A	Hauling	1.00	20.0	HHDT
Phase 1 Construction: A	Onsite truck	—	—	HHDT
Phase 1 Construction: B	—	—	—	—
Phase 1 Construction: B	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 1 Construction: B	Vendor	0.00	8.80	HHDT,MHDT
Phase 1 Construction: B	Hauling	0.00	20.0	HHDT

Phase 1 Construction: B	Onsite truck	—	—	HHDT
Phase 1 Construction: C	—	—	—	—
Phase 1 Construction: C	Worker	0.00	14.3	LDA,LDT1,LDT2
Phase 1 Construction: C	Vendor	0.00	8.80	HHDT,MHDT
Phase 1 Construction: C	Hauling	20.9	20.0	HHDT
Phase 1 Construction: C	Onsite truck	—	—	HHDT
Phase 1 Construction: D	—	—	—	—
Phase 1 Construction: D	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 1 Construction: D	Vendor	0.00	8.80	HHDT,MHDT
Phase 1 Construction: D	Hauling	0.00	20.0	HHDT
Phase 1 Construction: D	Onsite truck	—	—	HHDT
Phase 1 Construction: E	—	—	—	—
Phase 1 Construction: E	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 1 Construction: E	Vendor	2.66	8.80	HHDT,MHDT
Phase 1 Construction: E	Hauling	17.5	20.0	HHDT
Phase 1 Construction: E	Onsite truck	—	—	HHDT
Phase 1 Construction: F	—	—	—	—
Phase 1 Construction: F	Worker	0.00	14.3	LDA,LDT1,LDT2
Phase 1 Construction: F	Vendor	0.00	8.80	HHDT,MHDT
Phase 1 Construction: F	Hauling	0.00	20.0	HHDT
Phase 1 Construction: F	Onsite truck	—	—	HHDT
Phase 1 Construction: G	—	—	—	—
Phase 1 Construction: G	Worker	0.00	14.3	LDA,LDT1,LDT2
Phase 1 Construction: G	Vendor	0.00	8.80	HHDT,MHDT
Phase 1 Construction: G	Hauling	0.00	20.0	HHDT
Phase 1 Construction: G	Onsite truck	—	—	HHDT
Phase 1 Construction: H	—	—	—	—
Phase 1 Construction: H	Worker	40.0	14.3	LDA,LDT1,LDT2

Phase 1 Construction: H	Vendor	6.66	8.80	HHDT,MHDT
Phase 1 Construction: H	Hauling	0.00	20.0	HHDT
Phase 1 Construction: H	Onsite truck	—	—	HHDT
Phase 1 Construction: I	—	—	—	—
Phase 1 Construction: I	Worker	0.00	14.3	LDA,LDT1,LDT2
Phase 1 Construction: I	Vendor	0.00	8.80	HHDT,MHDT
Phase 1 Construction: I	Hauling	0.00	20.0	HHDT
Phase 1 Construction: I	Onsite truck	—	—	HHDT
Phase 2 Construction: A	—	—	—	—
Phase 2 Construction: A	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 2 Construction: A	Vendor	0.00	8.80	HHDT,MHDT
Phase 2 Construction: A	Hauling	0.71	20.0	HHDT
Phase 2 Construction: A	Onsite truck	—	—	HHDT
Phase 2 Construction: B	—	—	—	—
Phase 2 Construction: B	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 2 Construction: B	Vendor	0.00	8.80	HHDT,MHDT
Phase 2 Construction: B	Hauling	0.00	20.0	HHDT
Phase 2 Construction: B	Onsite truck	—	—	HHDT
Phase 2 Construction: C	—	—	—	—
Phase 2 Construction: C	Worker	0.00	14.3	LDA,LDT1,LDT2
Phase 2 Construction: C	Vendor	0.00	8.80	HHDT,MHDT
Phase 2 Construction: C	Hauling	0.00	20.0	HHDT
Phase 2 Construction: C	Onsite truck	—	—	HHDT
Phase 2 Construction: D	—	—	—	—
Phase 2 Construction: D	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 2 Construction: D	Vendor	0.00	8.80	HHDT,MHDT
Phase 2 Construction: D	Hauling	0.00	20.0	HHDT
Phase 2 Construction: D	Onsite truck	—	—	HHDT

Phase 2 Construction: E	—	—	—	—
Phase 2 Construction: E	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 2 Construction: E	Vendor	0.00	8.80	HHDT,MHDT
Phase 2 Construction: E	Hauling	0.00	20.0	HHDT
Phase 2 Construction: E	Onsite truck	—	—	HHDT
Phase 2 Construction: F	—	—	—	—
Phase 2 Construction: F	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 2 Construction: F	Vendor	0.00	8.80	HHDT,MHDT
Phase 2 Construction: F	Hauling	0.57	20.0	HHDT
Phase 2 Construction: F	Onsite truck	—	—	HHDT
Phase 2 Construction: G	—	—	—	—
Phase 2 Construction: G	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 2 Construction: G	Vendor	0.00	8.80	HHDT,MHDT
Phase 2 Construction: G	Hauling	0.00	20.0	HHDT
Phase 2 Construction: G	Onsite truck	—	—	HHDT
Phase 2 Construction: H	—	—	—	—
Phase 2 Construction: H	Worker	40.0	14.3	LDA,LDT1,LDT2
Phase 2 Construction: H	Vendor	0.00	8.80	HHDT,MHDT
Phase 2 Construction: H	Hauling	0.00	20.0	HHDT
Phase 2 Construction: H	Onsite truck	—	—	HHDT
Site Restoration: A	—	—	—	—
Site Restoration: A	Worker	40.0	14.3	LDA,LDT1,LDT2
Site Restoration: A	Vendor	0.00	8.80	HHDT,MHDT
Site Restoration: A	Hauling	0.00	20.0	HHDT
Site Restoration: A	Onsite truck	—	—	HHDT
Site Restoration: B	—	—	—	—
Site Restoration: B	Worker	0.00	14.3	LDA,LDT1,LDT2
Site Restoration: B	Vendor	0.00	8.80	HHDT,MHDT

Site Restoration: B	Hauling	0.42	20.0	HHDT
Site Restoration: B	Onsite truck	—	—	HHDT
Site Restoration: C	—	—	—	—
Site Restoration: C	Worker	0.00	14.3	LDA,LDT1,LDT2
Site Restoration: C	Vendor	0.00	8.80	HHDT,MHDT
Site Restoration: C	Hauling	0.00	20.0	HHDT
Site Restoration: C	Onsite truck	—	—	HHDT
Site Restoration: D	—	—	—	—
Site Restoration: D	Worker	0.00	14.3	LDA,LDT1,LDT2
Site Restoration: D	Vendor	0.00	8.80	HHDT,MHDT
Site Restoration: D	Hauling	0.00	20.0	HHDT
Site Restoration: D	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Pre-Outage: A	412	200	2.00	0.00	—
Pre-Outage: B	—	—	2.00	0.00	—

Pre-Outage: C	—	—	2.00	0.00	—
Phase 1 Construction: A	—	50.0	2.00	0.00	—
Phase 1 Construction: B	—	—	2.00	0.00	—
Phase 1 Construction: C	—	3,500	2.00	0.00	—
Phase 1 Construction: D	—	—	2.00	0.00	—
Phase 1 Construction: E	4,200	—	2.00	0.00	—
Phase 1 Construction: F	—	—	2.00	0.00	—
Phase 1 Construction: G	—	—	2.00	0.00	—
Phase 1 Construction: H	—	—	2.00	0.00	—
Phase 1 Construction: I	—	—	2.00	0.00	—
Phase 2 Construction: A	40.0	—	2.00	0.00	—
Phase 2 Construction: B	—	—	2.00	0.00	—
Phase 2 Construction: C	—	—	2.00	0.00	—
Phase 2 Construction: D	—	—	2.00	0.00	—
Phase 2 Construction: E	—	—	2.00	0.00	—
Phase 2 Construction: F	—	30.0	2.00	0.00	—
Phase 2 Construction: G	—	—	2.00	0.00	—
Phase 2 Construction: H	—	—	2.00	0.00	—
Site Restoration: A	—	—	2.00	0.00	—
Site Restoration: B	—	40.0	2.00	0.00	—
Site Restoration: C	—	—	2.00	0.00	—
Site Restoration: D	—	—	2.00	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Linear	2.00	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	28.7	annual days of extreme heat
Extreme Precipitation	20.4	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	45.4	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	3	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A

Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	0	0	0	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	3	1	1	3
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	1	1	1	2
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	72.8
AQ-PM	5.61
AQ-DPM	6.12
Drinking Water	18.3
Lead Risk Housing	54.7
Pesticides	49.6
Toxic Releases	7.36
Traffic	14.6
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	35.6
Impaired Water Bodies	12.5
Solid Waste	71.3
Sensitive Population	—
Asthma	55.1
Cardio-vascular	23.8
Low Birth Weights	29.7
Socioeconomic Factor Indicators	—
Education	32.2
Housing	87.5
Linguistic	0.00
Poverty	72.6
Unemployment	43.1

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	40.97266778
Employed	9.919158219
Median HI	16.7842936
Education	—
Bachelor's or higher	23.67509303
High school enrollment	100
Preschool enrollment	6.557166688
Transportation	—
Auto Access	50.17323239
Active commuting	20.96753497
Social	—
2-parent households	38.62440652
Voting	73.28371616
Neighborhood	—
Alcohol availability	69.65225202
Park access	26.17733864
Retail density	10.17579879
Supermarket access	26.2928269
Tree canopy	99.67919928
Housing	—
Homeownership	74.72090337
Housing habitability	34.27434877
Low-inc homeowner severe housing cost burden	13.06300526
Low-inc renter severe housing cost burden	1.283202874

Uncrowded housing	96.93314513
Health Outcomes	—
Insured adults	55.13922751
Arthritis	0.0
Asthma ER Admissions	67.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	11.2
Cognitively Disabled	6.4
Physically Disabled	2.8
Heart Attack ER Admissions	64.5
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	49.4
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	87.4
SLR Inundation Area	0.0

Children	77.6
Elderly	25.4
English Speaking	98.1
Foreign-born	0.4
Outdoor Workers	28.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	96.2
Traffic Density	8.5
Traffic Access	0.0
Other Indices	—
Hardship	51.5
Other Decision Support	—
2016 Voting	68.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	24.0
Healthy Places Index Score for Project Location (b)	35.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	See Project Description.
Construction: Off-Road Equipment	Information provided by client; see "Construction Equipment Subtask Estimates"
Construction: Trips and VMT	See Project Description. Approximately 10 to 20 construction workers per day would be on the Project Site.

Appendix C

Biological Resources Assessment

BIOLOGICAL RESOURCE ASSESSMENT

December 16, 2022

GEI Consultants

Geotechnical
Environmental
Water Resources
Ecological

Michael Baron
Environmental Review Analyst
El Dorado Irrigation District
2890 Mosquito Road
Placerville, CA 95667

Subject: Biological Resources Survey Report for the Flume 48 Project

Dear Mr. Baron:

The El Dorado Irrigation District (District) is proposing to replace the existing flume structure at Flume 48 along the El Dorado Canal. The Flume 48 project is located in central El Dorado County, north of U.S. Highway 50 and west of Fresh Pond (**Attachment A, Figure 1**). The proposed project is situated south of the South Fork American River at elevations ranging from approximately 3,840–3,900 feet (**Attachment A, Figure 2**). The project site includes the flume, staging area, access road and buffer zone of approximately 50 feet downslope of the flume (**Attachment A, Figure 3**). GEI Consultants, Inc. (GEI) biologists conducted a biological resource survey on the project site on June 21, 2022. This report describes the methods and results of these surveys and the potential for implementation of the proposed project to impact sensitive biological resources.

Pre-field Investigation and Field Survey

Before conducting the field survey, reviews of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2022a), California Native Plant Society (CNPS) online Inventory of Rare and Endangered Vascular Plants of California (CNPS 2022a), U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) website (USFWS 2022a), U.S. Forest Service (USFS) Region 5 Sensitive Plant Species (USFS 2013a) and Sensitive Animal Species Lists (USFS 2013b) were conducted. These reviews were centered on the Pollock Pines U.S. Geological Survey (USGS) 7.5-minute quadrangle and included the eight surrounding quadrangles. Species lists generated during the reviews are provided in **Attachment B**.

Aerial imagery on Google Earth®, the USGS Pollock Pines 7.5-minute quadrangles, USFWS National Wetlands Inventory (USFWS 2022b) and the Natural Resources Conservation Service *Soil Survey of El Dorado National Forest Area, Parts of Alpine, Amador, El Dorado, and Placer Counties, California* (NRCS 2019) were also reviewed before and after conducting the field survey.

A floristic survey of the project site was conducted by GEI botanist Lasthenia Michele Lee and biologist Devin Barry on June 21, 2022. This floristic survey included pedestrian visual surveys within the boundaries of the project site for target special-status plant species, mapping vegetation and habitat types, an evaluation of habitat suitability for special-status plants and recording plant species that were observed.

During the June 21, 2022 survey, biologist Devin Barry also conducted constraints-level mapping of aquatic resources and an evaluation of habitat suitability on or adjacent to the project site for special-status wildlife species, and documented observations of wildlife species. Photographs representative of the project sites are provided in **Attachment C**.

GEI Consultants, Inc.
2868 Prospect Park Drive, Suite 400, Rancho Cordova, CA 95670
916.631.4500 fax 916.634.4501

Environmental Setting

Elevation at the 3.8-acre project site is approximately 3,840 to 3,900 feet above mean sea level. The access road and staging area of the project site are located immediately north of CA-50. The staging area is a flat opening in the tree canopy. The flume located in the northern portion of the project site slopes gradually east to west, with north-facing slopes on both sides of the flume.

Habitat and Land Cover Types

The project site is composed primarily of Douglas fir (*Pseudotsuga menziesii*) forest (**Attachment A, Figure 3**). This habitat is characteristic of mixed coniferous forests that occur in El Dorado County between 2,000 and 6,000 feet (CNPS 2022b). Dominant tree species in this forest type in the project site include Douglas fir, black oak (*Quercus kelloggii*), and incense cedar (*Calocedrus decurrens*). Canyon live oak (*Quercus chrysolepis*) and Ponderosa pine (*Pinus ponderosa*) are occasional species that co-occur with big-leaf maple (*Acer macrophyllum*). Understory species density ranged from sparse due to the contiguous tree canopy that limits light penetration to denser areas in openings and along the forest edges bordering grassland and ruderal habitats. In addition, vegetation immediately adjacent to the flume appears disturbed and managed to reduce vegetation cover and supports more ruderal, non-native plant species. Understory species and species observed in small canopy openings along the access road and staging area include wax leaf raspberry (*Rubus glaucifolius*), feathery false lily of the valley (*Maianthemum racemosum*), western thimbleberry (*Rubus parviflora*), blue wildrye (*Elymus glaucus* ssp. *glaucus*), Bolander's blue grass (*Poa bolanderi*), tincture plant (*Collinsia tinctoria*), variable-leaf collomia (*Collomia heterophylla*), violet draperia (*Draperia systyla*), and chickweed (*Stellaria media*).

Two small ephemeral drainages were identified within the project site. The two drainages flow from rocky slopes north of the Eldorado Ditch below the elevated flume, and then south towards the South Fork American River (**Attachment A, Figure 3)**. At the time of the field survey, the drainages exhibited some evidence of ephemeral water flow but lacked vegetation and riparian trees species in the overstory.

One small intermittent drainage was identified north of the Eldorado Ditch below the elevated flume (**Attachment C**). Surface water originated from below the flume and trickled over concrete abutments. The area supported riparian species such as arroyo willow (*Salix lasiolepis.*) and alumroot (*Heuchera micrantha*) in proximity to the drainage.

Soil Types

Soils in the survey area are classified by the Natural Resources Conservation Service was entirely Josephine very rocky loam derived from metamorphic rock, schist or slate parent material (NRCS 2019). Josephine silt loam soils are sometimes associated with known occurrences of Pleasant valley mariposa-lily (*Calochortus clavatus* ssp. *avius*), a California Rare Plant Rank (CRPR) 1B.2 species. Soils in the project site are not serpentinite or volcanic soils that could support special-status plants endemic to these soil types.

Sensitive Biological Resources

Sensitive biological resources addressed in this section include those that are afforded consideration or protection under the California Environmental Quality Act (CEQA), California Fish and Game Code (FGC), California Endangered Species Act (CESA), Federal Endangered Species Act (ESA), Clean Water Act (CWA), and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act).

Special-status Species

Special-status species are plant and animal taxa (taxonomic categories or populations) that fall into any of the following categories:

- taxa officially listed by the Federal government or the State of California as endangered, threatened, or rare;
- candidate taxa for Federal or State listing as endangered or threatened;
- taxa proposed for Federal or State listing as endangered or threatened;
- taxa that meet the criteria for listing;
- taxa considered sensitive by USFS
- wildlife identified by CDFW as species of special concern and plants considered by CDFW to be "rare, threatened, or endangered in California;" (CRPR 1A through 2B)
- species listed as Fully Protected under the FGC; or
- taxa afforded protection under local or regional planning documents.

Plant taxa are assigned by CDFW to one of the following six California Rare Plant Ranks (CRPRs):

- CRPR 1A—Plants presumed to be extinct in California;
- CRPR 1B—Plants that are rare, threatened, or endangered in California and elsewhere;
- CRPR 2A—Plants that are presumed extirpated in California, but are more common elsewhere;
- CRPR 2B—Plants that are rare, threatened, or endangered in California but more common elsewhere;
- CRPR 3—Plants about which more information is needed (a review list); or
- CRPR 4—Plants of limited distribution (a watch list).

All plants with a CRPR are considered "special plants" by CDFW. The term "special plants" is a broad term used by CDFW to refer to all plant taxa inventoried in the CNDDB, regardless of their legal or protection status. CDFW applies the term "California species of special concern" to wildlife species that are not listed under federal or state endangered species acts but that are nonetheless declining at a rate that could result in listing, or that historically occurred in low numbers and are subject to current known threats to their persistence.

Figure 4 in **Attachment A** shows all CNDDB occurrences of plant and wildlife species that meet the definition of special-status species described above and have been documented within 5 miles of the project site. Results of the CNDDB search yielded occurrences of a total of 59 special-status plants and animals within the USGS 9-quadrangle search area; only six of these species have been documented within 5 miles of the project site, and many of the occurrences are historical (**Attachment B**). (Note: Not all species tracked in the CNDDB and included in the search results in Attachment B meet the definition of a special-status species described above).

Special-status Plants

Table 1 provides information on special-status plants that were evaluated for their potential to occur on the project site based on the CNDDB query, CNPS Inventory of Rare and Endangered Vascular Plants of California, and USFS list of Sensitive Plant Species for the El Dorado National Forest. A total of 36

special-status plant species were evaluated. Nine species, including Pleasant Valley mariposa-lily (*Calochortus clavatus* var. *avius*), could potentially occur on the project site. There is potentially limited suitable habitat for these species on the project site. Several of these nine species occur in wetland habitats, and the site lacks natural wetland habitats. As described above, there are areas where moisture from water leaking from the flume creates small patches with hydrophytic plants. The June 21, 2022, survey was conducted during the blooming period of all nine of these species and no special-status plants were observed during these surveys.

Pleasant Valley mariposa-lily was determined to have the potential to occur on the project site prior to conducting the June 21, 2022, floristic survey. A reference population for this species approximately 8 miles west along the El Dorado Powerhouse Penstock was visited on June 16, 2022. Most of these 100 individual plants were blooming were readily identifiable and within view of the survey area. Only a few individual plants contained fruit at the time of the survey.

Although the June 21, 2022, floristic survey was conducted during the blooming period of the nine plant species with a potential to occur on the project site, no special-status plant species were observed during this floristic survey.

Table 1. Special-status Plants Evaluated for Potential to Occur on the Project Site

Species	Blooming Period	Status[1]		Habitat Associations	Potential to Occur on the Project Site[2]
		Federal	State		
Three-bracted onion *Allium tribracteatum*	March–May	FSS	1B.2	Volcanic slopes in chaparral and lower and upper montane forests. Elevation: 3,610-9,845 feet	No potential to occur; no volcanic slopes present on the project site.
Nissenan manzanita *Arctostaphylos nissenana*	February–March	FSS	1B.2	Open, rocky shale ridges in closed-cone coniferous forest and chaparral. Elevation: 1,475- 5,410 feet	No potential to occur; no suitable habitat is present on the project site.
Big-scale balsamroot *Balsamorhiza macrolepis*	March–June	FSS	1B.2	Chaparral, cismontane woodland, valley and foothill grassland; sometimes on serpentinite. Elevation: below 4,500 feet	Could occur; grassland and woodland limited on project site.
Upswept moonwort *Botrychium ascendens*	July–August	FSS	2B.3	Lower montane coniferous forest, meadows and seeps; grassy fields, coniferous woods near springs and creeks. Elevation: 6,900- 15,000 feet.	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range.
Scalloped moonwort *Botrychium crenulatum*	June–September	FSS	2B.2	Bogs, fens, meadows, seeps, marshes, stream margins in lower and upper montane coniferous forest; typically in areas with hard water. Elevation: 4,900 – 11,800 feet.	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range.

Table 1. Special-status Plants Evaluated for Potential to Occur on the Project Site

Species	Blooming Period	Status[1]		Habitat Associations	Potential to Occur on the Project Site[2]
		Federal	State		
Common moonwort *Botrychium lunaria*	August	FSS	–	Meadows and seeps, subalpine coniferous forest, upper montane coniferous forest. Elevation: 6,500 – 11,200 feet	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Mingan moonwort *Botrychium minganense*	July–September	FSS	2B.2	Open areas in bogs, fens, meadows, seeps, marshes; stream margins in lower and upper montane coniferous forest; yellow pine forest. Elevation: 4,920- 10,100 feet	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Western goblin *Botrychium montanum*	July–September	FSS	2B.1	Creek banks in old growth forest in lower and upper montane coniferous forest. Elevation: 4,920- 10,100 feet.	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Pardox moonwort *Botrychium paradoxum*	August	FSS	2B.1	Moist meadows and shady slopes in lower and upper montane coniferous forest. Elevation: above 13,000 feet	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Stalked moonwort *Botrychium pedunculosum*	August	FSS	2B.1	Moist or dry meadows, springs, stream terraces, in lower and upper montane coniferous forest of Tuolumne County. Elevation: 3,000- 6,300 feet.	No potential to occur; no suitable habitat present on project site
Bolander's bruchia *Bruchia bolanderi*	NA	FSS	4.2	Mesic soils in upper montane coniferous forest. Elevation: 5,000 – 6,640 feet.	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Pleasant valley mariposa-lily *Calochortus clavatus* var. *avius*	May-July	FSS	1B.2	Open areas in pine-oak habitats in lower montane coniferous forest; sometimes on Josephine silt loam and volcanic soils	Could occur; marginally suitable habitat is present on the project site; suitable Josephine soils present on the project site; dense tree canopy limits open areas; nearby documented occurrences within 5 miles of the project site.
Flagella-like atractylocarpus *Campylopodiella stenocarpa*	NA	–	2B.2	Seeping metamorphic rock. Elevation: 330 – 1,640 feet.	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range

Table 1. Special-status Plants Evaluated for Potential to Occur on the Project Site

Species	Blooming Period	Status[1]		Habitat Associations	Potential to Occur on the Project Site[2]
		Federal	State		
Sierra arching sedge *Carex cyrtostachya*	May–August	–	1B.2	Mesic sites in lower montane coniferous forest, riparian forest, marshes and swamps, meadows and seeps. Elevation: 2,000- 4,460	Could occur; project site lacks natural wetland habitats; marginally suitable habitat present in north-facing upper slopes that border the flume and that are moist from flume leaks, species not observed during June 2022 survey.
Red Hills soaproot *Chlorogalum grandiflorum*	March–June	–	1B.2	Chaparral, cismontane woodland, lower montane coniferous forest on serpentinite and gabbroic soils. Elevation: 980- 1,640 feet.	No potential to occur; serpentine and gabbroic soils are not present on project site and project site is outside the species' known elevation range
Mountain lady's slipper *Cypripedium montanum*	March–August	FSS	4.2	Moist areas, dry slopes, cismontane woodland, broadleaf forest, lower montane coniferous forest. Elevation: 1,600- 6,900 feet.	Could occur; potential suitable habitat present in undisturbed areas of the Study Area, but many areas adjacent to flume are disturbed, species not observed during June 2022 survey
Tahoe draba *Draba asterophora* var. *asterophora*	July–August	FSS	1B.2	Alpine boulder rock fields and subalpine coniferous forest. Elevation: above 8,500 feet.	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Cup Lake draba *Draba asterophora* var. *macrocarpa*	July–August	FSS	1B.1	Rocky substrates in subalpine coniferous forest. Elevation: above 8,500 feet	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Jack's wild buckwheat *Eriogonum luteolum* var. *saltuarium*	July–September	FSS	1B.2	Granitic sand in Great Basin scrub and upper montane coniferous forest. Elevation: 5,575- 7,785	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Tripod buckwheat *Eriogonum tripodum*	May–July	FSS	4.2	Chaparral and cismontane woodland in serpentinite soils. Elevation: 655-5,250 feet	No potential to occur; serpentinite soils are not present on project site
Blandow's bog moss *Helodium blandowii*	NA	FSS	–	Montane bogs, fens, mires, and seeps. Elevation: 5,000-6,000 feet	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Parry's horkelia *Horkelia parryi*	April–September	FSS	1B.2	Chaparral and cismontane woodland. Elevation: 260-2,952	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range

Table 1. Special-status Plants Evaluated for Potential to Occur on the Project Site

Species	Blooming Period	Status[1]		Habitat Associations	Potential to Occur on the Project Site[2]
		Federal	State		
Finger rush *Juncus digitatus*	May–June	–	1B.1	Openings in cismontane woodland, lower montane coniferous forest, and vernal pools. Elevation: 2,130-2,625 feet	No potential to occur; no natural wetlands present on project site for this obligate wetland species and project site is outside the species' known elevation range
Hutchison's lewisia *Lewisia kelloggii* ssp. *hutchisonii*	May–August	FSS	3.2	Upper montane coniferous forest in openings, often on ridgetops composed of slate or rhyolite tuff Elevation: 4,915- 6,910 feet	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Kellogg's lewisia *Lewisia kelloggii* ssp. *kelloggii*	May–August	FSS	3.2	Upper montane coniferous forest in openings, often on ridgetops composed of slate or rhyolite tuff. Elevation: 5,100-7,000 feet	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Long-petaled lewisia *Lewisia longipetala*	July–August	FSS	1B.3	Alpine boulder and rock fields in subalpine coniferous forest in mesic substrates Elevation: above 8,000 feet.	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range
Saw-toothed lewisia *Lewisia serrata*	May–June	FSS	1B.1	North-facing, mostly shaded, moss-covered and metamorphic rock cliffs and ledges in steep gorges along relatively permanent streams in broadleafed upland forest, lower montane coniferous forest, riparian forest. Known from El Dorado and Placer counties. Elevation: 2,525-4,710 feet	Could occur; site lacks natural seeps and wetlands; marginally suitable moist, rocky north-facing upper slopes that border the flume where moisture occurs from flume structures; no gorges on or adjacent to the project site; species not observed during June 2022 survey
Broad-nerved hump-moss *Meesia uliginosa*	NA	FSS	2B.2	Mesic soils in meadows, seeps, and lower and upper coniferous forests Elevation: 5,000-6,000 feet	No potential to occur; project site is outside the species' known elevation range
Tehachapi monardella *Monardella linoides* ssp. *oblonga*	June–August	FSS	1B.3	Dry, gravelly slopes and flats in chaparral, conifer woodland, and pinyon and juniper woodlands in Tulare and Kern County. Elevation: 5,000-8,200 feet.	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range.
Yellow bur navarretia *Navarretia prolifera* ssp. *lutea*	May–July	FSS	4.3	Chaparral and cismontane woodland, often in dry rocky flats near drainage channels. Elevation: 2,300- 6,560 feet	Could occur; open habitat is limited on project site; species not observed during June 2022 floristic survey.

Table 1. Special-status Plants Evaluated for Potential to Occur on the Project Site

Species	Blooming Period	Status[1]		Habitat Associations	Potential to Occur on the Project Site[2]
		Federal	State		
Northern adder's tongue *Ophioglossum pusillum*	July	FSS	2B.2	Marshes and swamps; marsh edges, low pastures, and grassy roadside ditches in acidic soils. Elevation: 40-3,200 feet	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range.
Veined water lichen *Peltigera gowardii*	NA	FSS	4.2	On rocks in cold-water creeks with little or no sediment or disturbance. Elevation: 2,500- 7,000 feet.	No potential to occur; no suitable habitat present on project site.
Stebbins' phacelia *Phacelia stebbinsii*	May–July	FSS	1B.2	Shady, moss-covered metamorphic rock outcrops or meadows with rocky soil in lower montane coniferous forest, cismontane woodland, meadows and seeps. Elevation: 3,000-6,900 feet	Could occur; potential suitable habitat present on project site is limited; species not observed during June 2022 floristic survey.
Whitebark pine *Pinus albicaulis*	NA	FSS	–	Upper red fir forest to timberline, especially subalpine forest. Elevation: above 7,300 feet	No potential to occur; no suitable habitat present on project site and project site is outside the species' known elevation range.
Sierra blue grass *Poa sierrae*	April–July	FSS	1B.3	Shady north-facing, often moist, rocky slopes in lower montane coniferous forest; often in canyons. Elevation: 1,200- 4,900 feet	Could occur; understory habitat present on project site; species not observed during June 2022 floristic survey.
Brownish beaked rush *Rhynchospora capitella*	June–August	–	2B.2	Lower and upper montane coniferous forest, meadows, seeps, marsh, and swamps; mesic sites. Elevation: below 6,500 feet	Could occur; project site lacks natural wetland habitats; marginally suitable habitat present in north-facing upper slopes that border the flume and that are moist from flume leaks, species not observed during June 2022 survey

Table 1. Special-status Plants Evaluated for Potential to Occur on the Project Site

Species	Blooming Period	Status[1] Federal	Status[1] State	Habitat Associations	Potential to Occur on the Project Site[2]

[1] Status Definitions

Federal Status

FSS = U.S. Forest Service Region 5 Sensitive Species

– = No status

State/California Rare Plant Rank (CRPR)

1B = Considered rare or endangered in California and elsewhere

2B = Considered rare or endangered in California but more common elsewhere

3 = Species for which limited information is available

4 = Limited distribution or infrequent throughout a broader area in California

– = No status

California Rare Plant Rank (CRPR) Extensions

.1 = Seriously endangered in California (greater than 80 percent of occurrences are threatened and/or have a high degree and immediacy of threat)

.2 = Fairly endangered in California (20 to 80 percent of occurrences are threatened and/or have a moderate degree and immediacy of threat)

.3 = Not very endangered in California

[2] Potential to Occur

- No potential to occur: Potentially suitable habitat is not present
- Unlikely to occur: Potentially suitable habitat present but species unlikely to be present because of very restricted distribution
- Could occur: Suitable habitat is available; however, there are few or no other indicators that the species may be present
- Likely to occur: Habitat conditions, behavior of the species, known occurrences in the vicinity, or other factors indicate a relatively high likelihood that the species would occur
- Known to occur: The species, or evidence of its presence, was observed during reconnaissance-level surveys or was reported by others

Sources: CDFW 2022a; CNPS 2022a; USFS 2013a; data compiled by GEI Consultants, Inc. 2022

Special-status Wildlife

Table 2 provides information on special-status wildlife species that were evaluated for potential to occur on the project site based on review of the CNDDB, IPaC, and the USFS list of Sensitive Animal Species for the El Dorado National Forest. A total of 23 species were evaluated.

Based on the review of existing documentation and observations made during field surveys, habitat on the project site is unsuitable or only marginally suitable for all special-status wildlife species that were evaluated except California spotted owl (*Strix occidentalis occidentalis*). Therefore, potential for many of the species to occur on the project site is unlikely. Only species that are highly mobile and distributed in a variety of habitat types have potential to occur on the project site.

Table 2. Special-status Wildlife Evaluated for Potential to Occur on the Project Site

Species	Status[1] Federal	State	Habitat Associations	Potential to Occur on the Project Site[2]
Invertebrates				
Western bumble bee *Bombus occidentalis*	FSS	C	Wide variety of habitats, primarily flower-rich montane meadows; nests in abandoned rodent burrows and other cavities.	Unlikely to occur; no suitable meadow habitat in or adjacent to the project site; drainage areas in project site supports few flowering plants in the understory; nearest CNDDB occurrence approximately 23 miles northeast of project site.
Fishes				
Pacific lamprey *Entosphenus tridentalus*	FSS	–	Found in gravelly streams, including tributaries of the San Francisco Estuary and the Central Valley.	No potential to occur; no suitable habitat is present on or adjacent to the project site.
Delta smelt *Hypomesus transpacificus*	T	E	Endemic to the Sacramento-San Joaquin Delta, occurring primarily below Isleton on the Sacramento River	No potential to occur; project site is outside this species' range.
Hardhead *Mylopharodon conocephalus*	FSS	–	Typically found in small to large streams in a low to mid-elevation, but can inhabit lakes and reservoirs too. Can be found in warm water streams and spawns in gravel and rocky substrates.	No potential to occur; no suitable habitat is present on or adjacent to the project site.
Amphibians				
Southern long-toed salamander *Ambystoma macrodactylum sigillatum*	–	SSC	Montane meadows and lakes surrounded by coniferous forest; in non-breeding season, adults use mammal burrows and moist areas under litter, logs, and rocks	No potential to occur; no suitable habitat is present on or adjacent to the project site.
Yosemite Toad *Anaxyrus canorus*	T FSS	C –	High elevation wet meadows in central Sierra Nevada; also occurs in seasonal ponds in subalpine coniferous forest	No potential to occur; project site is outside this species' range.
Foothill yellow-legged frog *Rana boylii*	FSS	E	Rocky streams and rivers with open, sunny banks, in forests, chaparral, and woodlands	No potential to occur; no suitable habitat is present on or adjacent to the project site.
California red-legged frog *Rana draytonii*	T	SSC	Lowlands and foothill streams, pool, and marshes in or near permanent or late season sources of deep water with dense, shrubby, riparian, or emergent vegetation	No potential to occur; no suitable habitat is present on or adjacent to the project site.

Table 2. Special-status Wildlife Evaluated for Potential to Occur on the Project Site

Species	Status[1] Federal	Status[1] State	Habitat Associations	Potential to Occur on the Project Site[2]
Sierra Nevada yellow-legged frog *Rana sierrae*	E FSS	T	Montane ponds, lakes, and streams, typically with shallow, exposed, and gently sloping shorelines	No potential to occur; no suitable habitat is present on or adjacent to the project site.
Reptiles				
Western pond turtle *Emys marmorata*	FSS	SSC	Ponds, lakes, rivers, streams, etc. with abundant vegetation, rocks, and logs for basking	No potential to occur; no suitable habitat is present on or adjacent to the project site.
Birds				
Northern goshawk *Accipiter gentilis*	FSS	SSC	Coniferous and montane riparian forest; typically nests on north-facing slopes near water	Unlikely to occur; site provides poor-quality nesting habitat, but transient and other non-breeding individuals could occur in the area. Nearest CNDDB occurrence approximately 7 miles east of the project site.
Willow flycatcher *Empidonax traillii*	FSS	–	Dense willow thickets associated with wet meadows, ponds, and streams	No potential to occur; no suitable habitat is present on or adjacent to the project site.
Bald eagle *Haliaeetus leucocephalus*	FSS	E FP	Coastal shorelines and wetlands, lakes, reservoirs, and rivers. Nests in large trees, typically in mountain and foothill forests and woodlands near reservoirs, lakes, and rivers	Unlikely to occur; unlikely to nest in the immediate vicinity, but transient and other non-breeding individuals could occur in the area. Nearest CNDDB occurrence approximately 8 miles north of project site.
Great gray owl *Strix nebulosi*	FSS	E	High elevation coniferous forest, close to large meadows	No potential to occur; no suitable habitat is present on or adjacent to the project site (EID 2002a).
California spotted owl *Strix occidentalis occidentalis*	FSS	SSC	In the Sierra Nevada, primarily coniferous and montane hardwood forests at middle elevations; also occurs in red fir forest at high elevations	Likely to occur; suitable habitat present on and adjacent to the project site; species was observed 8 during surveys completed by GEI biologists 3 miles west at Flume 47A in 2021.
Mammals				
Pallid bat *Antrozous pallidus*	FSS	SSC	Variety of habitats, including woodland, forest, grassland, and desert; roosts in tree cavities, rock crevices, mines, caves, and human structures	Unlikely to occur; visible tree cavities were not observed at the project site. nearest documented CNDDB occurrence approximately 15 miles southwest of project site.

Table 2. Special-status Wildlife Evaluated for Potential to Occur on the Project Site

Species	Status[1] Federal	Status[1] State	Habitat Associations	Potential to Occur on the Project Site[2]
Sierra Nevada mountain beaver *Aplodontia rufa californica*	FSS –	SSC	Found in dense riparian-deciduous and open, brushy stages of forests, in the Sierra Nevada mostly found in maintain riparian habitats	No potential to occur; no suitable habitat is present on or adjacent to the project site.
Townsend's big-eared bat *Corynorhinus townsendii*	FSS	SSC	Variety of habitats, but prefers mesic habitats; roosts in caves, mines, tunnels, buildings, or other human-made structures	Unlikely to occur; no suitable roost sites occur on the project site; nearest CNDDB documented occurrence approximately 17 miles northwest of project site.
California wolverine *Gulo gulo*	FSS –	T FP	Various montane habitats; uses caves, logs, and burrows for cover and den sites; hunts in open areas.	No potential to occur; project site is outside this species' range.
Pacific marten *Martes caurina*	FSS	–	Mixed coniferous forest in the Olympic mountain range; high canopy closure, including old-growth trees and snags for denning.	No potential to occur; project site is outside this species' range.
Fringed myotis *Myotis thysanodes*	FSS	–	Wide variety of habitats, but most often in woodland and forest; roosts in caves, mines, buildings and other crevices	Unlikely to occur; suitable roost locations are absent onsite; has been documented approximately 3.5 miles south the project site.
Fisher *Pekania pennanti*	FSS	SSC	Large areas of mature, dense conifer forest and deciduous riparian areas with high canopy closure; uses cavities, snags, logs, and rocky areas for cover and den sites	No potential to occur; project site is outside this species' range.
Sierra Nevada red fox *Vulpes vulpes necator*	C	T	Variety of montane habitats; prefers forest interspersed with meadows and other open areas and requires dense vegetation and rocky areas for cover and den sites	No potential to occur; project site is outside this species' range.

Table 2. Special-status Wildlife Evaluated for Potential to Occur on the Project Site

Species	Status[1] Federal	Status[1] State	Habitat Associations	Potential to Occur on the Project Site[2]

Notes: CNDDB = California Natural Diversity Database

[1] Status Definitions

E = Listed as Endangered under the Federal or State Endangered Species Act
T = Listed as Threatened under the Federal or State Endangered Species Act
C = Candidate for listing as Threatened or Endangered under the State Endangered Species Act
FSS = U.S. Forest Service Region 5 Sensitive Species
FP = Fully Protected under the California Fish and Game Code
SSC = California Species of Special Concern
– = No status

[2] Potential to Occur

- No potential to occur: Potentially suitable habitat is not present
- Unlikely to occur: Potentially suitable habitat present but species unlikely to be present because of very restricted distribution
- Could occur: Suitable habitat is available; however, there are few or no other indicators that the species may be present
- Likely to occur: Habitat conditions, behavior of the species, known occurrences in the vicinity, or other factors indicate a relatively high likelihood that the species would occur
- Known to occur: The species, or evidence of its presence, was observed during reconnaissance-level surveys or was documented.

Sources: USFS 2013b, CDFW 2022a; data compiled by GEI Consultants, Inc. in 2022

Sensitive Habitats

Sensitive habitats include those that are of special concern to resource agencies or are afforded specific consideration through CEQA, ESA, Section 1602 of the FGC, Section 404 of the CWA, CDFW, and the Porter-Cologne Act. Sensitive habitats may be of special concern for a variety of reasons, including their locally or regionally declining status, or because they provide important habitat to special-status species.

Critical Habitat

Critical habitat is a geographic area containing features determined to be essential to the conservation of a species listed as threatened or endangered under the ESA. The project site is not within designated or proposed critical habitat for any species.

Other Habitats Protected under Federal and State Regulations

Under Section 404 of the CWA, the U.S. Army Corps of Engineers (USACE) regulates discharge of dredged or fill material into aquatic features that qualify as waters of the United States; wetlands that support hydrophytic vegetation, hydric soil types, and wetland hydrology may also qualify for USACE jurisdiction under Section 404 of the CWA. Under Section 401 of the CWA, the Central Valley Regional Water Quality Control Board (RWQCB) regulates discharge of dredged or fill material into waters of the State, to ensure such activities do not violate State or Federal water quality standards and in compliance with the Porter-Cologne Act. In addition, all diversions, obstruction, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources is subject to the regulatory approval of CDFW pursuant to Section 1602 of the FGC. The project site contains two ephemeral drainages and one intermittent drainage that are potentially subject to these regulations.

Sensitive Natural Communities

CDFW maintains a *List of Natural Communities* that are native to California (CDFW 2022b). CDFW identifies and ranks subsets of these natural communities as sensitive natural communities that are considered to be highly imperiled. CDFW publishes and frequently updates a list of *Sensitive Natural*

Communities (CDFW 2022b). Many riparian plant communities are included as sensitive natural communities because of habitat loss and their value to a diverse community of plant and wildlife species. No sensitive natural community occur on the project site.

If you have any questions or concerns regarding this biological assessment report, please contact me by phone at (916) 912-4940 or e-mail at ehtain@geiconsultants.com.

Sincerely,



Eric Htain
Project Manager/Senior Regulatory Specialist

Attachment A: Figures 1-5
Attachment B: Special-status Species Lists
Attachment C: Representative Photographs
Attachment D: Lists of Plant and Wildlife Species Observed during the Field Survey

References

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Attachment A

Figure 1. Regional Location

Figure 2. Topographic Map

Figure 3. Habitat Types on the Project Site

Figure 4. California Natural Diversity Database Occurrences within 5 Miles of the Project Site

Figure 5. California Natural Diversity Database Occurrences of Spotted Owl within 5 Miles of the Project Site

Figure 1. Regional Location



Source: GEI Consultants, Inc. 2022

Figure 2. Topographic Map



Source: GEI Consultants, Inc. 2022

Figure 3. **Habitat Types on the Project Site**



Source: GEI Consultants, Inc. 2022

Figure 4. California Natural Diversity Database Occurrences within 5 Miles of Project Site

Source: GEI Consultants, Inc. 2022

Figure 5. California Natural Diversity Database Occurrences of Spotted Owl within 5 Miles of Project Site

Source: GEI Consultants, Inc. 2022

Attachment B

Special-status Species Lists

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:
Project Code: 2022-0079365
Project Name: Flume 48

August 26, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Project Summary

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Pollock Pines (3812075) OR Slate Mtn. (3812076) OR Tunnel Hill (3812086) OR Devil Peak (3812085) OR Robbs Peak (3812084) OR Riverton (3812074) OR Old Iron Mountain (3812064) OR Sly Park (3812065) OR Camino (3812066))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter gentilis northern goshawk	ABNKC12060	None	None	G5	S3	SSC
Ambystoma macrodactylum sigillatum southern long-toed salamander	AAAAA01085	None	None	G5T4	S3	SSC
Aplodontia rufa californica Sierra Nevada mountain beaver	AMAFA01013	None	None	G5T3T4	S2S3	SSC
Arctostaphylos nissenana Nissenan manzanita	PDERI040V0	None	None	G1	S1	1B.2
Atractelmis wawona Wawona riffle beetle	IICOL58010	None	None	G3	S1S2	
Bombus occidentalis western bumble bee	IIHYM24250	None	None	G2G3	S1	
Botrychium ascendens upswept moonwort	PPOPH010S0	None	None	G3G4	S2	2B.3
Botrychium crenulatum scalloped moonwort	PPOPH010L0	None	None	G4	S3	2B.2
Botrychium minganense Mingan moonwort	PPOPH010R0	None	None	G4G5	S3	2B.2
Calochortus clavatus var. avius Pleasant Valley mariposa-lily	PMLIL0D095	None	None	G4T2	S2	1B.2
Campylopodiella stenocarpa flagella-like atractylocarpus	NBMUS84010	None	None	G5	S1?	2B.2
Carex cyrtostachya Sierra arching sedge	PMCYP03M00	None	None	G2	S2	1B.2
Central Valley Drainage Hardhead/Squawfish Stream Central Valley Drainage Hardhead/Squawfish Stream	CARA2443CA	None	None	GNR	SNR	
Central Valley Drainage Resident Rainbow Trout Stream Central Valley Drainage Resident Rainbow Trout Stream	CARA2421CA	None	None	GNR	SNR	
Central Valley Drainage Spring Stream Central Valley Drainage Spring Stream	CARA2413CA	None	None	GNR	SNR	
Chlorogalum grandiflorum Red Hills soaproot	PMLIL0G020	None	None	G3	S3	1B.2
Clarkia biloba ssp. brandegeeae Brandegee's clarkia	PDONA05053	None	None	G4G5T4	S4	4.2
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Cosumnoperla hypocrena Cosumnes stripetail	IIPLE23020	None	None	G2	S2	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Haliaeetus leucocephalus bald eagle	ABNKC10010	Delisted	Endangered	G5	S3	FP
Horkelia parryi Parry's horkelia	PDROS0W0C0	None	None	G2	S2	1B.2
Lasionycteris noctivagans silver-haired bat	AMACC02010	None	None	G3G4	S3S4	
Lasiurus cinereus hoary bat	AMACC05030	None	None	G3G4	S4	
Lewisia serrata saw-toothed lewisia	PDPOR040E0	None	None	G2	S2	1B.1
Monadenia mormonum buttoni Button's Sierra sideband	IMGASC7071	None	None	G2T1	S1S2	
Myotis thysanodes fringed myotis	AMACC01090	None	None	G4	S3	
Myotis volans long-legged myotis	AMACC01110	None	None	G4G5	S3	
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Nebria darlingtoni South Forks ground beetle	IICOL6L100	None	None	G1	S1	
Orobittacus obscurus gold rush hanging scorpionfly	IIMEC07010	None	None	G1	S1	
Pekania pennanti Fisher	AMAJF01020	None	None	G5	S2S3	SSC
Phacelia stebbinsii Stebbins' phacelia	PDHYD0C4D0	None	None	G3	S3	1B.2
Poa sierrae Sierra blue grass	PMPOA4Z310	None	None	G3	S3	1B.3
Rana boylii foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Rana sierrae Sierra Nevada yellow-legged frog	AAABH01340	Endangered	Threatened	G1	S1	WL
Rhynchospora capitellata brownish beaked-rush	PMCYP0N080	None	None	G5	S1	2B.2
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Sacramento-San Joaquin Foothill/Valley Ephemeral Stream	CARA2130CA	None	None	GNR	SNR	
Sacramento-San Joaquin Foothill/Valley Ephemeral Stream						
Sphagnum Bog	CTT51110CA	None	None	G3	S1.2	
Sphagnum Bog						
Stygobromus grahami	ICMAL05920	None	None	G2	S2	
Graham's Cave amphipod						
Viola tomentosa	PDVIO04280	None	None	G3	S3	4.2
felt-leaved violet						
Vulpes vulpes necator pop. 2	AMAJA03017	Endangered	Threatened	G5TNR	S1	
Sierra Nevada red fox - Sierra Nevada DPS						

Record Count: 44

CNPS Rare Plant Inventory

CALIFORNIA NATIVE PLANT SOCIETY

Search Results

38 matches found. Click on scientific name for details

Search Criteria: Quad is one of [3812075:3812076:3812086:3812085:3812084:3812074:3812064:3812065:3812066]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	FED LIST	STATE LIST	CA RARE PLANT RANK
Allium sanbornii var. congdonii	Congdon's onion	Alliaceae	perennial bulbiferous herb	None	None	4.3
Allium sanbornii var. sanbornii	Sanborn's onion	Alliaceae	perennial bulbiferous herb	None	None	4.2
Arctostaphylos nissenana	Nissenan manzanita	Ericaceae	perennial evergreen shrub	None	None	1B.2
Bolandra californica	Sierra bolandra	Saxifragaceae	perennial herb	None	None	4.3
Botrychium ascendens	upswept moonwort	Ophioglossaceae	perennial rhizomatous herb	None	None	2B.3
Botrychium crenulatum	scalloped moonwort	Ophioglossaceae	perennial rhizomatous herb	None	None	2B.2
Botrychium minganense	Mingan moonwort	Ophioglossaceae	perennial rhizomatous herb	None	None	2B.2
Calochortus clavatus var. avius	Pleasant Valley mariposa-lily	Liliaceae	perennial bulbiferous herb	None	None	1B.2
Campylopodiella stenocarpa	flagella-like atractylocarpus	Dicranaceae	moss	None	None	2B.2
Carex cyrtostachya	Sierra arching sedge	Cyperaceae	perennial herb	None	None	1B.2
Ceanothus fresnensis	Fresno ceanothus	Rhamnaceae	perennial evergreen shrub	None	None	4.3
Chlorogalum grandiflorum	Red Hills soaproot	Agavaceae	perennial bulbiferous herb	None	None	1B.2
Clarkia biloba ssp. *brandegeeae*	Brandegee's clarkia	Onagraceae	annual herb	None	None	4.2
Clarkia virgata	Sierra clarkia	Onagraceae	annual herb	None	None	4.3
Claytonia palustris	marsh claytonia	Montiaceae	perennial herb	None	None	4.3
Claytonia parviflora ssp. *grandiflora*	streambank spring beauty	Montiaceae	annual herb	None	None	4.2
Erigeron petrophilus var. sierrensis	northern Sierra daisy	Asteraceae	perennial rhizomatous herb	None	None	4.3
Eriogonum ovalifolium var. eximium	brown-margined buckwheat	Polygonaceae	perennial herb	None	None	4.3
Eriophorum gracile	slender cottongrass	Cyperaceae	perennial rhizomatous herb (emergent)	None	None	4.3
Githopsis pulchella ssp. *serpentinicola*	serpentine bluecup	Campanulaceae	annual herb	None	None	4.3
Horkelia parryi	Parry's horkelia	Rosaceae	perennial herb	None	None	1B.2
Jensia yosemitana	Yosemite tarplant	Asteraceae	annual herb	None	None	3.2
Juncus digitatus	finger rush	Juncaceae	annual herb	None	None	1B.1
Lewisia kelloggii ssp. *hutchisonii*	Hutchison's lewisia	Montiaceae	perennial herb	None	None	3.2
Lewisia serrata	saw-toothed lewisia	Montiaceae	perennial herb	None	None	1B.1
Lilium humboldtii	Humboldt lily	Liliaceae	perennial bulbiferous herb	None	None	4.2

Lilium humboldtii ssp. *humboldtii*	Humboldt lily	Liliaceae	perennial bulbiferous herb	None	None	4.2
Myrica hartwegii	Sierra sweet bay	Myricaceae	perennial deciduous shrub	None	None	4.3
Navarretia prolifera ssp. *lutea*	yellow bur navarretia	Polemoniaceae	annual herb	None	None	4.3
Peltigera gowardii	western waterfan lichen	Peltigeraceae	foliose lichen (aquatic)	None	None	4.2
Phacelia stebbinsii	Stebbins' phacelia	Hydrophyllaceae	annual herb	None	None	1B.2
Piperia colemanii	Coleman's rein orchid	Orchidaceae	perennial herb	None	None	4.3
Poa sierrae	Sierra blue grass	Poaceae	perennial rhizomatous herb	None	None	1B.3
Primula pauciflora	beautiful shootingstar	Primulaceae	perennial herb	None	None	4.2
Pseudostellaria sierrae	Sierra starwort	Caryophyllaceae	perennial rhizomatous herb	None	None	4.2
Rhynchospora capitellata	brownish beaked-rush	Cyperaceae	perennial herb	None	None	2B.2
Stellaria obtusa	obtuse starwort	Caryophyllaceae	perennial rhizomatous herb	None	None	4.3
Streptanthus longisiliquus	long-fruit jewelflower	Brassicaceae	perennial herb	None	None	4.3
Viola tomentosa	felt-leaved violet	Violaceae	perennial herb	None	None	4.2

Showing 1 to 38 of 38 entries

Suggested Citation:
California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website https://www.rareplants.cnps.org [accessed 16 May 2022].

CONTACT US
Send questions and comments to rareplants@cnps.org.

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CONTRIBUTORS
The Calflora Database
The California Lichen Society
California Natural Diversity Database
The Jepson Flora Project
The Consortium of California Herbaria
CalPhotos

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USDA Forest Service, Pacific Southwest Region
El Dorado Forest Sensitive Plant Species List

2013 FS R5 RF Sensitive Plant Species List	Eldorado NF
Scientific Name (Common Name)	
Allium tribracteatum (three-bracted onion)	X
Arctostaphylos nissenana (Nissenan manzanita)	X
Balsamorhiza macrolepis (big-scale balsamroot)	X
Botrychium ascendens (upswept moonwort)	X
Botrychium crenulatum (scalloped moonwort)	X
Botrychium lunaria (common moonwort)	X
Botrychium minganense (mingan moonwort)	X
Botrychium montanum (western goblin)	X
Botrychium paradoxum (paradox moonwort)	X
Botrychium pedunculosum (stalked moonwort)	X
Bruchia bolanderi (Bolander's bruchia)	X
Calochortus clavatus var. *avius* (Pleasant Valley mariposa-lily)	X
Cypripedium montanum (mountain lady's-slipper)	X
Draba asterophora var. *asterophora* (Tahoe draba)	X
Draba asterophora var. *macrocarpa* (Cup Lake draba)	X
Eriogonum luteolum var. *saltuarium* (Jack's wild buckwheat)	X
Eriogonum tripodum (tripod buckwheat)	X
Helodium blandowii (Blandow's bog moss)	X
Horkelia parryi (Parry's horkelia)	X
Lewisia kelloggii ssp. *hutchisonii* (Hutchison's lewisia)	X
Lewisia kelloggii ssp. *kelloggii* (Kellogg's lewisia)	X
Lewisia longipetala (long-petaled lewisia)	X
Lewisia serrata (saw-toothed lewisia)	X
Meesia uliginosa (broad-nerved hump-moss)	X
Monardella linoides ssp. *oblonga* (Tehachapi monardella)	X
Navarretia prolifera ssp. *lutea* (yellow bur navarretia)	X
Ophioglossum pusillum (northern adder's tongue)	X
Peltigera gowardii (veined water lichen)	X
Phacelia stebbinsii (Stebbins' phacelia)	X
Pinus albicaulis (whitebark pine)	X
Poa sierrae (Sierra blue grass)	X

Source: U.S. Forest Service. September 9, 2013a.

USDA Forest Service, Pacific Southwest Region El Dorado Forest Sensitive Wildlife Species List	
INVERTEBRATES, TERRESTRIAL (1)	
Bombus occidentalis	Western bumble bee
BIRDS (5)	
Accipiter gentilis	Northern goshawk
Empidonax traillii	Willow flycatcher
Haliaeetus leucocephalus	Bald eagle
Strix nebulosa	Great gray owl
Strix occidentalis occidentalis	California spotted owl
AMPHIBIANS (4)	
Anaxyrus canorus	Yosemite toad
Rana boylii	Foothill yellow-legged frog
Rana sierrae	Sierra Nevada yellow-legged frog
Emys marmorata	Western pond turtle
MAMMALS (6)	
Antrozous pallidus	Pallid bat
Corynorhinus townsendii	Townsend's big-eared bat
Gulo gulo luscus	North American wolverine
Martes caurina	Pacific marten
Pekania pennanti	Fisher
Myotis thysanodes	Fringed myotis
FISHES (2)	
Entosphenus tridentatus	Pacific lamprey
Mylopharodon conocephalus	Hardhead

Source: U.S. Forest Service. September 9, 2013b.

Attachment C

Representative Photographs



View of Flume 48 project site from below, facing west.



View of access road to project site, facing northeast.



View of staging area in project site, facing east.



View of north-facing intermittent drainage in the project site below Flume 48, facing east.



View of ephemeral drainage in project site, facing northeast toward South Fork American River.



View of steep, rocky slopes of ephemeral drainage in eastern portion of project site, facing northeast.

Attachment D

Lists of Plant and Wildlife Species Observed during the Field Survey

Plant Species Observed at the Flume 48 Project Site (June 21, 2022)		
Scientific Name[1]	**Common Name**	**Native?**
APIACEAE		
Lomatium californicum	California lomatium	yes
Osmorhiza berteroi	Sweet cicely	yes
Torilis arvensis	Field hedge parsley	no
ASTERACEAE		
Adenocaulon bicolor	Trail plant	yes
Agoseris grandiflora var. *grandiflora*	Giant mountain dandelion	yes
Artemisia douglasiana	Mugwort	yes
Eriophyllum lanatum	Common woolly sunflower	yes
Madia gracilis	Grassy tarweed	yes
Sonchus oleraceus	Sow thistle	no
BETULACEAE		
Corylus cornuta ssp. *californica*	Beaked hazelnut	yes
BORAGINACEAE		
Draperia systyla	Violet draperia	yes
Hydrophyllum occidentale	California waterleaf	yes
Nemophila heterophylla	Variable leaved nemophila	yes
BRASSICACEAE		
Erysimum capitatum	Western wallflower	yes
CARYOPHYLLACEAE		
Cerastium glomeratum	Large mouse ears	no
Stellaria media	Chickweed	no
CUPRESSACEAE		
Calocedrus decurrens	Incense cedar	yes
CYPERACEAE		
Carex sp. (Group 10)[2]	Sedge	yes
Carex sp. (Group 11)[3]	Sedge	yes
DRYOPTERIDACEAE		
Polystichum munitum	Western sword fern	yes
FAGACEAE		
Quercus chrysolepis	Canyon live oak	yes
Quercus kelloggii	California black oak	yes
HYDROPHYLLACEAE		
Nemophila heterophylla	Variable leaved nemophila	yes
Phacelia heterophylla var. *virgata*	Varied leaf phacelia	yes
MONTIACEAE		
Claytonia parviflora	Narrow leaved miner's lettuce	yes
ONAGRACEAE		
Clarkia rhomboidea	Diamond clarkia	yes
PINACEAE		
Pinus ponderosa	Ponderosa pine	yes
Pseudotsuga menziesii	Douglas fir	yes
PHRYMACEAE		

Plant Species Observed at the Flume 48 Project Site (June 21, 2022)		
Scientific Name[1]	**Common Name**	**Native?**
Erythranthe guttata	Seep monkey flower	yes
PLANTAGINACEAE		
Collinsia parviflora	Few flowered blue eyed mary	yes
Collinsia tinctoria	Tincture plant	yes
POACEAE		
Elymus glaucus ssp. *glaucus*	Blue wildrye	yes
Poa bolanderi	Bolander's blue grass	yes
POLEMONIACEAE		
Gilia capitata ssp. *mediomontana*	Blue field gilia	yes
Collomia grandiflora	Large flowered collomia	yes
Collomia heterophylla	Variableleaf collomia	yes
ROSACEAE		
Drymocallis glandulosa	Sticky cinquefoil	yes
Rubus glaucifolius	Wax leaf raspberry	yes
Rubus parviflorus	Western thimbleberry	yes
RUBIACEAE		
Galium aparine	Common bedstraw	yes
RUSCACEAE		
Maianthemum racemosum	Feathery false lily of the valley	yes
SAPINDACEAE		
Acer macrophyllum	Bigleaf maple	yes
SAXIFRAGACEAE		
Heuchera micrantha	Alum root	yes
SCROPHULARIACEAE		
Verbascum thapsus	Woolly mullein	no
WOODSIACEAE		
Cystopteris fragilis	Bladder fern	yes

Notes:

[1]Scientific name is based on: Jepson Flora Project. 2022. *Jepson eFlora*, The Jepson Herbarium, University of California, Berkeley. Available at https://ucjeps.berkeley.edu/eflora/. Accessed July 2022.

[2]Several sedge (*Carex* sp.) were observed growing in moist areas on and under the flume structure near the southern half of the project site. This sedge belongs to Group 10, so it is not the special-status target species, Sierra arching sedge (*Carex cyrtostachya*), which is in Group 1 and 4.

[3]This sedge (*Carex* sp.) was observed growing on a dry upland slope in the project site. This sedge belongs to Group 11, so it is not the special-status target species, Sierra arching sedge (*Carex cyrtostachya*), which is in Group 1 and 4.

Wildlife Species Observed – June 21, 2022	
Scientific Name	**Common Name**
Invertebrates	
Adelpha californica	California sister
Birds	
Colaptes auratus	Norther flicker
Corvus brachyrhynchos	American crow
Cyanocitta stelleri	Steller's jay
Dryocopus pileatus	Pileated woodpecker
Junco hyemalis	Dark-eyed junco
Pipilo maculatus	Spotted towhee
Poecile rufescens	Chestnut-backed chickadee
Psaltriparus minimus	Bushtit
Zenaida macroura	Mourning dove

Appendix D

Updated Special-Status Species Information

SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR IN THE REGION THAT WERE NOT ASSESSED IN THE BRA (APPENDIX D)

Scientific Name	Common Name	Status*	General habitat	Potential to Occur on Project Site
Animals				
Accipiter atricapillus	American goshawk	CSSC	North coniferous forest, subalpine coniferous forest, upper montane coniferous forest. Prefer old-growth forests, sites near forest openings or edges for foraging. Need mature trees (old-growth conifer, mixed hardwood-conifer, birch, or aspen) with high canopies for nesting. Breeding occurs between 305-3290 meters.	Unlikely to occur; site provides poor-quality nesting habitat, but transient and other non-breeding individuals could occur in the area.
Actinemys marmorata	northwestern pond turtle	FC, CSSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying. Elevations from near sea level to 1,430 meters.	No potential to occur; no suitable habitat onsite.
Canis lupus	gray wolf	FE	Habitat generalists. Temperate forests, mountains, tundra, taiga, grasslands, and deserts. Require ungulate prey.	No potential to occur; no suitable habitat onsite and the project site is surrounded by disturbance.
Plants				
Acleisanthes nevadensis	Desert wing-fruit	2B.1	Joshua tree woodland, Mojavean desert scrub. Elevations between 800-1000 meters.	No potential to occur; no suitable habitat onsite.
Androstephium breviflorum	Small-flowered androstephium	2B.2	Desert dunes, Mojavean desert scrub. Elevations between 220 to 800 meters.	No potential to occur; no suitable habitat onsite.
Astragalus nyensis	Nye milk-vetch	1B.1	Mojavean desert scrub. Elevations between 790-815 meters.	No potential to occur; no suitable habitat onsite.
Astragalus sabulonum	Gravel milk-vetch	2B.2	Desert dunes, Mojavean desert scrub, Sonoran desert scrub. Elevations between 60 and 930 meters.	No potential to occur; no suitable habitat onsite.
Camissonia lacustris	Grassland suncup	1B.2	Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and Foothill grassland. Elevations between 180 and 1220 meters. Granitic, gravelly, serpentine substrate. Elevations between 180 and 1,220 meters.	No potential to occur; no suitable habitat onsite.
Chaetadelpha wheeleri	Wheeler's dune-broom	2B.2	Desert dunes, Great Basin scrub, Mojavean desert scrub. Elevations between 795 and 1,900 meters.	No potential to occur; no suitable habitat onsite.
Eriogonum bifurcatum	Forked buckwheat	1B.2	Chenopod scrub, sandy. Elevations between 645 and 810 meters.	No potential to occur; no suitable habitat onsite.
Penstemon utahensis	Utah beardtongue	2B.3	Chenopod scrub, Great Basin scrub, Mojavean desert scrub, Pinon & juniper woodlands. Elevations between 1,065 and 2,500 meters.	No potential to occur; no suitable habitat onsite.
Phacelia pulchella var. gooddingii	Goodding's phacelia	2B.2	Mojavean desert scrub. Elevations between 765 and 1,000 meters.	No potential to occur; no suitable habitat onsite.
Critical Habitat				
Rana boylii	Foothill yellow legged frog	Proposed Critical Habitat pending	Proposed critical habitat is pending for the foothill yellow legged frog.	No potential to occur; the project site lacks suitable habitat to support foothill yellow legged frog.

Sources: IPaC, CNDDB (Pollock Pines Quad and surrounding 9 Quads), and CNPS (Pollock Pines Quad and surrounding 9 Quads)
Date: August 1, 2025

Definitions of Status Codes

FE = Federally listed as endangered FT = Federally listed as threatened FC = Candidate for Federal listing
CE = California State listed as endangered CT = California State listed as threatened CSSC = California species of special concern
California Rare Plant Rank (CRPR) List 1A = Plants presumed extinct in California List 1B = Plants designated rare, threatened or endangered in California and elsewhere List 2A = Plants presumed extirpated in California but common elsewhere
List 2B = Plants rare threatened or endangered in California, but more common elsewhere
CRPR Threat Ranks: 0.1 = seriously threatened in California .2 = moderately threatened in California .3 = not very threatened in California

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: 07/07/2025 22:45:14 UTC
Project Code: 2025-0118589
Project Name: EIR Flume 48 EIR

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

PROJECT SUMMARY

Project Code: 2025-0118589
Project Name: EIR Flume 48 EIR
Project Type: Utility Infrastructure Maintenance
Project Description: EID Flume 48
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.7636045,-120.54353685995186,14z



Counties: El Dorado County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Gray Wolf *Canis lupus* Population: U.S.A.: All of AL, AR, CA, CO, CT, DE, FL, GA, IA, IN, IL, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, and WV; and portions of AZ, NM, OR, UT, and WA. Mexico. There is **final** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/4488	Endangered

BIRDS

NAME	STATUS
California Spotted Owl *Strix occidentalis occidentalis* Population: Sierra Nevada No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7266	Proposed Threatened

REPTILES

NAME	STATUS
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

AMPHIBIANS

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
Foothill Yellow-legged Frog *Rana boylii* Population: South Sierra Distinct Population Segment (South Sierra DPS) There is **proposed** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5133	Endangered

INSECTS

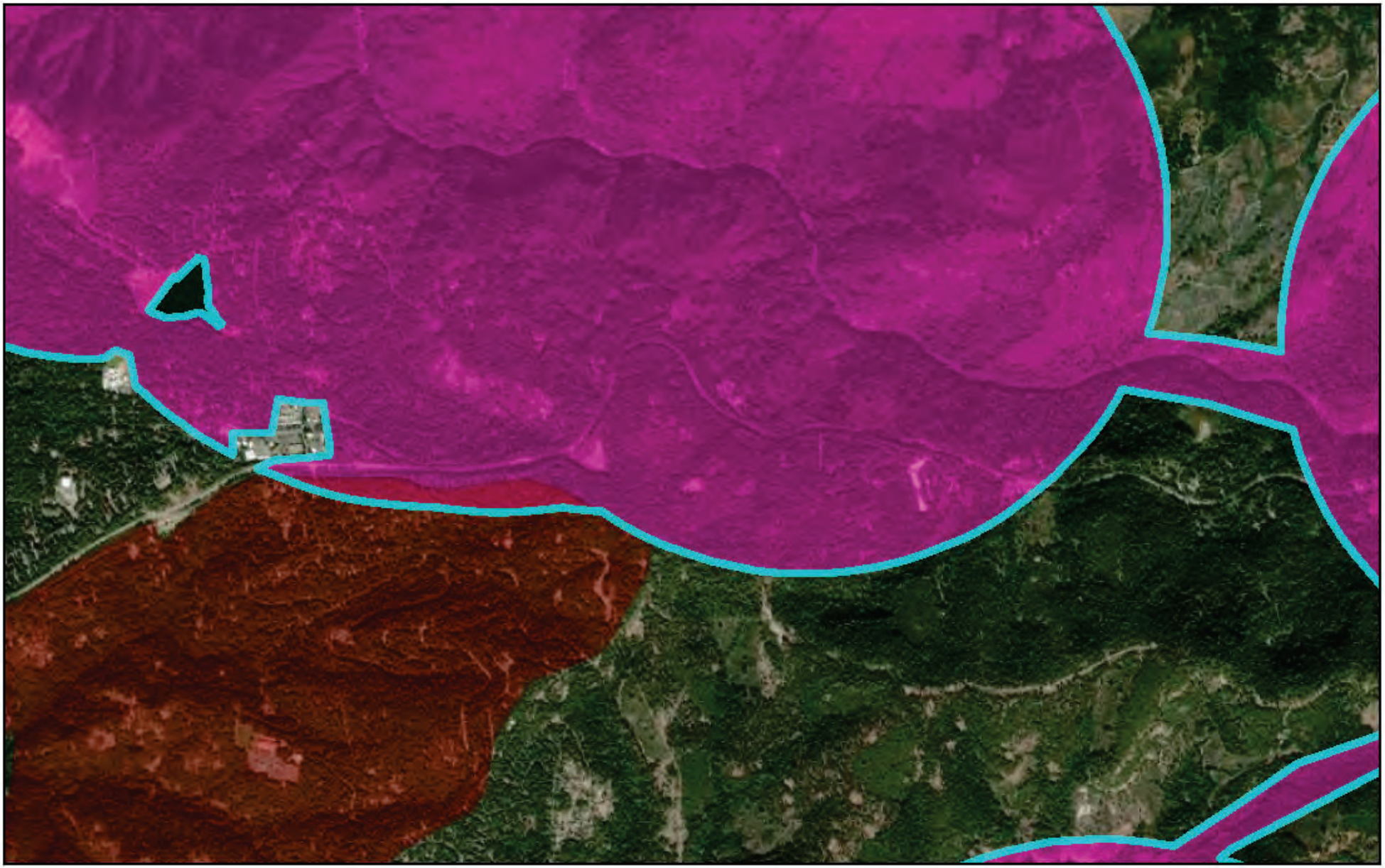
NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRITICAL HABITATS

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Foothill Yellow-legged Frog *Rana boylii* https://ecos.fws.gov/ecp/species/5133#crithab	Proposed

Critical Habitat for Threatened & Endangered Species [USFWS]



7/7/2025

1:38,730

0 0.25 0.5 1 mi

0 0.4 0.8 1.6 km

Final Polygon Features

Proposed Polygon Features

World Imagery

Low Resolution 15m Imagery

High Resolution 60cm Imagery

High Resolution 30cm Imagery

Citations

9.6m Resolution Metadata

Maxar

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Stump Spring, Nev. (3511587) OR Robbs Peak (3812084) OR Riverton (3812074) OR Slate Mtn. (3812076) OR Tunnel Hill (3812086) OR Devil Peak (3812085) OR Camino (3812066) OR Sly Park (3812065) OR Pollock Pines (3812075))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter atricapillus American goshawk	ABNKC12061	None	None	G5	S3	SSC
Acleisanthes nevadensis desert wing-fruit	PDNYC0F040	None	None	G4?	S1	2B.1
Actinemys marmorata northwestern pond turtle	ARAAD02031	Proposed Threatened	None	G2	SNR	SSC
Ambystoma macrodactylum sigillatum southern long-toed salamander	AAAAA01085	None	None	G5T4	S2	SSC
Androstephium breviflorum small-flowered androstephium	PMLIL06010	None	None	G5	S2?	2B.2
Aplodontia rufa californica Sierra Nevada mountain beaver	AMAFA01013	None	None	G5T3T4	S2S3	SSC
Arctostaphylos nissenana Nissenan manzanita	PDERI040V0	None	None	G1	S1	1B.2
Astragalus nyensis Nye milk-vetch	PDFAB0F660	None	None	G3?	S1	1B.1
Astragalus sabulonum gravel milk-vetch	PDFAB0F7R0	None	None	G4G5	S2	2B.2
Astragalus tidestromii Tidestrom's milk-vetch	PDFAB0F8X0	None	None	G4	S2	2B.2
Bombus occidentalis western bumble bee	IIHYM24252	None	Candidate Endangered	G3	S1	
Botrychium ascendens upswept moonwort	PPOPH010S0	None	None	G4	S3	2B.2
Botrychium crenulatum scalloped moonwort	PPOPH010L0	None	None	G4	S3	2B.2
Botrychium minganense Mingan moonwort	PPOPH010R0	None	None	G5	S4	4.2
Calochortus clavatus var. avius Pleasant Valley mariposa-lily	PMLIL0D095	None	None	G4T2	S2S3	1B.2
Camissonia lacustris grassland suncup	PDONA030W0	None	None	G2	S2	1B.2
Carex cyrtostachya Sierra arching sedge	PMCYP03M00	None	None	G2	S2	1B.2
Central Valley Drainage Hardhead/Squawfish Stream Central Valley Drainage Hardhead/Squawfish Stream	CARA2443CA	None	None	GNR	SNR	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Central Valley Drainage Resident Rainbow Trout Stream Central Valley Drainage Resident Rainbow Trout Stream	CARA2421CA	None	None	GNR	SNR	
Chaetadelpha wheeleri Wheeler's dune-broom	PDAST21010	None	None	G4	S2	2B.2
Chlorogalum grandiflorum Red Hills soaproot	PMLIL0G020	None	None	G3	S3	4.2
Clarkia biloba ssp. brandegeeae Brandegee's clarkia	PDONA05053	None	None	G4G5T4	S4	4.2
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
Cosumnoperla hypocrena Cosumnes stripetail	IIPLE23020	None	None	G2	S2	
Eriogonum bifurcatum forked buckwheat	PDPGN080R0	None	None	G3	S3	1B.2
Haliaeetus leucocephalus bald eagle	ABNKC10010	Delisted	Endangered	G5	S3	FP
Horkelia parryi Parry's horkelia	PDROS0W0C0	None	None	G2	S2	1B.2
Lasionycteris noctivagans silver-haired bat	AMACC02010	None	None	G4	S3S4	
Lewisia serrata saw-toothed lewisia	PDPOR040E0	None	None	G1G2	S1S2	1B.1
Monadenia mormonum buttoni Button's Sierra sideband	IMGASC7071	None	None	G2T1T2	S1S2	
Myotis thysanodes fringed myotis	AMACC01090	None	None	G4	S3	
Myotis volans long-legged myotis	AMACC01110	None	None	G4G5	S3	
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Nebria darlingtoni South Forks ground beetle	IICOL6L100	None	None	G1	S1	
Orobittacus obscurus gold rush hanging scorpionfly	IIMEC07010	None	None	G1	S1	
Pekania pennanti Fisher	AMAJF01020	None	None	G5	S2S3	SSC
Penstemon utahensis Utah beardtongue	PDSCR1L6G0	None	None	G4	S2	2B.3
Phacelia pulchella var. gooddingii Goodding's phacelia	PDHYD0C3V1	None	None	G5T3	S2	2B.2
Phacelia stebbinsii Stebbins' phacelia	PDHYD0C4D0	None	None	G3	S3	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Poa sierrae Sierra blue grass	PMPOA4Z310	None	None	G3	S3	1B.3
Rana boylii pop. 3 foothill yellow-legged frog - north Sierra DPS	AAABH01053	None	Threatened	G3T2	S2	
Rana boylii pop. 5 foothill yellow-legged frog - south Sierra DPS	AAABH01055	Endangered	Endangered	G3T2	S2	
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Rana sierrae Sierra Nevada yellow-legged frog	AAABH01340	Endangered	Threatened	G2	S2	WL
Rhynchospora capitellata brownish beaked-rush	PMCYP0N080	None	None	G5	S2	2B.2
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S3	
Sacramento-San Joaquin Foothill/Valley Ephemeral Stream Sacramento-San Joaquin Foothill/Valley Ephemeral Stream	CARA2130CA	None	None	GNR	SNR	
Sphagnum Bog Sphagnum Bog	CTT51110CA	None	None	G3	S1.2	
Stygobromus grahami Graham's Cave amphipod	ICMAL05920	None	None	G2	S2	
Viola tomentosa felt-leaved violet	PDVIO04280	None	None	G3	S3	4.2
Vulpes vulpes necator pop. 2 Sierra Nevada red fox - Sierra Nevada DPS	AMAJA03017	Endangered	Threatened	G5TNR	S1	

Record Count: 51

CNPS Rare Plant Inventory

Search Results

11 matches found. Click on scientific name for details

Search Criteria: , CRPR is one of [**1A:1B:2A:2B**] , Fed List is one of [**FE:FT:FC:FD:None**] **or** State List is one of [**CE:CT:CR:CC:CD:None**] , 9-Quad include [**3812084:3812064:3812074:3812076:3812086:3812085:3812066:3812065:3812075**]

SCIENTIFIC NAME	COMMON NAME	BLOOMING PERIOD	FED LIST	STATE LIST	CA RARE PLANT RANK
Arctostaphylos nissenana	Nissenan manzanita	Feb-Mar	None	None	1B.2
Botrychium ascendens	upswept moonwort	(Jun)Jul-Aug	None	None	2B.2
Botrychium crenulatum	scalloped moonwort	Jun-Sep	None	None	2B.2
Calochortus clavatus var. *avius*	Pleasant Valley mariposa-lily	May-Jul	None	None	1B.2
Camissonia lacustris	grassland suncup	Mar-Jun	None	None	1B.2
Carex cyrtostachya	Sierra arching sedge	May-Aug	None	None	1B.2
Horkelia parryi	Parry's horkelia	Apr-Sep	None	None	1B.2
Lewisia serrata	saw-toothed lewisia	May-Jun	None	None	1B.1
Phacelia stebbinsii	Stebbins' phacelia	May-Jul	None	None	1B.2
Poa sierrae	Sierra blue grass	Apr-Jul	None	None	1B.3
Rhynchospora capitellata	brownish beaked-rush	Jul-Aug	None	None	2B.2

Showing 1 to 11 of 11 entries

Suggested Citation:

Appendix E

Wetland Assessment

Wetland Assessment

Memorandum

To: Michael Baron, El Dorado Irrigation District

From: Eric Htain

cc:

Date: July 11, 2023

Re: Wetland Assessment for Flume 48

Introduction

GEI, Inc. (GEI) has been supporting the El Dorado Irrigation District (District) with biological resources surveys along the El Dorado Canal in the location of Flume 48. GEI conducted a constraints-level mapping survey at the Flume 48 project site in June 2022. During the 2022 surveys, GEI biologists observed and noted three areas downslope of Flume 48 that appeared to be potential drainages that convey water. Based on this observation, the District has requested GEI to conduct a wetland assessment of the potential drainage to determine if the feature has the potential to be subject to jurisdiction by resources agencies.

Methodology

GEI biologists Devin Barry and Summer Pardo conducted a wetland assessment in the project site on May 19, 2023. The wetland assessment consisted of walking the project site, taking photographs of any potential drainage feature, and conducting a vegetative and hydrologic assessment of the features. For the vegetative assessment, observation and characterization of vegetation within potential drainage features was conducted. Vegetative species were identified to specific epithet and compared to the 2020 National Wetland Plant List (USACE 2022) to determine if the plants were hydrophytic, which would meet the U.S. Army Corps of Engineers (USACE) definition for wetland plants. For the hydrologic assessment, potential drainage features were examined for evidence of flow, erosion and drainage patterns in the soil, and a defined drainage channel.

Results

The flume located in the northern portion of the project site slopes gradually east to west, with steep north-facing slopes on both sides of the flume. No potential drainages were identified in the project site during the May 2023 site visit. The potential drainages previously observed as surface waters during 2022 surveys was determined to originate from a leak in the elevated flume. Moisture from water leaking from the flume created a small patch downslope with riparian species such as arroyo willow (*Salix lasiolepis*) and alumroot (*Heuchera rubescens*). Additionally, there was no evidence of a flow or water conveyance from a drainage upslope of the flume. Representative photographs of the area provided below.

Conclusion

Based on the wetland assessment, GEI considers the potential drainage features identified in the Flume 48 project site to not be jurisdictional waterbodies subject to regulation by the regulatory agencies. These features that were observed may be the result of small landslides on the steep slopes, or as a result of leaks from the canal. No evidence of a swale, drainage, or seep was observed above

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Rancho Cordova, CA 95670
916.631.4500 fax 916.631.4501

the flume. Therefore, there is no contributing water or flow from above the flume that would be providing the conditions of moisture and vegetation growth to the downstream potential drainage feature. It is GEI's assessment that the moisture and vegetation observed comes from periodic spillage or leaks of water from the El Dorado Canal.

References Cited:

U.S. Army Corps of Engineers (USACE). 2020. National Wetland Plant List, version 3.5. U.S. Army Corps of Engineers Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH. *Available:* http://wetland-plants.usace.army.mil/.

Attachments:

Representative Photographs

REPRESENTATIVE PHOTOGRAPHS



Photograph 1: View looking downslope flume abutment elevated above the area of the leak.



Photograph 2: View facing northeast looking at the moisture originating from a leak in the flume.

Appendix F

Cultural Resources Study (Confidential – Available Upon Request)

Appendix G

NRCS Soils Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for El Dorado Area, California



July 12, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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Soil Map.....9
Legend.....10
Map Unit Legend.....11
Map Unit Descriptions.....11
El Dorado Area, California.....13
CcE—Chaix very rocky coarse sandy loam, 9 to 50 percent slopes.....13
JsE—Josephine very rocky loam, 15 to 50 percent slopes.....14
References.....17

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

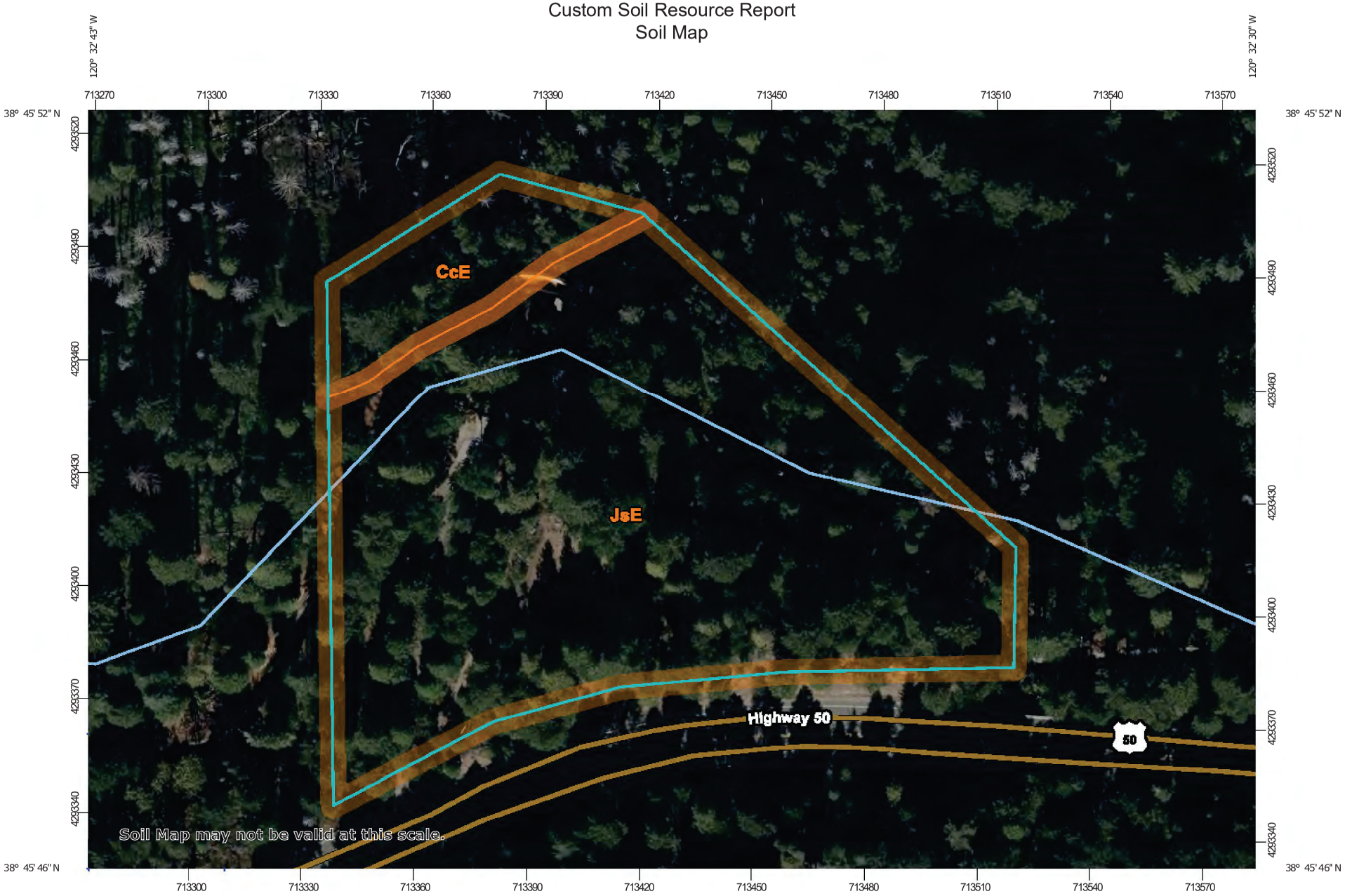
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Map Scale: 1:1,420 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Dorado Area, California
Survey Area Data: Version 16, Aug 30, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 3, 2022—Oct 6, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CcE	Chaix very rocky coarse sandy loam, 9 to 50 percent slopes	0.5	11.1%
JsE	Josephine very rocky loam, 15 to 50 percent slopes	4.2	88.9%
Totals for Area of Interest		**4.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

El Dorado Area, California

CcE—Chaix very rocky coarse sandy loam, 9 to 50 percent slopes

Map Unit Setting

National map unit symbol: hhz4
Elevation: 1,200 to 6,500 feet
Mean annual precipitation: 25 to 55 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 100 to 225 days
Farmland classification: Not prime farmland

Map Unit Composition

Chaix and similar soils: 75 percent
Rock outcrop: 15 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chaix

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from granite

Typical profile

H1 - 0 to 8 inches: coarse sandy loam
H2 - 8 to 34 inches: coarse sandy loam
H3 - 34 to 38 inches: weathered bedrock

Properties and qualities

Slope: 9 to 50 percent
Depth to restrictive feature: 34 to 38 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: F022AW006CA - Mesic Mountains >40"ppt
Hydric soil rating: No

Description of Rock Outcrop

Setting

Parent material: Granite

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Minor Components

Ahwahnee

Percent of map unit: 3 percent
Hydric soil rating: No

Chawanakee

Percent of map unit: 3 percent
Hydric soil rating: No

Mariposa

Percent of map unit: 2 percent
Landform: Ridges, mountain slopes
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Mountaintop, mountainflank
Down-slope shape: Concave
Across-slope shape: Convex, concave
Hydric soil rating: No

Hotaw

Percent of map unit: 2 percent
Hydric soil rating: No

JsE—Josephine very rocky loam, 15 to 50 percent slopes

Map Unit Setting

National map unit symbol: hj04
Elevation: 1,200 to 5,000 feet
Mean annual precipitation: 50 inches
Mean annual air temperature: 55 degrees F
Frost-free period: 125 to 260 days
Farmland classification: Not prime farmland

Map Unit Composition

Josephine and similar soils: 75 percent
Rock outcrop: 15 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Josephine

Setting

Landform: Ridges, mountain slopes
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Mountaintop, mountainflank

Down-slope shape: Concave
Across-slope shape: Concave, convex
Parent material: Residuum weathered from metamorphic rock, schist, or slate

Typical profile

H1 - 0 to 14 inches: gravelly loam
H2 - 14 to 50 inches: clay loam
H3 - 50 to 54 inches: weathered bedrock

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 50 to 54 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: F022AW007CA - Deep Mesic Mountains >40"ppt
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Minor Components

Josephine

Percent of map unit: 2 percent
Hydric soil rating: No

Musick

Percent of map unit: 2 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Hydric soil rating: No

Sites

Percent of map unit: 2 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Holland

Percent of map unit: 2 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Mariposa

Percent of map unit: 2 percent
Landform: Ridges, mountain slopes
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Mountaintop, mountainflank
Down-slope shape: Concave
Across-slope shape: Convex, concave
Hydric soil rating: No

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