FLUME 45 CRITICAL WATER SYSTEM INFRASTRUCTURE PROJECT

Draft Environmental Impact Report

Prepared By:

El Dorado Irrigation District
2890 Mosquito Road
Placerville, California
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February 2025

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Flume 45 Critical Water System Infrastructure Project

State Clearinghouse Number: 2024091018

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Acronyms and Abbreviations

AB	Assembly Bill
Basin Plan	Water Quality Control Plan
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
BRA	Biological Resources Area
BSA	biological study area
CAA	Federal Clean Air Act
CAAQs	California ambient air quality standards
CAL FIRE	California Department of Forestry and Fire Protection
CARB	California Air and Resources Board
CalEEMod	California Emissions Estimator Model
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
CH4	methane
CHSC	California Health and Safety Code
CLG	Certified Local Government
CNDDB	California Natural Diversity Database
CO	carbon monoxide
CO2	carbon dioxide
CO2e	CO2-equivalents

County	El Dorado County
CWA	Clean Water Act
CRHR	California Register of Historical Resources
District	El Dorado Irrigation District
DTSC	California Department of Toxic Substances Control
EDAQMD	El Dorado Air Quality Management District
EID	El Dorado Irrigation District
EIR	Environmental Impact Report
El Dorado	El Dorado Water and Deep Gravel Mining Company
EPA	United States Environmental Protection Agency
ESA	Federal Endangered Species Act
FSS	U.S. Forest Service Sensitive Species
FP	Fully Protected
FPA	Federal Power Act
FWARG	Far Western Anthropological Group
FERC	Federal Energy Regulatory Commission
FGC	Fish and Game Code
FYLF	foothill yellow-legged frog
GHG	greenhouse gases
GWP	global warming potential
HAER	Historic American Engineering Record
HFC	hydrofluorocarbon
HPMP	Historic Properties Management Plan
HRA	health risk assessment
IPaC	Information for Planning and Conservation

IS	Initial Study
LHMP	Local Hazard Mitigation Plan
LOP	Limited Operating Period
LTS	less than significant
MBTA	Migratory Bird Treaty Act
MCAB	Mountain Counties Air Basin
MIS	Management Indicator Species
MSE	mechanically stabilized earth
MT	metric tons
NAAQS	National ambient air quality standards
NAHC	Native American Heritage Commission
N2O	Nitrous oxide
NCIC	North Central California Information Center
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NOI	Notice of Intent
NOP	Notice of Preparation
NPDES	National Pollution Discharge Elimination System
NPPA	Native Plant Protection Act
NRHP	National Register of Historic Places
NO2	nitrogen dioxide
NOx	oxides of nitrogen
O3	ozone
O&M	operations and maintenance
OSHA	Occupational Safety and Health Administration

PAC	Protective Activity Center
PFC	perfluorocarbon
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
PRC	California Public Resources Code
Project	Critical Water System Infrastructure Project
RCRA	Resource Conservation Recovery Act
ROG	reactive organic gas
RWQCB	Regional Water Quality Control Board
S	Significant
SB	Senate Bill
SF6	sulfur hexafluoride
SHPO	State Historic Preservation Officer
SLF	Sacred Lands File
SMAQMD	Sacramento Metropolitan Air Quality District
SO2	sulfur dioxide
SRA	State Responsibility Area
SSC	species of special concern
SU	significant and unavoidable
SWRCB	State Water Resources Control Board
SWPPP	Stormwater Pollution Prevention Plan
TAC	toxic air contaminant
TRC	Tribal Cultural Resource
TSCA	Toxic Substances Control Act

UAIC	United Auburn Indian Community of the Auburn Rancheria
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
USFWS	U.S. Fish and Wildlife Service
WUI	wildland urban interface

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Executive Summary

ES.1. Introduction

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. Project 184 includes various conveyance structures (e.g., flumes, canals, tunnels, siphons) to convey approximately 1/3 of the District's total drinking water supply to over 125,000 residents in El Dorado County (County), California, and also provides clean renewable energy through a 21-megawatt hydroelectric generation facility. Flume 45 is a component of this critical water conveyance system. The flume is constructed of wood and highly susceptible to damage and destruction by natural hazards including wildfires, landslides, and falling trees and rocks. The non-historic era wood flume is constructed on a historic, hand-stacked rock wall that was constructed in 1875.

The District is proposing the Flume 45 Critical Water System Infrastructure Project (Project), which would replace approximately 1,140 linear feet of existing wood flume and replace it with a more durable ignition-resistant concrete conveyance structure (i.e., U-shaped concrete canal) of similar length and associated appurtenances. The California Environmental Quality Act (CEQA) specifies that a public agency must prepare an environmental impact report (EIR) on 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, EID has prepared this project-level 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 Draft EIR is an informational document which will inform public agency decision makers and the public of the significant environmental effects of a 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 Project is located east of the town of Pollock Pines in an unincorporated area of El Dorado County, as shown in **Figure ES 1**. The Project site is south of Highway 50 and east of Ogilby Creek, on Federal lands managed by the U.S. Forest Service (USFS), in the Eldorado National Forest. The Project site is located on steep terrain on a northeast-facing slope approximately 0.28-mile upslope from the South Fork American River in a heavily forested area. Elevations range from approximately 3,900 to 4,200 feet above mean sea level. The total Project site footprint, encompassing all construction areas, covers approximately 5-acres.

ES.2.2 Project Objectives

The purpose of the Project is to increase protection of Flume 45 and the District's overall El Dorado Hydroelectric Project 184 (Project 184), which is licensed by the Federal Energy Regulatory Commission (FERC). The Project is designed to meet the following additional objectives:

- increase protection of Flume 45 and Project 184 from potential catastrophic wildfire;
- ensure a reliable water supply for drinking water and hydroelectric generation;
- improve the safety of the El Dorado canal system; and,
- ensure continued operational reliability of the El Dorado canal system.

ES.2.3 Project Operations and Maintenance

Ongoing operations and maintenance (O&M) of the U-shaped concrete canal 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 U-shaped concrete canal would likely be less than current activities since the concrete canal 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 same access routes used for current O&M activities. 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 Hazardous Substances Plan, Project 184 Integrated Pest Management Plan, and Project 184 Noxious Weed Prevention and Control 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.

ES.2.4 Project Construction

The Project includes the removal and demolition of approximately 1,140 linear feet of Flume 45 Section 3, which includes a wooden flume, wooden substructure, and a historic hand-stacked rock wall. 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, replacement of an existing maintenance access bridge that spans the canal, and improvements along a maintenance access road adjacent to the flume. As part of the Project, EID would also perform routine road maintenance activities along Camp P Road to allow for construction and continued maintenance access to the new canal segment.

The Project is expected to be constructed during the District's annual maintenance outages beginning in August 2026 and ending in January 2028. The first construction period would occur between August 2026 and January 2027 and the second construction period would occur between August 2027 and January 2028. The Project site would be accessible via established roads, including, but not limited to, Highway 50, Hazel Valley Road, Plum Creek Road, and Camp P Road, all of which are paved roadways, except Camp P Road, which is surfaced with aggregate base and suitable for the anticipated construction loads. Existing staging areas along Camp P Road and on Sierra Pacific Industries property on Plum Creek Road, which are authorized for

operation and maintenance activities associated with Project 184 facilities, would be utilized for equipment and material staging for the Project. Construction activities would require material haul trips, excavated material trips, and employee 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.3. 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 proposed Project considered in this Draft 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 Chapter 4 "Alternatives," of this Draft EIR, the proposed Project is considered the environmentally superior alternative among all alternatives.

ES.3.1 No Project Alternative

The No Project Alternative assumes that the Flume 45 Critical Water System Infrastructure Project would not be implemented and that the existing wood flume would remain in its current condition. In addition, the existing historic rock wall would remain and there would be no construction of an MSE retaining wall or access improvements along an adjacent maintenance road. The flume is highly susceptible to damage and destruction by natural hazards including wildfires, landslides, and falling trees and rocks.

ES.3.2 Alternative 1 – Stabilize Rock Bench In-Place and Construct MSE Wall, Where Necessary, and U-Shaped Concrete Canal

Under Alternative 1, the existing historic rock wall would be stabilized in place with an air-placed concrete (i.e., shotcrete or grouted in place) facing wall and rock anchors to meet required factors of safety. To mitigate the potential risk of destabilizing the underlying bedrock, multiple evenly spaced anchors would be placed anywhere needing stabilization. Once tensioned and stabilized, the rock bench material behind the wall would be grouted in place to increase stability and to achieve required factors of safety. Where walls are short (i.e., less than 3-feet high), the concrete facing would effectively enclose the wall and would not preserve the historic character of the wall in these locations. Once the bench is complete, a u-shaped concrete canal would be constructed to meet current factors of safety.

Based on the presence of voids within the bench material, extreme bulging of the wall, and signs of prior partial collapse, the retrofit under Alternative 1 would require special care to prevent rockfalls during construction, such as netting or preliminary drilling and grout injection at the rock wall prior to the drilling of rock anchors.

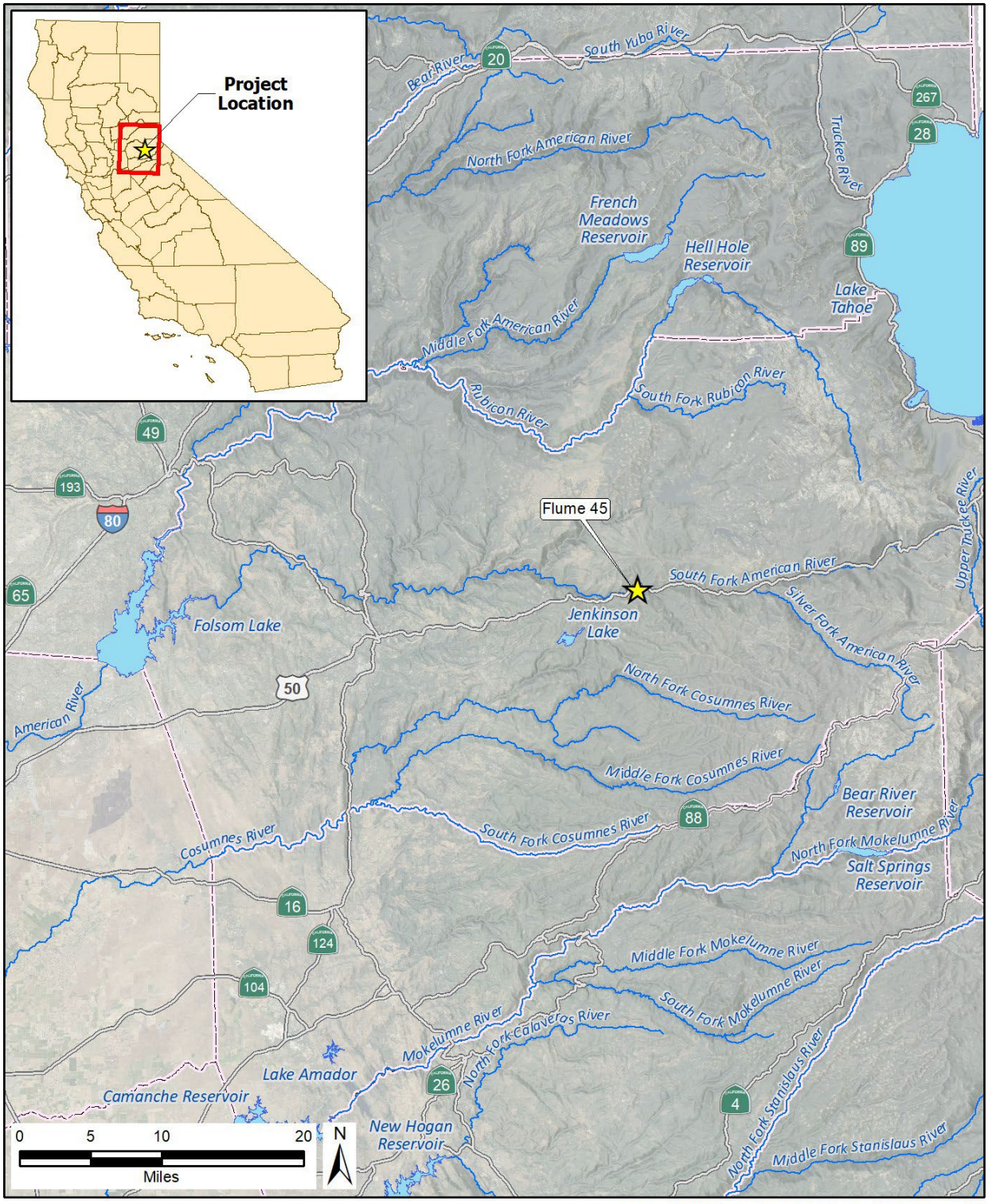

Figure Source: GEI Consultants, Inc.2024.

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Figure ES.1. Regional Project Location

This alternative would require multiple crews mobilized at the site and carefully staged construction. Alternative 1 is the only feasible alternative for partially maintaining the historic character of the rock wall. Alternative 1 would also allow for reduced excavation at locations that would otherwise have the tallest required MSE walls.

ES.3.3 Alternative 2 – Remove Existing Rock Wall and Bench and Construct Steel Supports and Concrete Flume

Under Alternative 2, the existing flume, rock wall, and bench would be removed and replaced with an elevated steel support system. This would include demolition and removal of rock bench material from the historic rock wall, except for short segments of the base of the stacked wall between frame locations. Alternative 2 would be feasible where the height of the existing bench would be constructed at an elevation that is high enough to accommodate a steel frame in order to reach the design flume elevation. At portions of the flume lower than that, the steel frames would be omitted, and flumes would be located directly on concrete abutments or on ground surface at grade.

Based on the marginal stability of the underlying bedrock supporting bench material, the use of isolated footings may destabilize the local soil conditions. As a result, removing substantial material from the bench and reducing the burden on bedrock would be necessary for the use of isolated footing and steel frames. Frames and foundations would require rock anchors to achieve required factors of safety. While Alternative 2 allows for relatively low earthwork quantities, the number of construction trades requiring coordination and the sequencing of work could extend the construction timeline beyond the available planned outage timeframes.

ES.4. Agency Roles and Responsibilities

EID, as the CEQA lead agency, has the principal responsibility for approving and carrying out the project and for ensuring that CEQA requirements and all 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:

- USFS
- State Water Resources Control Board (SWRCB)
- Office of Historic Preservation
- Federal Energy Regulatory Commission

ES.5. Areas of Controversy/Issues to Be Resolved

Pursuant to CEQA Guidelines Sections 15123(b)(2) and (3), the EIR Executive Summary is required to include areas of controversy, including those raised by agencies and the public, and issues to be resolved. Based on comments made during the 45-day 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 and Final EIR

EID 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 selected appendices are available at the following website: www.eid.org/ceqa and at the District Customer Service Building, 2890 Mosquito Road, Placerville, California. The NOA was also posted 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 Flume45EIR@eid.org or by U.S. mail to: El Dorado Irrigation District 2890 Mosquito Road, Placerville, California 95667 by 5:00 p.m. on April 7, 2025; Attention: Michael C. Baron. The comment period is from February 21, 2025 to April 7, 2025.

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 Measures

CEQA requires that the environmental analysis contained in the Draft EIR also includes a summary of the proposed Project and its consequences, including an identification of each potentially significant effect of the proposed Project, the level of effect the proposed Project may have, as well as any proposed mitigation measures. **Table ES 1** presents a summary of the impacts and mitigation measures identified for the proposed Project. A full description of each impact and mitigation measure is found in Chapter 3, "Environmental Analysis."

Table ES.1. Sample Table

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.1 Air Quality			
Impact AIR-1: Conflicts with Applicable Air Quality Plan from Construction Activities.	S	**Mitigation Measure AIR-1:** Dust and Emissions Control Plan	LTS
Impact AIR-2: Result in Cumulatively Considerable Net Increases of Any Criteria Pollutant from Construction Activities.	S	**Mitigation Measure AIR-1:** Dust and Emissions Control Plan	LTS
Impact AIR-3: Expose Sensitive Receptors to Substantial Pollutant Concentrations.	LTS	None Required.	LTS
3.2 Biological Resources			
Impact BIO-1: Impacts to Foothill Yellow-legged Frog from Construction Activities	LTS	None Required	LTS
Impact BIO-2: Impacts to Special-Status Nesting Raptors and Other Migratory Bird Species from Construction Activities.	S	**Mitigation Measure BIO-1:** Conduct a Biological Resources Training to All Staff That Will be On-site During Project Activities **Mitigation Measure BIO-2:** Avoid or Minimize Impacts to Special-Status Bird Species, Nesting Raptors, and Other Migratory Birds Protected under the MBTA and FGC	LTS
Impact BIO-3: Impacts to Special-Status Bats from Construction Activities.	S	**Mitigation Measure BIO-1:** Conduct a Biological Resources Training to All Staff That Will be On-site During Project Activities **Mitigation Measure BIO-3:** Avoid and Minimize Impacts to Bats	LTS
3.3 Cultural			
Impact CUL-1: Cause a Substantial Adverse Change in the Significance of a Built Environment Historical Resource.	S	**Mitigation Measure CUL-1:** Document the Flume 45 Section 3 Rock Wall (P-09-000599/ELD-511H)	SU
Impact CUL-2: Cause a Substantial Adverse Change in the Significance of an Archaeological Resource.	S	**Mitigation Measure CUL-2:** Conduct Preconstruction Cultural Resource Awareness Training **Mitigation Measure CUL-3:** Address Previously Undiscovered Historical and Archaeological Resources	LTS

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
Impact CUL-3: Potential to Disturb Human Remains, including Those Interred Outside of Formal Cemeteries.	S	**Mitigation Measure CUL-4:** Avoid Potential Effects on Undiscovered Burials	LTS
3.4 Geology and Soils			
Impact GEO-1: Result in Substantial Soil Erosion or the Loss of Topsoil from Construction Activities.	S	**Mitigation Measure GEO-1:** Prepare and Implement a SWPPP and BMPs to Reduce Erosion	LTS
3.5 Greenhouse Gas Emissions			
Impact GHG-1: Generate Greenhouse Gas Emissions from Construction Activities	LTS	None Required.	LTS
Impact GHG-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing Greenhouse Gas Emissions.	LTS	None Required.	LTS
3.6 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.	S	**Mitigation Measure GEO-1:** Prepare and Implement a Stormwater Pollution Prevention Plan and BMPs to Reduce Erosion **Mitigation Measure HAZ-1:** Prepare and Implement a Hazardous Materials Release Prevention Plan	LTS
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.	S	**Mitigation Measure GEO-1:** Prepare and Implement a Stormwater Pollution Prevention Plan and BMPs to Reduce Erosion **Mitigation Measure HAZ-1:** Prepare and Implement a Hazardous Materials Release Prevention Plan	LTS
Impact HAZ-3: Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires During Construction Activities.	S	**Mitigation Measure WILD-1:** Prepare and Implement a Fire Safety Plan	LTS
3.7 Hydrology and Water Quality			

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
Impact HWQ-1: Violate any Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface or Ground Water Quality from Construction Activities.	S	**Mitigation Measure GEO-1:** Prepare and Implement a SWPPP and BMPs to Reduce Erosion **Mitigation Measure HAZ-1:** Prepare and Implement a Hazardous Materials Release Prevention Plan	LTS
Impact HWQ-2: Substantially Alter the Existing Drainage Pattern of the Project Site in a Manner Which Would Result in Substantial Erosion Onsite or Offsite.	S	**Mitigation Measure GEO-1:** Prepare and Implement a SWPPP and BMPs to Reduce Erosion	LTS
Impact HWQ-3: Substantially Alter the Existing Drainage Pattern of the Project Site in a Manner Which Would 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.	LTS	None Required.	LTS
3.8 Tribal Cultural Resources			
Impact TRIB-1: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource.	S	**Mitigation Measure TRIB-1:** Implement Best Management Practices to Reduce or Avoid Impacts on Tribal Cultural Resources **Mitigation Measure TRIB-2:** Conduct Preconstruction Tribal Cultural Resource Awareness and Sensitivity Training **Mitigation Measure TRIB-3:** Address Previously Undiscovered Tribal Cultural Resources	LTS
3.9 Wildfire			
Impact WILD-1: Expose Project Occupants to Pollutant Concentrations from a Wildfire or the Uncontrolled Spread of a Wildfire.	S	**Mitigation Measure WILD-1:** Prepare and Implement a Fire Safety Plan	LTS

Notes: LTS = less than significant; S = significant; SU = significant and unavoidable.

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Chapter 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 responsible and trustee agencies with information about the potential environmental impacts of the Flume 45 Critical Water System Infrastructure Project (Project). This Draft EIR was prepared in compliance with the California Environmental Quality Act of 1970 (as amended) and the State California Environmental Quality Act (CEQA) 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 various conveyance structures (e.g., flumes, canals, tunnels, siphons) to convey approximately 1/3 of the District's total drinking water supply to over 125,000 residents in El Dorado County (County), California, and also provides clean renewable energy through a 21-megawatt hydroelectric generation facility. Flume 45 is a component of this critical water conveyance system. The flume is constructed of wood and highly susceptible to damage and destruction by natural hazards including wildfires, landslides, and falling trees and rocks. The non-historic era wood flume is constructed on a historic, hand-stacked rock wall that was constructed in 1875.

The proposed Project would remove approximately 1,140 linear feet of existing wood flume and replace it with a more durable ignition-resistant concrete conveyance structure (i.e., U-shaped concrete canal) and appurtenances. The Project is designed to increase protection of Flume 45 and 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 have 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 the 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 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 from persons who reviewed the Draft EIR and will provide written responses to those comments that raised significant environmental issues. The District will prepare the Final EIR, which will include: any necessary revisions to the Draft EIR; the comments received on the Draft EIR; a list of persons, organizations, and public agencies who commented; and written responses to those comments that raised significant environmental issues pursuant to CEQA Guidelines Sections 15088−15089 and 15132. As required under 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 the EIR and Agency Roles

As described in the CEQA Guidelines (14 CCR Section 15121[a]), an EIR is a public information document that assesses environmental effects of a proposed project, as well as identifies mitigation measures and alternatives to the project that could reduce or avoid significant environmental impacts (CEQA Guidelines Section 15121[a]). The intent of this Draft EIR is to evaluate in detail all the actions proposed to take place under the Project. The analysis in the Draft EIR 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 EIR is an informational document used in the planning and decision-making process. It is not the purpose of an EIR to recommend either approval or denial of a project. The information contained in this Draft EIR and the administrative record will be reviewed and considered by the Board prior to making a decision to approve, disapprove, or modify the project.

The State CEQA Guidelines (Section 15367) identify the lead agency as the public agency that is responsible for approving and implementing a project. EID is both the lead agency and the Project proponent. EID is responsible for providing documentation and implementing steps necessary to satisfy CEQA requirements for the proposed Project. As the lead agency, EID 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. EID will also be responsible for EIR certification and project approval.

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, or 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. However, there are no CEQA responsible agencies for the proposed 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 Scope of Draft EIR Analysis

Pursuant to the State CEQA Guidelines Section 15143, a lead agency may limit EIR's discussion of environmental impacts to specific issue areas where significant impacts on the environment

may occur. Pursuant to CEQA Guidelines Section 15063(c)(3), the District prepared an Initial Study (IS) providing an evaluation of the Project for each criterion in Appendix G of the State CEQA Guidelines to identify issues where the Project would have no impact, a less-than-significant impact, or would be evaluated further in the Draft EIR. The IS was included with the Notice of Preparation (NOP) of a Draft EIR, as discussed in Section 1.3.1, "Notice of Preparation and Public Scoping." The IS for this Project is included in **Appendix A**.

Through preparation of the IS, the District concluded that additional environmental review in an EIR will be conducted for only those CEQA Guidelines Appendix G Checklist items requiring further impact analysis in an EIR. The Draft EIR does not include those issues where the Project was determined to have no impact or a less-than-significant impact in the IS. Therefore, the following resource topics are focused only on those impacts found to be potentially significant and requiring further impact analysis in the IS:

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

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

1.3 CEQA Scoping Process

1.3.1 Notice of Preparation and Public Scoping

In accordance with CEQA Guidelines Section 15082(a), the District distributed a NOP of a Draft EIR, including the IS discussed above, on September 25, 2024. The NOP/IS was circulated to provide the public an opportunity to provide comments on the scope of the analysis that should be included in this Draft EIR. The public scoping comment period closed on October 25, 2024. A public scoping meeting was not held. In addition, the District coordinated and provided the El Dorado County Historical Museum with additional information on the project and the historic rock wall on the project site. **Table 1.1** summarizes the one comment letter the District received in response to the NOP. A copy of the NOP including the IS is provided in **Appendix A**.

Table 1-1. Notice of Preparation and Public Scoping Comment Letter Summary

Date	Commenter	Affiliation	Summary	Relevant EIR Section Related to Concern(s)
October 24, 2024	Peter Minkel	Central Valley Regional Water Quality Control Board	Listed potentially needed water quality permits for the Project.	• Permits Required • Project Description • Section 3.8, Hydrology and Water Quality

1.3.2 Tribal Consultation

Assembly Bill (AB) 52, passed in 2014, requires formal consultation with Native American Tribes during the CEQA process for projects that have an NOP filed on or after July 1, 2015. Project notification letters were sent to Tribal representatives of the United Auburn Indian Community of the Auburn Rancheria (UAIC), Shingle Springs Band of Miwok Indians, Torres Martinez Desert Cahuilla Indians, Wilton Rancheria, and Wopumnes-Nisenan Tribes on July 20, 2024, consistent with AB 52 and CEQA requirements. UAIC provided additional information regarding unanticipated discoveries of Tribal Cultural Resources and closed consultation on November 29, 2022. As of the date of publication of this Draft EIR, no further responses have been received by the District requesting consultation under AB 52.

1.3.3 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 formal notification that the Draft EIR is available for review and comment during the public comment period from February 21, 2025 to April 7, 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 appendices are available at the following website www.eid.org/ceqa and at the District Customer Service Building, 2890 Mosquito Road, Placerville, California. The NOA was also posted 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 Flume45EIR@eid.org or by U.S. mail to: El Dorado Irrigation District 2890 Mosquito Road, Placerville, California 95667 by 5:00 p.m. on April 7, 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 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, 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 those that focus on the adequacy and completeness of the environmental analysis and that are supported by factual evidence. Comments that focus on the District's decision to approve or deny an action are not comments on the adequacy of this Draft EIR.

1.4 Preparation of Final EIR

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. 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 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 is 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.

1.5 Organization of this Draft EIR

This Draft EIR contains the following components:

Executive Summary. This chapter 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.

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

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

Chapter 3, Regulatory and Environmental Setting and Impact Analysis. Chapter 3 includes analysis of criteria identified in the IS for evaluation in the Draft EIR in 9 resource sections that describe existing regulatory and environmental conditions and the proposed Project's anticipated environmental impacts. The following resource topics are analyzed in Chapter 3:

3.1 – Air Quality
3.2 – Biological Resources
3.3 – Cultural Resources
3.4 – Geology and Soils
3.5 – Greenhouse Gas Emissions
3.6 – Hazards and Hazardous Materials
3.7 – Hydrology and Water Quality
3.8 – Tribal Cultural Resources
3.9 – Wildfire

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

Chapter 4, Other CEQA Considerations. Chapter 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.

Chapter 5, Alternatives. This chapter 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.

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

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

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

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Chapter 2. Project Description

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 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, CA and also provides clean renewable energy through a 21-megawatt hydroelectric generation facility. The District is proposing to develop, construct, and maintain the proposed Project, which would remove approximately 1,140 linear feet of an existing wooden flume (Flume 45) and replace it with a more durable ignition-resistant concrete conveyance structure (i.e., U-shaped concrete canal) and appurtenances. This chapter 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 Project is located east of the town of Pollock Pines in an unincorporated area of El Dorado County, as shown in **Figure 2.1**. The Project site is south of Highway 50 and east of Ogilby Creek, on Federal lands managed by the U.S. Forest Service (USFS), in the Eldorado National Forest, as shown in **Figure 2.2**. The Project site is located on steep terrain on a northeast-facing slope approximately 0.28-mile upslope from the South Fork American River in a heavily forested area. Elevations range from approximately 3,800 to 3,900 feet above mean sea level. The total Project site footprint, encompassing all construction areas, is approximately 5 acres.

2.2 Project Objectives

The purpose of the Project is to increase protection of Flume 45 and FERC Project 184 overall. The Project is designed to meet the following additional objectives:

- increase protection of Flume 45 and Project 184 from potential catastrophic wildfire;
- ensure a reliable water supply for drinking water and hydroelectric generation;
- improve the safety of the El Dorado canal system; and,
- ensure continued operational reliability of the El Dorado canal system.

2.3 Project Components and Characteristics

The main components of Project construction would include mobilization, access, and site preparation, construction of MSE wall, construction of new concrete canal, and slope stabilization and erosion control. The Project components and their characteristics are summarized below and discussed in following sections.

- Mobilization, access, and site preparation – includes mobilization of construction equipment to the site, demolition of the existing wooden flume off-site in accordance with all applicable regulations and removal of rock foundation. Access improvements would include routine road maintenance activities along Camp P Road and improvements along a maintenance access road adjacent to the flume. An existing bridge over the canal would be replaced with a new 12-foot-wide vehicular bridge to facilitate construction access. Clearing and grubbing of vegetation within the limits of work area to remove hazard trees. Hazardous rocks in the immediate vicinity of the work area would be either removed or stabilized in place.

- Construction of mechanically stabilized earth wall – includes excavation on the downslope side of the access road and the canal area to native competent material to accommodate a footing or leveling pad that will support the new concrete conveyance structure, installation of appropriate drains within the new foundation, rock anchors to stabilize sections of the embankment, and construction of the MSE wall.

- Construction of new concrete canal – includes installing transitions to adjacent concrete conveyances, construction of a replacement spillway to continue to allow for controlled releases from the canal in the event of a future emergency, and construction of metal walkways and handrails to facilitate future maintenance and inspection.

- Slope stabilization and erosion control – includes temporary erosion control measures that would be used during construction to prevent erosion associated with stormwater runoff (e.g., straw bales, fencing). Hazard tree removal, slope scaling upslope from the facility, and installation of rock fall protection would be necessary to contain rock and debris fall to localized areas, while providing additional worker safety.

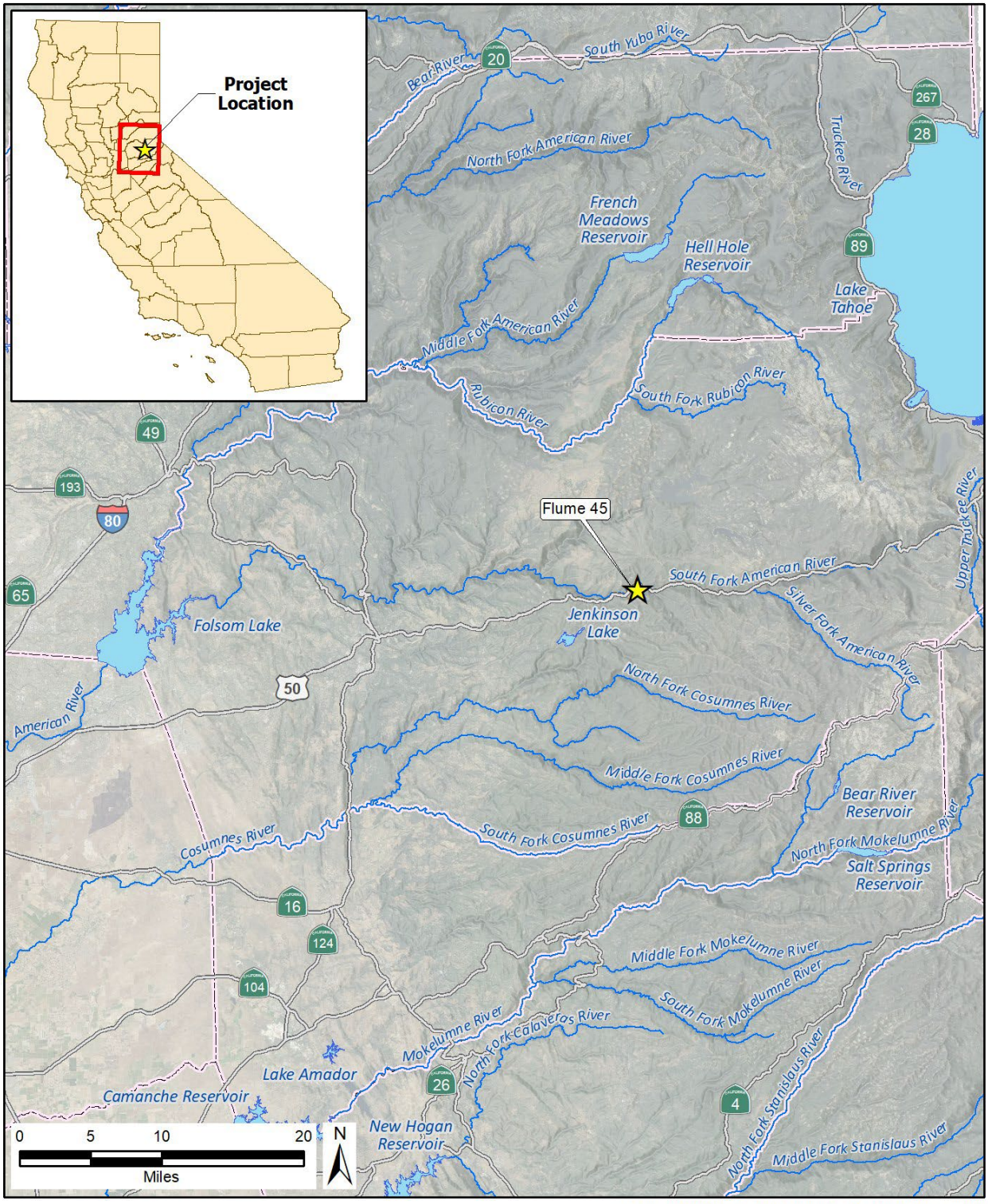

Figure Source: GEI Consultants, Inc.2024.

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30Dec2024 RS/SI

Figure 2.1. Regional Project Location

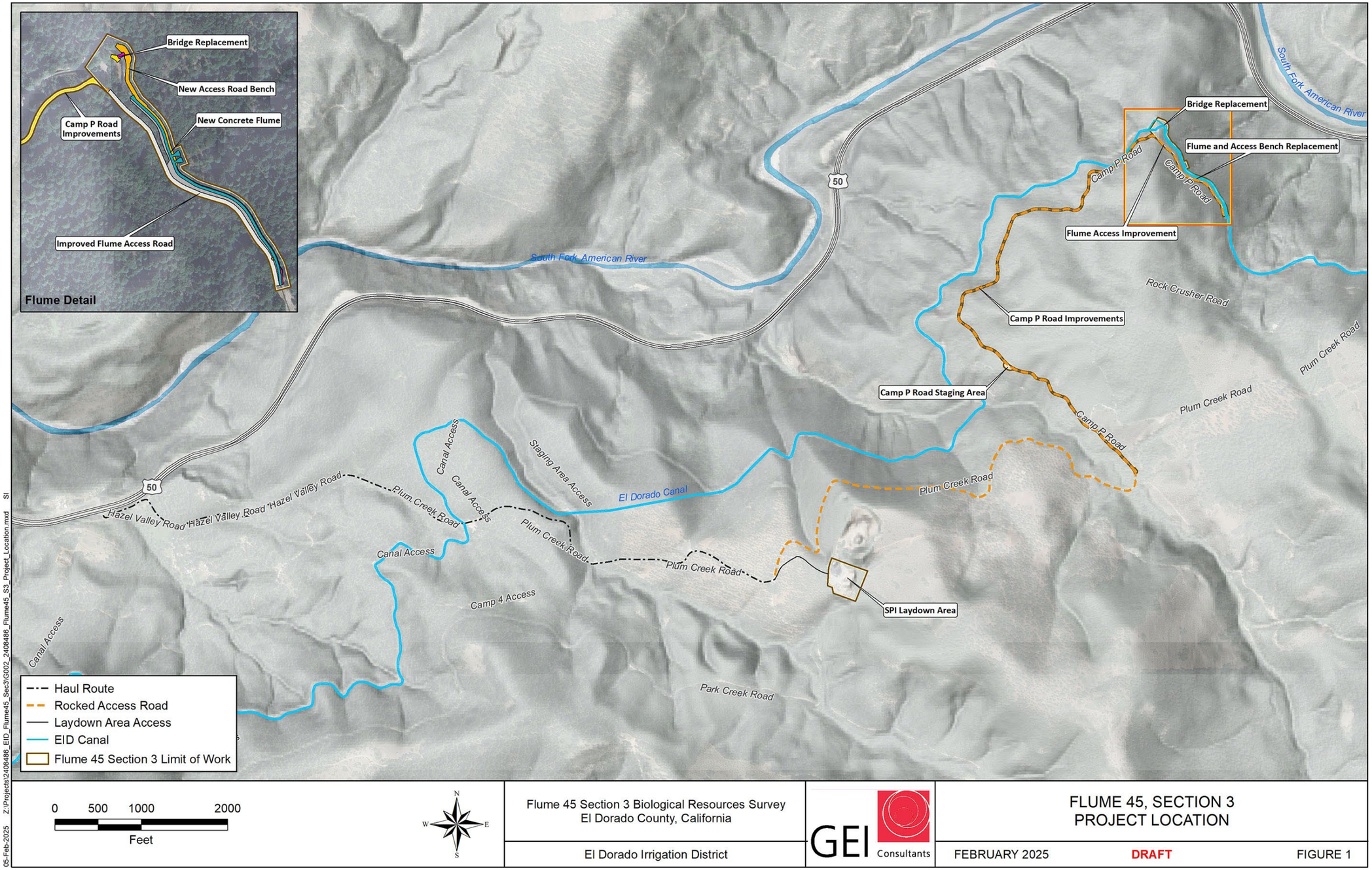

Figure 2.2. Project Location

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2.3.1 Flume and Wall Replacement

The proposed Project includes the removal and demolition of approximately 1,140 linear feet of Flume 45, which includes a wooden flume, wooden substructure, and a historic hand-stacked rock wall (constructed in 1875). The existing Flume 45 wooden structure is shown in **Figure 2.3,** the underside of the Flume 45 wooden substructure is shown in **Figure 2.4**, and the historic rock wall is shown in **Figure 2.5**. The existing wooden flume and associated structures would be disposed of offsite, in accordance with applicable regulations. The Project would result in replacement of the existing spillway and there would be no change in canal operations or capacity. The proposed flume replacement and associated structures are described further below.

EID proposes replacing Flume 45 with a U-shaped reinforced air-placed concrete canal, supported by a MSE retaining wall consisting of redi-rock geogrid placed horizontally in layers of engineered fill. **Figure 2.6** shows a typical cross-section of U-shaped concrete canal and access road. **Figure 2.7** provides an example of typical U-shaped canal similar to the design proposed for the Project. Reconstruction of the canal bench would include excavating the downslope side canal area to native material to accommodate a footing or leveling pad that would support the new concrete conveyance structure. Additionally, EID would install appropriate drainages with the new foundation of the canal bench and rock anchors to stabilize sections of the embankment. Drainage includes pipes and rock slope protection along the existing alignment.

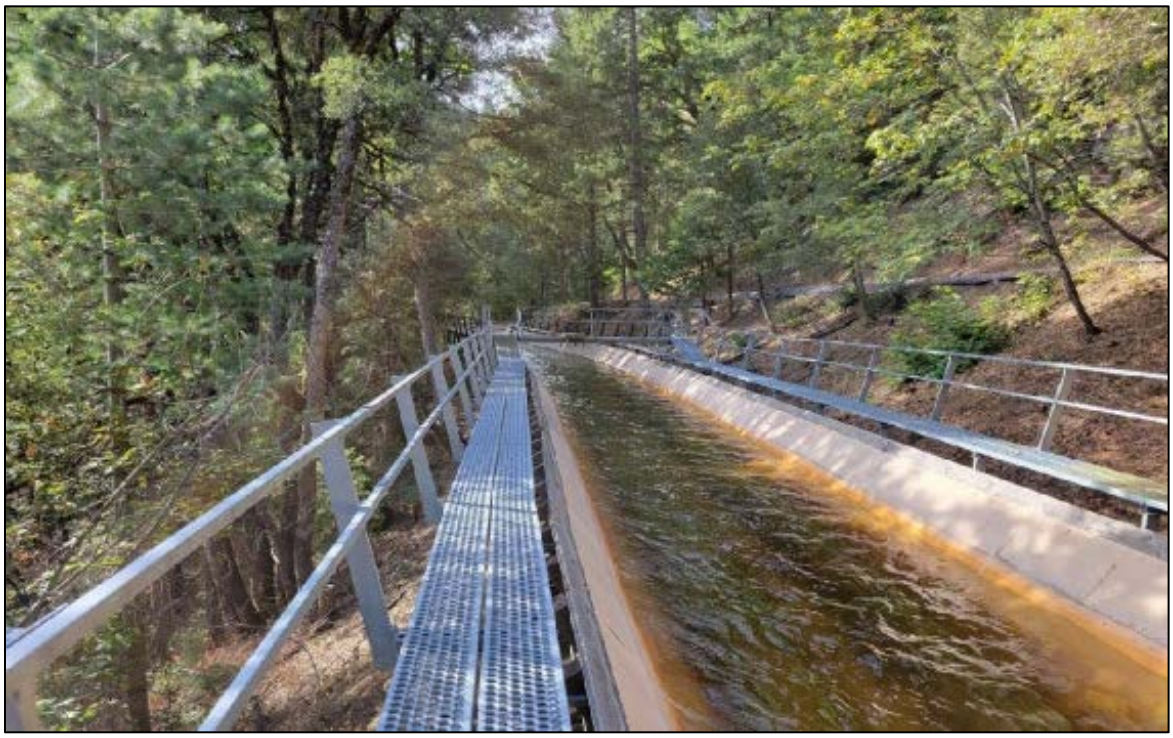

Figure 2.3. Photo of Existing Flume 45

Figure 2.4. Photo of Underside of Flume 45 Wooden Substructure

Figure 2.5. Photo of Flume 45 Historic Rock Wall Foundation

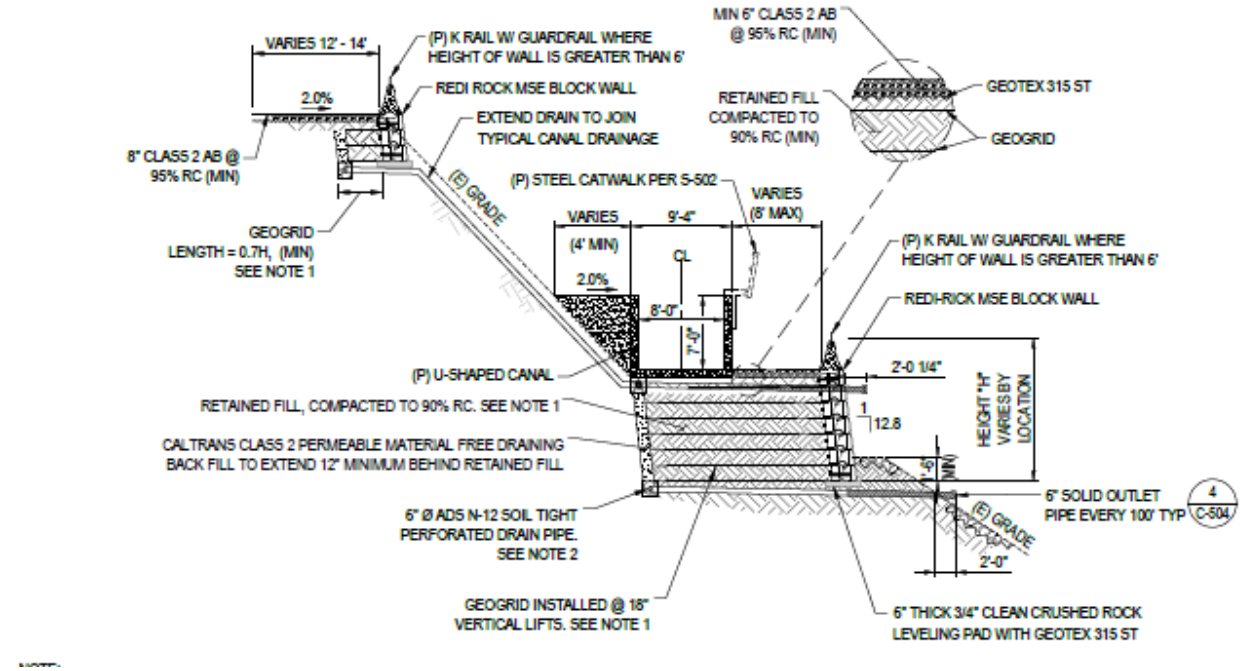

Figure 2.6. Typical Cross Section of U-Shaped Canal

Figure 2.7. Example of a U-Shaped Canal Proposed by the Project

2.3.2 Access Improvements

Access improvements would include routine road maintenance activities along Camp P Road and improvements along a maintenance access road adjacent to the flume to allow for construction and continued maintenance access to the new flume segment. Maintenance activities along Camp P Road would include activities authorized in the Project 184 Transportation System Management Plan (e.g., surface repair, blading, and/or replacement). Improvements along the maintenance access road adjacent to the flume include road widening where needed to achieve a minimum width of 12-feet, surfacing the roadway with aggregate base for all-weather access, and slope stabilization. An existing 12-foot-wide wooden maintenance access bridge that spans the canal would be replaced in kind. The bridge would allow for vehicle access during construction and maintenance.

2.4 Project Construction

2.4.1 Construction Schedule and Sequencing

The Project is expected to be constructed during two of the District's annual canal maintenance shutdown periods beginning in August 2026 and ending in January 2028. The first construction period would occur between August 2026 and January 2027 and the second would occur between August 2027 and January 2028. Construction may be suspended as necessary for inclement weather. Construction would be completed by a 10- to 20-person construction crew and typically would occur 12-hours per day and 5 to 7 days per week, although construction activities could occur up to 24 hours per day, if necessary.

Water services would not be interrupted during work activities, and therefore, no service impacts to District customers would be expected to occur.

Project construction would be completed within two phases as outlined below.

- Construction Phase 1 (between August 2026 and January 2027)
- Mobilization of equipment to the site.
- Clearing and grubbing vegetation within the limits of work area and remove hazard trees in the immediate vicinity of the flume.
- Hazardous rocks in the immediate vicinity of the flume either would be removed or stabilized in place. Temporary measures (e.g., straw bales, fencing) would be employed to contain rock and debris fall to localized areas.
- Implement access improvements including road widening to a minimum width of 12 feet and surfacing with aggregate base for all-weather access (for the access road adjacent to the flume), routine maintenance activities along Camp P Road, slope stabilization, and replacement of an existing bridge with a new 12-foot-wide vehicular bridge.
- Demolition of rock foundation.
- Demolition and reconstruction of the spillway to allow for controlled releases from the canal in the event of a future emergency.

- Construction of the MSE wall.
- Demolition of approximately 400-foot downstream section of the existing wooden flume off-haul material from site in accordance with all applicable regulations.
- Construction of approximately 400-feet of U-shaped concrete canal on the downstream end of Flume 45.
- Construction of temporary canal transition to allow for water conveyance
- Construction Phase 2 (between August 2027 and January 2028)
- Demolition of temporary canal transition
- Demolition of approximately 700-foot upstream section of the existing wooden flume off-haul materials from the site in accordance with all applicable regulations.
- Construction of approximately 700-feet of U-shaped concrete canal on the upstream end of Flume 45.
- Construction of metal walkways and handrails for safety and to facilitate future maintenance and inspection.

2.4.2 Access Roads and Staging Areas

Project site access and staging areas are shown on Figure 2.2. The Project site would be accessible via established roads, including, but not limited to, Highway 50, Hazel Valley Road, Plum Creek Road, and Camp P Road, all of which are paved roadways, except Camp P Road which is covered with aggregate base, and suitable for the anticipated construction loads. Existing staging areas along Camp P Road and on Sierra Pacific Industries property on Plum Creek Road, which are authorized for operation and maintenance activities associated with Project 184 facilities, would be used for equipment and material staging for the Project as shown on Figure 2.2.

2.4.3 Construction-Related Traffic

Construction activities would require material haul trips, supply and delivery trips, and employee trips over the duration of the Project. During Project construction, approximately 10 to 20 construction workers per day would be on the Project site. Vehicle access to the Project site would be from US 50 at Hazel Valley Road to Plum Creek Road to an existing gated entrance on Camp P Road (see Figure 2.4). Camp P Road is a designated access route identified in the Project 184 Transportation System Management Plan and all construction traffic would be completed in accordance with this plan. Typical traffic patterns during construction of the proposed 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. Maximum daily truck trips during peak construction are estimated to be approximately 5 trips per day.

2.4.4 Site Stabilization and Restoration

Slope stabilization and erosion control measures would be implemented as needed to maintain a safe work environment. Slope stabilization and erosion control measures include use of straw

bales and fencing, removal of hazardous trees, slope scaling upslope from the facility, and installing rock fall protection to contain rock and debris fall to localized areas. 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 including the use of biodegradable weed-free certified natural-fiber erosion control materials and native seed mix to revegetate the site. After construction is completed, disturbed areas would be stabilized in accordance with erosion control measures identified in the Stormwater Pollution Prevention Plan (SWPPP) prepared for the Project. Following construction, EID would conduct noxious weed surveys and appropriate treatments in areas where construction activities occurred in accordance with the Project 184 Noxious Weed Prevention and Control Plan.

2.4.5 Construction Equipment and Quantities

Construction equipment expected to be used during Project activities includes, but would not be limited to, the following:

- 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

The proposed reconstruction of Flume 45 would involve the earthwork and materials quantities shown in **Table 2.1.**

Table 2.1. Earthwork and Materials Quantities

Activity/Materials	Quantities
Limit of Work Area	5.0 acres
Grading Cut	16,800 cubic yards
Grading Fill	14,000 cubic yards
MSE Wall	27,300 square feet
Reinforced U-Shape Canal	1,140 linear feet
Reinforced Concrete Canal Transitions	25 linear feet
All-Weather Aggregate Base Surface Area	29,000 square feet

2.5 Project Operations and Maintenance

Ongoing operations and maintenance (O&M) of the U-shaped concrete canal 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 proposed U-shaped concrete canal would likely be less than current activities since the concrete canal 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 same access routes used for current O&M activities. 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 Hazardous Substances Plan, Project 184 Integrated Pest Management Plan, and Project 184 Noxious Weed Prevention and Control 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 Project Permits and Other Approvals

EID and its contractors would comply with all terms and conditions of applicable permits, plans, and agency approvals for the project. The Project would be subject to the permits and approvals shown in **Table 2.2**.

All work would be conducted within the existing FERC license boundary. No changes or variances to FERC license requirements would be required to implement the Project. All activities would be completed in compliance with the FERC-approved plans for Project 184 provided in **Table 2.2**.

Although the Project is within El Dorado County, EID is a special district with equal authority, and therefore, EID is exempt from the El Dorado County General Plan and Zoning Ordinance requirements pursuant to Government Code Sections 53091(D) and (E), many of the District's activities are not subject to local zoning or land use requirements, 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.*

Government Code Sections 53091(D) and (E) apply to all resource topics analyzed in this Draft EIR. However, EID uses the goals and policies outlined in the General Plan as a metric for analyzing impacts under CEQA and elects to implement certain goals and policies when appropriate for a project.

Table 2.2. Approvals, Permits, and Plan Compliance

Responsible/Trustee Agency	Approvals/Permits
U.S. Forest Service	• Timber Sale Contract • Fire Prevention Plan Review • Consistency with existing Special Use Authorizations associated with the FERC license
State Water Resources Control Board, Sacramento Region	Clean Water Act Section 402, National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction
California Office of Historic Preservation	National Historic Preservation Act Consultation
Federal Energy Regulatory Commission Project 184 License Conditions	Compliance with the following Project 184 Plans • Transportation System Management Plan • Visual Resource Management Plan • Hazardous Substances Plan • Noxious Weed Prevention and Control Plan • Integrated Pest Management Plan

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Chapter 3. Environmental Analysis

This chapter describes the approach to identify relevant environmental and regulatory setting information, evaluate environmental impacts, and identify feasible mitigation measures for the Project.

3.01 Approach

California environmental law is governed by CEQA, found in Public Resources Code (PRC) Section 21000 et seq. and the CEQA Guidelines (14 Cal. Code Regs. 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 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 the 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 itself would cause 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 cause a significant impact upon implementation.

3.02 Operations and Maintenance Activities

Since operations and maintenance (O&M) requirements after construction of the Project would be similar to those for the current flume, there would be no new O&M activities or vehicle trips that don't already occur under existing conditions, and O&M activities are not evaluated in this Draft EIR.

3.03 Resources and Criteria Eliminated from Further Analysis

Pursuant to CEQA Guidelines, the discussion of the potential impacts on the physical environment can be focused on those 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. The resource sections that would not result in a significant impact due to project implementation and have been eliminated from further analysis in this Draft EIR are aesthetics, agriculture and forestry resources, energy, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation, and utilities and service systems. Additionally, several criteria within the remaining resource sections that are included in the Draft EIR have been eliminated from further analysis in this Draft EIR (these criteria are identified within each resource section).

The rationale for eliminating resource sections and criteria from further evaluation in this Draft EIR was documented in the IS released with the NOP of a Draft EIR for the Project. The criteria from Appendix G (Environmental Checklist) of the CEQA Guidelines relevant to each resource topic was addressed in the NOP/IS, which is provided in **Appendix A**.

3.04 Section Format

Each environmental resource topic analyzed in Chapter 3.0 contains the following components:

- ***Regulatory Setting*** presents the Federal, State, and/or local laws, regulations, plans, and policies that are relevant to each issue area.
- ***Environmental Setting*** 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 (the study area) appropriately differs among resources, 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 vicinity only.

- ***Environmental Impacts and Mitigation Measures*** presents the thresholds of significance, analysis methodology, impact analysis, and mitigation measures, as follows:
    - ***Criteria Evaluated in the NOP/IS*** identifies criteria evaluated in the NOP/IS that were determined not to require additional analysis in the Draft EIR.
    - ***Thresholds of Significance*** presents the thresholds of significance used in this Draft 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*** describes the methodology used to evaluate impacts, including quantitative methods developed for this Draft EIR.
    - ***Impact Analysis*** 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*** 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*** discusses either why mitigation measures reduce the impact to less than significant or why the impact is significant and unavoidable.

3.05 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 measure 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*** refers to potentially feasible specific measures that can be adopted to avoid, minimize, rectify, reduce, or eliminate, or compensate, for an impact.

3.06 Impact Descriptors

Project 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 3-years after the anticipated duration of construction activities for the project.
- A ***long-term impact*** would last longer than approximately 3-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 the 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 Chapter 4 of this Draft EIR.

3.1 Air Quality

This section examines the degree to which implementing the 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.

3.1.1 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 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 3 minutes in any 1 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.

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.

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.

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.

Rule 223-1 Fugitive Dust - Construction, Bulk Material Handling, Blasting, Other Earthmoving Activities and Carryout and Trackout 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 trackout 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.

1-9.1 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
    A. An owner/operator shall limit the speed of vehicles traveling within construction sites to a maximum of 15 miles per hour.
    B. An owner/operator shall post speed limit signs limiting vehicle speed to a maximum of 15 miles per hour that meet State and Federal Department of Transportation standards at each construction site's uncontrolled unpaved access/haul road entrance.
1. 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.

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.

3.1.2 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. (EDAQMD 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 F, but the western end of the county can routinely exceed 100 degrees Fahrenheit. (EDAQMD 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 (NOx) that result in the formation of ozone (O_3). Because of its long formation time, ozone is a regional pollutant rather than a local hotspot problem. (EDAQMD 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; nitrogen dioxide (NO_2); sulfur dioxide (SO_2); lead; and 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 ($PM_{2.5}$). 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 2024a)

- **Ozone** is the principal component of smog and is formed in the atmosphere through a series of reactions involving reactive organic gases (ROG) and oxides of nitrogen (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. The 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:
    - **PM2.5** 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.
    - **PM10** 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 have been established for these pollutants by EPA at the national level and by CARB at the State level. These standards were established to protect the public with a margin of safety from adverse health impacts caused by exposure to air pollution. California also has established standards for sulfates, visibility reducing particles, hydrogen sulfide, and vinyl chloride. A brief description of each criteria air pollutant is provided below along with the most current monitoring station data and attainment designations for the study area. **Table 3.1-1** presents the NAAQS and the CAAQS.

Table 3.1-1. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [a] Concentration [c]	National Standards [b] Primary [c,d]	National Standards [b] Secondary [c,e]
Ozone (O_3)	1 hour	0.09 ppm (180 µg/m^3)	–	Same as primary standard
Ozone (O_3)	8 hours	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	Same as primary standard
Respirable particulate matter (PM_{10})[f]	24 hours	50 µg/m^3	150 µg/m^3	Same as primary standard
Respirable particulate matter (PM_{10})[f]	Annual arithmetic mean	20 µg/m^3	–	Same as primary standard
Fine particulate matter ($PM_{2.5}$)[f]	24 hours	–	35 µg/m^3	Same as primary standard
Fine particulate matter ($PM_{2.5}$)[f]	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)	–	–
Nitrogen dioxide (NO_2)[g]	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as primary standard
Nitrogen dioxide (NO_2)[g]	1 hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	None
Sulfur dioxide (SO_2)[h]	Annual Arithmetic Mean	–	0.030 ppm (for certain areas) [h]	–
Sulfur dioxide (SO_2)[h]	24 hours	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas) [h]	–
Sulfur dioxide (SO_2)[h]	3 hours	–	–	0.5 ppm (1,300 µg/m^3)
Sulfur dioxide (SO_2)[h]	1 hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	–
Lead (Pb)[i,j]	30-day average	1.5 µg/m^3	–	–
Lead (Pb)[i,j]	Calendar quarter	–	1.5 µg/m^3 (for certain areas) [j]	Same as primary standard

Pollutant	Averaging Time	California Standards [a] Concentration [c]	National Standards [b] Primary [c,d]	National Standards [b] Secondary [c,e]
Lead (Pb)[i,j]	Rolling 3-month average	–	0.15 µg/m^3	Same as primary standard
Visibility-reducing particles[k]	8 hours	See footnote j	No national standards	No national standards
Sulfates	24 hours	25 µg/m^3	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[i]	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

[a] 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.

[b] 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 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standards.

[c] Concentration expressed first in the units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius (°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 reference pressure of 760 torr; parts per million (ppm) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

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

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

[f] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[g] 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. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards the units can be converted from 100 ppb to 0.100 ppm.

[h] On June 2, 2010, a new 1-hour SO_2 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 SO_2 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.

[i] The California Air Resources Board (CARB) 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.

[j] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until 1 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 standards are approved.

[k] In 1989, CARB 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 the “extinction of 0.07 per kilometer” for the Statewide and Lake Tahoe Air Basin standards, respectively.

Source: California Air Resources Board 2016

California and 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 3.1-2 describes El Dorado County area attainment designations for State and Federal ambient air quality (CARB 2022; USEPA 2024b).

Table 3.1-2. El Dorado County Area Designations for State and Federal Ambient Air Quality

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

Notes: O_3 = ozone; CO = carbon monoxide; NO_2 = nitrogen dioxide; SO_2 = sulfur dioxide; PM_{10} = PM equal to or less than 10 micrometers in diameter; and $PM_{2.5}$ = PM equal to or less than 2.5 micrometers in diameter.
Source: CARB 2023, USEPA 2024b

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.

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) (EDAQMD 2002). Due to the known health risks from exposure to asbestos (i.e. development of lung disease, mesothelioma, and asbestosis) it is strictly regulated (USEPA 2024c). EDAQMD is responsible for implementing and enforcing asbestos-related regulations and programs (see Section 3.1.2 “Regulatory Framework”). 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 10 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 Project site is in a heavily forested area with no sensitive receptors nearby. The closest sensitive receptors to the Project site are cabin tracts along Highway 50. Cabin tracts are groups of cabins located on U.S. Forest Service land. The Bull Creek Tract is approximately 1.4 miles east of the Project site. There are no other known sensitive receptors in the vicinity of the Project site.

3.1.3 Environmental Impacts and Mitigation Measures

Criteria Evaluated in the NOP/IS

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

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

Thresholds of Significance

The CEQA Guidelines Appendix G Environmental Checklist was assessed during the NOP scoping process and the following criteria were determined to need further evaluation in this Draft EIR:

- Conflict with or obstruct implementation of the applicable air quality plan,
- 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, or
- Expose sensitive receptors to substantial pollutant concentrations.

EDAQMD has established significance 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 NOx levels shown in **Table 3.1-3** 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}) need not be quantified and may be assumed not to be significant if a project includes mitigation measures that will prevent visible dust beyond the property lines, in compliance with Table C.4 "Best Available Fugitive Dust Control Measures" in the EDAPCD CEQA Guide (EDAPCD 2002). Additionally, EDAQMD has determined that keeping total construction phase fuel use limited to 37,000 gallons, if the most effective control technology (T-BACT) is applied, or 3,700 gallons if T-BACT is not applied, would not result in a health risk from diesel PM that exceeds the significance criteria for TAC (1 in 1-million if T-BACT is not applied; 10- in 1-million if T-BACT is applied).

Table 3.1-3. EDAQMD Significance Thresholds

Pollutant	Pounds per Day
ROG	82
NO_X	82

Notes: ROG = reactive organic gases; NO_X = oxides of nitrogen
Source: EDAQMD 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. Construction-related emissions were estimated using information such as construction schedule and phasing, expected duration of activities, equipment types, volumes of material to be hauled, and number of construction workers on-site during each construction phase. Construction information used to estimate air emissions is discussed in Chapter 2, "Project Description." Construction-related emissions of ROG and NO_X were compared with the applicable 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 are presented and compared to the EDAQMD significance thresholds in **Table 3.1-4**. Because the majority of all construction activities occurs in 2026 and 2027, there are no emissions result for the end of construction in the month of January 2028. Activities in January 2028 would be substantially less than for 2026 and 2027 as construction activities would mainly consist of installation of metal walkways and handrails, and site stabilization and erosion control measures which include the use of minimal construction equipment. Emissions modeling data summarized in this section is provided in **Appendix B.**

Table 3.1-4. Unmitigated and Mitigated 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	2.85	20.8	145
Exceedance	*No*	*No*	-
2027			
EDAQMD Threshold	82	82	None
Unmitigated Emissions	2.16	23.4	139
Exceedance	*No*	*No*	-

Notes: yellow-shaded cells indicate exceedance of the applicable significance threshold.
ROG=reactive organic gases; NO_X=oxides of nitrogen; EDAQMD=El Dorado Air Quality Management District; lbs/day = pounds per day.
Source: GEI 2024; see Appendix B for details.

Impact Analysis

Impact AIR-1: Conflicts with 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.

The MCAB is designated as nonattainment for the Federal 8-hour ozone standard, and State ozone and PM_{10} standards (EDAQMD 2002). Project construction-related emissions above the EDAQMD thresholds of significance, as shown in **Table 3.1-3**, would conflict with EDAQMD's commitment to attain the Federal 1-hour ozone standard in the MCAB, and thus, could have a significant adverse impact on air quality in the region. However, construction-related ROG and NO_X emissions for each year of Project construction would not exceed applicable EDAQMD significance thresholds, as shown in **Table 3.1-4**. Additionally, PM_{10} emissions are shown in **Table 3.1-4** for disclosure purposes, since EDAQMD does not have an established threshold for PM_{10}.

Because the Project would generate fugitive dust, EDAQMD has not established a threshold of significance for PM_{10}, and the MCAB is designated as nonattainment for State PM_{10} standards, the Project could have a **significant impact** from emissions of fugitive dust.

Mitigation Measures: The following mitigation measure has been identified to address this impact.

Mitigation Measure AIR-1: Dust and Emissions Control Plan

The District shall require that the selected contractor prepare and implement a Project Dust and Emissions Control Plan that is approved by the EDAQMD prior to construction. Additionally, the District will comply with EDAQMD adopted rules designed specifically to address a variety of air quality impacts due to construction-related air quality emissions. EDAQMD rules that apply 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:

- All 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.
- All areas with vehicle traffic shall be watered or have a dust palliative applied as necessary to minimize dust emissions.
- All on-site vehicle traffic shall be limited to a speed of 15 mph on unpaved roads.
- All land clearing, grading, earth moving, or excavation activities on the Project shall be suspended as necessary to prevent excessive windblown dust when winds are expected to exceed 20 mph.
- All inactive portions of the construction site shall be covered, seeded, or watered or otherwise stabilized until a suitable cover is established.
- All 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 (6) inches of freeboard in the bed of the transport vehicle.

- Paved streets adjacent to the Project 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 accumulations or visibly raised areas of soil which may have resulted from activities at the Project area.
- Prior to the end of construction, the applicant shall re-establish ground cover on the site through seeding.
- The Project contractor shall ensure that all construction equipment is properly maintained.

  Timing: Before and during construction activities.

  Responsibility: EID and its construction contractor(s).

Significance after Mitigation: Implementation 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 would have a **less than significant with mitigation**.

Impact AIR-2: ***Result in Cumulatively Considerable Net Increase of Any Criteria Pollutant from Construction Activities.***
(Less than Significant)

MCAB is designated as nonattainment for the Federal 8-hour ozone standard, and State ozone and PM_{10} standards (EDAQMD 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 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 3.1-4**, 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: ***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 3.1.3, "Environmental Setting," the nearest sensitive receptors to the Project site are cabin tracts along Highway 50. Cabin tracts are groups of cabins located on U.S. Forest

Service land. The Bull Creek Tract is approximately 1.4 miles east of the Project site. There are no other known sensitive receptors in the vicinity of the Project site.

The greatest potential for TAC emissions would be related to diesel PM and CO emissions from use of diesel-powered heavy-duty construction equipment and off-road vehicles, as well as fugitive dust from excavation activities. The dose to which receptors are exposed to TAC's is the primary factor used to determine health risk and is a function of the concentration and duration of exposure. According to the State Office of Environmental Health Hazard Assessment, health-risk assessments (HRA) that determine the health risks associated with exposure of residential receptors to TAC emissions should be based on a 70-year exposure period (OEHHA 2003). However, HRAs should be limited to the period/duration of activities associated with the emissions activity. Construction emissions from the Project would only be generated for an approximately 2-year period.

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 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, 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. Additionally, the Project site is not located in or near an area with naturally occurring asbestos. Therefore, this impact would be **less than significant**.

3.2 Biological Resources

This section identifies the regulatory setting applicable to species, provides an overview of the existing biological resource conditions in the Project site and vicinity related to species, and analyzes impacts from the Project on candidate, sensitive, or special-status species.

3.2.1 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 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. 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. A sensitive species is defined as any species of plant or animal that has been recognized by the Regional Forester as needing special management to prevent them from becoming endangered or threatened and are included on the 2013 Pacific Southwest Region's Sensitive Animal Species List (USFS 2013a) and the 2013 Pacific Southwest Region's Sensitive Plant Species List (USFS 2013b). Sensitive species receive special management attention as prescribed by the Forest Service Manual Section 2670, with the goal of habitat management to prevent these species from becoming candidates for threatened or endangered status (USFS 2005. Furthermore, within the land and resource management plans of each national forest, the USFS identifies Management Indicator Species (MIS), as directed by 36 CFR 219.19, to evaluate the effects of management alternatives. These species represent habitat types that occur either within the national forest boundary and/or are species that are presumed to be sensitive to the various forest management activities within that forest (USFS 2004).

State Laws, Regulations, and Policies

California Endangered Species Act

California Department of Fish and Wildlife (CDFW) has jurisdiction over species listed as threatened or endangered under Fish and Game Code (FGC) Section 2080, which is the California Endangered Species Act (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) was enacted in 1977 and is administered by CDFW (FGC Section 1900 et seq.). The NPPA prohibits "take" of endangered, threatened, or rare plant species native to California, with the exception of special criteria identified in the FGC. A "native plant" means a plant growing in a wild, uncultivated state, which is normally found native to the plant life of the State. Under the FGC, species become endangered, threatened, or rare when the plants' prospects of survival and reproduction are in immediate jeopardy for one or more causes. "Rare" species can be defined as species that are: broadly distributed but never abundant where found, narrowly distributed or clumped yet abundant where found, and/or narrowly distributed or clumped and not abundant where found. If a project would result in take of an endangered, threatened, or rare plant, then consultation with CDFW, permitting, and/or other conservation 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).

3.2.2 Environmental Setting

A Biological Resources Assessment (BRA) prepared by the District for the Project was used to prepare this section and is provided in **Appendix C**. The main components of Project construction would include mobilization, access, and site preparation, vegetation removal, demolition of the existing infrastructure, construction of a mechanically stabilized earthen retaining wall, construction of new concrete canal, slope stabilization, and erosion control. The Camp P Road access route to the Project site and the SPI Laydown Area are routinely maintained and are void of vegetation. An updated assessment of special-status species with potential to occur within the Project site or immediate vicinity was prepared for this EIR. **Appendix D** provides the updated species lists and tables that were generated from sources discussed below in this section. For purposes of analyzing potential wildlife presence or absence within the Project site and vicinity, a biological study area (BSA) including the Project site plus a 50-foot buffer downslope and 25-foot buffer upslope of the flume is utilized. Access roads and staging areas were surveyed with a 25-foot buffer around the boundary to assess habitat potential for special-status species.

Database searches, site-specific documentation, field work, and other compiled sources on sensitive biological resources were utilized to identify potential biological resources within and adjacent to the Project site using the methods described below. Sensitive biological resources were initially identified by desktop analysis and later verified and further assessed during the field surveys. Biological resources eliminated from the analysis include sensitive natural communities and aquatic resources, including wetlands, streams, and drainages. Sensitive biological resources discussed further include special-status plant and wildlife species and wildlife habitat connectivity corridors.

Database searches, site-specific documentation, field work, and other compiled sources on sensitive biological resources in the Project site and vicinity were utilized to prepare this focused section of the EIR. The Project site is in the Riverton, California, U.S. Geological Survey (USGS) 7.5-minute quadrangle. Most database searches included this quadrangle and all adjacent quadrangles including: Devil Creek, Kyburz, Leek Spring Hill, Loon Lake, Pollock Pines, Robbs Peak, Sly Park, and Stump Spring 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) (CDFW 2024)
- CNPS online Inventory of Rare and Endangered Vascular Plants of California (CNPS 2024a)
- USFWS Information for Planning and Conservation (IPaC) website (USFWS 2024a)
- USFWS Critical Habitat Mapper (USFWS 2024b)
- USFWS National Wetlands Inventory (USFWS 2024c)
- USFS Sensitive Animal Species Lists (USFS 2013a)
- U.S. Forest Service (USFS) 2013 Region 5 Sensitive Plant Species (USFS 2013b)

- NRCS *Soil Survey of El Dorado National Forest Area, Parts of Alpine, Amador, El Dorado, and Placer Counties, California* (NRCS 2019)
- Google Earth™ mapping service aerial imagery of the study area (Google Earth 2024)

Field surveys of the BSA were conducted by GEI Biologists on July 21, 2022, October 19, 2022, May 19, 2023 and January 28, 2025. Field surveys mapped land cover, assessed the BSA for jurisdictional aquatic resources, and assessed the suitability of existing habitat to support sensitive plant and wildlife species. Field surveys included a floristic evaluation of all the plant taxa in the BSA using Jepson Manual dichotomous key (Baldwin et. al. 2012). Surveys were conducted on foot and potential wildlife habitat within trees and underneath the elevated flume were inspected for signs of usage. Additionally, a reference population for the Pleasant Valley mariposa-lily (*Calochortus clavatus* var. *avius*) located approximately 8 miles west along the El Dorado Powerhouse Penstock was visited on June 16, 2022. Most of these 100 individual plants were blooming and readily identifiable within view of the BSA. Only a few individual plants contained fruit at the time of the survey.

Regional Setting

The Project site is in western El Dorado County, in the Sierra Nevada ecoregion of California, and is located within the South Fork American River watershed. The topography of the Project site slopes gradually east to west, with steep north-facing slopes on both sides of Flume 45. Soils within the Project site are classified by the Natural Resources Conservation Service as entirely Chaix-Rock outcrop complex derived from granite parent material, not serpentinite or volcanic soils (NRCS 2019). The climate in this region is characterized by a Mediterranean climate with cool, wet winters, and hot, dry summers. Elevation within the Project site is approximately 3,900 feet above mean sea level. The Project site is at the base of a steep hillside upslope Highway 50, approximately 0.28-mile from the South Fork American River. There are no aquatic features within the proposed Project area that flow into the South Fork American River.

Land Cover Types

Land cover types identified within the BSA are shown in **Figure 3.2-1** and described below. It should be noted that in previous documentation of land cover types in the Project site, potential drainage ephemeral features are mentioned. These features were assessed for wetland hydrology and hydrophytic vegetation and determined to not be aquatic in nature and were a topographical signature (GEI 2022a, GEI 2022b).

Douglas Fir – Tan Oak – Pacific Madrone

The BSA along Flume 45 is composed of Douglas fir (*Pseudotsuga menziesii*) forest that is best described by the Manual of California Vegetation as a *Douglas fir* – (tan oak (*Notholithocarpus densiflorus)* – Pacific madrone *(Arbutus menziesii*)) Forest & Woodland Alliance (CNPS 2024b). This alliance is not a CDFW designated sensitive natural community. Black oak (*Quercus kelloggii*) and incense cedar (*Calocedrus decurrens*) are co-dominant in the tree canopy. Other tree species occasionally distributed in the BSA include: canyon live oak (*Quercus chrysolepis*), Ponderosa pine (*Pinus ponderosa*), and big-leaf maple (*Acer macrophyllum*). Vegetation immediately adjacent to the flume appears maintained. Understory species are generally sparse due to the fairly contiguous tree canopy that limits light penetration and include: wax leaf

raspberry (*Rubus glaucifolius*), western thimbleberry (*Rubus parviflora*), feathery false lily of the valley (*Maianthemum racemosum*), blue wildrye (*Elymus glaucus* ssp. *glaucus*), Bolander's blue grass (*Poa bolanderi*), tincture plant (*Collinsia tinctoria*), variableleaf collomia (*Collomia heterophylla*), violet draperia (*Draperia systyla*), and chickweed (*Stellaria media*).

Ponderosa Pine – Incense Cedar – Douglas Fir Forest and Woodland

The access routes and staging areas within the BSA are surrounded by Ponderosa Pine forest that is best described by the Manual of California Vegetation as Ponderosa pine – (Incense Cedar – Douglas Fir) Forest and Woodland Alliance (CNPS 2024b). This alliance is not a CDFW designated sensitive natural community. Incense cedar is co-dominant in the tree canopy, with black oak and canyon live oak occasionally distributed. Understory species are generally sparse with Bolander's blue grass and blue wildrye.

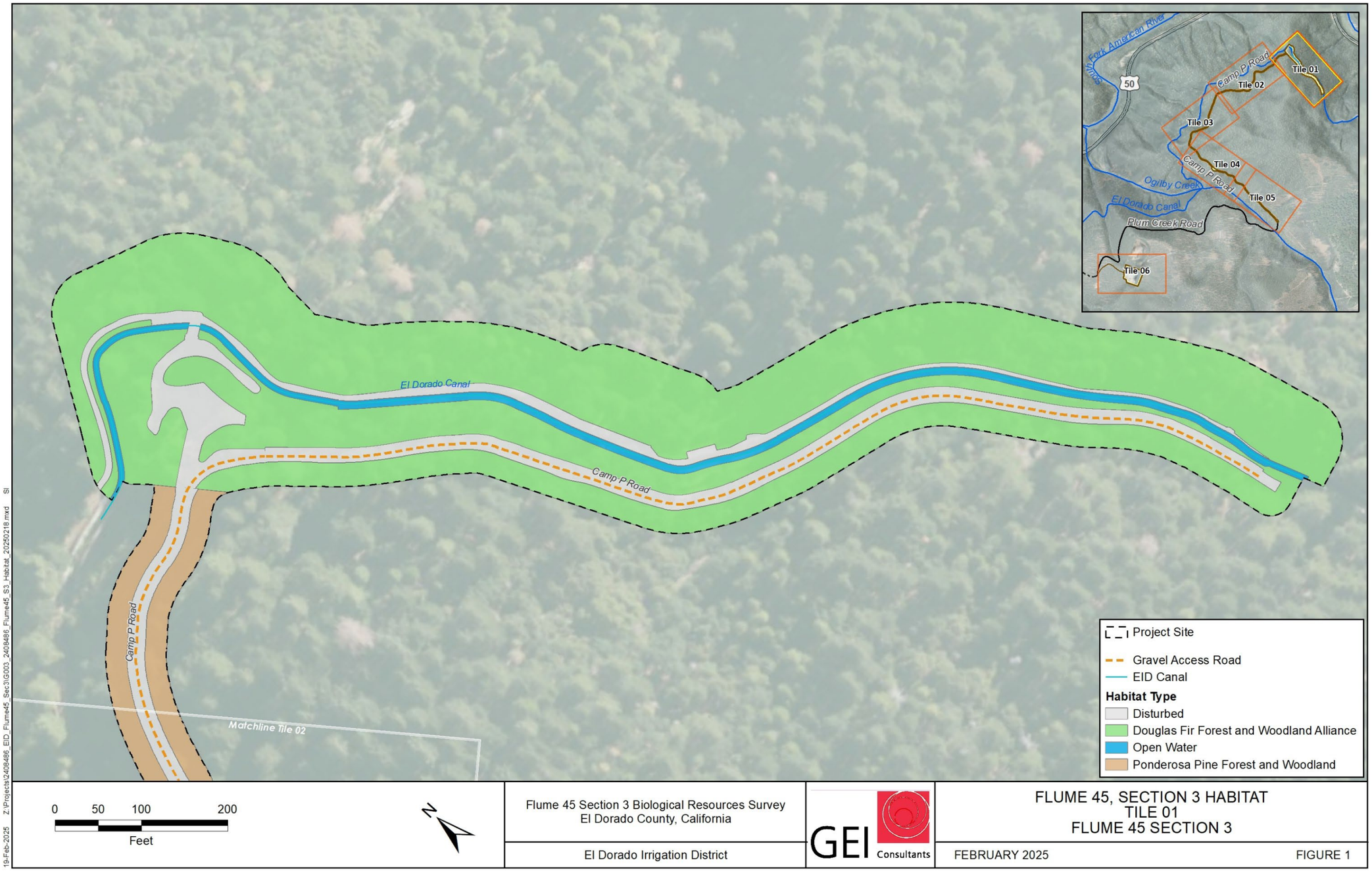

Figure 3.2-1. Land Cover Types within the Biological Study Area

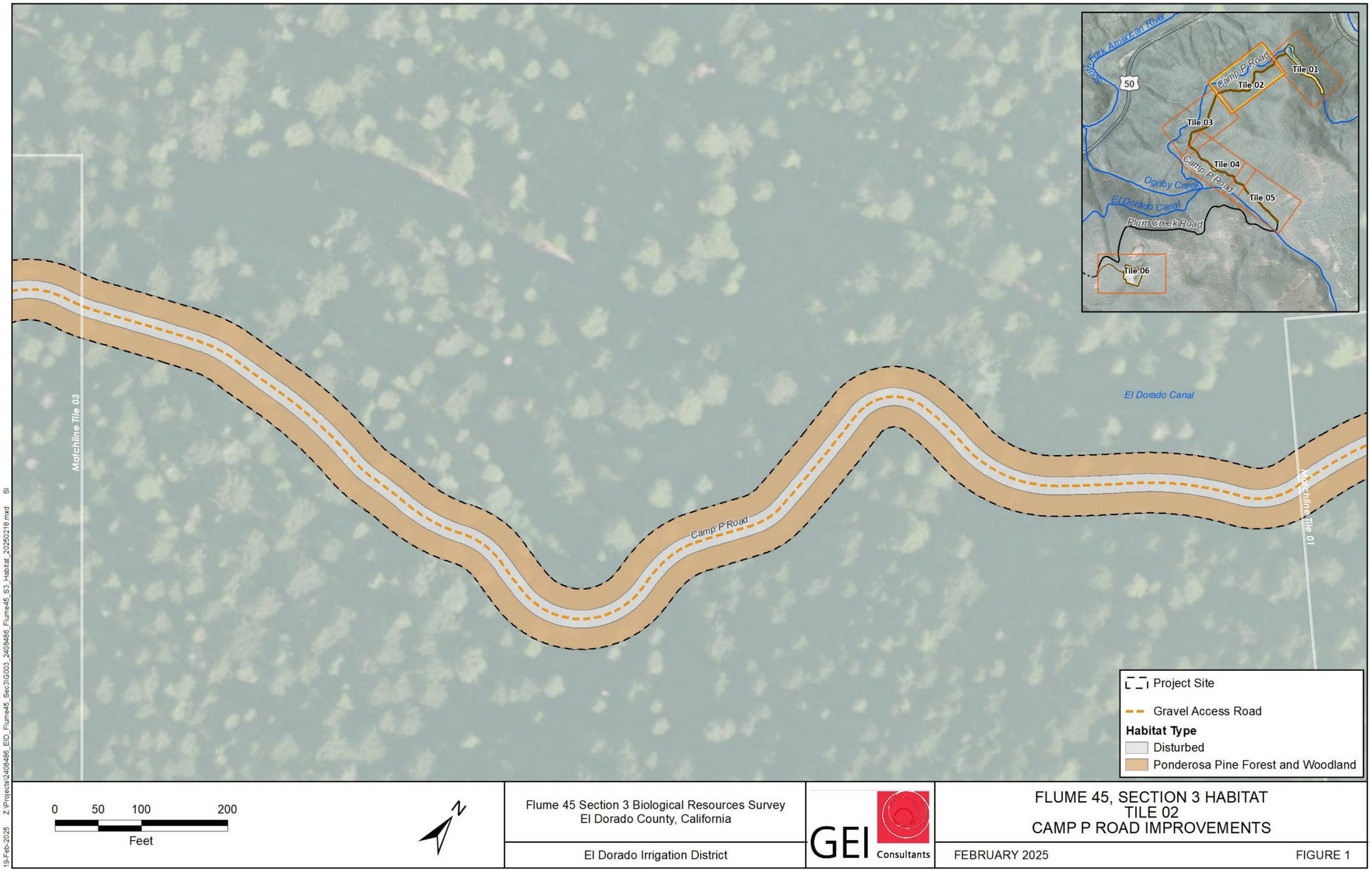

Figure 3.2-2. Land Cover Types within the Biological Study Area (continued)

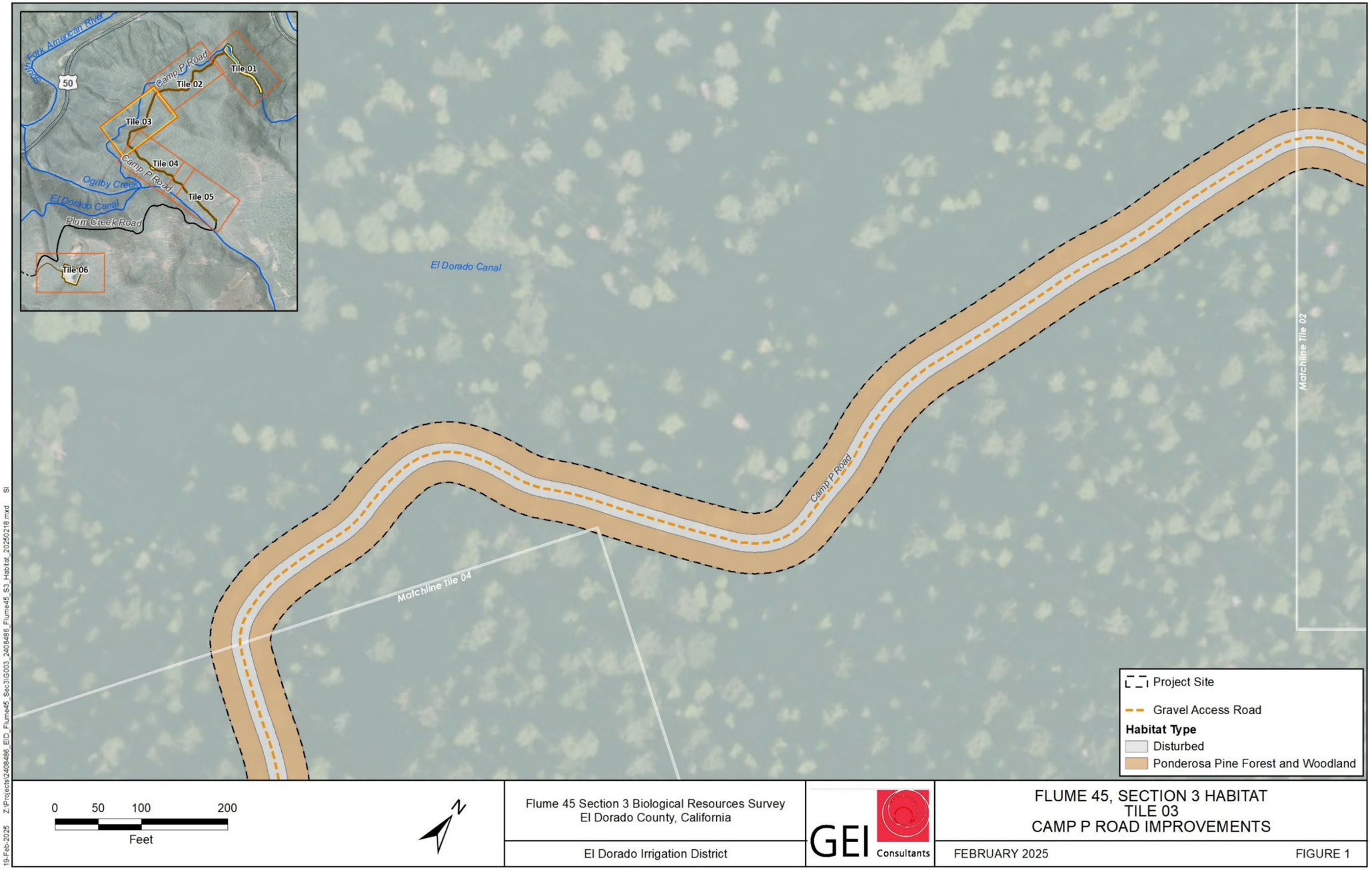

Figure 3.2-3. Land Cover Types within the Biological Study Area (continued)

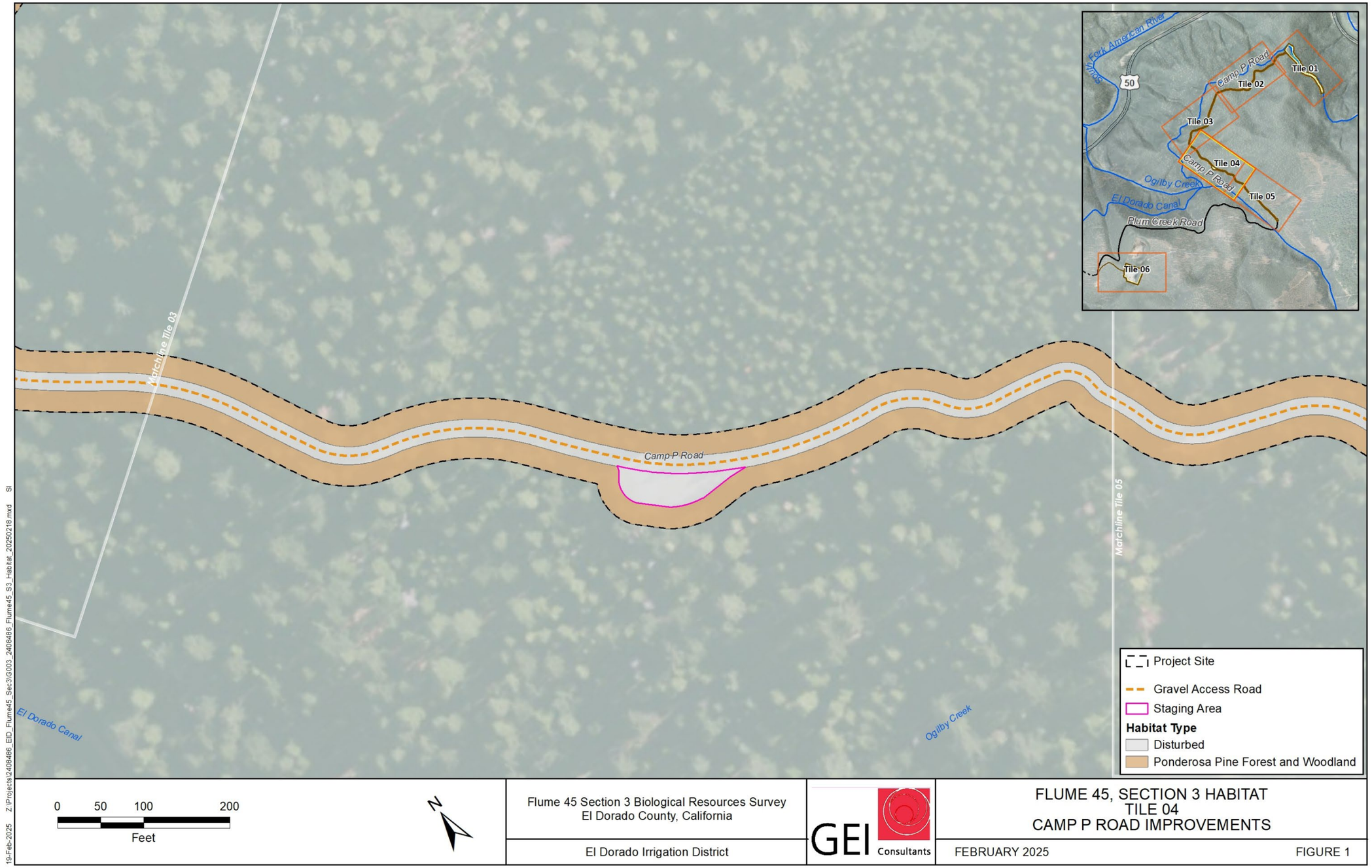

Figure 3.2-4. Land Cover Types within the Biological Study Area (continued)

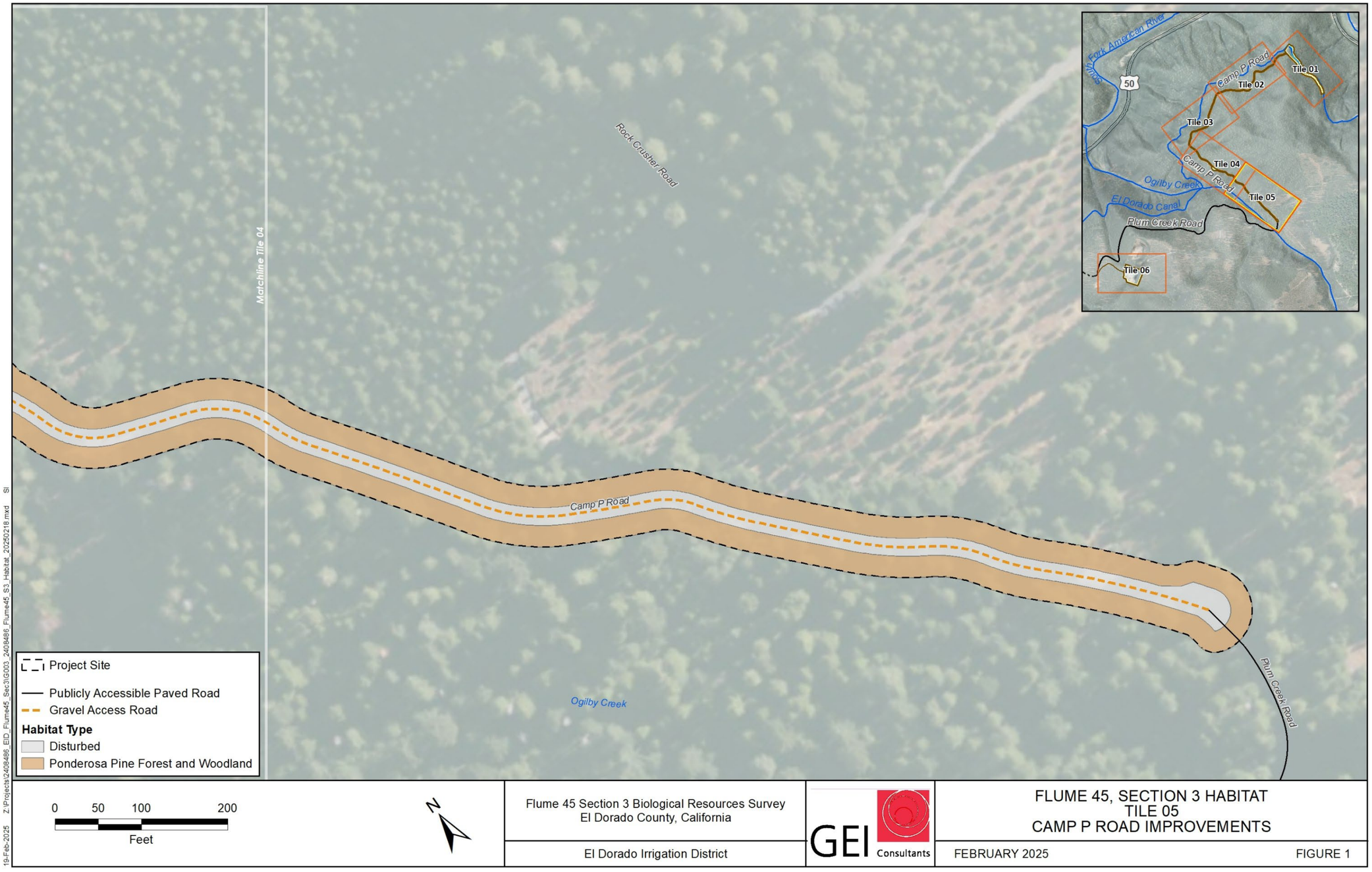

Figure 3.2-5. Land Cover Types within the Biological Study Area (continued)

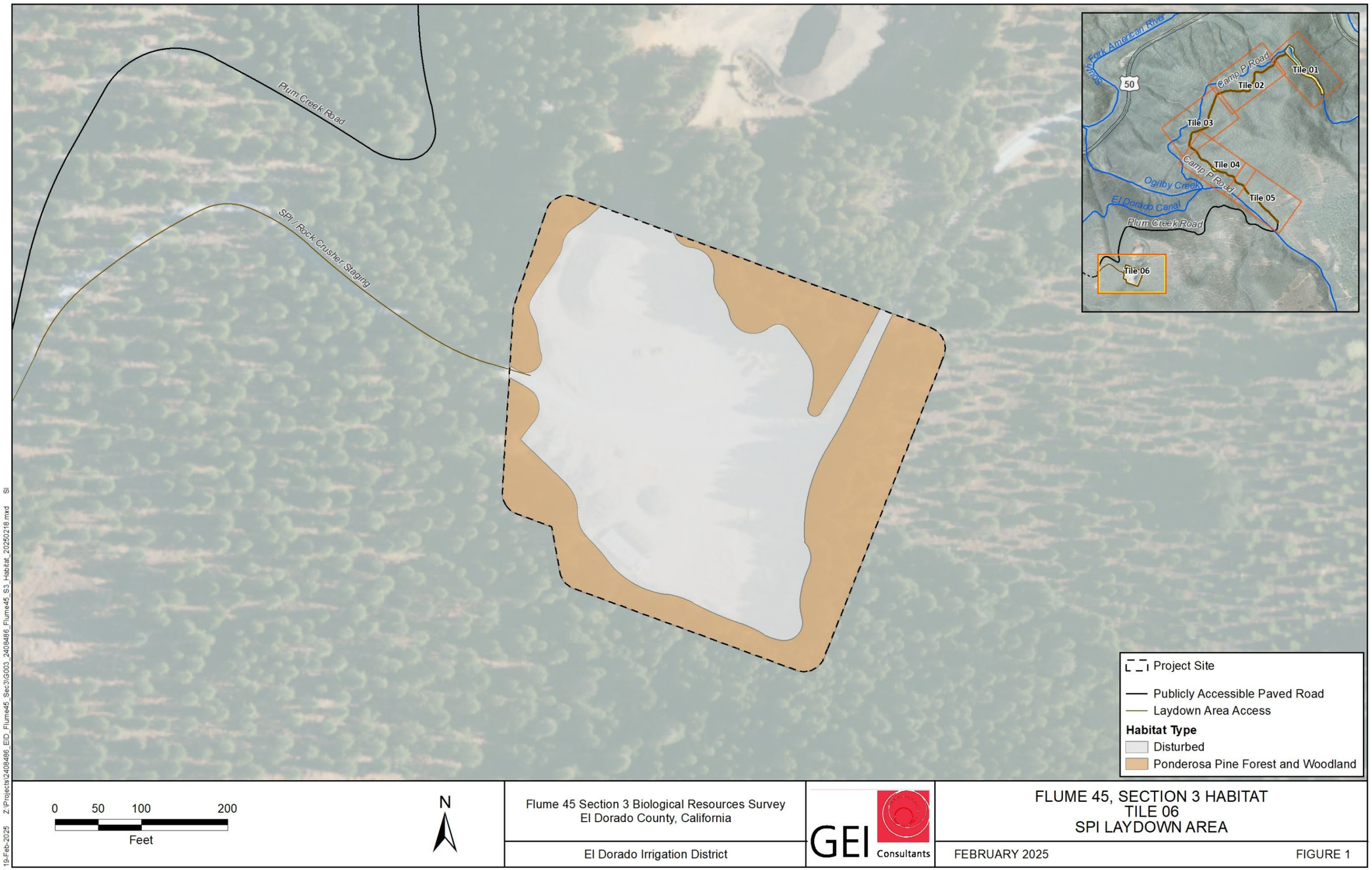

Figure 3.2-6. Land Cover Types within the Biological Study Area (continued)

During the field surveys, several small patches of hydrophytic plants and mosses were observed underneath the elevated flume. These areas are likely a result of water leaking from the flume and are not mapped as a different land cover type given their small size (GEI 2022b). Species identified at these locations include: Bolander's sedge (*Carex bolanderi*), fragile-sheath sedge (*Carex fracta*), Sierra arching sedge (*Carex cyrtostachya*), and seep monkey flower (*Erythranthe guttata*).

Open Water

Water is conveyed in the elevated flume in a general east to west direction typically from mid-December to October each year. The entire canal system including Flume 45 is typically dewatered from October to mid-December each year during the annual maintenance outage. The flume is void of vegetation or suitable substrates to support wildlife and plant life in the long term.

Disturbed/ Developed

The disturbed/developed portion of the BSA consists of the access road, elevated flume structure, the historic rock wall, and the lay down area for staging. The existing access road and lay down area is bare ground devoid of vegetation. The wooden flume structure is absent of substrate suitable for vegetation growth. The ground beneath the flume is regularly maintained to support structural integrity and is mostly barren with moist areas around leaks in the flume.

Wildlife Habitat

Wildlife populations in the BSA have been substantially affected by disturbance associated with past and ongoing human activities, including construction and maintenance of the flume system. As a result, the abundance and diversity of native species formerly associated with the local habitat have been greatly reduced. Wildlife habitat is moderate to marginal quality within most of the BSA.

The douglas fir and ponderosa pine forest and woodlands habitat have the potential to support a variety of wildlife species, including rodents such as the western gray squirrel (*Sciurus griseus*) and; mammals such as mule deer (*Odocoileus hemionus*) that may use this habitat for foraging, cover, and fawning; various predators, including gray fox (*Urocyon cinereoargenteus*) and raptors that may feed on the rodents and other small mammals; and a variety of bird species, such as the California scrub-jay (*Aphelocoma californica*) and acorn woodpecker (*Melanerpes formicivorus*).

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 in Section 3.2.2, "Regulatory Setting." For the purposes of this analysis, special-status species considered in this section include taxa (distinct taxonomic categories or groups) that fall into any of the following categories:

- 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 special concern (SSC);
- Plants listed as rare under NPPA of 1977 (FGC Section 1900 et seq.);
- Species designated as Fully Protected (FP) under the CFGC;
- Birds protected under the Migratory Bird Treaty Act and Fish and Game Code Section 3503, 3503.5, 3800(a), and 3513.
- Plant or animal species ranked by the Eldorado National Forest as Forest Service Sensitive[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).

All plants with a CRPR are considered "special plants" by USFWS, but this is a broad term used to refer to all plant taxa inventoried in the CNDDB, regardless of their legal or protection status. Plants ranked as CRPR 1 or 2 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 USFWS, CDFW, and CNPS database queries identified several special-status species that occur in the region. Tables E-1 and E-2 in Appendix D provide information, including habitat requirements, for special-status species plants and wildlife, respectively, that were identified in the database search results and other biological information sources and determined to have potential to occur within the BSA. In the case where a determination was made that there is no potential for a species to occur in the BSA, that species is not analyzed further within this document. Species that were determined to have potential to occur within the BSA are discussed and evaluated below in this section.

Special-Status Plants

A total of 36 special-status plant species were evaluated for potential to occur in the BSA. All plants were eliminated from consideration based on (1) a lack of suitable wetlands habitat requirements, (2) lack of suitable soil types, and/or (3) not being present during the three field surveys that were conducted during the suitable blooming periods.

There were no aquatic resources present within the BSA, there were several small areas under the flume where moisture from water leaking that allowed suitable conditions for small patches of hydrophytic plants, including sedges (*Carex* spp.) to persist. Soils within the BSA are not

[1] Please note: 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.

serpentinite or volcanic soils that could support special-status plants endemic to these soil types. Additionally, soils that are mapped within the BSA do not 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 of Pleasant Valley mariposa-lily 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.

Special-Status Wildlife Species

A total of 25 special-status wildlife species were evaluated for potential to occur in the BSA. Based on review of existing documentation and observations made during field surveys, habitat within the BSA is limited or only marginally suitable for 6 special-status wildlife species. Species were eliminated from consideration based on known limiting ranges or lack of suitable habitat within the BSA. Additionally, based on the timing of the proposed Project's construction activities, several species were eliminated, but these species are included in this document as possible presence.

The 6 special-status wildlife species that were identified as having potential to occur within the BSA are highly mobile and distributed in a variety of habitat types and include: foothill yellow-legged frog (*Rana boylii*), California spotted owl (*Strix occidentalis*) northern goshawk (*Accipiter gentilis*), bald eagle (*Haliaeetus leucocephalus*), pallid bat (*Antrozous pallidus*), and Townsend's big-eared bat (*Corynorhinus townsendii*).

Foothill Yellow-legged Frog

Foothill yellow-legged frog (FYLF) is listed as U.S. Fish and Wildlife Service Endangered, State of California Endangered, and U.S. Forest Service Sensitive. The Project site is within the range of the North Sierra and South Sierra Distinct Population Segments, of foothill yellow-legged frog. This species is active mainly during the day, and almost exclusively are found near water. They are typically found in rocky streams and rivers with open, sunny banks, within woodland or chaparral habitats at elevations from sea level up to approximately 6,000 feet (1,829 meters) above mean sea level (CDFW 2019ab). They may also be found in isolated pools, vegetated backwaters, and deep shaded spring-fed pools. Rarely heard, the FYLF call is a low-pitched and faint single note including a raspy series of four to six notes per second. Calls may also include grunts and oinks, are made primarily under water (occasionally in the air) and may be made during the day or night (CaliforniaHerps 2024a and 2024b).

Mating and egg-laying occurs in streams and rivers from April until early July after streams have slowed from winter runoff. Breeding habitat within rivers and large streams are often located near the confluence of tributary streams in sunny, wide, shallow reaches (CDFW 2019a). During the nonbreeding season, foothill yellow-legged FYLFs and tend to select sunny areas with limited canopy cover close to riffles and pools (CDFW 2019a). Food availability, ability to thermoregulate (e.g., basking sites and cool refugia), adequate water, cover from predators, and the absence of non-native predators are the key components of suitable nonbreeding habitat (CDFW 2019bb).

The potential for FYLF is limited to upland habitat in the Project site. Suitable aquatic habitat is present in the vicinity of the Project site and includes South Fork American River, Plum Creek, and Ogilby Creek. The nearest known occurrences for FYLF are in the South Fork American River approximately 0.29 miles to the south of the Project site. This occurrence is located on a severely steep, rugged terrain in which frogs are unlikely to traverse up. Occurrence records located within Ogilby Creek are located 0.96 miles west of the construction footprint.

California Spotted Owl

California spotted owl is listed as U.S. Fish and Wildlife Proposed Threatened, Bird of Conservation Concern under the Migratory Bird Treaty Act, State of California Species of Special Concern, and a U.S. Forest Service Sensitive Species. California spotted owl breeding typically begins in mid-February to early October. Nests in the Sierras are most often cavities, but spotted owls can also use broken top trees or platform nests.

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. Nests are typically found in areas of high canopy cover, a high number of large trees, and downed trees.

California spotted owl has potential to forage and move through the Project site, while it is unlikely that this species would nest within the immediate area of Flume 45 due to regular maintenance and adjacent high-quality habitat.

USFS has reported a spotted owl protected activity center (ELD0054) located immediately adjacent to the Project site. Additionally, CNDDB spotted owl viewer also shows 7 nearby pairs of spotted owls, less than 5-miles of the Project site (CDFW 2024b). Several pairs of California spotted owl have been recorded near the Project site (CDFW 2024b). Spotted owls were detected in the area near the Project site during surveys conducted in 2023 and 2024 (Dudek 2023; Dudek 2024).

Northern Goshawk

Northern goshawk is a California Department of Fish and Wildlife Species of Special Concern and U.S. Forest Service Sensitive**.** This species forages and nests in mature and old-growth forest stands over much of their California range. Suitable nesting and foraging habitat requires there to be an adequate prey base of smaller passerines, and 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 breeding season occurs between February 15 to September 15. Seasonal movements and migration occur downslope after breeding season, as far as valley foothill hardwood habitat in Sierra Nevada. (CHWR 2008).

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 2022 and 2023 surveys. No nests were observed in the Project site or immediate vicinity during the field surveys. Northern Goshawk were not detected

in the area near the Project site during surveys conducted in 2023 and 2024 (Dudek 2023; Dudek 2024). The nearest occurrence record of a nest location is recorded is over 6-miles southeast of the Project site.

Bald Eagle

Bald eagle is protected under The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d); State of California Endangered; California Department of Fish and Wildlife Fully Protected; U.S. Forest Service Sensitive**.** They typically nest in forested areas adjacent to large bodies of water, staying away from heavily developed areas when possible. Bald Eagles are tolerant of human activity when feeding, and may congregate around fish processing plants, dumps, and below dams where fish concentrate. 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 about 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. This species nests in large, mature conifers with dense canopy and open understory, typically 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 near Jenkinson Lake approximately 5-miles from the Project site (personal communication, Brian Deason, EID). This species would most likely occur as flyovers, or there is a potential for use of the Project site for roosting or less ideal nesting habitat**.**

Nesting Raptors and Other Migratory Bird Species

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 Fish and Game codes to occur within the Project site and vicinity. Although any impact would be incidental to Project construction, and not the purpose of the Project or Project-related activity, construction activities during the nesting season (approximately March 1 through August 31) have the potential to cause direct impacts to birds including the loss of habitat and direct fatality. Any destruction or disturbance of breeding or foraging habitat could directly impact the survivorship of birds, and the removal or disturbance of nests may result in breeding failure or fatality of individual birds. Birds could be killed, injured, or disturbed by vehicles or equipment related to proposed Project construction. Any disturbance resulting in nest abandonment, the loss of eggs, or direct mortality to a nesting bird would be considered a significant impact. Indirect impacts to birds could result from habitat changes that affect sources of food or breeding suitability. 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 wooden structure supporting the flume could provide suitable nesting substrate for birds in the Project site.

Potential for special-status birds to occur onsite is likely limited to species that may forage or nest in coniferous forest, utilize the forest as a movement corridor, or migrate through the Project vicinity 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.

Pallid bat

Pallid bat is listed as a California Department of Fish and Wildlife Species of Special Concern and as U.S. Forest Service Sensitive. 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 forest. The species is most common in open, dry habitat with rocky areas for roosting (CWHR 2024). 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 in the historic rock wall and 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 roosting habitat. 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.

There are no known occurrence records of pallid bat on the Project site or in the vicinity.

Townsend's big-eared bat

Townsend's big-eared bat is listed a U.S. Forest Service Sensitive species and California Department of Fish and Wildlife Species of Special Concern. 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 2000). 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 in the historic rock wall and 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. 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.

There are no known occurrence records of Townsend's big-eared bat on the Project site or in the vicinity.

3.2.3 Environmental Impacts and Mitigation Measures

Criteria Evaluated in the NOP/IS

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

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

CEQA Guidelines Appendix G Environmental Checklist was assessed during the NOP scoping process and the following criteria were determined to need further evaluation in the Draft EIR:

- 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 CDFW or U.S. Fish and Wildlife Service (USFWS).

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 field surveys 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.

Approximately 5.0 acres of temporary and permanent impacts would occur within the limits of work for the proposed Project. Temporary impacts to land cover are defined as those that occur with the disturbed area returning to ecological function within approximately 3 calendar years from the date of completion. 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 and woodland 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.

Construction activities are expected to occur during normal annual shutdown maintenance periods beginning in August 2026 and ending in January 2028. The first construction period would occur between August 2026 and January 2027 and the second would occur between August 2027 and January 2028. Construction may be suspended as necessary for inclement weather. Construction would occur 12 hours per day and 5 to 7 days per week, although construction activities could occur up to 24 hours per day, if necessary. Additional information about construction can be found in Chapter 2 *Project Description*.

O&M activities would be similar to current activities and would not result in new or different types of impacts related to biological resources. Therefore, O&M activities are not evaluated further in this section.

Impact Analysis

The evaluation of Project impacts to special-status species is grouped and analyzed below based on taxa if impacts are similar or specific species if impacts are not similar within a taxa.

Impact BIO-1: Impacts to Foothill Yellow-legged Frog from Construction Activities. (Less than significant)

While the Project site provides suitable terrestrial habitat for FYLF, known occupied aquatic resources, South Fork American River and Ogilby Creek, are located over 200 feet downslope of the Project site and location of Camp P access road maintenance activities. In a recent USFWS concurrence letter for a separate wildfire fuels management project, which included the Project site, it was determined that direct impacts to FYLF could potentially occur within 82 feet of aquatic habitat (USFWS 2024d). No construction activities would be located within 82 feet of suitable aquatic habitat. Therefore, impacts from the Project activities to FYLF would be considered **less than significant**.

Impact BIO-2: ***Impacts to Special-Status Nesting Raptors and Other Migratory Bird Species from Construction Activities.***
(Less than Significant with Mitigation)

The Project site contains limited nesting and foraging habitat for California spotted owl, northern goshawk, and bald eagle. No nests were observed on the Project site or immediate vicinity during field surveys. Spotted owls were detected in the area near the Project site during surveys conducted in 2023 and 2024 (Dudek 2023; Dudek 2024). Northern Goshawk were not detected in the area near the Project site during surveys conducted in 2023 and 2024 (Dudek 2023; Dudek 2024). Habitat within the Project site is unsuitable or only marginally suitable for bald eagle due to distance to a water source such as Union Valley Reservoir and Jenkinson Lake.

The USFS requires a Limited Operating Period (LOP) within 0.25 mile of an active nest or roost site (if known) or within a designated protective activity center (PAC) (if nest/roost site is not known) from March 1 to July 9 for noise and smoke and from March 1 to August 31 for habitat manipulating activities. Because all three of these species are known or could occur in the general region, Project construction activities are planned to occur between the months of August and January, which is primarily outside the bird nesting season and USFS LOP for California spotted owl (i.e., March 1 to August 31). Additionally, following the LOP would reduce any effects to owls to a level that is discountable by avoiding the potential for adverse effects to owls when they could be in their more vulnerable breeding and nesting stages (USFWS 2024d).

Project work outside the bird nesting season does not have the potential to remove active nests of common or special-status bird species. However, if work needs to occur during the nesting period, indirect impacts from construction noise and human disturbance and direct impacts from removing trees could potentially result in nest abandonment, and removal or destruction of nests. Therefore, Project impacts on raptor and bird habitat would be considered **significant**.

Mitigation Measures: The following mitigation measures have been identified to address this impact.

> **Mitigation Measure BIO-1: Conduct a Biological Resources Training to All Staff That Will be On-site During Project Activities.**
>
> The District shall provide biological resources awareness training for workers prior to beginning Project construction activities. The District shall have a qualified biologist prepare training materials (i.e., printed handouts) that provide information on the following topics:
>
> - How to recognize special-status plant species, wildlife species, and sensitive habitats that could occur in the Project area (i.e., special-status amphibian identification and habitat, special-status avian identification and habitat, wetland habitats, and riparian habitats);
> - What to do if special-status species are encountered in the Project area;
> - 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 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. 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.

Mitigation Measure BIO-2: Avoid or Minimize Impacts to Special-Status Bird Species, Nesting Raptors, and Other Migratory Birds Protected under the MBTA and FGC

EID shall implement the following measures to avoid and minimize impacts to special-status bird species, nesting birds, and other migratory birds.

1. **Tree and Vegetation Removal to Occur Outside Nesting Season**. If tree and vegetation will be removed, or commencement of construction occurs outside the nesting season, February 15 through September 15, no mitigation is required. If tree or vegetation removal, or commencement of construction occurs between February 15 and September 15, a qualified biologist shall conduct preconstruction surveys for active nests of migratory nesting birds and raptors, including special-status species, northern goshawk, and bald eagle, within 14-days before the start of any construction-related activities.
2. **Avoidance Buffers for Active Nests**. If active nests are found, a qualified biologist shall consult with appropriate agencies to establish 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. Typical avoidance buffers during the nesting season will be a radius of 100-feet for nesting passerine birds and 500 feet for nesting raptors, unless a qualified biologist determines that smaller buffers will be sufficient 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 buffer zone will be delineated by highly visible, temporary construction fencing. A qualified biologist will monitor active nests during construction, to ensure that the species is not harmed or harassed by the noise or activity resulting from Project-related activities. The 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 stop authority if the birds exhibit behaviors of agitation.

Timing: Before and during construction activities.

Responsibility: EID.

Significance after Mitigation: Implementing Mitigation Measures BIO-1 and BIO-2 would reduce this impact because biological training would be provided to workers, pre-construction surveys would be conducted if tree or vegetation removal or commencement of construction occurs between February 15 and September 15, and buffers would be established if special status species are detected during pre-construction surveys. Therefore, this impact would be **less than significant with mitigation.**

Impact BIO-3: Impacts to Special-Status Bats from Construction Activities. (Less than Significant with Mitigation)

Pallid bat and Townsend's big-eared bat could potentially occur in the Project site utilizing the u-shaped concrete canal or wooded area for day or night roosts. Direct impacts could occur from tree removal, vegetation clearing, removal of the historic rock wall, and demolition of the existing wooden u-shaped concrete canal structure. Indirect impacts may include elevated noise levels during the above activities. Impacts are more likely if Project construction activities occur during the maternity season (March through July) or overwintering season (October through February) when these species are less mobile and less likely to be able to escape danger. Therefore, Project impacts to special-status bats would be considered **significant**.

Mitigation Measures: The following mitigation measures have been identified to address this impact.

Mitigation Measure BIO-1: Conduct a Biological Resources Training to All Staff That Will be On-site During Project Activities.

Please refer to Impact BIO-2 above for full text of this mitigation measure.

Mitigation Measure BIO-3: Avoid and Minimize Impacts to Bats

EID shall implement the following measures to avoid and minimize impacts to special-status 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: EID.

Significance after Mitigation: Implementing Mitigation Measures BIO-1 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.**

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3.3 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 3.8, "Tribal Cultural Resources."

3.3.1 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 is the nation's master inventory of known historic resources. It is administered by the National Park Service, 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

CEQA includes provisions that specifically address the consideration of cultural resources. CEQA states that if a project would have significant impacts on important cultural resources, then alternative plans or mitigation measures must be considered. However, only significant cultural resources (termed "historical 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 Tribal Cultural Resources (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.

Discovery of Human Remains

14 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.

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.

E. The County shall request to become a Certified Local Government (CLG) through the State Office of Historic Preservation. Certification would qualify the County for grants

to aid in historic preservation projects. The Cultural Resources Preservation commission could serve as the Commission required for the CLG program.

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 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.

Policy 7.6.1.1C: Maintaining areas of importance for outdoor recreation including areas of outstanding scenic, historic and cultural value; areas particularly suited for park and recreation purposes including those providing access to lake shores, beaches and rivers and streams; and areas which serv e as links between major recreation and open space reservations including utility easements, banks of rivers and streams, trails and scenic highway corridors (El Dorado County General Plan 2004).

3.3.2 Environmental Setting

This section focuses on the Native American archaeological setting, the ethnographic setting, and the historic-era setting of the Project area. A geological-based analysis of the potential archaeological sensitivity for surface and buried sites is included, as well as discussion of natural environmental factors relevant to the cultural and historical patterns discussed, and both rely on the information presented in other sections of Chapter 3, "Environmental Analysis." The information in this section is presented to contextualize the inventory of cultural resources that follows, and as a basis for evaluating the significance of resources at the Project site and degree of potential impacts to these resources.

Prehistoric Setting

Linguistic anthropologists have analyzed the relationships and geographic distributions of language families in California and developed theories about the patterns and the timing of human migrations. According to this theory, the earliest, pre-4000 Before Present (BP) archaeology in the Sierran foothills and one the west slope, as well as on the crest, relates to the ancestral Washoe, whose territory by ethnographic times lay mostly along the crest zone and the eastern Sierran front. This earliest period is only hinted at in current databases by the occasional fluted or wide-stemmed dart point or unusually thick obsidian hydration band. It is after about 4000 BP that human populations seem to have grown dramatically, both in central California and in the western Great Basin (Far Western 2023).

Many attribute this to changes in climate that brought winter precipitation, increased water supplies and overall conditions that were more favorable to the plant and animal resources upon which the human populations depended. This coincides with the appearance of "Martis"-phase sites on the crest of the upper west slope. Where these people originated has been a key research issue for decades. Moratto speculates that Martis is probably hot ancestral to Washo but may represent Maiduan prehistory. This is far from certain, however, and conflicts with the linguistic

data that indicate a late Maiduan arrival in central California. Elston and colleagues have argued that it is time to retire the concept of a Martis "Complex" or culture and use the term "Marti" simply to refer to Middle Archaic sites and assemblages in the Tahoe region and along the eastern Sierran front (Far Western 2023).

The "Good Times" of the Middle Archaic appear to have ended sometime over the last 1,000 to 1,500 years, depending on location. This was a time of severe demographic stress, as the human populations that had been expanding were not faced with serious and abrupt declines in productivity caused by repeated and prolonged droughts. Along the eastern Sierran front, as elsewhere during the Late Archaic was marked by increasing resource intensification as people worked harder to obtain the same amounts of food on land that was now less productive than before. The bow and arrow replaced the dart, mortars and pestles became much more common, and well-made, curated tools were replaced by simple, expedient flake tools. Settlement patterns also changed. Houses and presumably household groups generally were smaller, more ephemeral in nature, and, as the period went on, more dispersed (Far Western 2023).

The Late Archaic archaeological record in the north-central Sierra seems much less visible than that for the Middle Archaic. This is quite possibly a result of the various changes in subsistence and settlement. There are, however, clear signs of late-period use of the crest zone and the west slope on the Eldorado National Forest and adjacent areas: Rose Spring, "Gunther," and other projectile points are common, as are hydration readings of <3 microns (Far Western 2023).

Many archaeologists believe that in the last several hundred years before historic contact the native groups of the Tahoe Sierra developed patterns of settlement, subsistence, trade, and mobility (or lack thereof) that were still in place when the first non-Natives arrived in the early nineteenth century. This final precontact period that Elston and his colleagues have called the Late Kings Beach phase. It is marked by small, triangular projectile points of the Desert series (e.g., Cottonwood, Desert Side-notched), hydrations readings of <2 microns, a shift from biface reduction to a core/flake technology, a much higher ratio of milling equipment to the flaked stone implements, a lack of specialized or functionally specific tools, and much smaller and more dispersed encampments (Far Western 2023).

Ethnographic Setting

Sustained Euro-American incursions directly impacting Indigenous populations in the Project vicinity did not occur until after the Marshall gold discoveries in 1848 and the development and construction of the El Dorado Canal, circa 1856. Although native fishing locations are not specifically reported along the South Fork American River near the Project area, the canal and mining activity in the river wiped out the spawning capacity of the river. Extensive lumbering also took place. All these changes dramatically impacted the indigenous lifeway, appropriating village and camping areas, completely foreclosing uses of other areas, and altering seasonal travel. As a result, native populations seem to have consolidated into centrally located areas. Today the Native groups most closely associated with the Project area are the Shingle Springs Band of Miwok Indians, the United Auburn Community of the Auburn Rancheria (UAIC), the Ione Band of Miwok Indians, the Tsi Akim Maidu, the Washoe Tribe of Nevada and California, the Wilton Rancheria, and the Colfax-Todds Valley Consolidated Tribe (Far Western 2023).

Historical Setting

Exploration and Settlement

The Spanish explored the San Joaquin Valley as early as 1806-1808 with expeditions of Gabriel Moraga and the Franciscans. Moraga and his party explored the lowest elevations of the Sierra Nevada foothills and some of the valleys leading into the mountains. The Central Valley and the Sierra Nevada range, however, was mostly inhabited by Native Californians until the 1820s when the newly established Mexican government of California granted lands to its citizens and recent immigrants. European American encroachment into the Sierra Nevada Mountains started later in the 19th century during the Californian Gold Rush (Moratto 2004:331).

English, American, and French fur trappers attracted to the region by the abundance of animal life of the mountains and valley, established trapping operations throughout the region (Rice, et al 2012:133-135). By the mid-19th century, mining and logging activities were active in and near present-day El Dorado National Forest. State officials established the mining town of Placerville in 1850 as the county seat of the newly formed El Dorado County (Sioli 1883:70-71).

El Dorado County

Originally, El Dorado County consisted of numerous small mining camps and claims (El Dorado County 2025b). However, as gold deposits gradually were depleted in the latter part of the 19th century the local industry shifted to logging and farming. Lack of adequate water supply resulted in challenges in farming and logging became a chief driver of the economy (Sioli 1883:104, 110-114). By the 20th century strict logging regulations on government-owned forest land eventually crippled the logging industry. During this same period, the tourism industry flourished as visitors flocked to tourist destinations such as Lake Tahoe and the Eldorado National Forest. Tourism remains an important economic driver in the county to the present day, although logging, mining, agricultural, and manufacturing also continue to be important local industries (El Dorado County Board of Trade 1911:18-19; El Dorado County 2025a).

El Dorado Irrigation District

County residents formed the District on October 5, 1925 for the purpose of creating a reliable irrigation system for farmers in the region (El Dorado Irrigation District 2024). Around the same time, the District purchased the water storage and distribution system of the older El Dorado Water Corporation. The system contained roughly 70 miles of laterals and ditches as well as the Weber Reservoir. One of the District's major projects was the construction of the Sly Park Reservoir in the mid-1950s (El Dorado Irrigation District 2024).

1. *Flume 45*

The El Dorado Water and Deep Gravel Mining Company (El Dorado Company) constructed the Flume 45 bench walls between 1874 and 1875 for the purpose of supporting the wood flume structure that rests on the bench created by the rock walls of the larger El Dorado Canal. The canal consists of the flume, rock walls, and other associated elements. Because of the rugged terrain, the flume segments were designed on the foundations of dry-laid granite and stone bench walls. The walls also helped to maintain the gradient necessary to facilitate waterflow along the steep mountainside (JRP Historical Consulting, LLC 2024:13; Far Western 2023:27).

3.3.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance

The CEQA Guidelines Appendix G Environmental Checklist was assessed during the NOP scoping process and all cultural resources criteria were determined to need further evaluation in this Draft 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

For those resources recommended to be eligible for listing in the NRHP/CRHR, analysis of the effects or likely effects was based on evaluation of the changes to the existing historic properties that would result from implementing the Project. In making a determination of the effects on historic properties, consideration was given to:

- Specific changes in the characteristics of historic properties in the study area.
- The temporary or permanent nature of changes to historic properties and the visual area around the historic properties.
- The existing aspects of integrity that are retained by historic properties in the study area and how those aspects relate to the specific significant characteristics that make a historic property eligible for listing in the NRHP.

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

On October 3, 2022, the North Central California Information Center, Sacramento State University (NCIC) responded to a request submitted on September 20, 2022, by Far Western Anthropological Group (FWARG) Project Manager, Patricia Galinda Mayo, to conduct a records search to determine the presence or absence of cultural resources and previous studies within a

one-quarter mile radius of the Project area (or Area of Potential Effects). In addition to the Information Center database (File NO. ELD-22-105), the following files were consulted:

- California Inventory of Historic Resources (1976)
- Office of Historic Preservation's Historic Property Data File, which includes:
    - National Register of Historic Places;
    - California Register of Historical Resources;
    - California State Historical Landmarks (1996 and updates);
    - California state Points of Historical Interest (1992 and updates); and
    - Office of Historic Preservation Archaeological Determinations of Eligibility.
- GLO, Historical Maps, and Rancho Plat Maps
- California Department of Transportation Bridge Survey

The records search identified four previous studies that have been conducted at least partially within the Project area, though all over 14 years previously.

The records search also identified two previously reported built environment resources within the Project area. These include segments of the Ogilby Road Grade Rock Wall (P-09-004245) and the El Dorado Canal/Flume 45 Rock Wall (P-09-000599/ELD-511H).

Literature Review

As part of the literature review, GEI reviewed the Section 106 Finding of Effect (FOE) document prepared by JRP for the Project as well as the Historic Property Management Plan for Project 184 (HPMP). The FOE assessed the effect of the proposed project on the El Dorado Canal (Flume 45) Rock Walls and concluded that implementation of the proposed Project would result in an adverse effect on the resource. The impacts discussion presented later in this chapter references the FOE effects analysis. The FOE report is currently in review with SHPO as part of the Section 106 review process.

The HPMP was prepared for EID also as part of Section 106 compliance and relates to the management of significant cultural resources and Project 184. The document provides general guidance on the mitigation of significant properties and mitigation measures relevant to the resources in the proposed Project are discussed later in this chapter (FWARG 2003).

Buried Site Assessment

FWARG conducted an assessment for buried archaeological sites within the Project site (Denay Grund in Far Western 2023). In their assessment, FWARG noted the Project area is located primarily on Mesozoic (252 to 66 million year ago [mya]) granite and granodiorite batholiths with older Paleozoic (541 to 252 mya) rocks and younger Tertiary (66 to 2.3 mya) sedimentary rocks in the surrounding foothills. All these formed generally before the Quaternary Period (2.58 mya to present) meaning the Project area has very low potential for preserving buried archaeological resources. This was used in conjunction to geographic variables such as slope and distance to water as well as the age and nature of landforms present. In sum, they found that the potential for encountering preserved, buried archaeological resources in the Project area was very low (Far Western 2023).

Pedestrian Surveys

An archaeological survey was conducted on November 15, 2022, by FWARG Assistant Project Manager, Patricial Galindo Mayo, and accompanied by EID Environmental Review analyst Michael Baron. All accessible areas within the Project area were surveyed including dirt access roads and narrow foot paths below the flume on the eastern side. All exposed surfaces were visually inspected or photographed if access was limited or unsafe. Many areas were too steep and/or contained snow-covered rocky terrain to survey. No precontact or multi-component (containing both precontact and historic era resources) were identified during the archeological pedestrian survey.

JRP Historical Consulting, LLC (JRP) conducted a survey of the Project area on October 4, 2022. Two historic-era built environment resources were identified, segments of the Ogilby Road Grade Rock Wall (P-09-004245) and the El Dorado Canal (Flume 45) Rock Wall (P-09-000599/ELD-511H). The resources were recorded and photographed (FWARG 2023: 31).

Architectural History Review

Two previously recorded historic-era resources are in the Project area: the Ogilby Road Grade Rock Walls (P-09-004245) and the (Flume 45) Rock Walls (P-09-000599/ELD-511H). The Ogilby Road Grade Rock Walls are a feature of the Carson Valley Road-Lower Ogilby Grade Connector. The rock wall and associated road were previously evaluated for NRHP eligibility and determined not eligible in 2014 because of a lack of integrity and historical significance (FWARG 2023: 31). Because of a lack of integrity and historical significance, this resource is also not considered a historical resource for the purposes of CEQA.

Flume 45 is supported by eight sections of dry-laid granite masonry wall totaling 1,183 feet in length. These eight sections are identified as a component of the El Dorado Rock Wall Discontiguous District (CA-ELD-511-H) (JRP 2024: 10). The historic district was determined eligible for the NRHP in 1993 for its significance in engineering (NRHP Criterion C). As part of the 2022 field visit, JRP assessed the current condition of three segments of the Flume 45 rock wall that are in the Project area and upon observation recommended they retain sufficient integrity and remain contributors to the historic district (FWARG 2023: 33). The wall segments are also considered a historical resource for the purposes of CEQA. Flume 45 is associated with the rock support wall but is not a contributing element of the historic district because it does not date to the period of significance (1874 to 1922). Furthermore, the El Dorado Canal (including the associated flumes, spillways, tunnels, and siphons) was previously determined not eligible for listing in the NRHP (JRP 2024: 1). Therefore. the flume and canal also are not considered historical resources under CEQA.

Impact Analysis

Impact CUL-1: Cause a Substantial Adverse Change in the Significance of a Built Environment Historical Resource. (Significant and Unavoidable)

The Flume 45 rock wall is eligible for the NRHP as a contributing resource to the El Dorado Rock Wall Discontiguous District, and thus, is considered a historical resource for the purposes of CEQA. The Project would remove approximately 715 feet of this historic structure, which includes approximately 690 feet of wall considered contributing to the historic district. The

remaining approximately 25 feet of wall are ineligible for the NRHP due to a lack of integrity. 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 this historic resource. In addition, a substantial portion of the wall that represents the longest single NRHP-eligible segment of the structure would be destroyed (496 feet of the entire eligible 1,183-foot length) (JRP 2024: 20). The proposed Project activities would alter the Flume 45 rock wall 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. Therefore, the impact from the Project would be **significant**.

Mitigation Measures: The following mitigation measure has been identified to address this impact.

> **Mitigation Measure CUL-1: Document the Flume 45 Rock Wall (P-09-000599/ELD-511H)**
>
> EID 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: Cause a Substantial Adverse Change in the Significance of an Archaeological Resource. (Less than Significant with Mitigation)

No precontact or historic era archaeological resources have been previously identified in the Project area. The pedestrian survey did not identify previously unrecorded archaeological resources. Therefore, there are no known archaeological resources within the Project area. In addition, the assessment for buried archaeological resources indicates that the potential for preserved, buried archaeological resources is very low. 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, the potential impact from the Project would be **significant**.

Mitigation Measures: The following mitigation measures have been identified to address this impact.

Mitigation Measure CUL-2: Conduct Preconstruction Cultural Resource Awareness Training

EID shall provide cultural resources awareness training for workers prior to beginning Project construction activities. EID 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, "Tribal Cultural Resources").

Timing: Prior to construction activities.

Responsibility: EID 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, all construction activities within 100-feet shall halt and EID 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 prehistoric, the EID and 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 MM TRIB-1, TRIB-2, and TRIB-3 for more discussion of tribes and culturally sensitive areas.

4. If EID determines that the resource qualifies as a historical resource or a unique archaeological resource (as defined pursuant to the CEQA Guidelines) and 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 EID 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: EID 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: Potential to Disturb 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 given the buried archaeological potential in the Project site is low, it is unlikely there are any unknown human remains in the Project site. While unlikely, there is the possibility that human remains might be encountered by Project-related, ground-disturbing activities. Therefore, the potential impact from the Project would be **significant**.

Mitigation Measures: The following mitigation measure has been identified to address this impact.

> **Mitigation Measure CUL-4: Avoid Potential Effects on Undiscovered Burials**
>
> EID 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 EID 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.
>
> If found on Federal lands, EID shall ensure that the procedures contained in Federal laws governing the disposition of Native American human remains be followed. Specifically, the Native American Graves Protection and Repatriation Act, Pub L. 101-601, 25 U.S.C. 3001 et seq., 104 Stat. 3048 requires Federal agencies and institutions that receive Federal funding to return Native American cultural items to lineal descendants and culturally affiliated Indian Tribes and Native Hawaiian organizations. Cultural items include human remains, funerary objects, sacred objects, and objects of cultural patrimony. The Native American Graves Protection and Repatriation Act has established procedures for the inadvertent discovery of Native American cultural items on Federal or Tribal lands, which includes consultation with potential lineal descendants or Tribal officials as part of their compliance responsibilities.
>
> **Timing:** During construction activities.
>
> **Responsibility:** EID 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**.

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3.4 Geology and Soils

This section discusses the existing setting, applicable regulations, and potential impacts related to soils and erosion.

3.4.1 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 U.S. Environmental Protection Agency (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. Specific sections of the CWA that are applicable to the Project are described below.

The CWA includes the Federal Antidegradation Policy which was enacted to require the States to enact policies to fully protect existing water uses and level of water quality required to protect and maintain the existing uses.

Clean Water Act Section 402

Section 402 of the CWA establishes the National Pollutant Discharge Elimination System (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 State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (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 NPDES. The Construction General Permit regulates construction site stormwater management. Projects that will disturb 1 or more acres of soil, or disturb less than 1 acre, but are part of a larger common plan of development that in total disturbs 1 or more acres, 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 Stormwater Pollution Prevention Plan (SWPPP) to minimize potential stormwater impacts to surface waters. The Construction General Permit SWPPP requirements are further discussed in Section 3.7,

"Hydrology and Water Quality." 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 Best Management Practices (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, and 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).

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

Policy 7.1.2.1: Development or disturbance of slopes over 30 percent 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.

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.

Grading, Erosion, and Sediment Control Ordinance

The Grading, Erosion, and Sediment Control Ordinance contained in the El Dorado County Code of Ordinances Chapter 110.14 regulates grading activity in the unincorporated area of the County 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 and the CBC.

The ordinance determines the administrative procedures for issuing permits and the approval of plans and inspections of grading construction (El Dorado County 2024).

3.4.2 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 3,780 to 3,920 feet (1,152 and 1,195 meters) above mean sea level. 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 Natural Resources Conservation Service Web Soil Survey three soil map units are generally present within the Project vicinity, as shown in **Table 3.5-1** (NRCS 2024). These soils are well drained, with more than 80-inches to the water table, and have a medium-to-high runoff capacity.

Table 3.4-1. Soils within the Project Vicinity

Soil Series Name and Identification Number	Drainage	Depth to Water Table	Runoff
CcF – Chaix very rocky coarse sandy loam, 50 to 70 percent slopes	Well drained	More than 80 inches	High
109 – Chaix-Rock outcrop complex, 30 to 75 percent slopes, N Low Montane	Well drained	More than 80 inches	Medium
146 – Holland-Musick loams, 5 to 30 percent slopes complex	Well drained	More than 80 inches	Medium

Source: Natural Ressources Conservation Service 2024

3.4.3 Environmental Impacts and Mitigation Measures

Criteria Evaluated in the NOP/IS

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

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure (including liquefaction), or landslides.
- 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.

- Be located on expansive soil, creating substantial direct or indirect risks to life or property.
- 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.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Thresholds of Significance

The CEQA Guidelines Appendix G Environmental Checklist was assessed during the NOP scoping process and the following criteria was determined to need further evaluation in this Draft EIR:

- Result in substantial soil erosion or the loss of topsoil.

Impact Analysis

Impact GEO-1: ***Result in Substantial Soil Erosion or the Loss of Topsoil from Construction Activities.***
(Less than Significant with Mitigation)

The Project includes ground disturbing construction activities from clearing and grubbing existing vegetation, removing hazard trees, grading, installing MSE wall and concrete at the u-shaped canal, roadway access improvements, and slope stabilization. Disturbance of existing vegetation and soil during construction activities could cause an increase in stormwater runoff, particularly during the winter months, which in turn could result in soil erosion, loss of topsoil, and sedimentation. Project-related ground disturbing activities 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, the Project impact related to soil erosion would be considered **significant**.

Mitigation Measures: The following mitigation measure has been identified to address this impact.

> **Mitigation Measure GEO-1: Prepare and Implement a SWPPP and BMPs to Reduce Erosion**
>
> 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 General Construction Permit. The Construction General Permit requires the development of a SWPPP by a Qualified SWPPP Developer. The SWPPP is required to identify appropriate BMPs to prevent erosion or soil loss from the Project site. These measures would include the implementation of construction staging in a manner that minimizes the amount of area

disturbed at any one time; secondary containment for storage of fuel and oil; and 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: EID and its construction contractor(s).

Significance after Mitigation: Implementing Mitigation Measure GEO-1 would reduce this impact because a NPDES General Construction Permit would be obtained and BMPs would be implemented 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**.

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3.5 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.

3.5.1 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 (2007), 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 the 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 the 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.

3.5.2 Environmental Setting

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 2024). 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 related to human activities have been determined to be highly likely responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's atmosphere and oceans, with corresponding effects 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 Toxic Air Contaminants (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. The 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 CH_4 from landfills and wastewater treatment.

3.5.3 Environmental Impacts

Thresholds of Significance

The CEQA Guidelines Appendix G Environmental Checklist was assessed during the NOP scoping process and the following criteria were determined to need further evaluation in this Draft EIR:

- Generate greenhouse gas (GHG) emissions, either directly or indirectly, that may have a significant impact on the environment; or,
- 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 2015).

Analysis Methodology

Construction-related GHG emissions were estimated using CalEEMod Version 2022.1. Construction-related emissions were estimated using information such as construction schedule and phasing, expected duration of activities, equipment types, volumes of material to be hauled, and number of construction workers on-site during each construction phase. Construction information used to estimate air emissions is discussed in Chapter 2, "Project Description." Construction-related GHG emissions estimated for each year of Project construction 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 B**.

Table 3.5-1. Unmitigated GHG Emissions from Construction Activities

Emissions Category	MT of CO_2e per year
SMAQMD Threshold	1,100
Year 1	
Unmitigated Emissions	265
Exceedance	*No*
Year 2	
Unmitigated Emissions	173
Exceedance	*No*

Source: GEI 2024; see Appendix B for details.

Impact Analysis

Impact GHG-1: 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 years. Therefore, the Project impact related to GHG emissions from construction-related activities would be **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)

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 affect the proposed Project if those policies are implemented before construction begins. 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 CO_2e 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**.

3.6 Hazards and Hazardous Materials

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

3.6.1 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. The RCRA established an all-encompassing Federal regulatory program for hazardous substances that is administered by the EPA. Under the RCRA, the EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances. The 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

The 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 (CRS 2020). 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 Regional Water Quality Control Boards (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 26 of the 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 26 regulations list more than 800 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

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), also known as the Business Plan Act, defines hazardous materials as raw or unused materials that are part of a process or manufacturing step. 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, materials inventories, and emergency response plans are generally required for operations involving hazardous materials and wastes.

Hazardous Materials Transport

The California Highway Patrol, the California Department of Transportation, 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 (Title 13 of the California Code of Regulations; the State Fire Marshal Regulations (Title 19 of the California Code of Regulations); and Title 22, Division 4.5, Chapter 13 of the California Code of Regulations.

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 the California Highway Patrol. 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. The California Highway Patrol is authorized to designate and enforce route restrictions for the transportation of hazardous materials.

California Code of Regulations Title 22

Transport of hazardous materials can only be conducted under a registration issued by DTSC as outlined by Chapter 13, Division 4.5 of Title 22.1 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 wastes 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 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.[1]

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 2023).

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 2004, as amended).

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

[1] 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.

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 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.

3.6.2 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. The nearest closed site is on the north side of the South Fork American River Canyon (SWRCB Site No. T060170054), approximately 1.9-miles northeast of the Project site. This site is a Sacramento Metropolitan Utility District maintenance facility, which experienced a diesel fuel leak in 1993. Contaminated soil was remediated, and the case was closed in 1996.

Fire Hazards

According to the California Department of Forestry and Fire Protection's Fire Hazard Severity Zone map, because the Project area is under Federal jurisdiction; it has not been rated for fire hazard severity (California Department of Forestry and Fire Protection 2024a, 2024b). The U.S. Forest Service is responsible for fire prevention and suppression in the Eldorado National Forest and those privately-owned lands within the forest boundaries. See Section 3.10, "Wildfire," for a detailed discussion of wildfire hazards.

3.6.3 Environmental Impacts and Mitigation Measures

Criteria Evaluated in the NOP/IS

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

- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- 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 area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Thresholds of Significance

The CEQA Guidelines Appendix G Environmental Checklist was assessed during the NOP scoping process and the following criteria were determined to need further evaluation in this Draft EIR:

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

- 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.
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

Analysis Methodology

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. 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.

Impact Analysis

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.***
(Less than Significant with Mitigation)

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. 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 during construction. Moreover, these hazardous 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 (Title 13 of the California Code of Regulations (CCR)), the State Fire Marshal Regulations (Title 19 of the CCR), and Title 22 of the CCR. Title 13 of the CCR requires all motor carrier transporters of hazardous materials are required to have a Hazardous Materials Transportation license issued by the California Highway Patrol, 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. Therefore, the impact from the Project would be considered **significant**.

Mitigation Measures: The following mitigation measure has been identified to address this impact.

Mitigation Measure GEO-1: Prepare and Implement a Stormwater Pollution Prevention Plan and BMPs to Reduce Erosion

Please refer to Impact GEO-1 in Section 3.4, "Geology and Soils," for full text of this mitigation measure.

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. EID 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: EID and its construction contractor(s).

Significance after Mitigation: Implementing Mitigation Measure GEO-1 would reduce this impact because a NPDES General Construction 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 EID 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: 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. 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. Therefore, the impact from the Project would be considered **significant**.

Mitigation Measures: The following mitigation measure has been identified to address this impact.

Mitigation Measure GEO-1: Prepare and Implement a Stormwater Pollution Prevention Plan and BMPs to Reduce Erosion

Please refer to Impact GEO-1 in Section 3.4, "Geology and Soils," for full text of this mitigation measure.

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

Please refer to Impact HAZ-1 above for full text of this mitigation measure.

Significance after Mitigation: Implementing Mitigation Measure HAZ-1 would reduce this impact because EID 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: ***Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires During Construction Activities.***
(Less than Significant with Mitigation)

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 3.10, "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. Therefore, the impact from the Project would be considered **significant**.

Mitigation Measures: The following mitigation measure has been identified to address this impact.

> **Mitigation Measure WILD-1: Prepare and Implement a Fire Safety Plan**
>
> Please refer to Impact WILD-1 in Section 3.9, "Wildfire," for full text of this mitigation measure.

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 all 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**.

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3.7 Hydrology and Water Quality

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

3.7.1 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 U.S. Environmental Protection Agency (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. Specific sections of the CWA that are applicable to the Project are described below.

The CWA includes the Federal Antidegradation Policy which was enacted to require the States to enact policies to fully protect existing water uses and level of water quality required to protect and maintain the existing uses.

Clean Water Act Section 301

Section 301 prohibits the discharge of any pollutant into waters of the U.S. without authorization under specific provisions of the CWA, including CWA Sections 402, which is discussed below.

Clean Water Act Section 402

Section 402 of the CWA establishes the National Pollutant Discharge Elimination System (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.

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 (CRS 2020). 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 No. 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.

State Laws, Regulations, and Policies

SWRCB and the nine RWQCBs are responsible for the protection of water quality in California. SWRCB establishes Statewide policies and regulations mandated by Federal and State water quality statutes and regulations. RWQCBs are responsible for the development and implementation of Water Quality Control Plans (Basin Plans) that address regional beneficial uses, water quality characteristics, and water quality problems. RWQCB is responsible for implementing the Porter-Cologne Water Quality Control Act discussed 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: 1) designate beneficial uses for surface and ground waters; 2) set narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the State's antidegradation policy; and 3) describe implementation programs to protect all waters in the region. Development of Basin Plans and the triennial review of these plans by SWRCB are necessary for compliance with CWA Section 303 (40 CFR 131).

State Antidegradation Policy

In accordance with the Federal Antidegradation Policy, the State policy was adopted by SWRCB to maintain high quality waters in California. This State policy, implemented by RWQCBs, restricts the degradation of surface and groundwaters in an effort to achieve the Federal CWA goals and objectives. Specifically, the policy protects bodies of water where the existing water quality is higher than necessary for the protection of present and anticipated beneficial uses. The policy requires that any activity that produces a waste or increased amount of waste and that discharges into high quality waters must meet waste discharge requirements to control the discharge and assure that degradation of the existing water quality does not occur (SWRCB 1968).

NPDES General Permit for Construction Activities

Most construction projects that disturb one acre or more of land are required to obtain coverage under the SWRCB's General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 2022-0057-DWQ; "Construction General Permit"; adopted on September 8, 2022, and effective September 1, 2023), which requires the applicant to file a public notice of intent to discharge stormwater and to prepare and implement a storm water pollution and prevention plan (SWPPP). The SWPPP must include a site map and a description of the proposed construction activities; demonstrate compliance with relevant local ordinances and regulations; present best management practices (BMPs) that will be implemented to prevent soil erosion and discharge of sediment and other construction related pollutants to surface waters; and discuss monitoring that will be conducted to assure ongoing compliance of storm water discharges from the construction site with the Construction General Permit.

The SWPPP must include BMPs to control erosion at the source, such as minimizing soil disturbance, preserving existing vegetation where feasible, and stabilizing and revegetating disturbed areas as soon as possible after grading or construction activities. Temporary soil stabilization measures/practices that could be utilized include covering disturbed areas with

mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation, and permanent seeding (SWRCB 2022). Additionally, the SWPPP may include sediment control measures, which would be used to capture soil that becomes eroded. This may include perimeter control measures, such as installing silt fences or placing straw waddles below slopes, sediment basins and active treatment systems to remove sediment prior to storm water releases (SWRCB 2022). Wastewater washout and cleanout areas or structure, secondary containment facilities, hazardous materials spill plans and other hazardous materials control measures to preclude discharge of toxic construction related pollutants in storm water runoff are also typically included in the SWPPP (SWRCB 2022). Permittees are further required to conduct annual monitoring and reporting to ensure that BMPs are correctly implemented and that they are effective in controlling the discharge of construction-related pollutants.

Local Laws, Regulations, and Requirements

El Dorado County Ordinance Code Chapter 8.79

Chapter 8.79 of the El Dorado County Ordinance Code ensures El Dorado 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 in El Dorado County by reducing pollutants in stormwater discharges to the maximum extent practicable and controlling non-stormwater discharges to a stormwater facility and require the use of best management practices by the County and its citizens that will reduce the adverse effects of polluted runoff discharges on waters of the State.

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.

Stormwater Quality Ordinance

Chapter 8.79, Stormwater Quality, of the El Dorado County Code is intended to ensure the County is compliant with State and Federal laws; protect the health, safety, and general welfare of the citizens of El Dorado County; enhance and protect the quality of waters of the State in El Dorado County by reducing pollutants in stormwater discharges to the maximum extent practicable and controlling non-stormwater discharges to a stormwater facility; and require use of BMPs that will reduce the adverse effects of polluted runoff discharges on waters of the State. The Stormwater Quality Ordinance prohibits illicit discharges to a stormwater facility and establishes authority to adopt requirements for stormwater management.

Grading Ordinance

Chapter 110.14, Grading, Erosion, and Sediment Control, 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; and ensure 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 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.

3.7.2 Environmental Setting

Regional Setting

The Project is located within the 850-square-mile South Fork American River watershed sub-basin (HUC 18020129). The South Fork American River watershed encompasses the central region of the County, extending from the headwaters at Echo Summit, west to the terminus at Folsom Reservoir (California Geological Survey 2002). 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 (California Geological Survey 2002).

Local Setting

The elevation at the Project site is approximately 3,800 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 site is located on the steep south side of the South Fork American River Canyon. The South Fork American River is located downslope from Flume 45, approximately 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 vary widely, depending on the season. Flows are highest during spring runoff and lowest at the end of summer (El Dorado County 2003).

3.7.3 Environmental Impacts and Mitigation Measures

Criteria Evaluated in the NOP/IS

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

- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Thresholds of Significance

The CEQA Guidelines Appendix G Environmental Checklist was assessed during the NOP scoping process and the following criteria was determined to need further evaluation in this Draft EIR:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.
- 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; or

- Impede or redirect flood flows.

Impact Analysis

Impact HWQ-1: ***Violate any Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface or Ground Water Quality from Construction Activities.***
(Less than Significant with Mitigation)

Construction of the proposed 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 3.4, "Geology and Soils." These activities have the potential to affect water quality and contribute to localized violations of water quality standards if impacted stormwater runoff from construction activities enters downstream waterways.

Soils exposed by the aforementioned types of construction activities have the potential to affect water quality in two ways: 1) suspended soil particles and sediments transported through runoff; or 2) sediments transported as dust that eventually reach 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 wastes 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. Therefore, the potential impact from the Project on water quality from construction activities is considered **significant**.

Mitigation Measures: The following mitigation measures have been identified to address this impact.

Mitigation Measure GEO-1: Prepare and Implement a Stormwater Pollution Prevention Plan and BMPs to Reduce Erosion

Please refer to Impact GEO-1 in Section 3.4, "Geology and Soils," for full text of this mitigation measure.

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

Please refer to Impact HAZ-1 in Section 3.6, "Hazards and Hazardous Materials," for full text of this mitigation measure.

Significance after Mitigation: Implementing Mitigation Measure GEO-1 would reduce this impact because a NPDES General Construction Permit would be obtained and BMPs would be implemented to prevent and control pollution and minimize and control runoff and erosion. Implementing Mitigation Measure HAZ-1 would reduce potential impacts to water quality from

construction activities because EID and its construction contractor(s) would be required to prepare and implement a Hazardous Materials Release Prevention 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 HWQ-2: Substantially Alter the Existing Drainage Pattern of the Project Site in a Manner Which Would Result in Substantial Erosion Onsite or Offsite. (Less than Significant with Mitigation)

No new roadways or impervious surfaces would be constructed for the Project. The Project would resurface existing access roads with aggregate base, resulting in similar drainage as occurs under existing conditions. The replacement of the flume would not change water conveyance capacity. The new U-shaped concrete canal structure also includes features to facilitate drainage. An existing bridge would also be replaced in kind and would not impact flows in the flume/canal system. As such, the Project would not result in a significant area of impervious surfaces that could result in a substantial increase in runoff downstream of the Project.

The Project also includes ground disturbing construction activities from clearing and grubbing existing vegetation, removing hazard trees, grading, installing MSE wall and construction of the U-shaped concrete canal, roadway access improvements, and slope stabilization. These activities have the potential to alter the existing drainage pattern at the Project site and would temporarily alter stormwater flows onsite and offsite which could result in substantial erosion onsite or offsite. Therefore, the impact from the Project would be considered **significant**.

Mitigation Measures: The following mitigation measure has been identified to address this impact.

> **Mitigation Measure GEO-1: Prepare and Implement a Stormwater Pollution Prevention Plan and BMPs to Reduce Erosion**
>
> Please refer to Impact GEO-1 in Section 3.4, "Geology and Soils," for full text of this mitigation measure.

Significance after Mitigation: Implementing Mitigation Measure GEO-1 would reduce this impact because a NPDES General Construction Permit would be obtained and BMPs would be implemented 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**.

Impact HWQ-2: Substantially Alter the Existing Drainage Pattern of the Project Site in a Manner Which Would 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. (Less than Significant)

No new roadways or impervious surfaces would be constructed for the Project. The Project would resurface existing access roads with aggregate base, resulting in similar drainage as occurs under existing conditions. The replacement of the flume would not change water conveyance

capacity. The new U-shaped concrete canal structure also includes features to facilitate drainage. An existing bridge would also be replaced in kind and would not impact flows in the flume/canal system. 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. The impact of the project would be **less than significant**.

3.8 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 3.3, "Cultural Resources."

3.8.1 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 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 (Public Resources Code [PRC] Section 21084.2)

Assembly Bill (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 3.8.2.4 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.

3.8.2 Environmental Setting

Ethnographic Setting

Refer to Section 3.3, "Cultural Resources," for a description of the Ethnographic setting of the Project site and vicinity.

3.8.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance

The CEQA Guidelines Appendix G Environmental Checklist was assessed during the NOP scoping process and the TCRs criteria was determined to need further evaluation in this Draft EIR, as follows:

- Cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in PRC Section 21074 as either a site, feature, place cultural landscape that is geographically defined in terms of the size, or object with cultural value to the California Native American Tribe, and that is:
    - listed or eligible for listing in the California Register of Historic Resources (CRHR), or in a local register of historic resources as defined in Public Resources Code (PRC) Section 5020.1(k); or
    - a resource determined buy the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in of PRC Section 5024.1(c).

Analysis Methodology

The analysis of Project impacts to TCRs is based on Native American consultation conducted for the Project.

Native American Consultation

A request was sent to NAHC on September 20, 2022, for a search of their Sacred Lands File (SLF) and for a Tribal Contact List. The NAHC responded on November 28, 2022, stating that their search had negative results for sacred lands in the vicinity of the Project and provided a list of 10 tribal representatives for El Dorado County. Consultation with the 10 Native American

representatives was carried out by the District in compliance with Section 106. Letters and maps detailing the preliminary Project information were sent to all individuals on December 15, 2022.

The original letter addressed to Tsi Akim Maidu Cultural Director Grayson Coney was returned due to failed delivery so Ms. Galindo followed-up with Mr. Coney via email with Project details and a map. On January 10, 2023, Ms. Galindo followed up with all tribal contacts via email requesting a response by January 16, 2023.

As the CEQA lead agency, the District initiated AB 52 consultation for the Project from July 19, 2022 through August 19, 2022, with United Auburn Indian Community (UAIC). UAIC Tribal Heritage Coordinator, Anna Cheng, responded to the District's AB 52 notification for the Project on August 3, 2022, and requested shapefiles of the Project area. UAIC expressed concern for areas of the Project that includes replacement, tree removal locations, stabilizations of rock wall and embankment, and other ground-disturbing works. The District sent an email request to close consultation on November 29, 2022. UAIC responded by providing a preferred mitigation measure to incorporate into the future CEQA documents for unanticipated discoveries of TCRs. Staff discussed implementation of the preferred mitigation measures with UAIC and at the conclusion of the discussion, close of consultation was provided.

Impact Analysis

Impact TRIB-1: ***Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource.***
(Less than Significant with Mitigation)

The SLF search performed by the NAHC did not identify any TCRs within the Project area. Likewise, consultation with California Native American Tribes also did not result in the identification of TCRs within the Project area. However, it is possible that TCRs could be revealed through further consultation with culturally affiliated Tribes. If this were to occur, then the potential impact from the Project would be considered **significant**.

Mitigation Measures: The following mitigation measures have been identified to address this impact.

> **Mitigation Measure TRIB-1: Implement Best Management Practices to Reduce or Avoid Impacts on Tribal Cultural Resources**
>
> EID 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 Best Management Practices (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: EID and its construction contractor(s).

Mitigation Measure TRIB-2: Conduct 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 Project 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 (MM CUL-2).

Timing: Prior to construction activities.

Responsibility: EID 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 §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: EID and its construction contractor(s).

Significance after Mitigation: Implementing Mitigation Measures TRIB-1, TRIB-2, and TRIB-3 would reduce this impact 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**.

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3.9 Wildfire

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

3.9.1 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 all land management planning efforts in order to address the challenges of wildland fire.

State Laws, Regulations, and Policies

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.[1]

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).

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 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.

[1] 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.

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.

3.9.2 Environmental Setting

This section describes wildfire conditions and wildfire behavior, identifies the California Department of Forestry and Fire Protection (CAL FIRE) fire hazard severity zones for the planning area, and describes first response to wildfires. As discussed further below, areas in the vicinity of the Project site are within CAL FIRE's State Responsibility Area (SRA).

The Project site is under Federal jurisdiction, and the U.S. Forest Service is responsible for fire prevention and suppression. The Project area is in the Placerville Ranger District of the Eldorado National Forest and the nearest district facility is the Kyburz Station located at 13275 Highway 50. The Kyburz Station has one engine crew and one Type III wildfire engine (U.S. Forest Service 2025).

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 within and in the Project vicinity (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.[2] 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 RC 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.[3]

The Project is under Federal jurisdiction and is not located within an SRA or designated as a fire hazard severity zone (CAL FIRE 2022). However, areas surrounding Highway 50 north of the Project site and areas surrounding the American River south of the Project site are within an SRA designated as very high fire hazard severity zones (CAL FIRE 2022).

3.9.3 Environmental Impacts and Mitigation Measures

Criteria Evaluated in the NOP/IS

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

- If the Project would be located in or near SRAs or lands classified as very high fire hazard severity zones and would:
    - Substantially impair an adopted emergency response plan or emergency evacuation plan.
    - 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?
    - 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?

[2] 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.

[3] CAL FIRE has developed a Fire and Resource Assessment Program (FRAP) that uses a series of computer models to assess fire hazard. FRAP'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

The CEQA Guidelines Appendix G Environmental Checklist was assessed during the NOP scoping process and the following criteria was determined to need further evaluation in this Draft EIR:

- If the Project would be located in or near SRAs or lands classified as very high fire hazard severity zones and would:
    - 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: Expose Project Occupants to Pollutant Concentrations from a Wildfire or the Uncontrolled Spread of a Wildfire.
(Less than Significant with Mitigation)

The Project is under Federal jurisdiction and not located within an SRA or designated as a fire hazard severity zone (CAL FIRE 2022). However, areas surrounding Highway 50 north of the Project site and areas surrounding the American River south of the Project site are within a SRA designated as very high fire hazard severity zones (CAL FIRE 2022).

During construction, the primary fire hazards would be from use of vehicles and construction equipment. Construction vehicles use flammable fuels, such as diesel and gasoline, and would be operated in proximity to dry vegetation; 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, including, but not limited to:

- PRC Section 4427, which 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, which identifies additional firefighting equipment requirements during the period of highest fire danger (April 1–December 1);
- PRC Section 4431, which 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, which requires engines to be equipped with a spark arrestor; and
- El Dorado County Ordinance Code Chapter 8.38, which requires disclosure of hazardous materials release, possible hazardous materials inspection, and prevention of possible environmental impacts due to hazardous material.

Adherence to these safety measures would decrease the risk of exposure of people or structures to wildfire. However, risk of fires within and adjacent to the Project site would remain high. Therefore, the impact from the Project would be considered **significant**.

Mitigation Measures: The following mitigation measure has been identified to address this impact.

> **Mitigation Measure WILD-1: Prepare and Implement a Fire Safety Plan**
>
> Prior to commencement of construction activities, EID shall prepare a fire prevention plan, per Eldorado National Forest guidelines. Measures included in the plan would require that fire suppression equipment be maintained and accessible to work crews at all times during project construction, that spark arrestors be installed on vehicles and equipment, that use of non-sparking tools and fire safe practices be implemented for construction work, among other measures. The fire prevention plan shall be approved by the USFS prior to the start of construction activities. Fire safe measures in the fire prevention plan would be followed throughout construction on all project work sites.
>
> **Timing:** Prepare fire prevention plan prior to construction activities and implementation throughout project construction..
>
> **Responsibility:** EID and its construction contractor(s).

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 all 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**.

Chapter 4. Other CEQA Considerations

This chapter addresses other CEQA required topics including growth inducing impacts, significant and unavoidable impacts, and significant irreversible environmental changes relative to the proposed Project. It also provides an assessment of potential cumulative impacts resulting from the proposed 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 the growth-inducing impact of a proposed project. The 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 characteristic of some projects which 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 direct growth inducement if it would result in construction of new housing, which would facilitate new population in an area. Indirect growth inducement or secondary growth-inducement potential could occur if a project would establish substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises), or if it would involve a substantial construction effort with substantial long-term employment opportunities which 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 would 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 smart growth. Current planning documents applicable to the Project include the District's 2020 Urban Water Management Plan (UWMP), 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 is expected to be constructed in two phases between August 2026 and January 2028. Phase 1 would occur between August 2026 and January 2027 and Phase 2 would occur between August 2027 and January 2028. 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 not relocate from other areas for the relatively short construction period. Even if some construction workers were to 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 require an increase in permanent employees during normal operation. Therefore, the Project would not directly foster significant population growth or housing demands in the area through employment opportunities.

Additionally, the Project would not change the capacity of the canal system or provide individual treated water connections, treatment capacity, or sewer service. Potable water supplies are already provided to the area, and the Project would allow the District to continue to serve the demand within its authorized service area while increasing the District's water reliability. Camp P Road would only be maintained as under current maintenance activities, would allow for the construction and continued maintenance of the water conveyance structure, and would not provide public access to a previously inaccessible area. No aspect of the Project would either directly or indirectly add to the development of this area. Therefore, the Project would not remove key obstacles to population growth in the area.

4.2 Significant and Irreversible Environmental Changes

A commitment of resources is 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.

The CEQA Guidelines refer to the need to evaluate and justify the consumption of nonrenewable resources and the extent to which the project commits future generations to similar uses of nonrenewable resources. In addition, CEQA requires that irreversible damage that could result from an environmental accident associated with the 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 site, and construction workers driving to and from the 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 proposed 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 proposed Project would not result in irreversible damage from environmental accidents, such as an accidental spill of a hazardous material. During construction, equipment would be using various types of fuel and material classified as hazardous. In the State of California, the storage and use of hazardous substances are 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 require construction contractor(s) to prepare and implement a Hazardous Materials Release Prevention Plan to reduce the risk of exposure to hazards due to the handling of hazardous materials during construction. The plan would identify 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.

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 the project together with other projects causing related impacts. CEQA requires that an EIR discuss cumulative impacts of a project when the 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., greenhouse gas (GHG) emissions) are also described.

This cumulative impact analysis has three steps as defined below:

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.

Geographic Scope

The geographic area that is analyzed for cumulative impacts depends on the resource being analyzed. The geographic area associated with a proposed project's different 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 4.1**.

Table 4.1. Geographic Scope of Cumulative Impact

Resource Topic	Geographic Area
Air Quality	Mountain Counties Air Basin (MCAB)
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 and nearby 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 Gases	Global
Hazards and Hazardous Materials	The Project site and vicinity
Hydrology and Water Quality	South Fork American River watershed

Resource Topic	Geographic Area
Tribal Resources	Areas of ground disturbance within and nearby the Project site
Wildfires	The Project site and adjacent areas with very high fire risk

Projects, Plans, and Programs Included in Cumulative Impact Analysis

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. All agencies and development projects that could result in a cumulative 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 "related projects." These projects are described in **Table 4.2**.

Table 4.2. List of Related Past, Present, and Reasonably Anticipated Future Projects in the Region

Lead Agency	Project Name	Date of Construction	Project Description	Potential Cumulative Impacts
El Dorado Irrigation District	Multiple – Capital Improvement Plan Projects	2025 – 2029	The District's five-year CIP is updated annually and describes various infrastructure improvement projects planned for implementation throughout the District's service area.	Cumulative construction related impacts if construction were to occur concurrently with the Project.
El Dorado County Department of Transportation	Pony Express Trail Class II Bicycle Route and Pedestrian Improvements	2022	The Pony Express Trail Class II Bicycle Route and Pedestrian Improvements from Sly Park Road to Sanders Drive will construct approximately 1.7 miles of Class II bike lanes on both sides of Pony Express Trail. It will include Americans with Disabilities Act improvements, crosswalks, and signage with flashing beacons.	Cumulative construction related impacts if construction were to occur concurrently with the Project.
El Dorado County Department of Transportation	Pony Express Trail Recessed Edge-Lines Project	2023	The Pony Express Trail Recessed Edge-Lines Project would include installation of 65,000 linear feet of recessed edge-lines along various segments of Sly Park Road and Pony Express Trail.	Cumulative construction related impacts if construction were to occur concurrently with the Project.
El Dorado Irrigation District	Flume 48 Utility and Infrastructure Replacement Project	2027-2028	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).	Cumulative construction related impacts if construction were to occur concurrently with the Project. In addition, cumulative impacts would occur from adverse effects to the historic rock wall from this site that is part of the El Dorado Rock Wall Discontiguous District.
El Dorado Irrigation District	El Dorado Canal Fuel Break Project	2025 - 2026	The District proposes to implement hazardous fuels treatments to protect four wood-constructed flumes that are part of the El Dorado Canal, which provides one-third of the District's potable drinking water supplies. 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 extremely steep slopes and rugged terrain of the project area.	Cumulative construction related impacts if treatments were to occur concurrently with the Project.

Lead Agency	Project Name	Date of Construction	Project Description	Potential Cumulative Impacts
El Dorado Irrigation District	Modification of Water Right Permit 21112	Unknown	The District proposes to modify its existing Water Right Permit 21112 (Permit 21112) to add an additional authorized upstream point of diversion at the El Dorado Diversion Dam and to add Jenkinson Lake as an authorized place of storage and to add a point of re-diversion to storage at Sly Park Dam (which forms Jenkinson Lake). The Project would not change other limitations of the water right, such as place of use, purpose of use, season of diversion, total diversion to storage, and total direct diversion. No new physical infrastructure would be needed for the District to divert Permit 21112 water at the El Dorado Diversion Dam. However, to re-divert at the maximum rate of diversion currently authorized under Permit 21112 (i.e., 156 cubic feet per second; [cfs]) to Jenkinson Lake, future improvements to the El Dorado Canal and the channel that conveys water from the outfall of the Hazel Creek Tunnel to Jenkinson Lake would be required.	Cumulative construction related impacts if construction were to occur concurrently with the Project.

Sources: El Dorado Irrigation District 2022; El Dorado County 2023

4.3.2 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. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. 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. 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 3.1, "Air Quality," anticipated construction emissions of ROG and NO_X are less than applicable EDAQMD thresholds of significance (see **Table 3.1-4**).[1] 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 Wildlife. (Less than Significant with Mitigation)

The geographic scope for the analysis of cumulative impacts on biological resources are areas within El Dorado County with similar special-status species and their habitat. Cumulative impacts on special-status species could occur if the Project and cumulative projects identified in Table 4-2 involve concurrent activities that would 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 CDFW. Most of the cumulative projects listed in Table 4.2 could result in cumulative impacts on special-status species, depending on the project location and timing, construction and operations and maintenance activities, and use of BMPs.

As discussed in Chapter 3.2, "Biological Resources," construction-related impacts from the Project on certain special-status wildlife species with suitable habitat found at the Project site, including northern goshawk, bald eagle, pallid bat, and Townsend's big-eared bat would be considered significant. Therefore, cumulative impacts related to disturbing and/or adversely impacting special-status wildlife during construction would be significant, and the Project's contribution to cumulative special-status wildlife impacts would be cumulatively considerable.

Implementation of Mitigation Measures BIO-1 through BIO-3 as described in Section 3.2, "Biological Resources," would reduce the Project's contribution to impacts on special-status species because biological resources training would be conducted, , vegetation and construction

[1] PM_{10} emissions are shown in **Table 3.1-4** for disclosure purposes, since EDAQMD does not have an established threshold for PM_{10}.

activities would occur outside of bird and bat nesting periods, pre-construction surveys for nesting birds and during bat maternity and overwintering periods if work occurs within the nesting and overwintering periods, avoidance buffers for active bird and bat maternity roosting would be implemented, and tree removal would be done in a two-step process during bat overwintering and maternity periods, as needed if work occurs during nesting or roosting periods for birds and bats. In addition, adverse impacts of the related probable future projects would likely be mitigated in a similar manner to the Project. Therefore, the proposed Project would result in a less than considerable contribution to significant cumulative impacts on special-status wildlife. Therefore, 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 4-2 were to adversely affect the same resources. As described in Section 3.5, "Cultural Resources," the Flume 45 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. In addition to the Project, this historic rock wall may be adversely impacted by other flume replacement projects, including EID's Flume 48 replacement project.

Project activities proposed to remove approximately 715 feet of the historic structure which includes approximately 690 feet of wall that are part of the historic property known as 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. In addition, a substantial portion of the wall that represents the longest single NRHP-eligible segment of the structure would be destroyed (496 feet of the entire eligible 1,183-foot length). 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. Implementing Mitigation Measure CUL-1, as described in Section 3.3, "Cultural Resources," would reduce the significant impact associated with the Flume 45 rock wall because the historic rock wall would be documented, but not 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 impact would be significant and unavoidable, and the proposed 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 4-2 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.

Implementation of Mitigation Measures CUL-2 through CUL-4, as described in Section 3.3, "Cultural Resources," would reduce this impact because training would be provided for construction workers to identify cultural resources, cultural resources unexpectedly identified during construction would be properly handled and assessed, and human remains would be assessed by a coroner and treated or investigated in accordance with State laws. 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)

Geologic and soils related impacts are generally site-specific and depend on local geologic and soil conditions and the potential for a project to create an adverse effect that could result in impacts related to geology and soils. Cumulative geology, soil, and seismicity impacts could occur if the Project and cumulative projects identified in Table 4-2 involve concurrent activities that would result in substantial loss of topsoil (soil erosion).

Most related projects could result in cumulative impacts on geology and soils, depending on their location, proposed construction activities, and use of BMPs. However, many cumulative impacts to geology and soils associated with construction activities would be minimized with adherence to requirements of Federal, State, and local water quality regulations, including the NPDES Construction General Stormwater Permit. Conditions of the Construction General Permit would be tailored for each project.

As discussed in Section 3.4, "Geology and Soils," disturbance of existing vegetation and soil during construction activities could cause an increase in loss of exposed soil from wind and stormwater runoff, particularly during the winter months, which in turn could result in erosion and sedimentation. Therefore, cumulative impacts related to soil erosion during construction would be significant, and the project's contribution to cumulative soil erosion impacts would be cumulatively considerable.

Implementation of Mitigation Measure GEO-1, as described in Section 3.4, "Geology and Soils," would reduce this impact because a NPDES General Construction Permit would be obtained and BMPs would be implemented to prevent and control pollution and minimize and control runoff and erosion. Therefore, the Project's contribution to cumulative impacts would be less than 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 related projects considered in the cumulative effect analysis for GHG emissions is global because 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 will 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, "Greenhouse Gas Emissions," the Project would cause temporary construction-related GHG emissions that would cease following completion of the Project. 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 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)

Health and safety 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 hazards impacts could occur if cumulative projects involve concurrent activities that would create a significant hazard to the public or environment through the transport, use, or disposal of hazardous materials; or release hazardous materials into the environment.

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. Cumulative projects would be required to comply with appropriate regulatory agency standards designed to avoid hazardous waste releases.

As discussed in Section 3.7, "Hazards and Hazardous Materials," 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. However, implementation of Mitigation Measure HAZ-1 would reduce this impact because the construction contractor would be 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. Additionally, the proposed Project is not located directly adjacent to concurrent

cumulative projects, cumulative impacts from hazards or hazardous materials would not combine and the 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 HWQ-1: Cumulative Impacts on Hydrology and Water Quality.
(Less than Significant with Mitigation)

Cumulative hydrology and water quality impacts could occur if the Project and cumulative projects identified in Table 4-2 involve concurrent activities that would violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality; or 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, siltation, or flooding on- or offsite.

Most related projects could result in cumulative impacts on hydrology and water quality, depending on their location, proposed construction activities, and use of BMPs. However, many cumulative impacts to hydrology and water quality associated with construction activities would be minimized with adherence to requirements of Federal, State, and local water quality regulations, including the NPDES Construction General Stormwater Permit. Conditions of the Construction General Permit would be tailored to each project to be sufficient to maintain water quality.

The Project would not result in a significant area of 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 cumulatively considerable incremental contribution to a significant cumulative impact related to flooding onsite or offsite or impede or redirect flood flows.

As discussed in Section 3.7, “Hydrology and Water Quality,” the Project could degrade stormwater quality from erosion of graded or excavated surface materials or leaks or spills from equipment. Therefore, cumulative impacts related to water quality during construction would be significant, and the project’s contribution to cumulative water quality impacts would be cumulatively considerable.

Implementing Mitigation Measure GEO-1, as described in Section 3.4, “Geology and Soils,” and Mitigation Measure HAZ-1, as described in Section 3.6, “Hazards and Hazardous Materials,” would reduce this impact because a NPDES General Construction Permit would be obtained, BMPs would be implemented to prevent and control pollution and minimize and control runoff and erosion, and EID and its construction contractor(s) would be required to prepare and implement a Hazardous Materials Release Prevention Plan to reduce the risk of exposure to hazards due to the handling of hazardous materials during construction. Therefore, the proposed 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 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 4-2 were to adversely affect the same resources.

The SLF search performed by the NAHC did not identify TCRs within the Project area. Likewise, consultation with California Native American Tribes also did not result in the identification of TCRs within the Project area. However, it is possible that a TCR may be revealed through further consultation with culturally affiliated Tribes. 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 3.8, "Tribal Cultural Resources," would reduce impacts because BMPs, cultural resource awareness training, and proper handling of any inadvertent discoveries of TCRs would be required. Therefore, the proposed 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 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 4-2 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 above, including, but not limited to:

- PRC Section 4427, which 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, which identifies additional firefighting equipment requirements during the period of highest fire danger (April 1–December 1);
- PRC Section 4431, which 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, which requires engines to be equipped with a spark arrestor; and
- El Dorado County Ordinance Code Chapter 8.38, which requires disclosure of hazardous materials release, possible hazardous materials inspection, and prevention of possible environmental impacts due to hazardous material.

As discussed in Section 3.9, "Wildfire," while the Project is under Federal jurisdiction and not located within an SRA or designated as a fire hazard severity zone, areas surrounding Highway 50 north of the Project site and areas surrounding the American River south of the Project site are within an SRA and designated as very high fire hazard severity zones (CAL FIRE 2022). Depending on the time of year and location of construction activities, there could be a temporary increase in exacerbated fire risk in the area, even after adherence to regulations related to fire safety and wildlife suppression. Therefore, cumulative impacts related to wildfire during construction would be significant, and the project's contribution to cumulative wildfire impacts would be cumulatively considerable.

Implementing Mitigation Measure WILD-1, as described in Chapter 3.9, "Wildfire," would reduce this impact because the District would be required to prepare and implement a Fire Safety Plan during all 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 proposed Project would result in a less than considerable contribution to a significant cumulative impact on wildfires. Therefore, this cumulative impact is **less than significant 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."

Chapter 3, "Environmental Analysis," of this Draft EIR provides a detailed analysis of all significant and potentially significant environmental impacts related to implementing the proposed 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, "Cumulative Impacts," identifies the significant cumulative impacts resulting from the combined effects of the proposed Project and related 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 all feasible and available mitigation measures, the following impacts were determined to be significant and unavoidable for the project:

- **Impact CUL-1: Cause a Substantial Adverse Change in the Significance of a Built Environment Historical Resource.** The Flume 45 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 alter the Flume 45 rock wall 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 Chapter 3.3, “Cultural Resources.”

- **Cumulative Impact CUL-1: Cumulative Impacts on Built Environment Historic Resources.** The proposed Project and potentially other EID flume replacement projects would alter the Flume 45 rock wall 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 Chapter 4.3. “Cumulative Impacts.”

Chapter 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 chapter presents the project objectives, summarizes the 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 chapter 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 chapter.

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 specific "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 proposed 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 proposed Project, but must include enough information to allow meaningful evaluation, analysis, and comparison with the proposed 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, "Project Objectives," the purpose of the Project is to increase protection of Flume 45 and FERC Project 184 overall. The Project is designed to meet the following additional objectives:

- increase protection of Flume 45 and Project 184 from potential catastrophic wildfire;
- ensure a reliable water supply for drinking water and hydroelectric generation;
- improve the safety of the El Dorado canal system; and,
- ensure continued operational reliability of 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 Chapter 3, "Environmental Analysis," are summarized in below. For a complete summary of all project impacts and mitigation measures, see **Table ES.1** in the Executive Summary.

Significant but Mitigable Project Impacts

The following impacts were determined to be potentially significant for the proposed 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 AIR-2: Result in Cumulatively Considerable Net Increases of Any Criteria Pollutant from Construction Activities.
- Impact BIO-2: Impacts to Special-Status Nesting Raptors and Other Migratory Bird Species from Construction Activities.
- Impact BIO-3: Impacts to Special-Status Bats from Construction Activities.
- 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 HWQ-1: Violate any Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface or Ground Water Quality from Construction Activities.
- Impact HWQ-2: Substantially Alter the Existing Drainage Pattern of the Project Site in a Manner Which Would Result in Substantial Erosion Onsite or Offsite.
- Impact TRIB-1: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource.
- Impact WILD-1: Expose Project Occupants to Pollutant Concentrations from a Wildfire or the Uncontrolled Spread of a Wildfire.
- Cumulative Impact AIR-1: Cumulative Impacts on Criteria Air Pollutant Emissions.
- Cumulative Impact BIO-1: Cumulative Impacts on Special-Status Wildlife.
- 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 HWQ-1: Cumulative Impacts on Hydrology and Water Quality.
- Cumulative Impact TCR-1: Cumulative Impacts on Tribal Cultural Resources.
- 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 proposed 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 Alternatives Development and Screening

The District in coordination with their design consultant for the Project identified and evaluated alternatives that would satisfy the District requirements for longevity and flow, engineering design standards required by FERC, and requirements for preservation of historic architectural resources related to the historic rock wall (GHD 2024). In addition, the District has submitted, through its contractor JRP Historical Consulting, a Finding of Effect (Adverse Effect) documentation to the California State Historic Preservation Officer to begin the Section 106 consultation process required under the National Historic Preservation Act, to document the alternatives that would reduce impacts on the historic rock wall within the Project site. These alternatives, and their feasibility, are discussed below.

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 because they:

- were not substantially different from one of the considered alternatives;
- failed to meet most of the basic project objectives;
- would be infeasible to implement or operate; and/or,
- would not avoid or lessen one or more significant environmental impacts.

Those alternatives that were considered and dismissed from further consideration are discussed below.

Alternative to Replace Flume in Kind Using a Timber Flume

This alternative would replace the existing wooden conveyance system with a new wood flume meeting current standards. No MSE retaining wall would be constructed under this alternative. This alternative was determined to be infeasible because the flume would still be highly susceptible to wildfires, there would still be a long lead time for procuring treated wood, there would be higher maintenance costs, and the existing rock wall would still not meet current factors of safety due to loose fill and voids. Additionally, this alternative would not meet the basic project objectives because it would be very similar to the existing flume structure and would not increase protection of the conveyance structure and FERC Project 184 overall, especially from catastrophic wildfire.

Alternative to Replace Flume with Precast Concrete Flume

This alternative would replace the existing wooden conveyance structure with new precast concrete flume sections. No MSE retaining wall would be constructed under this alternative. This alternative was determined to be infeasible because the flumes would need to be cast offsite and transported to the Project area, and there is minimal opportunity to use cranes for moving new precast concrete flumes because of the limited access and staging in the Project area. These constructability constraints could extend the time needed for construction and could result in extended service outages. This alternative would not stabilize or replace the rock wall, and therefore there would be no improved water supply reliability, safety, or operational reliability of the El Dorado Canal system and this alternative would not meet most of the Project objectives.

Alternative to Retrofit Support of Existing Flume Using Steel Buttresses

This alternative would create a steel support system at the existing bench. Under this alternative, the wooden conveyance system would not be replaced, and the historic rock wall would not be removed. Under this alternative, the wooden flume would remain highly susceptible to damage and destruction by natural hazards including wildfires, landslides, and falling trees and rocks, and unstable foundation and surrounding rock formations, and, therefore, this alternative would not meet most of the Project objectives.

5.4 Alternatives Considered and Evaluated

It has been determined that the following alternatives are feasible and are carried throughout the remainder of the alternatives analysis.

5.4.1 Alternative Descriptions

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 proposed 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 – Stabilize Rock Bench In-Place and Construct MSE Wall, Where Necessary, and U-Shaped Concrete Canal

Under Alternative 1, the existing historic rock wall would be stabilized in place with an air-placed concrete (i.e., shotcrete or grouted in place) facing wall and rock anchors to meet current code requirements. To mitigate the potential risk of destabilizing the underlying bedrock, multiple evenly spaced anchors would be placed anywhere needing stabilization, interconnected by concrete beams with a minimum width of 1- to 2- feet. Rock anchors would be installed on a grid-pattern approximately 8- to 12- feet on center and would be tensioned against a new buttressing grid of reinforced shotcrete beams. Once tensioned and stabilized, the rock bench material behind the wall would be grouted in place to increase stability and to achieve current code requirements. Where walls are short (i.e., less than 3-feet high), the concrete facing would effectively enclose the wall and would not preserve the historic character of the wall in these locations. Once the bench is complete, a u-shaped concrete canal would be constructed to meet current code requirements. **Figure 5.1** depicts a typical cross-section of Alternative 1.

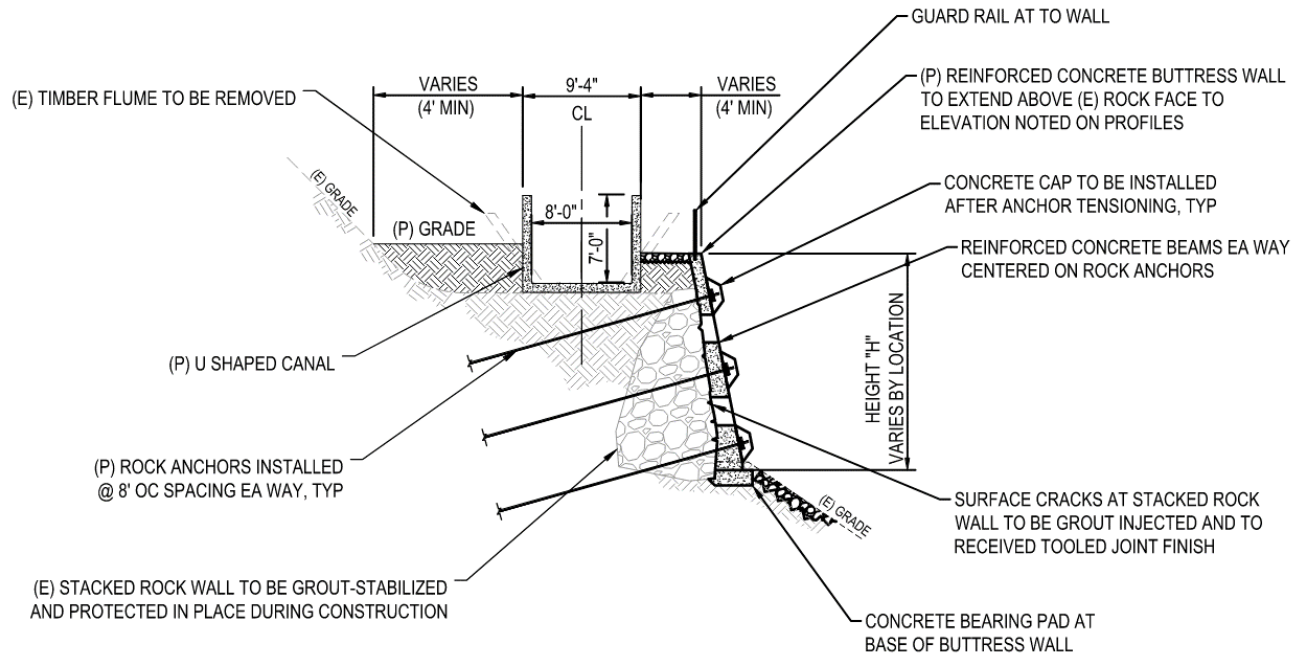

Figure 5.1. Retrofit Stacked Rock Wall Profile

Based on the presence of voids within the bench material, extreme bulging of the wall, and signs of prior partial collapse, the retrofit under Alternative 1 would require special care to prevent

rockfalls during construction, such as netting or preliminary drilling and grout injection at the rock wall prior to the drilling of rock anchors. This alternative would require multiple crews mobilized at the site and carefully staged construction. Alternative 1 is the only feasible alternative for partially maintaining the historic character of the rock wall. Alternative 1 would also allow for reduced excavation at locations that would otherwise have the tallest required MSE walls.

Alternative 2 – Remove Existing Rock Wall and Bench and Construct Steel Supports and Concrete Flume

Under Alternative 2, the existing flume, rock wall, and bench would be removed and replaced with an elevated steel support system. This would include demolition and removal of rock bench material from the historic rock wall, except for short segments of the base of the stacked wall between frame locations. Alternative 2 would be feasible where the height of the existing bench would be constructed at an elevation that is high enough to accommodate a steel frame in order to reach the design flume elevation. At portions of the flume lower than that, the steel frames would be omitted, and flumes would be located directly on concrete abutments or on ground surface at grade. **Figure 5.2** depicts a typical cross section of Alternative 2.

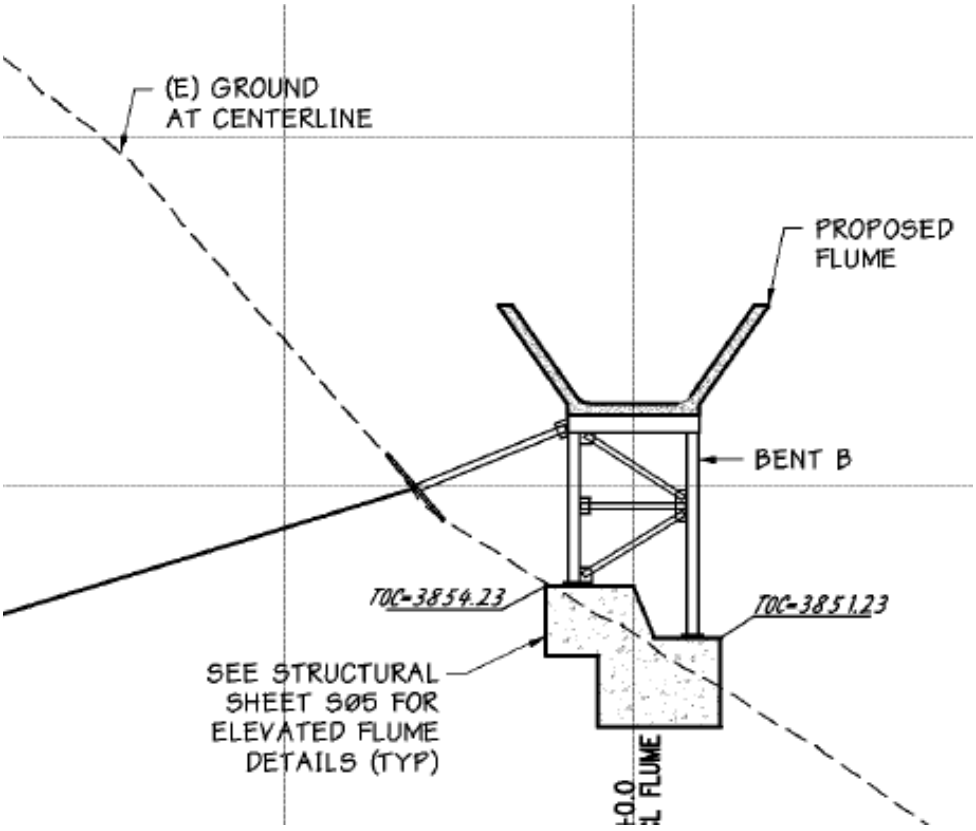

Figure 5.2. Steel Frame and Concrete Flume Profile

Based on the marginal stability of the underlying bedrock supporting bench material, the use of isolated footings may destabilize the local soil conditions. As a result, removing substantial material from the bench and reducing the burden on bedrock would be necessary for the use of

isolated footing and steel frames. Frames and foundations would require rock anchors to achieve required factors of safety. While Alternative 2 allows for relatively low earthwork quantities, the number of construction trades requiring coordination and the sequencing of work could extend the construction timeline beyond the available planned outage timeframes.

5.4.2 Alternatives Project Objectives Evaluation

As required by CEQA, to be considered as a viable alternative to the preferred proposed 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 alternative's ability to meet the Project objectives.

5.4.3 Alternatives Environmental Evaluation

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 preferred proposed Project. The alternatives were reviewed for their ability to reduce one or more significant effects of the proposed Project, as shown in the evaluation in **Table 5.2**.

5.5 Environmental 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 Draft EIR that are reduced to less than significant with mitigation. While the No Project Alternative would eliminate the significant adverse effect of the proposed 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. Comparing impacts of the proposed Project to Alternatives 1 and 2, both alternatives result in a slightly greater increase in construction air quality emissions and associated impacts from longer construction schedule and more construction equipment. Although Alternatives 1 and 2 would slightly reduce impacts to the historic rock wall, both alternatives would still alter portions of the Flume 45 rock wall such that the integrity of the historic district would be diminished and would result in a significant and unavoidable impact like the proposed Project. Therefore, the proposed Project would be the environmentally superior alternative since it would meet the project objectives and would result in less construction activity associate air quality emissions.

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Table 5.1. Alternatives Ability to Meet Project Objectives

Project Objective	No Project Alternative	Alternative 1	Alternative 2
Increase protection of Flume 45 and Project 184 overall from potential future catastrophic wildfire.	**No** – The existing wood flume would remain in its current condition and would be susceptible to wildfires.	**Yes –** The air-placed concrete flume would not be susceptible to wildfires.	**Yes –** The concrete flume would not be susceptible to wildfires.
Ensure a reliable water supply for drinking water 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 bench, constructing a MSE wall, and replacing the wooden flume.	**Yes –** Alternative 2 would ensure a reliable water supply for drinking water and hydroelectric generation by removing the existing rock bench, constructing steel supports, and replacing the wooden flume.
Improve the safety of the El Dorado canal system.	**No** – The existing facility does not meet current factors of safety for long-term continued operation.	**Yes –** Alternative 1would meet current factors of safety for long-term continued operation.	**Yes –** Alternative 2 would meet current factors of safety for long-term continued operation.
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.	**Yes –** The concrete canal would replace the wooden flume and the system would be less susceptible to natural hazards	**Yes –** The concrete canal would replace wooden flume and the system would be less susceptible to natural hazards
Total Project Objectives Satisfied	**0/4**	**4/4**	**4/4**

Table 5.2. Comparison of Alternative Impacts to the Proposed Project

Resource Topic	No Project Alternative	Alternative 1	Alternative 2
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 proposed Project. Similar to the proposed Project, Alternative 1's construction activities could conflict with or obstruct implementation of the applicable air quality plan, resulting 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 proposed Project, would be required for Alternative 1.	**Similar** – Alternative 2 would result in slightly less air quality emissions from decreased level of construction activities, including less hauling of materials. However, this alternative would likely result in slightly extended duration of construction schedule as compared to the proposed Project. Similar to the proposed Project, Alternative 2's construction activities could conflict with or obstruct implementation of the applicable air quality plan, resulting in a cumulatively considerable net increase of criteria pollutants. Alternative 2 would have similar potential to expose sensitive receptors to substantial pollutant concentrations. Mitigation Measure AIR-1 as described for the proposed Project, would be required for Alternative 2.
Biological Resources	**Lesser** – No construction activities would occur; therefore, there would be no impact related to biological resources.	**Similar** – Similar to the proposed Project, construction activities would disturb suitable habitat for the northern goshawk, bald eagle, California spotted owl, pallid bat, and Townsend's big-eared bat. Mitigation Measures BIO-1 through BIO-3 as described for the proposed Project, would be required for Alternative 1.	**Similar** – Similar to the proposed Project, construction activities would disturb suitable habitat for the northern goshawk, bald eagle, California spotted owl, pallid bat, and Townsend's big-eared bat. Mitigation Measures BIO-1 through BIO-3 as described for the proposed Project, would be required for Alternative 2.
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.	**Lesser** – Alternative 1 would partially maintain the historic character of the rock wall thereby lessening the impact compared to the proposed Project. However, Alternative 1 would still likely result in a significant and unavoidable impact to the rock wall. Mitigation Measures CUL-1 through CUL-4, as described for the proposed Project, would be required for Alternative 1.	**Lesser** – Alternative 2 would partially maintain the historic character of the rock wall thereby lessening the impact compared to the proposed Project. However, Alternative 2 would still likely result in a significant and unavoidable impact to the rock wall under the proposed Project. Mitigation Measures CUL-1 through CUL-4, as described for the proposed Project, would be required for Alternative 2.

Resource Topic	No Project Alternative	Alternative 1	Alternative 2
Geology and Soils	**Lesser** – No construction activities would occur; therefore, there would be no impact related to geology and soils.	**Similar** – Similar to the proposed Project, construction could result in substantial erosion or loss of topsoil. Mitigation Measure GEO-1 as described for the proposed Project, would be required for Alternative 1.	**Similar** – Similar to the proposed Project, construction could result in substantial erosion or loss of topsoil. Mitigation Measure GEO-1 as described for the proposed Project, would be required for Alternative 2.
Greenhouse Gas Emissions	**Lesser** – No construction activities would occur; therefore, there would be no impact related to greenhouse gas emissions.	**Similar** – Similar to the proposed Project, construction would not generate construction-related GHG emissions exceeding the SMAQMD construction threshold.	**Similar** – Similar to the proposed Project, construction would not generate construction-related GHG emissions exceeding the SMAQMD construction threshold.
Hazards and Hazardous Materials	**Lesser** – No construction activities would occur; therefore, there would be no impact related to hazards and hazardous materials.	**Similar** – Similar to the proposed Project, construction would require the use, transport, and disposal of hazardous materials and could exacerbate the risk of wildfires. Mitigation Measures HAZ-1 and WILD-1 as described for the proposed Project, would be required for Alternative 1.	**Similar** – Similar to the proposed Project, construction would require the use, transport, and disposal of hazardous materials and could exacerbate the risk of wildfires. Mitigation Measures HAZ-1 and WILD-1 as described for the proposed Project, would be required for Alternative 2.
Hydrology and Water Quality	**Lesser** – No construction activities would occur; therefore, there would be no impact related to hydrology and water quality.	**Similar** – Similar to the proposed Project, construction activities have the potential to result in violation of water quality standards and result in changes to drainage patterns. Mitigation Measures GEO-1 and HAZ-1, as described for the proposed Project, would be required for Alternative 1.	**Similar** – Similar to the proposed Project, construction activities have the potential to result in violation of water quality standards and result in changes to drainage patterns. Mitigation Measures GEO-1 and HAZ-1, as described for the proposed Project, would be required for Alternative 2.
Tribal Cultural Resources	**Lesser** – No construction activities would occur; therefore, there would be no impact related to tribal cultural resources.	**Similar –** Similar to the proposed 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 proposed Project, would be required for Alternative 1.	**Similar –** Similar to the proposed 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 proposed Project, would be required for Alternative 2.
Wildfire	**Lesser** – No construction activities would occur; therefore, there would be no impact related to wildfire.	**Similar** – Similar to the proposed Project, construction could exacerbate wildfire risks. Mitigation Measure WILD-1 as described for the proposed Project, would be required for Alternative 1.	**Similar** – Similar to the proposed Project, construction could exacerbate wildfire risks. Mitigation Measure WILD-1 as described for the proposed Project, would be required for Alternative 2.

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Chapter 6. Report Preparers

As required by CEQA, this chapter identifies the preparers of this EIR.

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1.0 Introduction

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2.0 Project Description

No citations referenced

3.0 Environmental Analysis

No citations referenced

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Appendix A. Notice of Preparation Documents

FLUME 45 CRITICAL WATER SYSTEM INFRASTRUCTURE 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

September 2024

Notice of Preparation of a Draft Environmental Impact Report and Initial Study

El Dorado Irrigation District
Flume 45 Critical Water System Infrastructure Project

Prepared By:

El Dorado Irrigation District
2890 Mosquito Road
Placerville, CA, 95667

Contact:

Michael C. Baron
Environmental Review Analyst
(530) 642-4188

September 2024

Project Tracking No. 22014.01

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ACRONYMS AND OTHER ABBREVIATIONS

AB	Assembly Bill
AQAP	air quality attainment plan
AQMP	air quality management plan
ARB	California Air Resources Board
BMP	best management practice
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CVRWQCB	Central Valley Regional Water Quality Control Board
CGS	California Geological Survey
CH_4	methane
CHP	California Highway Patrol
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO2 equivalents
dB	decibel(s)
diesel PM	diesel particulate matter
DTSC	California Department of Toxic Substances Control
EDCAQMD	El Dorado County Air Quality Management District
EID	El Dorado Irrigation District
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
GHG	greenhouse gas
HCP	Habitat Conservation Plan
ITE	Institute of Transportation Engineers
L_{eq}	average noise level
LOS	level of service
MCAB	Mountain Counties Air Basin
MND	Mitigated Negative Declaration
MRZ	mineral resource zone
MT	metric ton(s)
NAHC	Native American Heritage Commission
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NO_2	nitrogen dioxide
NOX	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
PG&E	Pacific Gas and Electric Company
PGA	peak horizontal ground acceleration
PM	particulate matter
PM_{10}	PM equal to or less than 10 micrometers in diameter
$PM_{2.5}$	PM equal to or less than 2.5 micrometers in diameter
Project	Flume 45 Critical Water System Infrastructure Project
ROG	reactive organic gases

SACOG	Sacramento Area Council of Governments
SCAQMD	South Coast Air Quality Management District
SHPO	State Historic Preservation Officer
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
SRA	State Responsibility Area
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCR	tribal cultural resource
US 50	U.S. Highway 50

NOTICE OF PREPARATION FOR ENVIRONMENTAL IMPACT REPORT AND INITIAL STUDY

Project title:	Flume 45 Critical Water System Infrastructure Project
Lead Agency name and address:	El Dorado Irrigation District 2890 Mosquito Road Placerville, California 95667
Contact person and phone number:	Michael C. Baron Environmental Review Analyst ph: (530) 642-4188, mail to: mbaron@eid.org
Project location:	U.S. Geological Survey, Riverton, California quadrangle, Section 30, Township 11N, Range 14E (See Figure 2.2.1)
Project sponsor's name and address:	El Dorado Irrigation District 2890 Mosquito Road Placerville, California 95667
Land Use designation:	NR (Natural Resources) – El Dorado County General Plan The Project is located entirely within the El Dorado Hydroelectric Project-FERC Project 184 license boundary within the Eldorado National Forest in El Dorado County
Zoning:	FR-160 (Forest Resources, 160-acre minimum parcel size)
Description of Project:	The proposed Project would remove approximately 1,140 linear feet of an existing water conveyance structure (flume) constructed out of wood, which is highly susceptible to damage from wildfire and other natural hazards, and replace it with a more durable ignition resistant concrete conveyance structure (i.e., U shaped concrete canal). 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, excavation and slope stabilization, construction of a new canal bench using mechanically stabilized earth (MSE) walls, and construction of a U-shaped concrete canal. 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. This water conveyance

	infrastructure (Flume 45) 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.
Surrounding Land Uses and Setting:	The Project area is east of the town of Pollock Pines in an unincorporated area of El Dorado County, south of U.S. Highway 50 and east of Ogilby Creek, on federal lands managed by the U.S. Forest Service in the Eldorado National Forest.
Other Public Agencies whose approval may be required or requested (e.g., permits, financing approval, or participation agreement.):	The proposed Project may be subject to further approval from the Federal Emergency Management Agency (FEMA), U.S. Forest Service (USFS), Federal Energy Regulatory Commission (FERC), and the California Office of Historic Preservation (SHPO)

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1. INTRODUCTION

1.1 Notice of Preparation of a Draft Environmental Impact Report and Initial Study

The El Dorado Irrigation District (EID) has prepared this Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) and Initial Study (IS) in compliance with the California Environmental Quality Act (CEQA) to address the potentially significant environmental impacts of the proposed Flume 45 Critical Water System Infrastructure Project ("Project"). The Environmental Impact Report (EIR) will address the potential environmental effects of the Project for the relevant environmental issues outlined by CEQA. The District will use the EIR when considering approval of the proposed Project.

This NOP/IS has been prepared in accordance with CEQA (Public Resources Code, Section 21000 et seq.) and the State CEQA Guidelines (Title 14, California Code of Regulations, Section 15000 et seq.). The purpose of this NOP/IS is to determine whether Project implementation would result in potentially significant or significant effects on the environment.

As Lead Agency, in accordance with the CEQA Guidelines Section 15367, EID has prepared this NOP/IS and made a determination that the Project may cause a significant effect on the environment, so an EIR will be prepared.

1.2 Public Review Process

The proposed NOP/IS is subject to a 30-day public review period (September 25, 2024 through October 25, 2024). The public is encouraged to provide written comments during the 30-day review. Comments may be submitted to EID at Flume45NOP@eid.org or by U.S. mail to: El Dorado Irrigation District 2890 Mosquito Road, Placerville, California 95667; Attention: Michael C. Baron.

2. PROJECT DESCRIPTION

2.1 Project Context and Summary

The El Dorado Irrigation District (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 various conveyance structures (e.g., flumes, canals, tunnels, siphons) to 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 45 is an approximately 1,140-foot water conveyance structure of this critical water delivery system (Photos 1–3). The flume 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 45 Critical Water System Infrastructure Project (Project).

The proposed Project would remove approximately 1,140 linear feet of existing flume and replace it with a more durable ignition resistant concrete conveyance structure (i.e., U-shaped concrete canal). 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, excavation and slope stabilization, construction of MSE walls, and construction of a U-shaped concrete canal. 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 including the use of biodegradable weed-free certified natural-fiber erosion control materials and native seed mix to revegetate the site.

Construction of the proposed Project is scheduled to begin during the District's annual maintenance outage early fall of 2026 and is anticipated to be completed during the 2027 maintenance outage. Water services will not be interrupted during work activities, and therefore no service impacts to District customers are anticipated to occur.

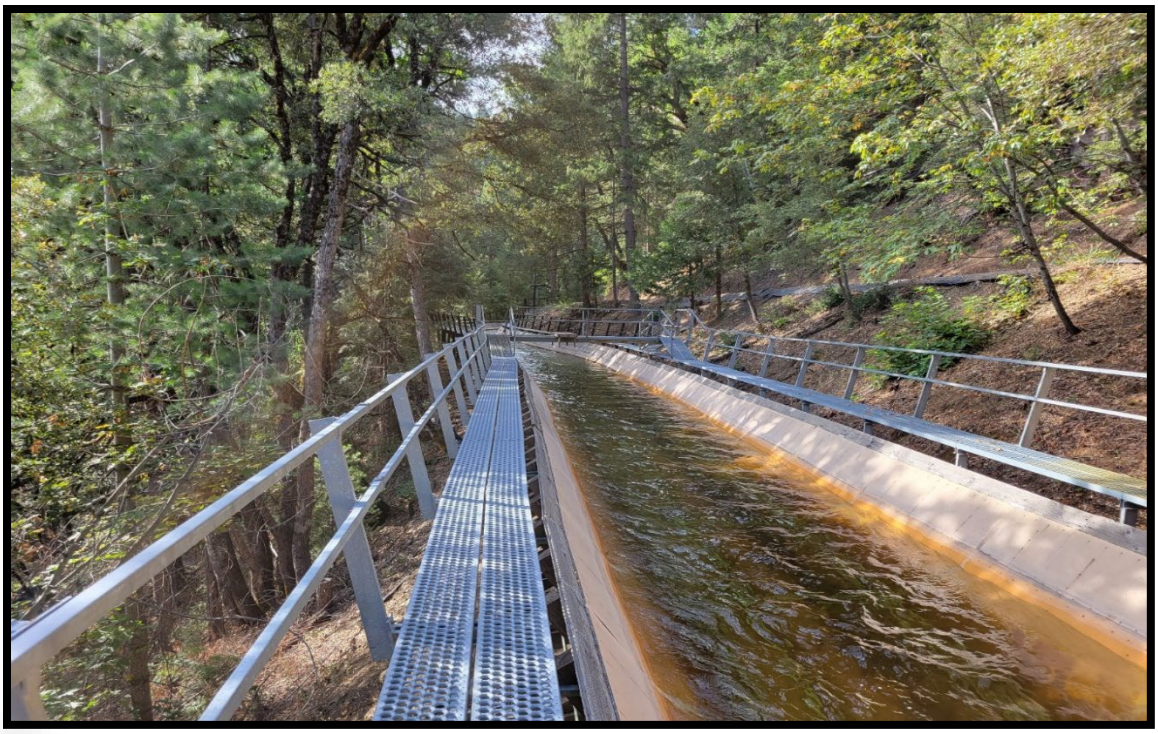


Photo 1: Flume 45 wooden flume section

Photo 2: Flume 45 wooden substructure

Photo 3: Flume 45 rock wall foundation

2.2 Project Location and Setting

The Project area is east of the town of Pollock Pines in an unincorporated area of El Dorado County. The Project area is south of US 50 and east of Ogilby Creek, on federal lands managed by the U.S. Forest Service (USFS), in the Eldorado National Forest (ENF) (Figure 2.2.1). The Project area is located on steep terrain on a northeast-facing slope approximately 0.28-mile upslope from the South Fork American River in a heavily forested area. The Project area is in Section 30, Township 11 north, Range 13 east of the U.S. Geological Survey 7.5-minute Riverton quadrangle. Elevations range from approximately 3,900 to 4,200 feet above mean sea level. The total Project footprint encompasses approximately 5-acres. The proposed Project site is shown in Figure 2.2.2.

Figure 2.2.1: Project Location

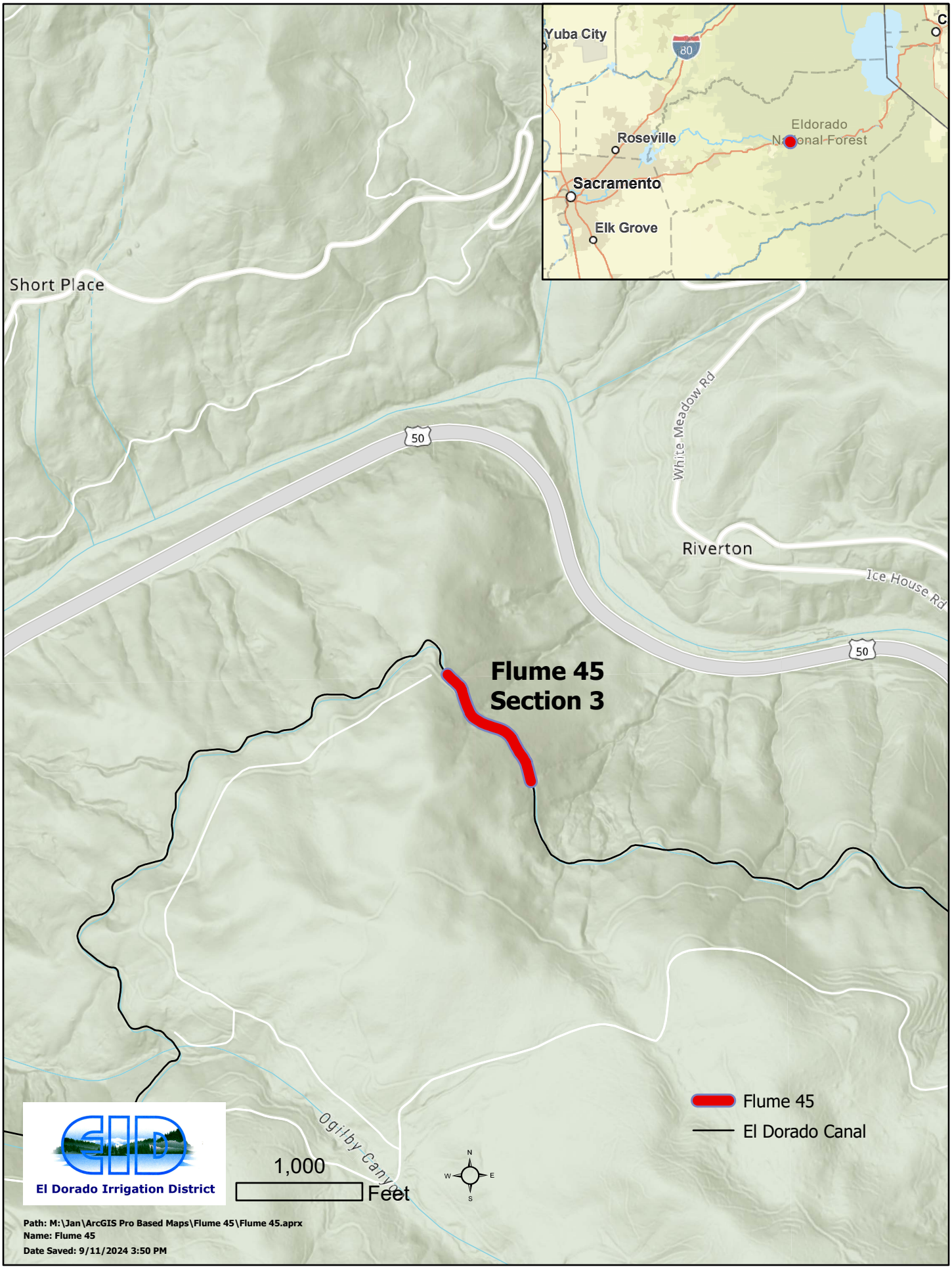
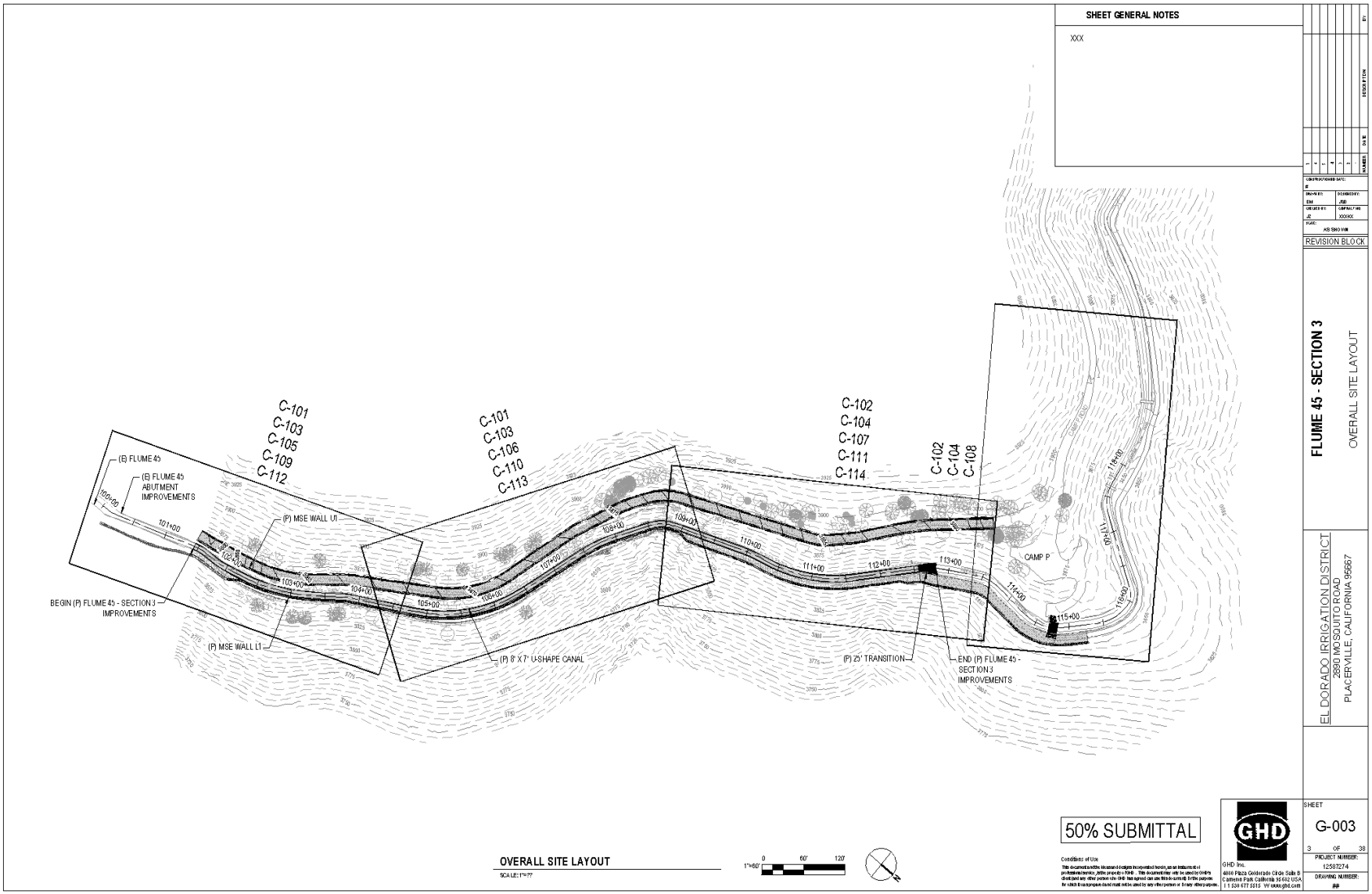


Figure 2.2.2: Project Site



2.3 Objectives

The Project is designed to meet the following objectives:

- Increase protection of Flume 45 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, access, and site preparation, construction of MSE wall, construction of new concrete canal, and slope stabilization and erosion control. Detailed descriptions are as follows:

- Mobilization, access, and site preparation - includes mobilization of construction equipment to the site, demolition of the existing wooden flume off-site in accordance with all applicable regulations and removal of rock foundation. Access improvements include road widening to a minimum width of 12-feet, surfacing with aggregate base for all-weather access, slope stabilization, and replacement of an existing bridge with a new 12-foot-wide vehicular bridge to facilitate construction access. Clearing and grubbing of vegetation within the limits of work area to remove hazard trees. Hazardous rocks in the immediate vicinity of the work area would be either removed or stabilized in place.

- Construction of mechanically stabilized earth wall - includes excavation on the downslope side canal area to native competent material to accommodate a footing or leveling pad that will support the new concrete conveyance structure, installation of appropriate drains within the new foundation, rock anchors to stabilize sections of the embankment, and construction of the MSE wall.

- Construction of new concrete canal – includes installing transitions to adjacent concrete conveyances, construction of a spillway to allow for controlled releases from the canal in the event of a future emergency, and construction of metal walkways and handrails to facilitate future maintenance and inspection. The proposed reconstruction of Flume 45 would involve the earthwork and materials quantities shown in Table 2-1. Figure 2.4.1 shows a typical cross-section of a concrete canal and access road. Photo 4 shows an example of a u-shaped canal.

- Slope stabilization and erosion control – includes temporary erosion control measures that would be used during construction to prevent erosion associated with stormwater runoff (e.g., straw bales, fencing). Hazard tree removal, slope scaling upslope from the facility, and installation of rock fall protection would be necessary to contain rock and debris fall to localized areas, while providing additional worker safety.

All work would be conducted within the existing FERC license boundary. The Project would result in no change in canal operations or capacity. No changes or variances to FERC license requirements would be required to implement the Project.

Table 2-1: Earth work and Materials Quantities

Activity/Materials	Quantities
Limit of Work Area	5.0 acres
Grading Cut	16,800 cubic yards
Grading Fill	14,000 cubic yards
MSE Wall	27,300 square feet
Reinforced U-shaped Canal	1,140 lineal feet
Reinforced Concrete Canal Transitions	25 lineal feet
All-Weather Aggregate Base Surface Area	29,000 square feet

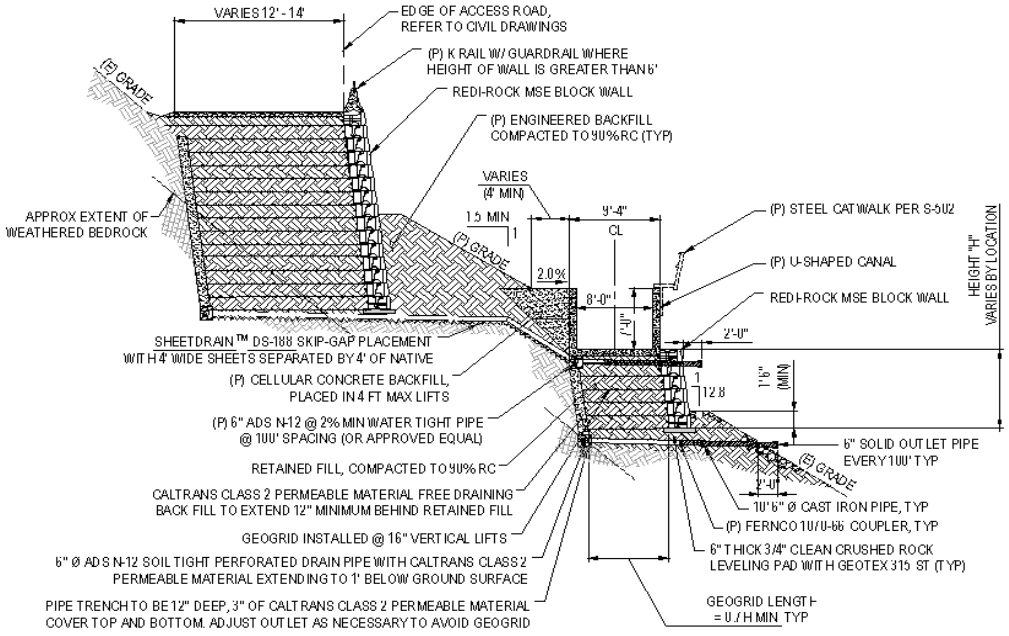


Figure 2.4.1: Typical Cross Section of Concrete Canal and Access Road

Photo 4: Example of a U-shaped Canal

2.5 Construction Equipment

The following equipment is expected to be used during Project activities:

- Helicopter
- 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

The Project is expected to begin in 2026 during the District's annual maintenance outage which typically occurs from October through December and is anticipated to be completed during two outage timeframes. Construction may be suspended as necessary for inclement weather. 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 construction activities could occur up to 24-hours per day if necessary.

2.7 Permitting and Agency Requirements

EID 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 2-2, below.

Table 2-2
Approvals/Permits/Plan Compliance

Responsible/Trustee Agency	Approvals/Permits
U.S. Forest Service	• Timber Sale Contract • Fire Prevention Plan • Land and Resource Management Plan consistency
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 • Transportation System Management Plan • Visual Resource Management Plan • Hazardous Substances Plan • Noxious Weed Prevention and Control Plan

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3. NITIAL STUDY CHECKLIST

Environmental Factors Potentially Affected

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

☐	Aesthetics	☐	Agriculture and Forestry Resources	☒	Air Quality
☒	Biological Resources	☒	Cultural Resources	☒	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 (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

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

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

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

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier 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.

September 23,2024

Michael C. Baron
Environmental Review Analyst
El Dorado Irrigation District

Date

Evaluation of Environmental Impacts

The degree of change from existing conditions caused by the Project is compared to the impact evaluation criteria to determine if the change is significant. Where it is determined that one or more significant impacts could result from implementation of the Project, further analysis would be provided in an EIR and mitigation measures would be developed to reduce or eliminate the significant impacts when feasible. Existing conditions serve as a baseline for evaluating the impacts of the Project.

The Environmental Checklist uses the following response headings to identify potential environmental effects that will be addressed in the EIR:

1. **Impact to be analyzed in EIR:** An effect that may or may not be significant that will be addressed in the EIR. The effect may be an impact for which further analysis is necessary or desirable before a determination about significance can be made; an impact that is potentially significant but may be reduced to a less-than-significant level with the adoption of mitigation measures; or an impact that may be significant and unavoidable. The EIR will analyze the environmental impacts of the proposed Project, which is envisioned to be completed in 2027.

2. **No Additional Analysis Required (Less Than Significant Impact/No Impact):** Implementation of the proposed Project would clearly result in no impact or result in a less-than-significant impact under CEQA criteria, no analysis beyond that provided in this Initial Study is necessary.

This IS, and forthcoming EIR, will analyze the potential significant environmental impacts that could result if the Project is approved by the El Dorado Irrigation District Board of Directors and subsequently implemented.

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 Flume 45 Project area is east of the town of Pollock Pines in an unincorporated area of El Dorado County on federal lands managed by the USFS in the ENF. The Project Area is characterized by steep slopes on a northeast-facing slope, approximately 0.28-mile upslope from the South Fork American River. Most of the Project area and surrounding area is heavily forested, primarily with conifers, interspersed with deciduous trees and shrubs. The Project area is located upslope of US 50 on a northeast-facing slope and is not visible to motorists. Land uses in the surrounding area include other infrastructure associated with Project 184, undeveloped forest, commercial logging, and outdoor recreation.

3.1.2 Discussion

a) & c)

No Impact. US 50 is a designated State Scenic Highway in the vicinity of the Project and the South Fork American River Canyon presents scenic vistas, encompassing the steep, narrow canyon; and heavily forest vegetation including trees and shrubs on the canyon and riparian vegetation along the river. These scenic views are available to recreationists and travelers in both directions on US 50, downslope from the Project site (Cal Trans 2017).

The Project area is heavily forested and removal of hazard trees would not substantially detract from the existing viewshed. No officially designated scenic viewpoints are along US 50 in the Project vicinity. Additionally, replacing the existing wood flume with a concrete flume would result in a similar overall appearance and would occur in the same location as the existing flume. No Scenic Vistas are located on the Project Site. No impact would occur, and these topics will not be

analyzed in the EIR.

b) **No Impact.** US 50 is identified by Caltrans as an Officially Designated State Scenic Highway, protected for maintaining and enhancing its scenic view sheds (Caltrans 2017). The Project would not substantially damage scenic resources within a state scenic highway and will be constructed in accordance with the Districts Visual Resources Management Plan (EID, 2024) and will not be analyzed further in the EIR.

d) **Less than significant Impact.** Project construction activities may occur on a 24-hour basis at various times, if necessary. Nighttime lighting for these activities would be shielded and directed downward, to reduce light spillover. The proposed construction staging area is upslope and south of the South Fork American River Canyon, and therefore would not be visible to motorists from US 50. Additionally, temporary construction lighting would not represent a nighttime light or glare hazard for motorists. No nighttime lighting would be required during the Project's operational phase. 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 topic 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 USFS manages the ENF, which encompasses more than 793,652 acres in El Dorado, Alpine, and Placer counties (USDA, 2024). Most of the Project area and adjacent land are heavily forested, primarily with conifers, interspersed with deciduous trees and shrubs. The Project would occur on land within the ENF and private land (staging area) where the District has existing access for Project 184 operations and maintenance.

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 this topic will not be analyzed in the 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 topic will not be analyzed in the EIR.

c) & d)

No Impact. The Project area is zoned Forest Resources - Minimum 160-acres (FR-160) by the El Dorado County Zoning Ordinance (Ord. Sec. 130.21.010 C (5)). The Forest Resources Zone District FR-160 is applied to lands containing valuable timber or having the potential for timber production, but that are not subject to Timber Production (TPZ) zoning requirements. The purpose of this zone is to encourage timber production and associated activities, and to limit non-compatible uses from restricting such activities. The proposed Project 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 topics will not be analyzed in the 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 site 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) **Impact to be analyzed in EIR.** The proposed 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 issue will be provided in the EIR.

b) **Impact to be analyzed in EIR.** Proposed construction activities 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 will be provided in the EIR for cumulatively considerable increases in emissions of nonattainment pollutants, and cumulative impacts.

c) **Impact 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 will be provided in the EIR for the potential health effects associated with emissions of criteria air pollutants.

d) **Less than Significant Impact.** The Project is located in a remote area of the ENF far from any residential areas. 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. Therefore, this impact will not be discussed in the 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.

3.4.2 Discussion

a) **Impacts to be analyzed in EIR.** The biological resources report (Attachment A) 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 EIR for the potential impacts that could occur as a result of the proposed 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 topic will not be analyzed in the EIR.

c) **No Impact.** The proposed 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. No impact would occur and therefore this topic will not be analyzed in the 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 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 topic will not be analyzed in the 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 topic will not be analyzed in the 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

The entire Project area is located within the Area of Potential Effect (APE) of the Project 184 Historic Properties Management Plan (HPMP) 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. Flume 45 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 proposed Project would require removal and/or stabilization of this rock wall. A Section 106 Finding of Effect (FOE) was prepared and submitted to the State Historic Preservation Office (SHPO) requesting consultation to address potential impacts to the segment of historic rock wall that supports a portion of Flume 45.

3.5.2 Discussion

a) & b)

Impacts to be analyzed in EIR. The discussions of existing conditions and analysis of potential impacts on archeological resources included in this Cultural Resources section will rely on information contained in a cultural resources inventory report prepared for the 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, the existing cultural resources inventory report prepared for the Project site and subsequent analysis will be provided in the 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 45 is a portion of infrastructure that is included in Districts Project 184 FERC license. 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 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 proposed 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 is expected to begin fall of 2026 and occur in 3-4 month increments for 2 years, during the District's annual maintenance outages. Once construction activities cease, 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. Therefore, no significant impact would occur and this topic will not be analyzed in the 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 0.28 miles upslope from the South Fork American River. Elevations range from 3,900 to 4,200 feet above mean sea level. The majority is the proposed Project occurs on previously disturbed land located on steep slopes. The South Fork of the American River is located approximately 700 feet downslope from the Project area.

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).

ii) **No Impact.** The potential for seismic ground shaking in the Project area would be considered remote as discussed in Section i) above. Therefore, no impact would occur, and this topic will not be analyzed in the 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 2019). Therefore, no impact would occur, and this topic will not be analyzed in the 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 topic will not be analyzed in the EIR.

b) **Impact 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 EIR.

c) **Less than Significant Impact.** See Section i) above.

d) **No impact.** See Section iv) above.

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 topic will not be analyzed in the EIR.

f) **No Impact.** The Project site is entirely within Mesozoic-age plutonic granitic bedrock. This type of rock originated from magma, which slowly crystallized below the Earth's surface; thus, these types of rocks do not contain fossils (USGS 1970). Therefore, no impact would occur, and this topic will not be analyzed in the 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 (see Section III. Air Quality above); 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 analysis contained in the EIR will assess whether the construction and operation of the proposed Project would either directly or indirectly have a significant impact on the environment.

b) **Impacts to be analyzed in EIR.** The analysis contained in the EIR will assess the potential for the construction and operation of the proposed 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), and GeoTracker, maintained by the State Water Resources Control Board (SWRCB). The results of these records searches indicated that no open cases are active within the Project site. The nearest closed site is on the north side of the South Fork American River Canyon (SWRCB Site No. T060170054), approximately 1.9-miles northeast of the Project site. This site is a Sacramento Metropolitan Utility District maintenance facility, which experienced a diesel fuel leak in 1993. Contaminated soil was remediated and the case was closed in 1996.

No schools are within 0.25 mile of the Project site. The nearest airport is in Placerville, approximately 17.5 miles to the west.

According to the California Department of Forestry and Fire Protection (CALFIRE) fire hazard severity zone map, the Project site is in an area of federal responsibility; it has not been rated for fire hazard severity (CALFIRE 2007). Most of the Project site is heavily forested, primarily with conifers, interspersed with deciduous trees and shrubs. The proposed staging area is cleared of vegetation.

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 and stored at 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 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 a SWPPP prepared in accordance with the Project 184 Hazardous Substances Plan (EID, 2008). Additional analysis will be provided in the EIR due to the need for implementation of protection measures involving the transport 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 accident conditions involving the release of hazardous materials into the environment further analysis and guidance will be provided in the EIR.

c) **No Impact.** There are no schools within 0.25-miles of the proposed Project site. Therefore, no impact would occur, and this topic will not be analyzed in the EIR.

d) **No Impact.** The Project site is not or within 0.25-miles of a hazardous materials site. Therefore, no impact would occur, and this topic will not be analyzed in the EIR.

e) **No Impact.** The nearest airport to the Project site is the Placerville Airport approximately 17.5-miles west and the Project site is not within an area covered by an airport land use plan. Therefore, no impact would occur, and this topic will not be analyzed in the EIR.

f) **No Impact.** Access to the Project area would be from US 50 at Hazel Valley Road to Plum Creek Road to an existing gated entrance from Camp P Road. There are no residents in the Project vicinity and the Project site 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 topic 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. Unintended ignitions from Project-related construction equipment or tools could result in a wildland fire. Additional analysis will be provided in the EIR due to the high-risk potential for wildfire during construction of the proposed 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 3,800 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 45 is located upslope on steep terrain from US 50 and 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 proposed 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 and guidance with regard to potential impacts to water quality will be provided in the EIR.

b) **No Impact.** The proposed 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 topic will not be analyzed in the EIR.

c), i), ii), iii)

Impacts to be analyzed in the EIR. Construction of the proposed 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 proposed Project to substantially impact existing drainage patterns further analysis and guidance will be provided in the 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 approximately 500-feet above 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 topic will not be analyzed in the 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 topic will not be analyzed in the 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 east of the town of Pollock Pines in an unincorporated area of El Dorado County. It is south of US 50 and east of Ogilby Creek, on federal lands managed by the USFS, in the ENF. The Project area sits on a northeast-facing slope approximately 0.28-mile upslope from US 50 and the South Fork American River on heavily forested land. All equipment will be staged at an existing storage site near the Project area as well as on-site.

Several rural residences are located in the general area along US 50 outside the ENF lands and several privately-owned cabins are on ENF lands approximately 1.4-miles east of the Project site. Established neighborhoods are in the community of Pollock Pines and are located approximately 8-miles west of the Project area.

3.11.2 Discussion

a) **No Impact.** The approximately 5-acre Project site is undeveloped area of the ENF. Established communities are not within or adjacent to the Project boundaries. No impact would occur and this topic will not be analyzed in the EIR.

b) **No Impact.** The Project would reconstruct an existing facility and increase protection of Flume 45 from potential future catastrophic wildfire. The Project is subject to review and approval by the USFS and would be required to comply with applicable provisions of the ENF Land and Resource Management Plan in addition to the Districts' FERC license requirements. Compliance with other applicable regulations such as the El Dorado County General Plan, EL Dorado County Air Quality Management District (EDCAQMD), California Air Resources Board (CARB), SWRCB, USFWS and the CDFW are evaluated in other sections of this Initial Study. Therefore, no impact would occur and this topic will not be analyzed in the 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 land owned by the USFS ENF, with Project activities occurring primarily within the District's approved FERC 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 this topic will not be analyzed in the 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 area surrounding the proposed Project consists of mostly undeveloped forest land and open space. There are no businesses, residences, or structures in close proximity to the Project area.

3.13.2 Discussion

a) **Less than significant Impact.** 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). 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. The nearest noise sensitive receptor to the Project area is in excess of 1-mile.

Project activities would comply with the County's maximum noise level standard of 75 dB and the County's hourly noise level standard of 55 dB. Short-term Project construction would not result in noise generation in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, therefore, this topic will not be analyzed in the EIR.

b) **Less than significant Impact.** The vibration generated by heavy equipment is not anticipated to cause excessive groundborne vibration or noise levels to cause a potentially significant impact on noise sensitive receptors. Short-term Project construction or long-term operation would not result in exposure of individuals to, or generation of, excessive groundborne noise or vibration levels, therefore, this topic will not be analyzed in the 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 topic will not be analyzed in the 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 primarily within the boundaries of the District's Project 184 on land owned by USFS the ENF. No existing housing occurs within or 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 a wooden flume with concrete lined canal in order, to mitigate the potential loss of the structure as a result of catastrophic wildfire while continuing to provide a safe and reliable water supply for drinking water and hydroelectric power generation, and continue meeting water and energy demands in El Dorado County. The Project would cause no change in canal operations or capacity. Therefore, no impact would occur and this topic will not be analyzed in the EIR.

b) **No Impact.** The replacement of Flume 45 with a wildfire resistant canal would not displace people or residents because there are no houses adjacent or within the boundaries of the Project. Therefore, no impact would occur and this topic will not be analyzed in the 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 of federal responsibility; it has not been rated for fire hazard severity (CALFIRE 2007). The USFS is responsible for fire prevention and suppression in the ENF and privately-owned lands within the forest boundaries. The nearest fire station is the Kyburz Station at 13275 US 50 Kyburz, Ca 95720, approximately 9.5-miles east of the Project area (EDCFPD 2024).

Police Protection

The USFS is responsible for prevention of crimes and enforcement of federal laws and regulations in the ENF and on adjacent lands. The Placerville Ranger station is located in Camino, approximately 11-miles west of the Project area.

Local law enforcement is also 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 an uninhabited mountainous region of El Dorado County on land owned and managed by the USFS. There are no schools located in the vicinity of the Project site.

PARKS

The Project area is located in an uninhabited mountainous region of El Dorado County on land owned and managed by the USFS. There are no parks located in the vicinity of the Project site.

OTHER

The Project area is located in an uninhabited mountainous region of El Dorado County on land owned and managed by the USFS. Other public services (libraries, churches, community centers) are not located in close proximity to the proposed 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 topics will not be analyzed in the 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 an unincorporated area of 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, access to the Project area is restricted by locked gates 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 these topics will not be analyzed in the 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 these topics will not be analyzed in the 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

Vehicle access to the Project site would be from US 50 at Hazel Valley Road to Plum Creek Road to an existing gated entrance on Camp P Road. (See Figure 2.2.1). Hazel Valley Road and Plum Creek Road (NF-10N40) are county and ENF roadways accessible to the public. Camp P Road is a designated access route identified in the Project 184 Transportation System Management Plan (EID 2017).

No railroads or transit facilities are in the Project area. The nearest airport to the Project site is the Placerville Airport approximately 16-miles west and the Project sire is not within an area covered by an airport land use plan.

3.17.2 Discussion

a) **Less than significant Impact**. Traffic generation associated with the proposed Project would be similar to other past flume replacement projects requiring equipment/materials hauling and worker commute trips to and from the Project area along local surface streets. These trips generally would occur on US 50, local roadways, and the Project access road. Increased construction traffic would be temporary, would occur seasonally over a two-year period between approximately August to the end of December during EID's annual maintenance outage starting in 2026. Typical traffic patterns during construction of the proposed 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. Therefore, the proposed Project would not conflict with any applicable program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities related to the performance of the circulation system. No further analysis on these topics will be provided in the EIR.

b) **Less than Significant Impact.** Local roads serving the Project site are not heavily traveled, and 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 topic will not be analyzed in the EIR.

c) **No Impact.** The Project would not result in any changes to public roadways, incompatible uses or inadequate emergency access. The Project would only require leveling the road surface and adding gravel along the existing road beyond the gated access portion of Project to allow for heavy equipment and materials transport. All work would be completed in accordance with the Project 184 Transportation System Management Plan. Therefore, no impact would occur and this topic will not be analyzed in the EIR.

d) **Less than Significant Impact.** 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 50 and Hazel Valley Road could delay the movement of emergency vehicles between US 50 and the Project site. However, in the event of an emergency all truck traffic associated with the Project would be halted to allow unimpeded movement of emergency vehicles. Also, all work would be completed in accordance with the Project 184 Transportation System Management Plan. Therefore, no significant impact would occur and this topic will not be analyzed in the 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) is generally identified by California Native American Tribes through the process of consultation. Under AB 52 a TCR must have tangible, geographically defined properties that could be impacted by implementation of a project. 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, on July 20, 2022, the District sent written correspondence to the Shingle Springs Miwok, Torres Martinez Desert Cahuila Indians, United Auburn Indian Community of Auburn Rancheria, Wilton Rancheria, and the Wopumnes Nisenan-Mewuk Nation of El Dorado County providing Project information and requesting a response if the groups are interested in consulting regarding the proposed Project in accordance with AB-52. Tribal correspondence resulted in a response from the United Auburn Indian Community of Auburn Rancheria requesting location information and that EID contact the tribe in the event any TCRs are discovered during Project construction. Other tribal groups on the Native American Heritage Commission (NAHC) list will be notified of the availability of this NOP/IS.

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 proposed Project to disturb unknown TCRs, further analysis on this topic will be provided in the 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 and it is within an undeveloped area primarily within the ENF. 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 topic will not be analyzed in the EIR.

b) **No Impact.** The Project would not include new development that would increase water supply demand. No impact would occur and this topic will not be analyzed in the 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 topic will not be analyzed in the 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 topic will not be analyzed in the 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 proposed Project would be disposed of in accordance with applicable federal, state, and local regulations. Therefore, no impact would occur and this topic will not be analyzed in the 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, because the Project area is under federal jurisdiction; it has not been rated for fire hazard severity (CAL FIRE 2007). The USFS is responsible for fire prevention and suppression in the ENF and those privately-owned lands within the forest boundaries. The Project area is in the Placerville Ranger District and the nearest district facility is the Kyburz Station, approximately 6-miles east of the Project area. Additional wildfire fighting assistance can be provided by the Sly Park Station at 5420 Sly Park Road in Pollock Pines, approximately 8-miles southwest of the Project area (USFS 2019).

3.20.2 Discussion

a) **Less than Significant Impact.** The Project area is not in an area that is subject to an adopted emergency response or evacuation plan. The short-term presence of construction vehicles on the access roads would not impede access for emergency response vehicles or evacuation. Therefore, no significant impact would occur and this topic will not be analyzed in the EIR.

b) **Impacts to be analyzed in EIR.** Flume 45 is located in a heavily forested area on a flat bench adjacent to a steep hillside upslope of US 50 and the South Fork of the American River. 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 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. The Project area is accessed via existing gravel entrance off Plum Creek Road (NF-10N40). Worker vehicles and equipment would not impede access that may exacerbate fire risk or result in temporary or on-going impacts to the environment. No impact would occur and this topic will not be analyzed in the EIR.

d) **No Impact.** The Project area is located in an undeveloped area of the ENF. The proposed Project will not include any habitable structures or grading that could 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 drainage changes. No impact would occur and this topic will not be analyzed in the 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 proposed Project has the potential to result in significant biological and cultural resource impacts, and substantially degrade the quality of the environment. The EIR will evaluate the potential for the proposed 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 proposed

Project would involve replacement of a wooden flume structure with reinforced air placed concrete and canal bench and access improvements. The EIR will evaluate whether the potential impacts of the proposed Project in combination with other current projects in the region and construction activities near the proposed 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 proposed 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.

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4.4 BIOLOGICAL RESOURCES

None

4.5 CULTURAL RESOURCES

None

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4.14 POPULATION AND HOUSING

None

4.15 PUBLIC SERVICES

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4.17 TRANSPORTATION

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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

5. LIST OF REVIEWERS/PREPARERS

EL DORADO IRRIGATION DISTRICT

Brian Mueller	Director of Engineering
Jon Money	Director of Engineering
Brian Deason	Environmental Resources Supervisor
Sifang Shan	Senior Engineer
Michael C. Baron	Environmental Review Analyst
Justine Teurman	Permit Technician

ATTACHMENT A

Biological Resource Assessment

September 8, 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 Results for the Flume 45 Section 3 Project

Dear Mr. Baron:

The El Dorado Irrigation District (District) is proposing to replace the existing flume structure at Flume 45 Section 3 along the El Dorado Canal. The Flume 45 Section 3 project is located in central El Dorado County, south of U.S. Highway 50 and east of the Pacific House (**Attachment A, Figure 1**). The proposed project is situated east of the South Fork American River at elevations ranging from approximately 3,800–3,900 feet (**Attachment A, Figure 2**). The project site includes Flume 45 Section 3 and buffer zones of approximately 50 feet downslope of the flume and 25 feet upslope 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 Riverton 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 Riverton 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 1.7-acre project site is approximately 3,800 to 3,900 feet above mean sea level. The topography slopes gradually east to west, with steep north-facing slopes on both sides of the El Dorado Canal.

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 are generally sparse due to the fairly contiguous tree canopy that limits light penetration. In addition, vegetation immediately adjacent to the flume appears disturbed and managed to reduce vegetation cover. Understory species and species observed in small canopy openings during the field survey include wax leaf raspberry (*Rubus glaucifolius*), western thimbleberry (*Rubus parviflora*), feathery false lily of the valley (*Maianthemum racemosum*), blue wildrye (*Elymus glaucus* ssp. *glaucus*), Bolander's blue grass (*Poa bolanderi*), tincture plant (*Collinsia tinctoria*), variableleaf collomia (*Collomia heterophylla*), violet draperia (*Draperia systyla*), and chickweed (*Stellaria media*).

The project site lacks natural wetlands but several areas where water was leaking from the flume structures supported very small patches of hydrophytic plants and mosses. Several sedges (*Carex* sp.) were growing in moist areas on and under the flume structure near the southern half of the project site. These sedges were not keyed to specific epithet but were keyed to determine they belong in two distinct groups as described in the Jepson e-flora website. One of these sedges was keyed to belong to Group 10 and the other was keyed to Group 11. The target species, Sierra arching sedge (*Carex cyrtostachya*), is in Group 1and 4 and was not observed at the project site. Another area supports several seep monkey flower (*Erythranthe guttata*), an obligate wetland species; however, this area only supports a few hydrophytic plants and was not mapped as wetlands because the only apparent source of water to this area is leakage from the flume.

One small ephemeral drainage was identified within the project site. The drainage appears to be a small swale or topographic draw leading from the flume down the hillside (**Attachment A, Figure 3)**. This drainage had some evidence of ephemeral water flow during the survey due to the presence of saturated algal growth within the confined portion of the swale. The drainage lacked pronounced bed and bank and geometry of a channel, but there was topographic contour of a small (approximately 2-3 foot wide) dip from surrounding areas. The drainage also lacked vegetation growing in it aside from the algae at the uppermost portion of the drainage.

Soil Types

Soils in the survey area are classified by the Natural Resources Conservation Service was entirely Chaix-Rock outcrop complex derived from granite parent material (NRCS 2019). Soils in the project site are not serpentinite or volcanic soils that could support special-status plants endemic to these soil types. Soils that are mapped on the project site do not include Josephine silt loam soils that are sometimes associated with known occurrences of Pleasant valley mariposa-lily (*Calochortus clavatus* ssp. *avius*), a California Rare Plant Rank (CRPR) 1B.2 species.

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 57 special-status plants and animals within the USGS 9-quadrangle search area; only four 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. Eight species, including Pleasant Valley mariposa-lily (*Calochortus clavatus* var. *avius*), could potentially occur on the project site. There is limited suitable habitat for these species on the project site. Several of these eight species occur in wetland habitats, and the site lacks natural wetland habitats. As described above, there are several areas where moisture from water leaking from the flume creates small patches with hydrophytic plants, including sedge (*Carex* sp.) The June 21, 2022, survey was conducted during the blooming period of all eight 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.

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	No potential to occur; no suitable habitat is present on the 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; no Josephine or volcanic soils on project site; dense tree canopy limits open areas; nearby documented occurrences within 5 miles of the project site. Species not observed during June 2022 floristic survey.
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. *Carex* sp. in Group 10 was observed near leaky flume structures and an upland *Carex* sp. in Group 11 was observed; the species observed on the project site are not this rare species, which is in Group 1 and 4.
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 project site, 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

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		
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
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.

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		
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; potential suitable habitat present on project site is limited; species not observed during June 2022 floristic survey.
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 24 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 during surveys completed by GEI biologists 4 miles west at Flume 47A in 2021. Project site is within 2 miles of a Protected Activity Center for California spotted owl (PAC-ELD-0054).
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 14 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 with different-aged stands and high canopy closure, including old-growth trees and snags for denning	Unlikely to occur; habitat on and adjacent to the project site is only marginally suitable. Nearest CNDDB occurrences approximately 24 miles northeast of the project site.
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 regulations such as CEQA, ESA, CESA, Section 1602 of the FGC, Section 404 and 401 of the CWA, 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

The ephemeral drainage described previously and shown in the maps and photos in the Attachments may potentially be subject to regulation under Sections 404 and 401 of the CWA.

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 survey 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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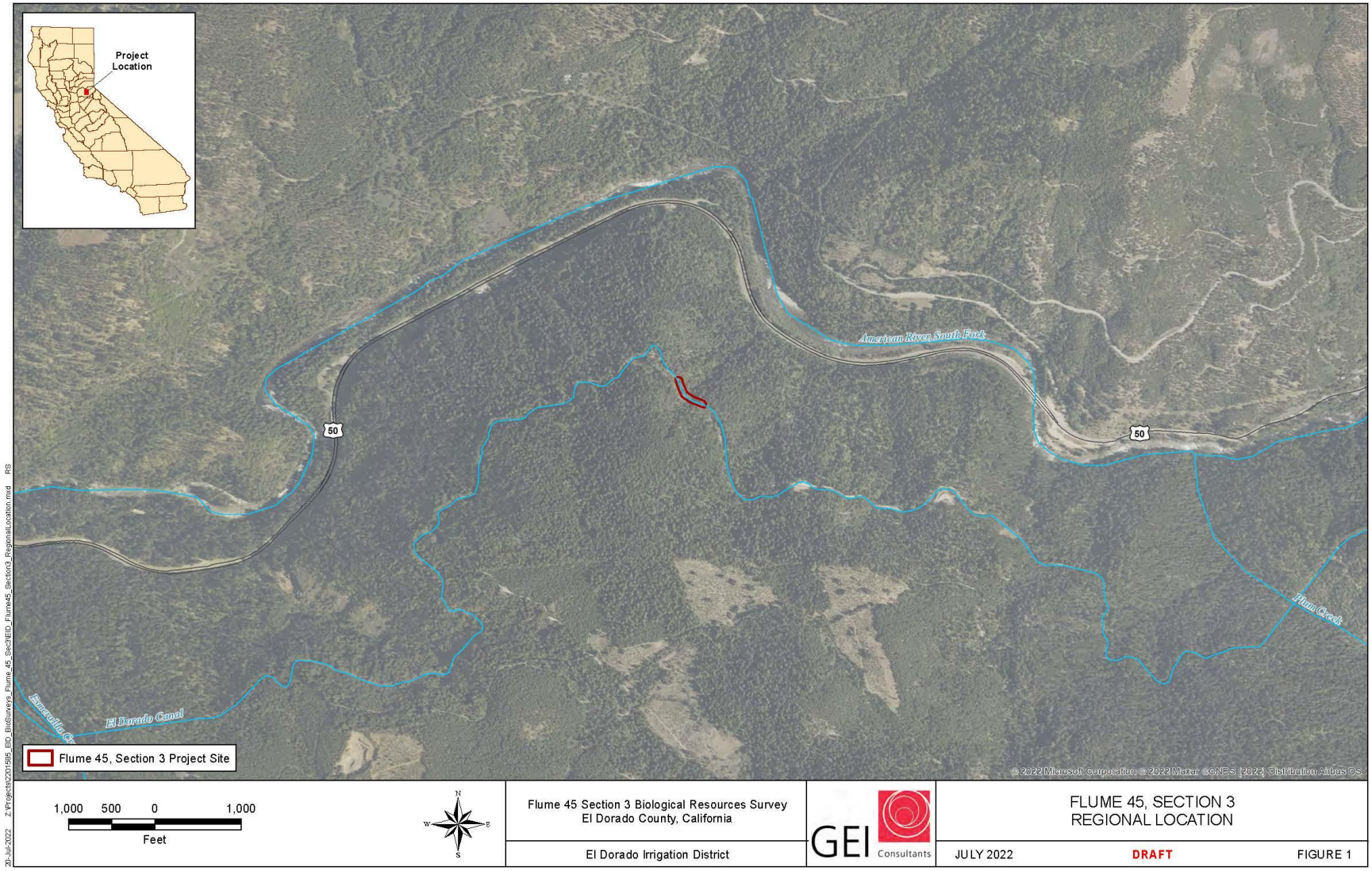
------. 2022b. National Wetlands Inventory Mapper [web application]. Accessed May 2022. Available at https://www.fws.gov/wetlands/data/mapper.html.

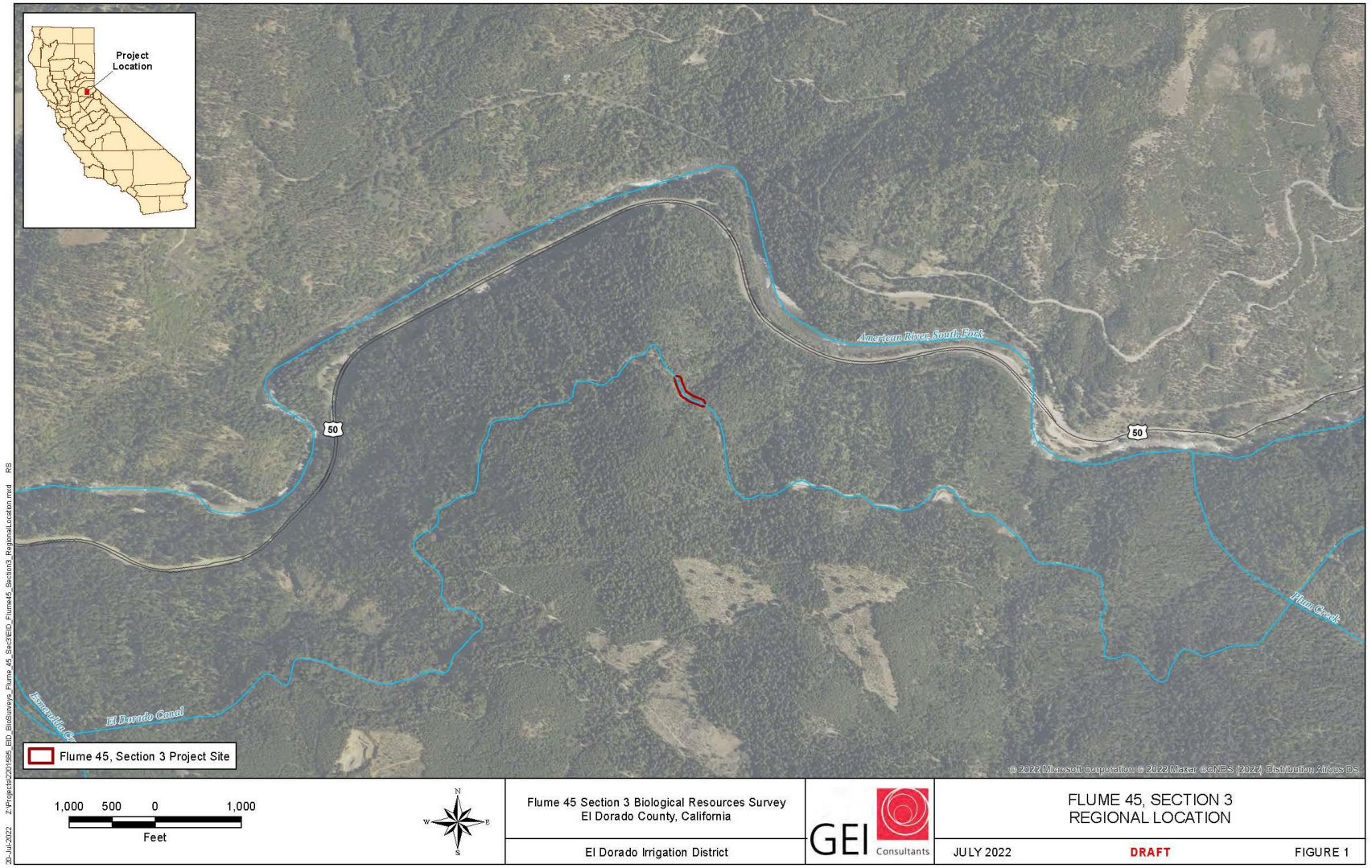
Attachment A

Figure 1. Regional Location



Source: GEI Consultants, Inc. 2022

Figure 2. Topographic Map

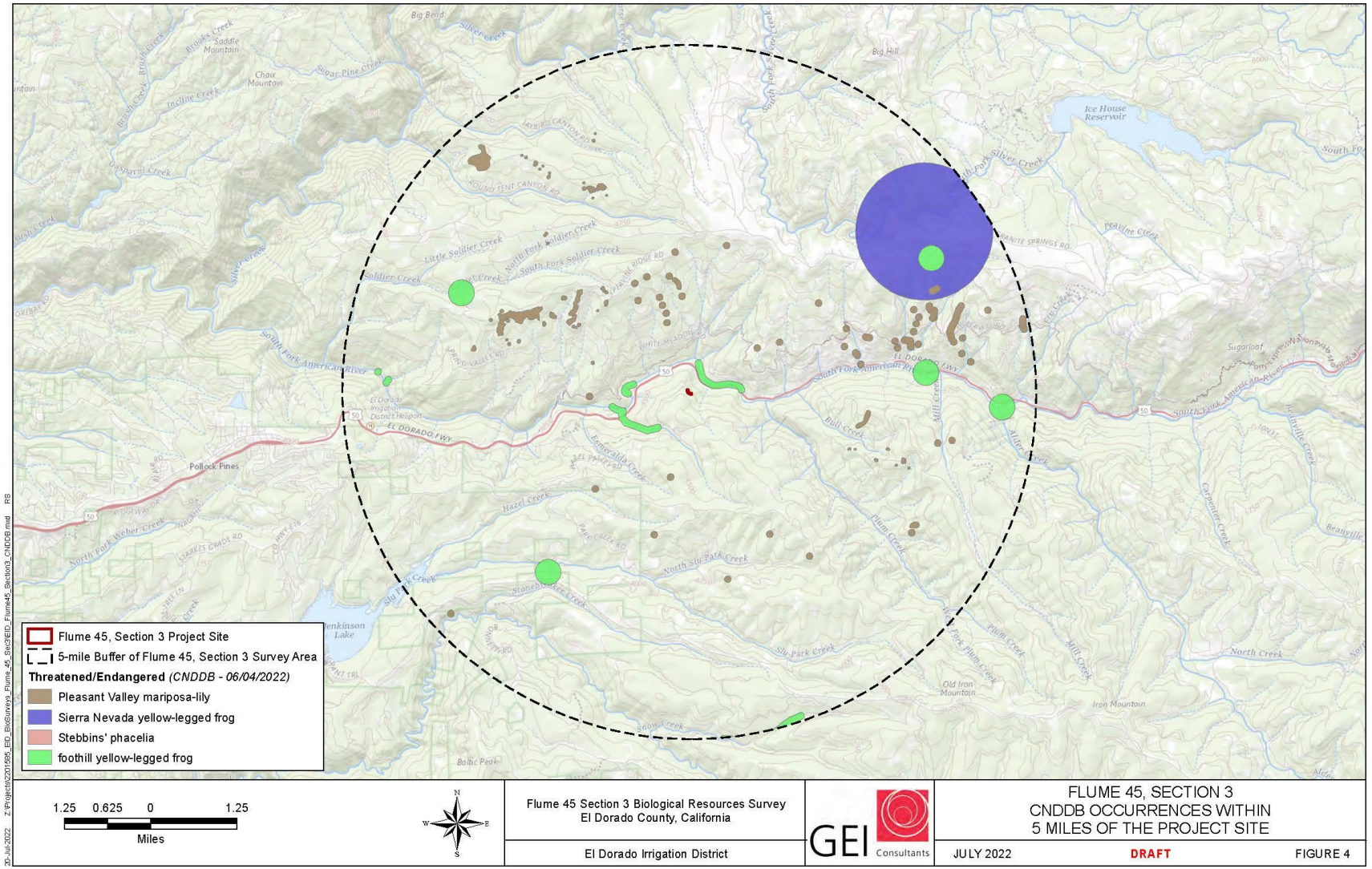


Source: GEI Consultants, Inc. 2022

Figure 3. **Habitat Types on the Project Site**

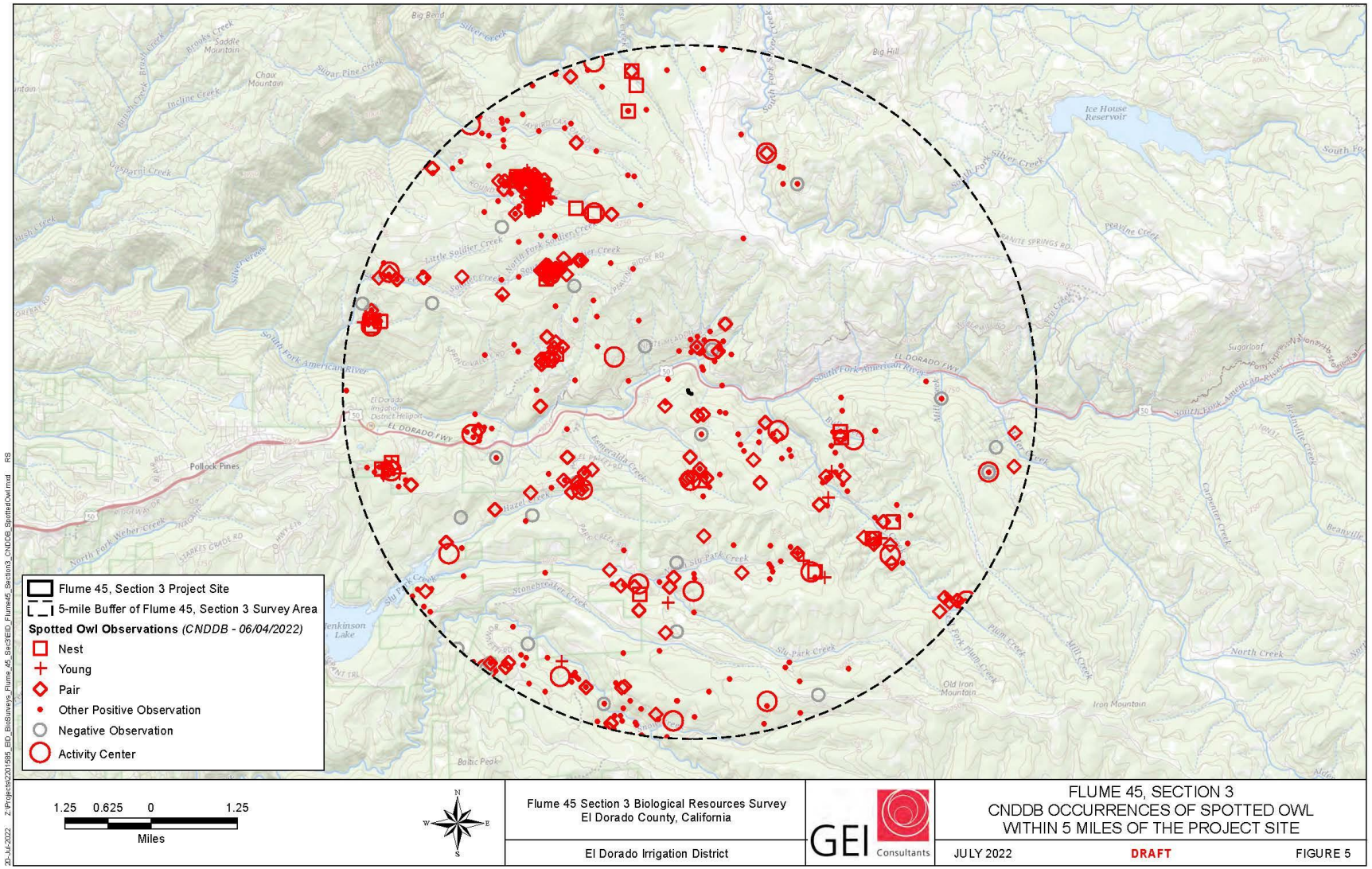
Source: GEI Consultants, Inc. 2022

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

IPaC U.S. Fish & Wildlife Service

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

El Dorado County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. 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.

The following species are potentially affected by activities in this location:

Amphibians

NAME	STATUS

California Red-legged Frog Rana draytonii — Threatened
Wherever found
There is final critical habitat for this species. Your location overlaps the critical habitat.
https://ecos.fws.gov/ecp/species/2891

Sierra Nevada Yellow-legged Frog Rana sierrae — Endangered
Wherever found
There is final critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/9529

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus Wherever found There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/321	Threatened

Flowering Plants

NAME	STATUS
Layne's Butterweed Senecio layneae Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4062	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE
California Red-legged Frog Rana draytonii https://ecos.fws.gov/ecp/species/2891#crithab	Final

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Black-throated Gray Warbler Dendroica nigrescens This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Jul 20
Cassin's Finch Carpodacus cassinii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9462	Breeds May 15 to Jul 15
Evening Grosbeak Coccothraustes vespertinus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Dec 1 to Aug 31
Oak Titmouse Baeolophus inornatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Olive-sided Flycatcher Contopus cooperi This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

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 ssp.	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].

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 45 section 3 project site facing west.

View of Flume (west side) and abutment in the project site facing southeast.

View of ephemeral drainage in the project site, looking northeast, downslope of the Flume.

View of rocky substrate along steep north-facing slopes in the project site below Flume 45 Section 3.

View of below Flume 45 section 3 project site facing east.

View of limited understory vegetation below flume along north slope facing west.

Attachment D

Lists of Plant and Wildlife Species Observed during the Field Survey

Plant Species Observed at the Flume 45 Section 3 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 45 Section 3 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

Memorandum

To: Michael Baron, El Dorado Irrigation District

From: Eric Htain

cc:

Date: November 23, 2022

Re: Wetland Assessment for Flume 45 Section 3

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 45, and in particular Section 3. GEI conducted a floristic survey and wildlife habitat assessment at the Flume 45 Section 3 project site on June 21, 2022. During the June 21 survey, GEI biologists observed and noted an area downslope of the flume that appeared to be a potential drainage that conveys 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 Grace Rhoades conducted a wetland assessment in the project site on October 19, 2022. 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 inundation, soil saturation, soil moisture, erosion and drainage patterns in the soil, and a defined drainage channel.

Results

One potential drainage feature was observed in the project site during the October 19 site visit. This feature exhibited topographic contouring in the land form that suggested conveyance of water in a channelized form, such as a swale. The feature did not have vegetation in it at the time of the survey, nor did it exhibit evidence of hydrology. There was no evidence of inundation, saturated soils, or flow patterns. It should be noted that the El Dorado Canal was also dry at the time of the survey. Inspection of the landscape above the canal (along the access road and abutment and upslope of the access road) showed no evidence of a drainage, seep, or other feature that would convey water.

At the time of the initial survey in June 2022, the El Dorado Canal was conveying flowing water through the flume. The GEI biologists noted the potential drainage feature based on localized soil moisture and algal growth just below the flume.

Conclusion

Based on the wetland assessment, GEI considers the one potential drainage feature identified in the Flume 45 Section 3 project site to not be a jurisdictional waterbody subject to regulation by the regulatory agencies. Although there was some evidence of potential hydrology and vegetation within the topographic swale (soil moisture and algae) during the initial site visit in June 2022, these indicators were not present and observed during the October site visit. No evidence of a swale, drainage, or seep was observed above the flume, along the abutment and access road and above those. Therefore, there is no contributing water or flow from above the flume that would be providing the conditions of soil moisture and algae growth to the downstream potential drainage feature. It is GEI's assessment that the soil moisture and algal growth was a function of spillage or leaks of water from the El Dorado Canal and that the topographic swale contour is most likely a function of the local topography – it is located in the draw or intersection of two hills. Given the location of the draw and yearly conveyance of water in the El Dorado Canal, the leaks from the flume have, over time, created the swale feature.

Based on current waters of the United States policy and guidance (Pre-2015 guidance/ Rapanos decision), erosional features and swales characterized by low volume, infrequent, or short duration flows are not considered to be jurisdictional waters (USACE 2008).

The State Water Resources Control Board defines an area as wetland as follows:

> *An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.* (SWRCB 2019)

The topographic feature does not have continuous or recurrent saturation based on the lack of saturation observed during the October survey. The topographic feature also does not have frequent enough saturation to cause anaerobic conditions as the soil was completely dry during the October survey and no hydrophytic vegetation was observed growing in the feature. Therefore, the feature would not be a wetland or regulated habitat by the State Water Resources Control Board.

References Cited:

State Water Resources Control Board (SWRCB). April 2019. State Wetland Definition and Procedures for Discharges of Dredged or Fill Materials to Waters of the State. Sacramento, CA.

U.S. Army Corps of Engineers (USACE). December 2008. Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v United States and Carabell v United States*. Washington, D.C.

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 west of access road (left) and flume(right) above the area of the potential feature. As seen in the photo, there is no natural drainage above the flume that would lead to the potential feature below the flume being a drainage.

Photograph 2: View facing northeast looking at the potential feature. This view is of the swale-looking topographic feature located downslope (north) of the flume.

Photograph 3: View facing northeast of the potential feature from the elevated deck of the flume. Note the terrain in the foreground of the photo, downslope of the flume. There is no continued defined channel going downslope.

Appendix B. EID Flume 45 Construction Estimates

	Work Description (Major Tasks)	Flume Outage Required	Sequence Constraints	Appx. Duration of Task (Day)	Appx. Number of Equipment	Appx. # of Days to Complete Work	Appx. # of Hours to Complete Work by Various Equipment	Types of Equipment	Estimate Material Quantites
Y1	YEAR 1 August-January								
	Staging and Mobilization	No	None	3	2	3	24	excavator, truck	
A	Camp P Roadwork	No	None	5	2	5	40	bobcat, truck	360 cubic yards
B	Clearing and Grubbing	No	None	2	2	2	16	excavator/backhoe loader, truck	
C	Excavation for MSE wall U1 1200', Demo Shoring Panel & Gabion	Yes, for ~300ft of length	Requires Shoring until E	55	4	43	348	excavator, material handler, trucks	4200 cubic yards
D	Tree Removal	Yes	Overlaps B & C	20	4	15	120	wheeled or tracked machines,harvestor, truck	
E	Construction of MSE Wall U1 1200'	Yes, for ~300ft of length	Follows & Overlaps C	50	4	40	316	material handler, truck, compactor	950 tons
F	Construction of Bridge	Yes	None	20	2	10	80	excavator, concrete pump	
G	Demolition of Wooden Flume 350' Downstream, catwalks, spillways	Yes	Follows F	5	3	3.5	28	excavator, material handler, truck	
H	Excavation for MSE Wall L1 610' Downstream	Yes, for ~400ft of length	Follows F & G	25	2	19	148	excavator, material handler	4200 cubic yards
I	Construction of MSE Wall L1 610' Downstream	Yes, for ~400ft of length	Follows & Overlaps H	25	2	22	176	excavator, material handler	950 tons
J	Construction of U-shaped Canal 350' Downstream	Yes	Follows I	25	3	17	136	concrete pump, material handler, truck	316 cubic yards
K	Construction of Interim Canal Transition	Yes	Overlaps J	15	3	5	40	excavator, concrete pump, material handler	316 cubic yards
L	Construction of Catwalks, Stairs	No	Follows J	5	0	4	0		466.6 cubic yards
M	Re-Construction of Monitoring Station	No	Overlaps E	5	1	3	24	concrete pump, material handler	
				260	neglecting overlap				

Y2	Year-2 August-January								
	Staging and Mobilization	No	None	3	2	3	24	excavator, truck	
A	Camp P Roadwork	No	None	5	2	5	40	bobcat, truck	360 cubic yards
B	Demolition of Wooden Flume 750' Upstream, catwalks, spillways	Yes	Follows Y1 C & F	10	3	7.5	60	excavator, material handler, truck	4200 cubic yards
C	Excavation for MSE wall L1, 750' Upstream, Demo Rock Wall	Yes	Follows & Overlaps B	25	2	19	148	excavator, material handler	4200 cubic yards
D	Demolition of Interim Canal Transition	Yes	Overlaps B	5	3	2	16	excavator, material handler, truck	
E	Construction of MSE wall L1, 750' Upstream	Yes	Follows & Overlaps C	25	2	22	176	excavator, material handler	1,900 tons
F	Construction of U-shaped Canal 750' Upstream	Yes	Follows & Overlaps E	40	3	33	264	concrete pump, material handler, truck	317 cubic yards
G	Construction of Spillways	Yes	Overlaps E & F	30	3	20	160	excavator, concrete pump, material handler	466.6 cubic yards
H	Construction of Catwalks, Stairs	No	Follows F	10	2	6	48	concrete pump, material handler	466.6 cubic yards
				153	negletcing overlap				

EID Flumes 45 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	EID Flumes 45
Construction Start Date	8/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	55.8
Location	38.77162662168337, -120.46379103642306
County	El Dorado-Mountain County
City	Unincorporated
Air District	El Dorado County AQMD
Air Basin	Mountain Counties
TAZ	414
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	1.00	Mile	5.00	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.	3.36	2.85	23.4	28.8	0.10	0.84	139	139	0.77	14.2	14.7	—	10,717	10,717	0.27	1.06	13.7	11,051
Mit.	3.36	2.85	23.4	28.8	0.10	0.84	139	139	0.77	14.2	14.7	—	10,717	10,717	0.27	1.06	13.7	11,051
% Reduced	—	—	—	—	—	—	< 0.5%	< 0.5%	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.16	1.83	24.6	25.5	0.12	0.67	144	145	0.62	14.9	15.3	—	12,191	12,191	0.16	1.56	0.47	12,659
Mit.	2.16	1.83	24.6	25.5	0.12	0.67	144	145	0.62	14.9	15.3	—	12,191	12,191	0.16	1.56	0.47	12,659
% Reduced	—	—	—	—	—	—	< 0.5%	< 0.5%	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	0.59	0.50	4.35	6.21	0.01	0.15	15.6	15.8	0.14	1.60	1.74	—	1,571	1,571	0.04	0.09	0.69	1,599
Mit.	0.59	0.50	4.35	6.21	0.01	0.15	15.6	15.8	0.14	1.60	1.74	—	1,571	1,571	0.04	0.09	0.69	1,599
% Reduced	—	—	—	—	—	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.11	0.09	0.79	1.13	< 0.005	0.03	2.85	2.88	0.03	0.29	0.32	—	260	260	0.01	0.01	0.11	265
Mit.	0.11	0.09	0.79	1.13	< 0.005	0.03	2.85	2.88	0.03	0.29	0.32	—	260	260	0.01	0.01	0.11	265
% Reduced	—	—	—	—	—	—	< 0.5%	< 0.5%	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	82.0	82.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	—	No	No	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mit.	—	No	No	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	82.0	82.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	—	No	No	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mit.	—	No	No	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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	3.36	2.85	20.8	28.5	0.07	0.84	59.6	60.3	0.77	6.09	6.70	—	7,851	7,851	0.27	0.22	4.76	7,923

2027	2.51	2.16	23.4	28.8	0.10	0.57	139	139	0.53	14.2	14.7	—	10,717	10,717	0.19	1.06	13.7	11,051
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.16	1.83	24.6	25.5	0.12	0.67	144	145	0.62	14.9	15.3	—	12,191	12,191	0.16	1.56	0.47	12,659
2027	1.38	1.20	9.28	16.0	0.03	0.31	61.3	61.6	0.29	6.27	6.53	—	3,611	3,611	0.10	0.23	0.12	3,681
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.59	0.50	4.35	6.21	0.01	0.15	15.6	15.8	0.14	1.60	1.74	—	1,571	1,571	0.04	0.09	0.69	1,599
2027	0.34	0.30	2.60	3.94	0.01	0.07	14.4	14.5	0.07	1.48	1.55	—	1,023	1,023	0.02	0.07	0.57	1,045
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.11	0.09	0.79	1.13	< 0.005	0.03	2.85	2.88	0.03	0.29	0.32	—	260	260	0.01	0.01	0.11	265
2027	0.06	0.05	0.47	0.72	< 0.005	0.01	2.63	2.64	0.01	0.27	0.28	—	169	169	< 0.005	0.01	0.09	173

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	3.36	2.85	20.8	28.5	0.07	0.84	59.6	60.2	0.77	6.09	6.70	—	7,851	7,851	0.27	0.22	4.76	7,923
2027	2.51	2.16	23.4	28.8	0.10	0.57	139	139	0.53	14.2	14.7	—	10,717	10,717	0.19	1.06	13.7	11,051
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.16	1.83	24.6	25.5	0.12	0.67	144	145	0.62	14.9	15.3	—	12,191	12,191	0.16	1.56	0.47	12,659
2027	1.38	1.20	9.28	16.0	0.03	0.31	61.3	61.6	0.29	6.26	6.53	—	3,611	3,611	0.10	0.23	0.12	3,681
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.59	0.50	4.35	6.21	0.01	0.15	15.6	15.8	0.14	1.60	1.74	—	1,571	1,571	0.04	0.09	0.69	1,599
2027	0.34	0.30	2.60	3.94	0.01	0.07	14.4	14.5	0.07	1.48	1.55	—	1,023	1,023	0.02	0.07	0.57	1,045

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.11	0.09	0.79	1.13	< 0.005	0.03	2.85	2.88	0.03	0.29	0.32	—	260	260	0.01	0.01	0.11	265
2027	0.06	0.05	0.47	0.72	< 0.005	0.01	2.63	2.64	0.01	0.27	0.28	—	169	169	< 0.005	0.01	0.09	173

3. Construction Emissions Details

3.1. Staging and Mobilization - Year 1 (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	0.47	0.40	3.72	4.72	0.01	0.18	—	0.18	0.17	—	0.17	—	693	693	0.03	0.01	—	695
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	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.70	5.70	< 0.005	< 0.005	—	5.72

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	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.94	0.94	< 0.005	< 0.005	—	0.95
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	0.10	0.09	0.06	1.18	0.00	0.00	12.4	12.4	0.00	1.26	1.26	—	220	220	< 0.005	0.01	0.79	224
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.09	0.09	0.00	0.01	0.01	—	1.66	1.66	< 0.005	< 0.005	< 0.005	1.69
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	< 0.005	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	0.28	0.28	< 0.005	< 0.005	< 0.005	0.28

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

3.2. Staging and Mobilization - Year 1 (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	0.47	0.40	3.72	4.72	0.01	0.18	—	0.18	0.17	—	0.17	—	693	693	0.03	0.01	—	695
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	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.70	5.70	< 0.005	< 0.005	—	5.72
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	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.94	0.94	< 0.005	< 0.005	—	0.95
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	0.10	0.09	0.06	1.18	0.00	0.00	12.4	12.4	0.00	1.26	1.26	—	220	220	< 0.005	0.01	0.79	224
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.09	0.09	0.00	0.01	0.01	—	1.66	1.66	< 0.005	< 0.005	< 0.005	1.69
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	< 0.005	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	0.28	0.28	< 0.005	< 0.005	< 0.005	0.28
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

3.3. Camp P Roadwork - Year 1 (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	0.66	0.56	4.49	7.90	0.01	0.25	—	0.25	0.23	—	0.23	—	1,233	1,233	0.05	0.01	—	1,237
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	0.06	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.9	16.9	< 0.005	< 0.005	—	16.9
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	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.80	2.80	< 0.005	< 0.005	—	2.81

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	0.20	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	0.02	0.02	1.21	0.13	0.01	0.01	7.85	7.85	0.01	0.81	0.82	—	782	782	< 0.005	0.12	1.24	821
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.29	0.29	0.00	0.03	0.03	—	5.55	5.55	< 0.005	< 0.005	0.01	5.63
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	0.02	< 0.005	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	10.7	10.7	< 0.005	< 0.005	0.01	11.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	0.92	0.92	< 0.005	< 0.005	< 0.005	0.93
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	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.77	1.77	< 0.005	< 0.005	< 0.005	1.86

3.4. Camp P Roadwork - Year 1 (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	0.66	0.56	4.49	7.90	0.01	0.25	—	0.25	0.23	—	0.23	—	1,233	1,233	0.05	0.01	—	1,237
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	0.06	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.9	16.9	< 0.005	< 0.005	—	16.9
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	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.80	2.80	< 0.005	< 0.005	—	2.81
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	0.20	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	0.02	0.02	1.21	0.13	0.01	0.01	7.85	7.85	0.01	0.81	0.82	—	782	782	< 0.005	0.12	1.24	821
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.29	0.29	0.00	0.03	0.03	—	5.55	5.55	< 0.005	< 0.005	0.01	5.63
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	0.02	< 0.005	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	10.7	10.7	< 0.005	< 0.005	0.01	11.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	0.92	0.92	< 0.005	< 0.005	< 0.005	0.93
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	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.77	1.77	< 0.005	< 0.005	< 0.005	1.86

3.5. Clearing and Grubbing - Year 1 (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	0.56	0.47	4.66	7.78	0.01	0.15	—	0.15	0.13	—	0.13	—	1,168	1,168	0.05	0.01	—	1,172
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	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.40	6.40	< 0.005	< 0.005	—	6.42
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	—	1.06	1.06	< 0.005	< 0.005	—	1.06
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	0.10	0.09	0.06	1.18	0.00	0.00	12.4	12.4	0.00	1.26	1.26	—	220	220	< 0.005	0.01	0.79	224
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	1.11	1.11	< 0.005	< 0.005	< 0.005	1.13
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	< 0.005	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.19
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. Clearing and Grubbing - Year 1 (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	0.56	0.47	4.66	7.78	0.01	0.15	—	0.15	0.13	—	0.13	—	1,168	1,168	0.05	0.01	—	1,172

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	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.40	6.40	< 0.005	< 0.005	—	6.42
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	—	1.06	1.06	< 0.005	< 0.005	—	1.06
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	0.10	0.09	0.06	1.18	0.00	0.00	12.4	12.4	0.00	1.26	1.26	—	220	220	< 0.005	0.01	0.79	224

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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	1.11	1.11	< 0.005	< 0.005	< 0.005	1.13
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	< 0.005	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.19
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. Staging and Mobilization - Year 2 (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	0.37	0.31	3.04	4.93	0.01	0.09	—	0.09	0.08	—	0.08	—	733	733	0.03	0.01	—	735
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	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.02	6.02	< 0.005	< 0.005	—	6.04
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	—	1.00	1.00	< 0.005	< 0.005	—	1.00
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.17	0.17	0.00	0.02	0.02	—	3.27	3.27	< 0.005	< 0.005	0.01	3.32
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	< 0.005	0.00	0.00	0.03	0.03	0.00	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.55
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

3.8. Staging and Mobilization - Year 2 (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	0.37	0.31	3.04	4.93	0.01	0.09	—	0.09	0.08	—	0.08	—	733	733	0.03	0.01	—	735
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	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.02	6.02	< 0.005	< 0.005	—	6.04
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	—	1.00	1.00	< 0.005	< 0.005	—	1.00
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.17	0.17	0.00	0.02	0.02	—	3.27	3.27	< 0.005	< 0.005	0.01	3.32
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	< 0.005	0.00	0.00	0.03	0.03	0.00	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.55
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

3.9. Camp P Roadwork - Year 2 (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	0.55	0.46	3.60	8.12	0.01	0.15	—	0.15	0.13	—	0.13	—	1,273	1,273	0.05	0.01	—	1,277
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	0.05	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.4	17.4	< 0.005	< 0.005	—	17.5
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	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.89	2.89	< 0.005	< 0.005	—	2.90
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	0.19	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	0.02	0.02	1.15	0.13	0.01	0.01	7.85	7.85	0.01	0.81	0.82	—	766	766	< 0.005	0.12	1.15	804
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.29	0.29	0.00	0.03	0.03	—	5.46	5.46	< 0.005	< 0.005	0.01	5.53
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	0.02	< 0.005	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	10.5	10.5	< 0.005	< 0.005	0.01	11.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	0.90	0.90	< 0.005	< 0.005	< 0.005	0.92
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	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.74	1.74	< 0.005	< 0.005	< 0.005	1.82

3.10. Camp P Roadwork - Year 2 (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	0.55	0.46	3.60	8.12	0.01	0.15	—	0.15	0.13	—	0.13	—	1,273	1,273	0.05	0.01	—	1,277
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	0.05	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.4	17.4	< 0.005	< 0.005	—	17.5
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	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.89	2.89	< 0.005	< 0.005	—	2.90
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	0.19	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	0.02	0.02	1.15	0.13	0.01	0.01	7.85	7.85	0.01	0.81	0.82	—	766	766	< 0.005	0.12	1.15	804
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.29	0.29	0.00	0.03	0.03	—	5.46	5.46	< 0.005	< 0.005	0.01	5.53
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	0.02	< 0.005	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	10.5	10.5	< 0.005	< 0.005	0.01	11.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	0.90	0.90	< 0.005	< 0.005	< 0.005	0.92
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	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.74	1.74	< 0.005	< 0.005	< 0.005	1.82

3.11. Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1 (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	0.99	0.83	8.09	11.3	0.02	0.38	—	0.38	0.35	—	0.35	—	1,694	1,694	0.07	0.01	—	1,700
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.99	0.83	8.09	11.3	0.02	0.38	—	0.38	0.35	—	0.35	—	1,694	1,694	0.07	0.01	—	1,700
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	0.15	0.13	1.22	1.70	< 0.005	0.06	—	0.06	0.05	—	0.05	—	255	255	0.01	< 0.005	—	256
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	0.03	0.02	0.22	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	—	42.3	42.3	< 0.005	< 0.005	—	42.4
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	0.20	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	0.02	0.02	1.29	0.14	0.01	0.01	8.32	8.33	0.01	0.86	0.87	—	830	830	< 0.005	0.13	1.32	871
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	0.02	0.02	1.37	0.14	0.01	0.01	8.32	8.33	0.01	0.86	0.87	—	830	830	< 0.005	0.13	0.03	869
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.28	0.00	0.00	3.17	3.17	0.00	0.32	0.32	—	61.0	61.0	< 0.005	< 0.005	0.10	61.9
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	1.07	1.07	< 0.005	0.11	0.11	—	125	125	< 0.005	0.02	0.09	131
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.05	0.00	0.00	0.58	0.58	0.00	0.06	0.06	—	10.1	10.1	< 0.005	< 0.005	0.02	10.2

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	< 0.005	< 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

3.12. Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1 (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	0.99	0.83	8.09	11.3	0.02	0.38	—	0.38	0.35	—	0.35	—	1,694	1,694	0.07	0.01	—	1,700
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.99	0.83	8.09	11.3	0.02	0.38	—	0.38	0.35	—	0.35	—	1,694	1,694	0.07	0.01	—	1,700
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-Roa Equipment	0.15	0.13	1.22	1.70	< 0.005	0.06	—	0.06	0.05	—	0.05	—	255	255	0.01	< 0.005	—	256
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	0.03	0.02	0.22	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	—	42.3	42.3	< 0.005	< 0.005	—	42.4
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	0.20	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	0.02	0.02	1.29	0.14	0.01	0.01	8.32	8.33	0.01	0.86	0.87	—	830	830	< 0.005	0.13	1.32	871
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	0.02	0.02	1.37	0.14	0.01	0.01	8.32	8.33	0.01	0.86	0.87	—	830	830	< 0.005	0.13	0.03	869
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.28	0.00	0.00	3.17	3.17	0.00	0.32	0.32	—	61.0	61.0	< 0.005	< 0.005	0.10	61.9

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	1.07	1.07	< 0.005	0.11	0.11	—	125	125	< 0.005	0.02	0.09	131
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.05	0.00	0.00	0.58	0.58	0.00	0.06	0.06	—	10.1	10.1	< 0.005	< 0.005	0.02	10.2
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	< 0.005	< 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

3.13. Tree Removal - Year 1 (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	2.06	1.73	11.3	13.5	0.04	0.45	—	0.45	0.41	—	0.41	—	4,666	4,666	0.19	0.04	—	4,682
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	0.11	0.09	0.62	0.74	< 0.005	0.02	—	0.02	0.02	—	0.02	—	256	256	0.01	< 0.005	—	257

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	0.11	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	42.3	42.3	< 0.005	< 0.005	—	42.5
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.06	1.18	0.00	0.00	12.4	12.4	0.00	1.26	1.26	—	220	220	< 0.005	0.01	0.79	224
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	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.58	0.58	0.00	0.06	0.06	—	11.1	11.1	< 0.005	< 0.005	0.02	11.3
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	0.11	0.11	0.00	0.01	0.01	—	1.84	1.84	< 0.005	< 0.005	< 0.005	1.86

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. Tree Removal - Year 1 (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	2.06	1.73	11.3	13.5	0.04	0.45	—	0.45	0.41	—	0.41	—	4,666	4,666	0.19	0.04	—	4,682
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	0.11	0.09	0.62	0.74	< 0.005	0.02	—	0.02	0.02	—	0.02	—	256	256	0.01	< 0.005	—	257
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	0.11	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	42.3	42.3	< 0.005	< 0.005	—	42.5
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.06	1.18	0.00	0.00	12.4	12.4	0.00	1.26	1.26	—	220	220	< 0.005	0.01	0.79	224
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	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.58	0.58	0.00	0.06	0.06	—	11.1	11.1	< 0.005	< 0.005	0.02	11.3
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	0.11	0.11	0.00	0.01	0.01	—	1.84	1.84	< 0.005	< 0.005	< 0.005	1.86
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. Construction of MSE Wall U1 1200' - Year 1 (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	0.78	0.65	6.62	10.3	0.01	0.28	—	0.28	0.25	—	0.25	—	1,573	1,573	0.06	0.01	—	1,578
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.78	0.65	6.62	10.3	0.01	0.28	—	0.28	0.25	—	0.25	—	1,573	1,573	0.06	0.01	—	1,578
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	0.11	0.09	0.91	1.41	< 0.005	0.04	—	0.04	0.03	—	0.03	—	215	215	0.01	< 0.005	—	216

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	0.02	0.02	0.17	0.26	< 0.005	0.01	—	0.01	0.01	—	0.01	—	35.7	35.7	< 0.005	< 0.005	—	35.8
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	0.20	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	0.25	0.03	< 0.005	< 0.005	1.64	1.64	< 0.005	0.17	0.17	—	163	163	< 0.005	0.03	0.26	171
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	< 0.005	< 0.005	0.27	0.03	< 0.005	< 0.005	1.64	1.64	< 0.005	0.17	0.17	—	163	163	< 0.005	0.03	0.01	171
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.26	0.00	0.00	2.89	2.89	0.00	0.29	0.29	—	55.5	55.5	< 0.005	< 0.005	0.09	56.3
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	0.04	< 0.005	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	22.4	22.4	< 0.005	< 0.005	0.02	23.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.53	0.53	0.00	0.05	0.05	—	9.18	9.18	< 0.005	< 0.005	0.02	9.31
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	—	3.71	3.71	< 0.005	< 0.005	< 0.005	3.88

3.16. Construction of MSE Wall U1 1200' - Year 1 (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	0.78	0.65	6.62	10.3	0.01	0.28	—	0.28	0.25	—	0.25	—	1,573	1,573	0.06	0.01	—	1,578
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.78	0.65	6.62	10.3	0.01	0.28	—	0.28	0.25	—	0.25	—	1,573	1,573	0.06	0.01	—	1,578
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	0.11	0.09	0.91	1.41	< 0.005	0.04	—	0.04	0.03	—	0.03	—	215	215	0.01	< 0.005	—	216
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	0.02	0.02	0.17	0.26	< 0.005	0.01	—	0.01	0.01	—	0.01	—	35.7	35.7	< 0.005	< 0.005	—	35.8
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	0.20	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	0.25	0.03	< 0.005	< 0.005	1.64	1.64	< 0.005	0.17	0.17	—	163	163	< 0.005	0.03	0.26	171
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	< 0.005	< 0.005	0.27	0.03	< 0.005	< 0.005	1.64	1.64	< 0.005	0.17	0.17	—	163	163	< 0.005	0.03	0.01	171
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.26	0.00	0.00	2.89	2.89	0.00	0.29	0.29	—	55.5	55.5	< 0.005	< 0.005	0.09	56.3
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	0.04	< 0.005	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	22.4	22.4	< 0.005	< 0.005	0.02	23.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.53	0.53	0.00	0.05	0.05	—	9.18	9.18	< 0.005	< 0.005	0.02	9.31
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	—	3.71	3.71	< 0.005	< 0.005	< 0.005	3.88

3.17. Construction of Bridge - Year 1 (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	0.27	0.22	1.85	2.01	< 0.005	0.06	—	0.06	0.06	—	0.06	—	297	297	0.01	< 0.005	—	298
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	0.10	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.3	16.3	< 0.005	< 0.005	—	16.3
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.69	2.69	< 0.005	< 0.005	—	2.70
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	0.10	0.00	0.00	1.15	1.15	0.00	0.12	0.12	—	22.2	22.2	< 0.005	< 0.005	0.04	22.5

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	0.21	0.21	0.00	0.02	0.02	—	3.67	3.67	< 0.005	< 0.005	0.01	3.73
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. Construction of Bridge - Year 1 (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	0.27	0.22	1.85	2.01	< 0.005	0.06	—	0.06	0.06	—	0.06	—	297	297	0.01	< 0.005	—	298
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	0.10	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.3	16.3	< 0.005	< 0.005	—	16.3

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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.69	2.69	< 0.005	< 0.005	—	2.70
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	0.10	0.00	0.00	1.15	1.15	0.00	0.12	0.12	—	22.2	22.2	< 0.005	< 0.005	0.04	22.5
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	0.21	0.21	0.00	0.02	0.02	—	3.67	3.67	< 0.005	< 0.005	0.01	3.73

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. Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1 (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	0.68	0.57	5.60	8.12	0.01	0.24	—	0.24	0.22	—	0.22	—	1,213	1,213	0.05	0.01	—	1,218
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.6	16.6	< 0.005	< 0.005	—	16.7
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	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.75	2.75	< 0.005	< 0.005	—	2.76
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	0.18	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	0.25	0.19	15.1	1.57	0.09	0.09	91.5	91.6	0.09	9.47	9.56	—	9,125	9,125	0.05	1.46	0.38	9,561
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.29	0.29	0.00	0.03	0.03	—	5.55	5.55	< 0.005	< 0.005	0.01	5.63
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	1.07	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	< 0.005	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	0.92	0.92	< 0.005	< 0.005	< 0.005	0.93
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	0.04	< 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

3.20. Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1 (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	0.68	0.57	5.60	8.12	0.01	0.24	—	0.24	0.22	—	0.22	—	1,213	1,213	0.05	0.01	—	1,218
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	< 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	0.01	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.6	16.6	< 0.005	< 0.005	—	16.7
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	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.75	2.75	< 0.005	< 0.005	—	2.76

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	0.18	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	0.25	0.19	15.1	1.57	0.09	0.09	91.5	91.6	0.09	9.47	9.56	—	9,125	9,125	0.05	1.46	0.38	9,561
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.29	0.29	0.00	0.03	0.03	—	5.55	5.55	< 0.005	< 0.005	0.01	5.63
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	1.07	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	< 0.005	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	0.92	0.92	< 0.005	< 0.005	< 0.005	0.93
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	0.04	< 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

3.21. Excavation for MSE Wall L1 610' Downstream - Year 1 (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	0.38	0.32	3.11	4.92	0.01	0.09	—	0.09	0.09	—	0.09	—	733	733	0.03	0.01	—	735
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.34	< 0.005	0.01	—	0.01	0.01	—	0.01	—	50.2	50.2	< 0.005	< 0.005	—	50.4
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	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.31	8.31	< 0.005	< 0.005	—	8.34
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	0.18	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	0.05	0.04	3.01	0.31	0.02	0.02	18.3	18.3	0.02	1.89	1.91	—	1,825	1,825	0.01	0.29	0.08	1,912
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	1.44	1.44	0.00	0.15	0.15	—	27.7	27.7	< 0.005	< 0.005	0.05	28.1
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	1.07	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	0.02	0.00	0.00	0.26	0.26	0.00	0.03	0.03	—	4.59	4.59	< 0.005	< 0.005	0.01	4.66
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	0.04	< 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

3.22. Excavation for MSE Wall L1 610' Downstream - Year 1 (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	0.38	0.32	3.11	4.92	0.01	0.09	—	0.09	0.09	—	0.09	—	733	733	0.03	0.01	—	735
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	0.03	0.02	0.21	0.34	< 0.005	0.01	—	0.01	0.01	—	0.01	—	50.2	50.2	< 0.005	< 0.005	—	50.4
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	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.31	8.31	< 0.005	< 0.005	—	8.34
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	0.18	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	0.05	0.04	3.01	0.31	0.02	0.02	18.3	18.3	0.02	1.89	1.91	—	1,825	1,825	0.01	0.29	0.08	1,912
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	1.44	1.44	0.00	0.15	0.15	—	27.7	27.7	< 0.005	< 0.005	0.05	28.1
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	1.07	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	0.02	0.00	0.00	0.26	0.26	0.00	0.03	0.03	—	4.59	4.59	< 0.005	< 0.005	0.01	4.66
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	0.04	< 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

3.23. Construction of MSE Wall L1 610' Downstream - Year 1 (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	0.38	0.32	3.11	4.92	0.01	0.09	—	0.09	0.09	—	0.09	—	733	733	0.03	0.01	—	735

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	0.03	0.02	0.21	0.34	< 0.005	0.01	—	0.01	0.01	—	0.01	—	50.2	50.2	< 0.005	< 0.005	—	50.4
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	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.31	8.31	< 0.005	< 0.005	—	8.34
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	0.18	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	0.01	0.01	0.54	0.06	< 0.005	< 0.005	3.28	3.28	< 0.005	0.34	0.34	—	327	327	< 0.005	0.05	0.01	342
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	1.44	1.44	0.00	0.15	0.15	—	27.7	27.7	< 0.005	< 0.005	0.05	28.1
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	0.04	< 0.005	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	22.4	22.4	< 0.005	< 0.005	0.02	23.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.26	0.26	0.00	0.03	0.03	—	4.59	4.59	< 0.005	< 0.005	0.01	4.66
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	—	3.71	3.71	< 0.005	< 0.005	< 0.005	3.88

3.24. Construction of MSE Wall L1 610' Downstream - Year 1 (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	0.38	0.32	3.11	4.92	0.01	0.09	—	0.09	0.09	—	0.09	—	733	733	0.03	0.01	—	735
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	0.03	0.02	0.21	0.34	< 0.005	0.01	—	0.01	0.01	—	0.01	—	50.2	50.2	< 0.005	< 0.005	—	50.4
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	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.31	8.31	< 0.005	< 0.005	—	8.34
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	0.18	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	0.01	0.01	0.54	0.06	< 0.005	< 0.005	3.28	3.28	< 0.005	0.34	0.34	—	327	327	< 0.005	0.05	0.01	342
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	1.44	1.44	0.00	0.15	0.15	—	27.7	27.7	< 0.005	< 0.005	0.05	28.1

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	0.04	< 0.005	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	22.4	22.4	< 0.005	< 0.005	0.02	23.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.26	0.26	0.00	0.03	0.03	—	4.59	4.59	< 0.005	< 0.005	0.01	4.66
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	—	3.71	3.71	< 0.005	< 0.005	< 0.005	3.88

3.25. Construction of U-Shaped Canal 350' Downstream - Year 1 (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	0.61	0.51	4.99	7.07	0.01	0.23	—	0.23	0.21	—	0.21	—	1,085	1,085	0.04	0.01	—	1,089
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	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.7	12.7	< 0.005	< 0.005	—	12.8

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	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.11	2.11	< 0.005	< 0.005	—	2.12
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	0.18	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	< 0.005	< 0.005	0.23	0.02	< 0.005	< 0.005	1.39	1.40	< 0.005	0.14	0.15	—	139	139	< 0.005	0.02	0.01	146
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.25	0.25	0.00	0.03	0.03	—	4.76	4.76	< 0.005	< 0.005	0.01	4.82
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	—	1.63	1.63	< 0.005	< 0.005	< 0.005	1.71
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.05	0.05	0.00	< 0.005	< 0.005	—	0.79	0.79	< 0.005	< 0.005	< 0.005	0.80

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	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28

3.26. Construction of U-Shaped Canal 350' Downstream - Year 1 (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	0.61	0.51	4.99	7.07	0.01	0.23	—	0.23	0.21	—	0.21	—	1,085	1,085	0.04	0.01	—	1,089
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	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.7	12.7	< 0.005	< 0.005	—	12.8
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	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.11	2.11	< 0.005	< 0.005	—	2.12
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	0.18	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	< 0.005	< 0.005	0.23	0.02	< 0.005	< 0.005	1.39	1.40	< 0.005	0.14	0.15	—	139	139	< 0.005	0.02	0.01	146
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.25	0.25	0.00	0.03	0.03	—	4.76	4.76	< 0.005	< 0.005	0.01	4.82
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	—	1.63	1.63	< 0.005	< 0.005	< 0.005	1.71
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.05	0.05	0.00	< 0.005	< 0.005	—	0.79	0.79	< 0.005	< 0.005	< 0.005	0.80
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	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28

3.27. Construction of U-Shaped Canal 350' Downstream - Year 1 (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	0.58	0.49	4.72	7.06	0.01	0.20	—	0.20	0.18	—	0.18	—	1,085	1,085	0.04	0.01	—	1,089
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	0.03	0.03	0.28	0.41	< 0.005	0.01	—	0.01	0.01	—	0.01	—	63.7	63.7	< 0.005	< 0.005	—	63.9
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	0.01	0.01	0.05	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.5	10.5	< 0.005	< 0.005	—	10.6

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	0.22	0.02	< 0.005	< 0.005	1.39	1.40	< 0.005	0.14	0.15	—	136	136	< 0.005	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	1.24	1.24	0.00	0.13	0.13	—	23.4	23.4	< 0.005	< 0.005	0.04	23.7
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	8.00	8.00	< 0.005	< 0.005	0.01	8.38
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.23	0.23	0.00	0.02	0.02	—	3.87	3.87	< 0.005	< 0.005	0.01	3.93
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	—	1.32	1.32	< 0.005	< 0.005	< 0.005	1.39

3.28. Construction of U-Shaped Canal 350' Downstream - Year 1 (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	0.58	0.49	4.72	7.06	0.01	0.20	—	0.20	0.18	—	0.18	—	1,085	1,085	0.04	0.01	—	1,089
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	0.03	0.03	0.28	0.41	< 0.005	0.01	—	0.01	0.01	—	0.01	—	63.7	63.7	< 0.005	< 0.005	—	63.9
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	0.01	0.01	0.05	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.5	10.5	< 0.005	< 0.005	—	10.6
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	0.22	0.02	< 0.005	< 0.005	1.39	1.40	< 0.005	0.14	0.15	—	136	136	< 0.005	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	1.24	1.24	0.00	0.13	0.13	—	23.4	23.4	< 0.005	< 0.005	0.04	23.7
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	8.00	8.00	< 0.005	< 0.005	0.01	8.38
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.23	0.23	0.00	0.02	0.02	—	3.87	3.87	< 0.005	< 0.005	0.01	3.93
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	—	1.32	1.32	< 0.005	< 0.005	< 0.005	1.39

3.29. Construction of Interim Canal Transition - Year 1 (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	0.47	0.39	3.66	5.41	0.01	0.11	—	0.11	0.10	—	0.10	—	817	817	0.03	0.01	—	820
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	0.15	0.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	33.6	33.6	< 0.005	< 0.005	—	33.7
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	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.56	5.56	< 0.005	< 0.005	—	5.58
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	0.01	< 0.005	0.36	0.04	< 0.005	< 0.005	2.32	2.33	< 0.005	0.24	0.24	—	227	227	< 0.005	0.04	0.01	238
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.87	0.87	0.00	0.09	0.09	—	16.4	16.4	< 0.005	< 0.005	0.03	16.6
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	0.08	0.08	< 0.005	0.01	0.01	—	9.33	9.33	< 0.005	< 0.005	0.01	9.78
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.16	0.16	0.00	0.02	0.02	—	2.71	2.71	< 0.005	< 0.005	< 0.005	2.75
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	—	1.54	1.54	< 0.005	< 0.005	< 0.005	1.62

3.30. Construction of Interim Canal Transition - Year 1 (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	0.47	0.39	3.66	5.41	0.01	0.11	—	0.11	0.10	—	0.10	—	817	817	0.03	0.01	—	820

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	0.15	0.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	33.6	33.6	< 0.005	< 0.005	—	33.7
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	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.56	5.56	< 0.005	< 0.005	—	5.58
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	0.01	< 0.005	0.36	0.04	< 0.005	< 0.005	2.32	2.33	< 0.005	0.24	0.24	—	227	227	< 0.005	0.04	0.01	238
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.87	0.87	0.00	0.09	0.09	—	16.4	16.4	< 0.005	< 0.005	0.03	16.6
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	0.08	0.08	< 0.005	0.01	0.01	—	9.33	9.33	< 0.005	< 0.005	0.01	9.78
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.16	0.16	0.00	0.02	0.02	—	2.71	2.71	< 0.005	< 0.005	< 0.005	2.75
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	—	1.54	1.54	< 0.005	< 0.005	< 0.005	1.62

3.31. Construction of Catwalks and Stairs - Year 1 (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	0.31	0.26	2.45	3.89	0.01	0.08	—	0.08	0.07	—	0.07	—	605	605	0.02	< 0.005	—	607
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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.29	8.29	< 0.005	< 0.005	—	8.31
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	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.37	1.37	< 0.005	< 0.005	—	1.38
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	0.03	0.02	1.60	0.17	0.01	0.01	10.3	10.3	0.01	1.06	1.07	—	1,005	1,005	0.01	0.16	0.04	1,052
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.29	0.29	0.00	0.03	0.03	—	5.46	5.46	< 0.005	< 0.005	0.01	5.53

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	0.02	< 0.005	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	13.8	13.8	< 0.005	< 0.005	0.01	14.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	0.90	0.90	< 0.005	< 0.005	< 0.005	0.92
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	0.02	0.02	< 0.005	< 0.005	< 0.005	—	2.28	2.28	< 0.005	< 0.005	< 0.005	2.39

3.32. Construction of Catwalks and Stairs - Year 1 (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	0.31	0.26	2.45	3.89	0.01	0.08	—	0.08	0.07	—	0.07	—	605	605	0.02	< 0.005	—	607
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	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.29	8.29	< 0.005	< 0.005	—	8.31

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	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.37	1.37	< 0.005	< 0.005	—	1.38
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	0.03	0.02	1.60	0.17	0.01	0.01	10.3	10.3	0.01	1.06	1.07	—	1,005	1,005	0.01	0.16	0.04	1,052
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.29	0.29	0.00	0.03	0.03	—	5.46	5.46	< 0.005	< 0.005	0.01	5.53
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	0.02	< 0.005	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	13.8	13.8	< 0.005	< 0.005	0.01	14.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	0.90	0.90	< 0.005	< 0.005	< 0.005	0.92

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	0.02	0.02	< 0.005	< 0.005	< 0.005	—	2.28	2.28	< 0.005	< 0.005	< 0.005	2.39

3.33. Re-construction of Monitoring Station - Year 1 (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	0.31	0.26	2.50	3.88	0.01	0.08	—	0.08	0.08	—	0.08	—	605	605	0.02	< 0.005	—	607
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	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.29	8.29	< 0.005	< 0.005	—	8.31
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	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.37	1.37	< 0.005	< 0.005	—	1.38
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	0.03	0.00	0.00	0.29	0.29	0.00	0.03	0.03	—	5.55	5.55	< 0.005	< 0.005	0.01	5.63
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	< 0.005	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	0.92	0.92	< 0.005	< 0.005	< 0.005	0.93
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. Re-construction of Monitoring Station - Year 1 (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	0.31	0.26	2.50	3.88	0.01	0.08	—	0.08	0.08	—	0.08	—	605	605	0.02	< 0.005	—	607
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	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.29	8.29	< 0.005	< 0.005	—	8.31
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	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.37	1.37	< 0.005	< 0.005	—	1.38

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	0.03	0.00	0.00	0.29	0.29	0.00	0.03	0.03	—	5.55	5.55	< 0.005	< 0.005	0.01	5.63
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	< 0.005	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	0.92	0.92	< 0.005	< 0.005	< 0.005	0.93
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. Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2 (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	0.64	0.54	5.32	8.11	0.01	0.21	—	0.21	0.19	—	0.19	—	1,213	1,213	0.05	0.01	—	1,218
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	< 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	0.02	0.01	0.15	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	33.2	33.2	< 0.005	< 0.005	—	33.4
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	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.50	5.50	< 0.005	< 0.005	—	5.52
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	0.19	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	0.13	0.10	6.70	0.75	0.05	0.05	45.8	45.8	0.05	4.73	4.78	—	4,470	4,470	0.03	0.70	6.69	4,687
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.58	0.58	0.00	0.06	0.06	—	10.9	10.9	< 0.005	< 0.005	0.02	11.1
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	0.19	0.02	< 0.005	< 0.005	1.07	1.07	< 0.005	0.11	0.11	—	122	122	< 0.005	0.02	0.08	128
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.11	0.11	0.00	0.01	0.01	—	1.81	1.81	< 0.005	< 0.005	< 0.005	1.83
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	0.04	< 0.005	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	20.3	20.3	< 0.005	< 0.005	0.01	21.2

3.36. Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2 (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	0.64	0.54	5.32	8.11	0.01	0.21	—	0.21	0.19	—	0.19	—	1,213	1,213	0.05	0.01	—	1,218
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.15	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	33.2	33.2	< 0.005	< 0.005	—	33.4
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	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.50	5.50	< 0.005	< 0.005	—	5.52
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	0.19	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	0.13	0.10	6.70	0.75	0.05	0.05	45.8	45.8	0.05	4.73	4.78	—	4,470	4,470	0.03	0.70	6.69	4,687
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.58	0.58	0.00	0.06	0.06	—	10.9	10.9	< 0.005	< 0.005	0.02	11.1
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	0.19	0.02	< 0.005	< 0.005	1.07	1.07	< 0.005	0.11	0.11	—	122	122	< 0.005	0.02	0.08	128
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.11	0.11	0.00	0.01	0.01	—	1.81	1.81	< 0.005	< 0.005	< 0.005	1.83
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	0.04	< 0.005	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	20.3	20.3	< 0.005	< 0.005	0.01	21.2

3.37. Excavation for MSE Wall L1, 750' Upstream, Demo Rock Wall - Year 2 (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	0.37	0.31	3.04	4.93	0.01	0.09	—	0.09	0.08	—	0.08	—	733	733	0.03	0.01	—	735

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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.34	< 0.005	0.01	—	0.01	0.01	—	0.01	—	50.2	50.2	< 0.005	< 0.005	—	50.4
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	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.31	8.31	< 0.005	< 0.005	—	8.34
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	0.19	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	0.05	0.04	2.68	0.30	0.02	0.02	18.3	18.3	0.02	1.89	1.91	—	1,788	1,788	0.01	0.28	2.67	1,875
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	1.44	1.44	0.00	0.15	0.15	—	27.3	27.3	< 0.005	< 0.005	0.04	27.7
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	< 0.005	< 0.005	0.19	0.02	< 0.005	< 0.005	1.07	1.07	< 0.005	0.11	0.11	—	122	122	< 0.005	0.02	0.08	128
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.26	0.26	0.00	0.03	0.03	—	4.52	4.52	< 0.005	< 0.005	0.01	4.58
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	0.04	< 0.005	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	20.3	20.3	< 0.005	< 0.005	0.01	21.2

3.38. Excavation for MSE Wall L1, 750' Upstream, Demo Rock Wall - Year 2 (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	0.37	0.31	3.04	4.93	0.01	0.09	—	0.09	0.08	—	0.08	—	733	733	0.03	0.01	—	735
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	0.03	0.02	0.21	0.34	< 0.005	0.01	—	0.01	0.01	—	0.01	—	50.2	50.2	< 0.005	< 0.005	—	50.4
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	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.31	8.31	< 0.005	< 0.005	—	8.34
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	0.19	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	0.05	0.04	2.68	0.30	0.02	0.02	18.3	18.3	0.02	1.89	1.91	—	1,788	1,788	0.01	0.28	2.67	1,875
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	1.44	1.44	0.00	0.15	0.15	—	27.3	27.3	< 0.005	< 0.005	0.04	27.7
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	< 0.005	< 0.005	0.19	0.02	< 0.005	< 0.005	1.07	1.07	< 0.005	0.11	0.11	—	122	122	< 0.005	0.02	0.08	128
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.26	0.26	0.00	0.03	0.03	—	4.52	4.52	< 0.005	< 0.005	0.01	4.58
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	0.04	< 0.005	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	20.3	20.3	< 0.005	< 0.005	0.01	21.2

3.39. Demolition of Interim Canal Transition - Year 2 (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	0.64	0.54	5.32	8.11	0.01	0.21	—	0.21	0.19	—	0.19	—	1,213	1,213	0.05	0.01	—	1,218
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.01	0.01	0.07	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.6	16.6	< 0.005	< 0.005	—	16.7
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.75	2.75	< 0.005	< 0.005	—	2.76
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	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.29	0.29	0.00	0.03	0.03	—	5.46	5.46	< 0.005	< 0.005	0.01	5.53
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	< 0.005	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	0.90	0.90	< 0.005	< 0.005	< 0.005	0.92
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. Demolition of Interim Canal Transition - Year 2 (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	0.64	0.54	5.32	8.11	0.01	0.21	—	0.21	0.19	—	0.19	—	1,213	1,213	0.05	0.01	—	1,218
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.6	16.6	< 0.005	< 0.005	—	16.7
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.75	2.75	< 0.005	< 0.005	—	2.76
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	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.29	0.29	0.00	0.03	0.03	—	5.46	5.46	< 0.005	< 0.005	0.01	5.53
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	< 0.005	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	0.90	0.90	< 0.005	< 0.005	< 0.005	0.92
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. Construction of MSE wall L1, 750' Upstream - Year 2 (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	0.37	0.31	3.04	4.93	0.01	0.09	—	0.09	0.08	—	0.08	—	733	733	0.03	0.01	—	735
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.34	< 0.005	0.01	—	0.01	0.01	—	0.01	—	50.2	50.2	< 0.005	< 0.005	—	50.4
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	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.31	8.31	< 0.005	< 0.005	—	8.34
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	0.19	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	0.02	0.01	0.96	0.11	0.01	0.01	6.56	6.56	0.01	0.68	0.68	—	640	640	< 0.005	0.10	0.96	671
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	1.44	1.44	0.00	0.15	0.15	—	27.3	27.3	< 0.005	< 0.005	0.04	27.7
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	< 0.005	< 0.005	0.07	0.01	< 0.005	< 0.005	0.38	0.38	< 0.005	0.04	0.04	—	43.9	43.9	< 0.005	0.01	0.03	45.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.26	0.26	0.00	0.03	0.03	—	4.52	4.52	< 0.005	< 0.005	0.01	4.58
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	0.07	0.07	< 0.005	0.01	0.01	—	7.26	7.26	< 0.005	< 0.005	< 0.005	7.61

3.42. Construction of MSE wall L1, 750' Upstream - Year 2 (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	0.37	0.31	3.04	4.93	0.01	0.09	—	0.09	0.08	—	0.08	—	733	733	0.03	0.01	—	735
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	0.03	0.02	0.21	0.34	< 0.005	0.01	—	0.01	0.01	—	0.01	—	50.2	50.2	< 0.005	< 0.005	—	50.4
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	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.31	8.31	< 0.005	< 0.005	—	8.34

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	0.19	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	0.02	0.01	0.96	0.11	0.01	0.01	6.56	6.56	0.01	0.68	0.68	—	640	640	< 0.005	0.10	0.96	671
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	1.44	1.44	0.00	0.15	0.15	—	27.3	27.3	< 0.005	< 0.005	0.04	27.7
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	< 0.005	< 0.005	0.07	0.01	< 0.005	< 0.005	0.38	0.38	< 0.005	0.04	0.04	—	43.9	43.9	< 0.005	0.01	0.03	45.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.26	0.26	0.00	0.03	0.03	—	4.52	4.52	< 0.005	< 0.005	0.01	4.58
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	0.07	0.07	< 0.005	0.01	0.01	—	7.26	7.26	< 0.005	< 0.005	< 0.005	7.61

3.43. Construction of U-shaped Canal 750' Upstream - Year 2 (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	0.58	0.49	4.72	7.06	0.01	0.20	—	0.20	0.18	—	0.18	—	1,085	1,085	0.04	0.01	—	1,089
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.58	0.49	4.72	7.06	0.01	0.20	—	0.20	0.18	—	0.18	—	1,085	1,085	0.04	0.01	—	1,089
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	0.06	0.05	0.52	0.77	< 0.005	0.02	—	0.02	0.02	—	0.02	—	119	119	< 0.005	< 0.005	—	119
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	0.01	0.01	0.09	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.7	19.7	< 0.005	< 0.005	—	19.8
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	0.19	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	< 0.005	< 0.005	0.09	0.01	< 0.005	< 0.005	0.61	0.61	< 0.005	0.06	0.06	—	59.6	59.6	< 0.005	0.01	0.09	62.5
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	0.09	0.01	< 0.005	< 0.005	0.61	0.61	< 0.005	0.06	0.06	—	59.6	59.6	< 0.005	0.01	< 0.005	62.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.19	0.00	0.00	2.31	2.31	0.00	0.24	0.24	—	43.6	43.6	< 0.005	< 0.005	0.07	44.3
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	0.06	0.06	< 0.005	0.01	0.01	—	6.53	6.53	< 0.005	< 0.005	< 0.005	6.84
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.42	0.42	0.00	0.04	0.04	—	7.23	7.23	< 0.005	< 0.005	0.01	7.33
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	—	1.08	1.08	< 0.005	< 0.005	< 0.005	1.13

3.44. Construction of U-shaped Canal 750' Upstream - Year 2 (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	0.58	0.49	4.72	7.06	0.01	0.20	—	0.20	0.18	—	0.18	—	1,085	1,085	0.04	0.01	—	1,089
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.58	0.49	4.72	7.06	0.01	0.20	—	0.20	0.18	—	0.18	—	1,085	1,085	0.04	0.01	—	1,089
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	0.06	0.05	0.52	0.77	< 0.005	0.02	—	0.02	0.02	—	0.02	—	119	119	< 0.005	< 0.005	—	119

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	0.01	0.01	0.09	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.7	19.7	< 0.005	< 0.005	—	19.8
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	0.19	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	< 0.005	< 0.005	0.09	0.01	< 0.005	< 0.005	0.61	0.61	< 0.005	0.06	0.06	—	59.6	59.6	< 0.005	0.01	0.09	62.5
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	0.09	0.01	< 0.005	< 0.005	0.61	0.61	< 0.005	0.06	0.06	—	59.6	59.6	< 0.005	0.01	< 0.005	62.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.19	0.00	0.00	2.31	2.31	0.00	0.24	0.24	—	43.6	43.6	< 0.005	< 0.005	0.07	44.3
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	0.06	0.06	< 0.005	0.01	0.01	—	6.53	6.53	< 0.005	< 0.005	< 0.005	6.84
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.42	0.42	0.00	0.04	0.04	—	7.23	7.23	< 0.005	< 0.005	0.01	7.33
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	—	1.08	1.08	< 0.005	< 0.005	< 0.005	1.13

3.45. Construction of Spillway - Year 2 (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	0.30	2.46	2.49	< 0.005	0.08	—	0.08	0.07	—	0.07	—	382	382	0.02	< 0.005	—	383
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	0.03	0.02	0.20	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.4	31.4	< 0.005	< 0.005	—	31.5

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	0.01	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.19	5.19	< 0.005	< 0.005	—	5.21
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	0.19	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	< 0.005	< 0.005	0.25	0.03	< 0.005	< 0.005	1.71	1.72	< 0.005	0.18	0.18	—	167	167	< 0.005	0.03	0.25	176
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	1.73	1.73	0.00	0.18	0.18	—	32.7	32.7	< 0.005	< 0.005	0.05	33.2
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	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	13.8	13.8	< 0.005	< 0.005	0.01	14.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.32	0.32	0.00	0.03	0.03	—	5.42	5.42	< 0.005	< 0.005	0.01	5.50

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	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	2.28	2.28	< 0.005	< 0.005	< 0.005	2.39

3.46. Construction of Spillway - Year 2 (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	0.30	2.46	2.49	< 0.005	0.08	—	0.08	0.07	—	0.07	—	382	382	0.02	< 0.005	—	383
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	0.03	0.02	0.20	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.4	31.4	< 0.005	< 0.005	—	31.5
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	0.01	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.19	5.19	< 0.005	< 0.005	—	5.21
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	0.19	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	< 0.005	< 0.005	0.25	0.03	< 0.005	< 0.005	1.71	1.72	< 0.005	0.18	0.18	—	167	167	< 0.005	0.03	0.25	176
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	1.73	1.73	0.00	0.18	0.18	—	32.7	32.7	< 0.005	< 0.005	0.05	33.2
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	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	13.8	13.8	< 0.005	< 0.005	0.01	14.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.32	0.32	0.00	0.03	0.03	—	5.42	5.42	< 0.005	< 0.005	0.01	5.50
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	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	2.28	2.28	< 0.005	< 0.005	< 0.005	2.39

3.47. Construction of Catwalk and Stairs - Year 2 (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	0.26	2.45	3.89	0.01	0.08	—	0.08	0.07	—	0.07	—	605	605	0.02	< 0.005	—	607
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	2.45	3.89	0.01	0.08	—	0.08	0.07	—	0.07	—	605	605	0.02	< 0.005	—	607
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	0.01	0.01	0.07	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.6	16.6	< 0.005	< 0.005	—	16.6

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	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.74	2.74	< 0.005	< 0.005	—	2.75
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	0.19	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	0.01	0.01	0.75	0.08	0.01	0.01	5.14	5.15	0.01	0.53	0.54	—	502	502	< 0.005	0.08	0.75	527
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	0.01	0.01	0.80	0.09	0.01	0.01	5.14	5.15	0.01	0.53	0.54	—	502	502	< 0.005	0.08	0.02	526
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.58	0.58	0.00	0.06	0.06	—	10.9	10.9	< 0.005	< 0.005	0.02	11.1
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	0.02	< 0.005	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	13.8	13.8	< 0.005	< 0.005	0.01	14.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.11	0.11	0.00	0.01	0.01	—	1.81	1.81	< 0.005	< 0.005	< 0.005	1.83
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	0.02	0.02	< 0.005	< 0.005	< 0.005	—	2.28	2.28	< 0.005	< 0.005	< 0.005	2.39

3.48. Construction of Catwalk and Stairs - Year 2 (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	0.26	2.45	3.89	0.01	0.08	—	0.08	0.07	—	0.07	—	605	605	0.02	< 0.005	—	607
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	2.45	3.89	0.01	0.08	—	0.08	0.07	—	0.07	—	605	605	0.02	< 0.005	—	607
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	0.01	0.01	0.07	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.6	16.6	< 0.005	< 0.005	—	16.6
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	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.74	2.74	< 0.005	< 0.005	—	2.75
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	0.19	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	0.01	0.01	0.75	0.08	0.01	0.01	5.14	5.15	0.01	0.53	0.54	—	502	502	< 0.005	0.08	0.75	527
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	0.01	0.01	0.80	0.09	0.01	0.01	5.14	5.15	0.01	0.53	0.54	—	502	502	< 0.005	0.08	0.02	526
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.58	0.58	0.00	0.06	0.06	—	10.9	10.9	< 0.005	< 0.005	0.02	11.1
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	0.02	< 0.005	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	13.8	13.8	< 0.005	< 0.005	0.01	14.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.11	0.11	0.00	0.01	0.01	—	1.81	1.81	< 0.005	< 0.005	< 0.005	1.83
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	0.02	0.02	< 0.005	< 0.005	< 0.005	—	2.28	2.28	< 0.005	< 0.005	< 0.005	2.39

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
Staging and Mobilization - Year 1	Linear, Grubbing & Land Clearing	8/1/2026	8/4/2026	6.00	3.00	—
Camp P Roadwork - Year 1	Linear, Grubbing & Land Clearing	8/5/2026	8/10/2026	6.00	5.00	—
Clearing and Grubbing - Year 1	Linear, Grubbing & Land Clearing	8/11/2026	8/12/2026	6.00	2.00	—
Staging and Mobilization - Year 2	Linear, Grubbing & Land Clearing	8/1/2027	8/4/2027	6.00	3.00	—
Camp P Roadwork - Year 2	Linear, Grubbing & Land Clearing	8/5/2027	8/10/2027	6.00	5.00	—
Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1	Linear, Grading & Excavation	8/13/2026	10/15/2026	6.00	55.0	—
Tree Removal - Year 1	Linear, Grading & Excavation	8/11/2026	9/2/2026	6.00	20.0	—
Construction of MSE Wall U1 1200' - Year 1	Linear, Grading & Excavation	9/3/2026	10/30/2026	6.00	50.0	—
Construction of Bridge - Year 1	Linear, Grading & Excavation	10/31/2026	11/23/2026	6.00	20.0	—
Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1	Linear, Grading & Excavation	11/24/2026	11/28/2026	6.00	5.00	—
Excavation for MSE Wall L1 610' Downstream - Year 1	Linear, Grading & Excavation	11/29/2026	12/28/2026	6.00	25.0	—
Construction of MSE Wall L1 610' Downstream - Year 1	Linear, Grading & Excavation	11/28/2026	12/26/2026	6.00	25.0	—
Construction of U-Shaped Canal 350' Downstream - Year 1	Linear, Grading & Excavation	12/27/2026	1/25/2027	6.00	25.0	—

Construction of Interim Canal Transition - Year 1	Linear, Grading & Excavation	1/5/2027	1/21/2027	6.00	15.0	—
Construction of Catwalks and Stairs - Year 1	Linear, Grading & Excavation	1/25/2027	1/29/2027	6.00	5.00	—
Re-construction of Monitoring Station - Year 1	Linear, Grading & Excavation	10/16/2026	10/21/2026	6.00	5.00	—
Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2	Linear, Grading & Excavation	8/11/2027	8/21/2027	6.00	10.0	—
Excavation for MSE Wall L1, 750' Upstream, Demo Rock Wall - Year 2	Linear, Grading & Excavation	8/17/2027	9/14/2027	6.00	25.0	—
Demolition of Interim Canal Transition - Year 2	Linear, Grading & Excavation	8/17/2027	8/21/2027	6.00	5.00	—
Construction of MSE wall L1, 750' Upstream - Year 2	Linear, Grading & Excavation	8/22/2027	9/20/2027	6.00	25.0	—
Construction of U-shaped Canal 750' Upstream - Year 2	Linear, Grading & Excavation	8/27/2027	10/12/2027	6.00	40.0	—
Construction of Spillway - Year 2	Linear, Grading & Excavation	8/22/2027	9/25/2027	6.00	30.0	—
Construction of Catwalk and Stairs - Year 2	Linear, Grading & Excavation	9/26/2027	10/7/2027	6.00	10.0	—

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
Staging and Mobilization - Year 1	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Staging and Mobilization - Year 1	Other Construction Equipment	Diesel	Average	1.00	12.0	82.0	0.42

Camp P Roadwork - Year 1	Rubber Tired Loaders	Diesel	Average	1.00	12.0	150	0.36
Camp P Roadwork - Year 1	Other Construction Equipment	Diesel	Average	1.00	12.0	82.0	0.42
Clearing and Grubbing - Year 1	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Clearing and Grubbing - Year 1	Tractors/Loaders/Backhoes	Diesel	Average	1.00	12.0	84.0	0.37
Clearing and Grubbing - Year 1	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Staging and Mobilization - Year 2	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Staging and Mobilization - Year 2	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Camp P Roadwork - Year 2	Rubber Tired Loaders	Diesel	Average	1.00	12.0	150	0.36
Camp P Roadwork - Year 2	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1	Other Construction Equipment	Diesel	Average	2.00	12.0	82.0	0.42
Tree Removal - Year 1	Off-Highway Trucks	Diesel	Average	2.00	12.0	376	0.38
Tree Removal - Year 1	Other General Industrial Equipment	Diesel	Average	1.00	12.0	35.0	0.34
Tree Removal - Year 1	Other Construction Equipment	Diesel	Average	1.00	12.0	82.0	0.42

Construction of MSE Wall U1 1200' - Year 1	Other Material Handling Equipment	Diesel	Average	2.00	12.0	93.0	0.40
Construction of MSE Wall U1 1200' - Year 1	Other Construction Equipment	Diesel	Average	1.00	12.0	82.0	0.42
Construction of MSE Wall U1 1200' - Year 1	Plate Compactors	Diesel	Average	1.00	12.0	8.00	0.43
Construction of Bridge - Year 1	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Construction of Bridge - Year 1	Cement and Mortar Mixers	Diesel	Average	1.00	12.0	10.0	0.56
Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1	Other Construction Equipment	Diesel	Average	1.00	12.0	82.0	0.42
Excavation for MSE Wall L1 610' Downstream - Year 1	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Excavation for MSE Wall L1 610' Downstream - Year 1	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Construction of MSE Wall L1 610' Downstream - Year 1	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Construction of MSE Wall L1 610' Downstream - Year 1	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40

Construction of U-Shaped Canal 350' Downstream - Year 1	Cement and Mortar Mixers	Diesel	Average	1.00	12.0	10.0	0.56
Construction of U-Shaped Canal 350' Downstream - Year 1	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Construction of U-Shaped Canal 350' Downstream - Year 1	Other Construction Equipment	Diesel	Average	1.00	12.0	82.0	0.42
Construction of Interim Canal Transition - Year 1	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Construction of Interim Canal Transition - Year 1	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Construction of Interim Canal Transition - Year 1	Cement and Mortar Mixers	Diesel	Average	1.00	12.0	10.0	0.56
Construction of Catwalks and Stairs - Year 1	Cement and Mortar Mixers	Diesel	Average	1.00	12.0	10.0	0.56
Construction of Catwalks and Stairs - Year 1	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Re-construction of Monitoring Station - Year 1	Cement and Mortar Mixers	Diesel	Average	1.00	12.0	10.0	0.56
Re-construction of Monitoring Station - Year 1	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40

Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2	Other Construction Equipment	Diesel	Average	1.00	12.0	82.0	0.42
Excavation for MSE Wall L1, 750' Upstream, Demo Rock Wall - Year 2	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Excavation for MSE Wall L1, 750' Upstream, Demo Rock Wall - Year 2	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Demolition of Interim Canal Transition - Year 2	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Demolition of Interim Canal Transition - Year 2	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Demolition of Interim Canal Transition - Year 2	Other Construction Equipment	Diesel	Average	1.00	12.0	82.0	0.42
Construction of MSE wall L1, 750' Upstream - Year 2	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Construction of MSE wall L1, 750' Upstream - Year 2	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Construction of U-shaped Canal 750' Upstream - Year 2	Cement and Mortar Mixers	Diesel	Average	1.00	12.0	10.0	0.56
Construction of U-shaped Canal 750' Upstream - Year 2	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Construction of U-shaped Canal 750' Upstream - Year 2	Other Construction Equipment	Diesel	Average	1.00	12.0	82.0	0.42
Construction of Spillway - Year 2	Excavators	Diesel	Average	1.00	12.0	36.0	0.38

Construction of Spillway - Year 2	Cement and Mortar Mixers	Diesel	Average	1.00	12.0	10.0	0.56
Construction of Spillway - Year 2	Cement and Mortar Mixers	Diesel	Average	1.00	12.0	10.0	0.56
Construction of Catwalk and Stairs - Year 2	Cement and Mortar Mixers	Diesel	Average	1.00	12.0	10.0	0.56
Construction of Catwalk and Stairs - Year 2	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Staging and Mobilization - Year 1	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Staging and Mobilization - Year 1	Other Construction Equipment	Diesel	Average	1.00	12.0	82.0	0.42
Camp P Roadwork - Year 1	Rubber Tired Loaders	Diesel	Average	1.00	12.0	150	0.36
Camp P Roadwork - Year 1	Other Construction Equipment	Diesel	Average	1.00	12.0	82.0	0.42
Clearing and Grubbing - Year 1	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Clearing and Grubbing - Year 1	Tractors/Loaders/Backhoes	Diesel	Average	1.00	12.0	84.0	0.37
Clearing and Grubbing - Year 1	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Staging and Mobilization - Year 2	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Staging and Mobilization - Year 2	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Camp P Roadwork - Year 2	Rubber Tired Loaders	Diesel	Average	1.00	12.0	150	0.36

Camp P Roadwork - Year 2	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1	Other Construction Equipment	Diesel	Average	2.00	12.0	82.0	0.42
Tree Removal - Year 1	Off-Highway Trucks	Diesel	Average	2.00	12.0	376	0.38
Tree Removal - Year 1	Other General Industrial Equipment	Diesel	Average	1.00	12.0	35.0	0.34
Tree Removal - Year 1	Other Construction Equipment	Diesel	Average	1.00	12.0	82.0	0.42
Construction of MSE Wall U1 1200' - Year 1	Other Material Handling Equipment	Diesel	Average	2.00	12.0	93.0	0.40
Construction of MSE Wall U1 1200' - Year 1	Other Construction Equipment	Diesel	Average	1.00	12.0	82.0	0.42
Construction of MSE Wall U1 1200' - Year 1	Plate Compactors	Diesel	Average	1.00	12.0	8.00	0.43
Construction of Bridge - Year 1	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Construction of Bridge - Year 1	Cement and Mortar Mixers	Diesel	Average	1.00	12.0	10.0	0.56
Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1	Excavators	Diesel	Average	1.00	12.0	36.0	0.38

Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1	Other Construction Equipment	Diesel	Average	1.00	12.0	82.0	0.42
Excavation for MSE Wall L1 610' Downstream - Year 1	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Excavation for MSE Wall L1 610' Downstream - Year 1	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Construction of MSE Wall L1 610' Downstream - Year 1	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Construction of MSE Wall L1 610' Downstream - Year 1	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Construction of U-Shaped Canal 350' Downstream - Year 1	Cement and Mortar Mixers	Diesel	Average	1.00	12.0	10.0	0.56
Construction of U-Shaped Canal 350' Downstream - Year 1	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Construction of U-Shaped Canal 350' Downstream - Year 1	Other Construction Equipment	Diesel	Average	1.00	12.0	82.0	0.42
Construction of Interim Canal Transition - Year 1	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Construction of Interim Canal Transition - Year 1	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40

Construction of Interim Canal Transition - Year 1	Cement and Mortar Mixers	Diesel	Average	1.00	12.0	10.0	0.56
Construction of Catwalks and Stairs - Year 1	Cement and Mortar Mixers	Diesel	Average	1.00	12.0	10.0	0.56
Construction of Catwalks and Stairs - Year 1	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Re-construction of Monitoring Station - Year 1	Cement and Mortar Mixers	Diesel	Average	1.00	12.0	10.0	0.56
Re-construction of Monitoring Station - Year 1	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2	Other Construction Equipment	Diesel	Average	1.00	12.0	82.0	0.42
Excavation for MSE Wall L1, 750' Upstream, Demo Rock Wall - Year 2	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Excavation for MSE Wall L1, 750' Upstream, Demo Rock Wall - Year 2	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Demolition of Interim Canal Transition - Year 2	Excavators	Diesel	Average	1.00	12.0	36.0	0.38

Demolition of Interim Canal Transition - Year 2	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Demolition of Interim Canal Transition - Year 2	Other Construction Equipment	Diesel	Average	1.00	12.0	82.0	0.42
Construction of MSE wall L1, 750' Upstream - Year 2	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Construction of MSE wall L1, 750' Upstream - Year 2	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Construction of U-shaped Canal 750' Upstream - Year 2	Cement and Mortar Mixers	Diesel	Average	1.00	12.0	10.0	0.56
Construction of U-shaped Canal 750' Upstream - Year 2	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40
Construction of U-shaped Canal 750' Upstream - Year 2	Other Construction Equipment	Diesel	Average	1.00	12.0	82.0	0.42
Construction of Spillway - Year 2	Excavators	Diesel	Average	1.00	12.0	36.0	0.38
Construction of Spillway - Year 2	Cement and Mortar Mixers	Diesel	Average	1.00	12.0	10.0	0.56
Construction of Spillway - Year 2	Cement and Mortar Mixers	Diesel	Average	1.00	12.0	10.0	0.56
Construction of Catwalk and Stairs - Year 2	Cement and Mortar Mixers	Diesel	Average	1.00	12.0	10.0	0.56
Construction of Catwalk and Stairs - Year 2	Other Material Handling Equipment	Diesel	Average	1.00	12.0	93.0	0.40

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Staging and Mobilization - Year 1	—	—	—	—
Staging and Mobilization - Year 1	Worker	20.0	14.3	LDA,LDT1,LDT2
Staging and Mobilization - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Staging and Mobilization - Year 1	Hauling	0.00	20.0	HHDT
Staging and Mobilization - Year 1	Onsite truck	—	—	HHDT
Camp P Roadwork - Year 1	—	—	—	—
Camp P Roadwork - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Camp P Roadwork - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Camp P Roadwork - Year 1	Hauling	9.00	20.0	HHDT
Camp P Roadwork - Year 1	Onsite truck	—	—	HHDT
Clearing and Grubbing - Year 1	—	—	—	—
Clearing and Grubbing - Year 1	Worker	20.0	14.3	LDA,LDT1,LDT2
Clearing and Grubbing - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Clearing and Grubbing - Year 1	Hauling	0.00	20.0	HHDT
Clearing and Grubbing - Year 1	Onsite truck	—	—	HHDT
Staging and Mobilization - Year 2	—	—	—	—
Staging and Mobilization - Year 2	Worker	40.0	14.3	LDA,LDT1,LDT2
Staging and Mobilization - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Staging and Mobilization - Year 2	Hauling	0.00	20.0	HHDT
Staging and Mobilization - Year 2	Onsite truck	—	—	HHDT
Camp P Roadwork - Year 2	—	—	—	—
Camp P Roadwork - Year 2	Worker	40.0	14.3	LDA,LDT1,LDT2
Camp P Roadwork - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Camp P Roadwork - Year 2	Hauling	9.00	20.0	HHDT
Camp P Roadwork - Year 2	Onsite truck	—	—	HHDT

Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1	—	—	—	—
Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1	Hauling	9.55	20.0	HHDT
Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1	Onsite truck	—	—	HHDT
Tree Removal - Year 1	—	—	—	—
Tree Removal - Year 1	Worker	20.0	14.3	LDA,LDT1,LDT2
Tree Removal - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Tree Removal - Year 1	Hauling	0.00	20.0	HHDT
Tree Removal - Year 1	Onsite truck	—	—	HHDT
Construction of MSE Wall U1 1200' - Year 1	—	—	—	—
Construction of MSE Wall U1 1200' - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Construction of MSE Wall U1 1200' - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Construction of MSE Wall U1 1200' - Year 1	Hauling	1.88	20.0	HHDT
Construction of MSE Wall U1 1200' - Year 1	Onsite truck	—	—	HHDT
Construction of Bridge - Year 1	—	—	—	—
Construction of Bridge - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Construction of Bridge - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Construction of Bridge - Year 1	Hauling	0.00	20.0	HHDT

Construction of Bridge - Year 1	Onsite truck	—	—	HHDT
Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1	—	—	—	—
Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1	Hauling	105	20.0	HHDT
Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1	Onsite truck	—	—	HHDT
Excavation for MSE Wall L1 610' Downstream - Year 1	—	—	—	—
Excavation for MSE Wall L1 610' Downstream - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Excavation for MSE Wall L1 610' Downstream - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Excavation for MSE Wall L1 610' Downstream - Year 1	Hauling	21.0	20.0	HHDT
Excavation for MSE Wall L1 610' Downstream - Year 1	Onsite truck	—	—	HHDT
Construction of MSE Wall L1 610' Downstream - Year 1	—	—	—	—
Construction of MSE Wall L1 610' Downstream - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Construction of MSE Wall L1 610' Downstream - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Construction of MSE Wall L1 610' Downstream - Year 1	Hauling	3.76	20.0	HHDT
Construction of MSE Wall L1 610' Downstream - Year 1	Onsite truck	—	—	HHDT

Construction of U-Shaped Canal 350' Downstream - Year 1	—	—	—	—
Construction of U-Shaped Canal 350' Downstream - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Construction of U-Shaped Canal 350' Downstream - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Construction of U-Shaped Canal 350' Downstream - Year 1	Hauling	1.60	20.0	HHDT
Construction of U-Shaped Canal 350' Downstream - Year 1	Onsite truck	—	—	HHDT
Construction of Interim Canal Transition - Year 1	—	—	—	—
Construction of Interim Canal Transition - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Construction of Interim Canal Transition - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Construction of Interim Canal Transition - Year 1	Hauling	2.67	20.0	HHDT
Construction of Interim Canal Transition - Year 1	Onsite truck	—	—	HHDT
Construction of Catwalks and Stairs - Year 1	—	—	—	—
Construction of Catwalks and Stairs - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Construction of Catwalks and Stairs - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Construction of Catwalks and Stairs - Year 1	Hauling	11.8	20.0	HHDT
Construction of Catwalks and Stairs - Year 1	Onsite truck	—	—	HHDT
Re-construction of Monitoring Station - Year 1	—	—	—	—
Re-construction of Monitoring Station - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2

Re-construction of Monitoring Station - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Re-construction of Monitoring Station - Year 1	Hauling	0.00	20.0	HHDT
Re-construction of Monitoring Station - Year 1	Onsite truck	—	—	HHDT
Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2	—	—	—	—
Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2	Worker	40.0	14.3	LDA,LDT1,LDT2
Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2	Hauling	52.5	20.0	HHDT
Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2	Onsite truck	—	—	HHDT
Excavation for MSE Wall L1, 750' Upstream, Demo Rock Wall - Year 2	—	—	—	—
Excavation for MSE Wall L1, 750' Upstream, Demo Rock Wall - Year 2	Worker	40.0	14.3	LDA,LDT1,LDT2
Excavation for MSE Wall L1, 750' Upstream, Demo Rock Wall - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Excavation for MSE Wall L1, 750' Upstream, Demo Rock Wall - Year 2	Hauling	21.0	20.0	HHDT
Excavation for MSE Wall L1, 750' Upstream, Demo Rock Wall - Year 2	Onsite truck	—	—	HHDT
Demolition of Interim Canal Transition - Year 2	—	—	—	—
Demolition of Interim Canal Transition - Year 2	Worker	40.0	14.3	LDA,LDT1,LDT2

Demolition of Interim Canal Transition - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Demolition of Interim Canal Transition - Year 2	Hauling	0.00	20.0	HHDT
Demolition of Interim Canal Transition - Year 2	Onsite truck	—	—	HHDT
Construction of MSE wall L1, 750' Upstream - Year 2	—	—	—	—
Construction of MSE wall L1, 750' Upstream - Year 2	Worker	40.0	14.3	LDA,LDT1,LDT2
Construction of MSE wall L1, 750' Upstream - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Construction of MSE wall L1, 750' Upstream - Year 2	Hauling	7.52	20.0	HHDT
Construction of MSE wall L1, 750' Upstream - Year 2	Onsite truck	—	—	HHDT
Construction of U-shaped Canal 750' Upstream - Year 2	—	—	—	—
Construction of U-shaped Canal 750' Upstream - Year 2	Worker	40.0	14.3	LDA,LDT1,LDT2
Construction of U-shaped Canal 750' Upstream - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Construction of U-shaped Canal 750' Upstream - Year 2	Hauling	0.70	20.0	HHDT
Construction of U-shaped Canal 750' Upstream - Year 2	Onsite truck	—	—	HHDT
Construction of Spillway - Year 2	—	—	—	—
Construction of Spillway - Year 2	Worker	40.0	14.3	LDA,LDT1,LDT2
Construction of Spillway - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Construction of Spillway - Year 2	Hauling	1.97	20.0	HHDT
Construction of Spillway - Year 2	Onsite truck	—	—	HHDT
Construction of Catwalk and Stairs - Year 2	—	—	—	—

Construction of Catwalk and Stairs - Year 2	Worker	40.0	14.3	LDA,LDT1,LDT2
Construction of Catwalk and Stairs - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Construction of Catwalk and Stairs - Year 2	Hauling	5.90	20.0	HHDT
Construction of Catwalk and Stairs - Year 2	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Staging and Mobilization - Year 1	—	—	—	—
Staging and Mobilization - Year 1	Worker	20.0	14.3	LDA,LDT1,LDT2
Staging and Mobilization - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Staging and Mobilization - Year 1	Hauling	0.00	20.0	HHDT
Staging and Mobilization - Year 1	Onsite truck	—	—	HHDT
Camp P Roadwork - Year 1	—	—	—	—
Camp P Roadwork - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Camp P Roadwork - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Camp P Roadwork - Year 1	Hauling	9.00	20.0	HHDT
Camp P Roadwork - Year 1	Onsite truck	—	—	HHDT
Clearing and Grubbing - Year 1	—	—	—	—
Clearing and Grubbing - Year 1	Worker	20.0	14.3	LDA,LDT1,LDT2
Clearing and Grubbing - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Clearing and Grubbing - Year 1	Hauling	0.00	20.0	HHDT
Clearing and Grubbing - Year 1	Onsite truck	—	—	HHDT
Staging and Mobilization - Year 2	—	—	—	—
Staging and Mobilization - Year 2	Worker	40.0	14.3	LDA,LDT1,LDT2
Staging and Mobilization - Year 2	Vendor	0.00	8.80	HHDT,MHDT

Staging and Mobilization - Year 2	Hauling	0.00	20.0	HHDT
Staging and Mobilization - Year 2	Onsite truck	—	—	HHDT
Camp P Roadwork - Year 2	—	—	—	—
Camp P Roadwork - Year 2	Worker	40.0	14.3	LDA,LDT1,LDT2
Camp P Roadwork - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Camp P Roadwork - Year 2	Hauling	9.00	20.0	HHDT
Camp P Roadwork - Year 2	Onsite truck	—	—	HHDT
Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1	—	—	—	—
Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1	Hauling	9.55	20.0	HHDT
Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1	Onsite truck	—	—	HHDT
Tree Removal - Year 1	—	—	—	—
Tree Removal - Year 1	Worker	20.0	14.3	LDA,LDT1,LDT2
Tree Removal - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Tree Removal - Year 1	Hauling	0.00	20.0	HHDT
Tree Removal - Year 1	Onsite truck	—	—	HHDT
Construction of MSE Wall U1 1200' - Year 1	—	—	—	—
Construction of MSE Wall U1 1200' - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Construction of MSE Wall U1 1200' - Year 1	Vendor	0.00	8.80	HHDT,MHDT

Construction of MSE Wall U1 1200' - Year 1	Hauling	1.88	20.0	HHDT
Construction of MSE Wall U1 1200' - Year 1	Onsite truck	—	—	HHDT
Construction of Bridge - Year 1	—	—	—	—
Construction of Bridge - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Construction of Bridge - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Construction of Bridge - Year 1	Hauling	0.00	20.0	HHDT
Construction of Bridge - Year 1	Onsite truck	—	—	HHDT
Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1	—	—	—	—
Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1	Hauling	105	20.0	HHDT
Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1	Onsite truck	—	—	HHDT
Excavation for MSE Wall L1 610' Downstream - Year 1	—	—	—	—
Excavation for MSE Wall L1 610' Downstream - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Excavation for MSE Wall L1 610' Downstream - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Excavation for MSE Wall L1 610' Downstream - Year 1	Hauling	21.0	20.0	HHDT
Excavation for MSE Wall L1 610' Downstream - Year 1	Onsite truck	—	—	HHDT

Construction of MSE Wall L1 610' Downstream - Year 1	—	—	—	—
Construction of MSE Wall L1 610' Downstream - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Construction of MSE Wall L1 610' Downstream - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Construction of MSE Wall L1 610' Downstream - Year 1	Hauling	3.76	20.0	HHDT
Construction of MSE Wall L1 610' Downstream - Year 1	Onsite truck	—	—	HHDT
Construction of U-Shaped Canal 350' Downstream - Year 1	—	—	—	—
Construction of U-Shaped Canal 350' Downstream - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Construction of U-Shaped Canal 350' Downstream - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Construction of U-Shaped Canal 350' Downstream - Year 1	Hauling	1.60	20.0	HHDT
Construction of U-Shaped Canal 350' Downstream - Year 1	Onsite truck	—	—	HHDT
Construction of Interim Canal Transition - Year 1	—	—	—	—
Construction of Interim Canal Transition - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Construction of Interim Canal Transition - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Construction of Interim Canal Transition - Year 1	Hauling	2.67	20.0	HHDT
Construction of Interim Canal Transition - Year 1	Onsite truck	—	—	HHDT
Construction of Catwalks and Stairs - Year 1	—	—	—	—
Construction of Catwalks and Stairs - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2

Construction of Catwalks and Stairs - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Construction of Catwalks and Stairs - Year 1	Hauling	11.8	20.0	HHDT
Construction of Catwalks and Stairs - Year 1	Onsite truck	—	—	HHDT
Re-construction of Monitoring Station - Year 1	—	—	—	—
Re-construction of Monitoring Station - Year 1	Worker	40.0	14.3	LDA,LDT1,LDT2
Re-construction of Monitoring Station - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Re-construction of Monitoring Station - Year 1	Hauling	0.00	20.0	HHDT
Re-construction of Monitoring Station - Year 1	Onsite truck	—	—	HHDT
Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2	—	—	—	—
Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2	Worker	40.0	14.3	LDA,LDT1,LDT2
Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2	Hauling	52.5	20.0	HHDT
Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2	Onsite truck	—	—	HHDT
Excavation for MSE Wall L1, 750' Upstream, Demo Rock Wall - Year 2	—	—	—	—
Excavation for MSE Wall L1, 750' Upstream, Demo Rock Wall - Year 2	Worker	40.0	14.3	LDA,LDT1,LDT2

Excavation for MSE Wall L1, 750' Upstream, Demo Rock Wall - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Excavation for MSE Wall L1, 750' Upstream, Demo Rock Wall - Year 2	Hauling	21.0	20.0	HHDT
Excavation for MSE Wall L1, 750' Upstream, Demo Rock Wall - Year 2	Onsite truck	—	—	HHDT
Demolition of Interim Canal Transition - Year 2	—	—	—	—
Demolition of Interim Canal Transition - Year 2	Worker	40.0	14.3	LDA,LDT1,LDT2
Demolition of Interim Canal Transition - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Demolition of Interim Canal Transition - Year 2	Hauling	0.00	20.0	HHDT
Demolition of Interim Canal Transition - Year 2	Onsite truck	—	—	HHDT
Construction of MSE wall L1, 750' Upstream - Year 2	—	—	—	—
Construction of MSE wall L1, 750' Upstream - Year 2	Worker	40.0	14.3	LDA,LDT1,LDT2
Construction of MSE wall L1, 750' Upstream - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Construction of MSE wall L1, 750' Upstream - Year 2	Hauling	7.52	20.0	HHDT
Construction of MSE wall L1, 750' Upstream - Year 2	Onsite truck	—	—	HHDT
Construction of U-shaped Canal 750' Upstream - Year 2	—	—	—	—
Construction of U-shaped Canal 750' Upstream - Year 2	Worker	40.0	14.3	LDA,LDT1,LDT2
Construction of U-shaped Canal 750' Upstream - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Construction of U-shaped Canal 750' Upstream - Year 2	Hauling	0.70	20.0	HHDT

Construction of U-shaped Canal 750' Upstream - Year 2	Onsite truck	—	—	HHDT
Construction of Spillway - Year 2	—	—	—	—
Construction of Spillway - Year 2	Worker	40.0	14.3	LDA,LDT1,LDT2
Construction of Spillway - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Construction of Spillway - Year 2	Hauling	1.97	20.0	HHDT
Construction of Spillway - Year 2	Onsite truck	—	—	HHDT
Construction of Catwalk and Stairs - Year 2	—	—	—	—
Construction of Catwalk and Stairs - Year 2	Worker	40.0	14.3	LDA,LDT1,LDT2
Construction of Catwalk and Stairs - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Construction of Catwalk and Stairs - Year 2	Hauling	5.90	20.0	HHDT
Construction of Catwalk and Stairs - Year 2	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)

Staging and Mobilization - Year 1	0.00	0.00	5.00	0.00	—
Camp P Roadwork - Year 1	360	0.00	5.00	0.00	—
Clearing and Grubbing - Year 1	0.00	0.00	5.00	0.00	—
Staging and Mobilization - Year 2	0.00	0.00	5.00	0.00	—
Camp P Roadwork - Year 2	360	0.00	5.00	0.00	—
Excavating for MSE Wall U1 1200', Demo Shoring Panel and Gabion - Year 1	0.00	4,200	5.00	0.00	—
Tree Removal - Year 1	0.00	0.00	5.00	0.00	—
Construction of MSE Wall U1 1200' - Year 1	950	0.00	5.00	0.00	—
Construction of Bridge - Year 1	0.00	0.00	5.00	0.00	—
Demolition of Wooden Flume 350' Downstream, Catwalks, Spillway - Year 1	0.00	4,200	5.00	0.00	—
Excavation for MSE Wall L1 610' Downstream - Year 1	0.00	4,200	5.00	0.00	—
Construction of MSE Wall L1 610' Downstream - Year 1	950	0.00	5.00	0.00	—
Construction of U-Shaped Canal 350' Downstream - Year 1	316	0.00	5.00	0.00	—
Construction of Interim Canal Transition - Year 1	316	0.00	5.00	0.00	—
Construction of Catwalks and Stairs - Year 1	467	0.00	5.00	0.00	—
Re-construction of Monitoring Station - Year 1	0.00	0.00	5.00	0.00	—
Demolition of Wooden Flume 750' Upstream, Catwalks, Spillway - Year 2	0.00	4,200	5.00	0.00	—

Excavation for MSE Wall L1, 750' Upstream, Demo Rock Wall - Year 2	0.00	4,200	5.00	0.00	—
Demolition of Interim Canal Transition - Year 2	0.00	0.00	5.00	0.00	—
Construction of MSE wall L1, 750' Upstream - Year 2	1,900	0.00	5.00	0.00	—
Construction of U-shaped Canal 750' Upstream - Year 2	217	0.00	5.00	0.00	—
Construction of Spillway - Year 2	467	0.00	5.00	0.00	—
Construction of Catwalk and Stairs - Year 2	467	0.00	5.00	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	5.00	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	21.7	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	49.7	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	67.0
AQ-PM	0.78
AQ-DPM	1.10
Drinking Water	78.5
Lead Risk Housing	—

Pesticides	0.00
Toxic Releases	3.05
Traffic	6.94
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	16.6
Impaired Water Bodies	0.00
Solid Waste	52.9
Sensitive Population	—
Asthma	41.0
Cardio-vascular	23.1
Low Birth Weights	—
Socioeconomic Factor Indicators	—
Education	14.2
Housing	—
Linguistic	—
Poverty	27.0
Unemployment	99.5

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	—
Employed	—
Median HI	—
Education	—

Bachelor's or higher	—
High school enrollment	—
Preschool enrollment	—
Transportation	—
Auto Access	—
Active commuting	—
Social	—
2-parent households	—
Voting	—
Neighborhood	—
Alcohol availability	—
Park access	—
Retail density	—
Supermarket access	—
Tree canopy	—
Housing	—
Homeownership	—
Housing habitability	—
Low-inc homeowner severe housing cost burden	—
Low-inc renter severe housing cost burden	—
Uncrowded housing	—
Health Outcomes	—
Insured adults	—
Arthritis	0.0
Asthma ER Admissions	62.8
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	0.0
Cognitively Disabled	1.2
Physically Disabled	4.3
Heart Attack ER Admissions	93.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	0.0
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	38.4
SLR Inundation Area	0.0
Children	87.9
Elderly	0.5
English Speaking	0.0
Foreign-born	0.0
Outdoor Workers	98.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	98.0
Traffic Density	0.0

Traffic Access	0.0
Other Indices	—
Hardship	0.0
Other Decision Support	—
2016 Voting	0.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	12.0
Healthy Places Index Score for Project Location (b)	—
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
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	Construction phasing provided by EID.
Construction: Off-Road Equipment	Construction equipment provided by EID.
Construction: Trips and VMT	Assumptions made based on information provided by EID.

Appendix C. Biological Resources Survey Results for the Flume 45 Section 3 Project

July 20, 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 Results for the Flume 45 Section 3 Project

Dear Mr. Baron:

The El Dorado Irrigation District (District) is proposing to replace the existing flume structure at Flume 45 Section 3 along the El Dorado Canal. The Flume 45 Section 3 project is located in central El Dorado County, south of U.S. Highway 50 and east of the Pacific House (**Attachment A, Figure 1**). The proposed project is situated east of the South Fork American River at elevations ranging from approximately 3,800–3,900 feet (**Attachment A, Figure 2**). The project site includes Flume 45 Section 3 and buffer zones of approximately 50 downslope of the flume and 25 feet upslope 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 Riverton 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 Riverton 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. A limitation to the floristic survey was that because the survey was limited to one day and did not include other surveys throughout the season, some plants that bloomed or fruited before or after the survey were potentially missed or were present but not identifiable. Some grasses that were very desiccated during the June 21st survey could not be identified to species. However, many of the desiccated grasses and forbs that were present during the survey were identifiable to the extent that the possibility that they were one of the target special-status plants with potential to occur on the project site was eliminated.

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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**.

Environmental Setting

Elevation at the 1.7-acre project site is approximately 3,800 to 3,900 feet above mean sea level. The topography slopes gradually east to west, with steep north-facing slopes on both sides of the Main Canal.

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 are generally sparse due to the fairly contiguous tree canopy that limits light penetration. In addition, vegetation immediately adjacent to the flume appears disturbed and managed to reduce vegetation cover. Understory species and species observed in small canopy openings during the field survey include wax leaf raspberry (*Rubus glaucifolius*), western thimbleberry (*Rubus parviflora*), feathery false lily of the valley (*Maianthemum racemosum*), blue wildrye (*Elymus glaucus* ssp. *glaucus*), Bolander's blue grass (*Poa bolanderi*), tincture plant (*Collinsia tinctoria*), variableleaf collomia (*Collomia heterophylla*), violet draperia (*Draperia systyla*), and chickweed (*Stellaria media*).

The project site lacks natural wetlands but several areas where water was leaking from the flume structures supported very small patches of hydrophytic plants and mosses. Several sedge (*Carex* sp.) were 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 1and 4. Another sedge in Group 11 was observed in the project site on a dry upland slope. Another area supports several seep monkey flower (*Erythranthe guttata*), an obligate wetland species. These areas only support a few hydrophytic plants and were not mapped as wetlands.

Two small ephemeral drainages were identified within the project site. The two drainages flow from rocky slopes north of the Main Canal 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.

Soil Types

Soils in the survey area are classified by the Natural Resources Conservation Service was entirely Chaix-Rock outcrop complex derived from granite parent material (NRCS 2019). Soils in the project site are not serpentinite or volcanic soils that could support special-status plants endemic to these soil types. Soils that are mapped on the project site do not include Josephine silt loam soils that are sometimes associated with known occurrences of Pleasant valley mariposa-lily (*Calochortus clavatus* ssp. *avius*), a California Rare Plant Rank (CRPR) 1B.2 species.

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 57 special-status plants and animals within the USGS 9-quadrangle search area; only four 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 several areas where moisture from water leaking from the flume creates small patches with hydrophytic plants, including sedge (*Carex* sp.) 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.

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		
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.
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; no Josephine or volcanic soils on project site; dense tree canopy limits open areas; nearby documented occurrences within 5 miles of the project site.

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		
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
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. *Carex* sp. in Group 10 was observed near leaky flume structures and an upland *Carex* sp. in Group 11 was observed; these species are not this rare species, which is in Group 1and 4.
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

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		
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
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

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		
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.
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 24 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 4 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 14 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 with different-aged stands and high canopy closure, including old-growth trees and snags for denning	Unlikely to occur; habitat on and adjacent to the project site is only marginally suitable. Nearest CNDDB occurrences approximately 24 miles northeast of the project site.
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	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 United States that drain to the Central Valley, to ensure such activities do not violate State or Federal water quality standards; the Central Valley RWQCB also regulates waters of the State, 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 that are potentially subject to Porter-Cologne Act and Section 1602 of the FGC.

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.

Potential Project Impacts

Impacts of the proposed flume replacement and road improvements on biological resources could result from temporary disturbance during construction and permanent changes in the footprint of the Flume 45 Section 3 project components. In general, these impacts are anticipated to be relatively minor, because the improvements would primarily be limited to the existing footprint of the flume structures and would focus on replacement, upgrade, and a slight expansion into adjacent disturbed areas. The area that would potentially be impacted by project activities is primarily already regularly disturbed by maintenance activities that are typically conducted on the Main Canal in November and December.

The potential for implementation of the proposed project to impact sensitive biological resources, including special-status species and regulated habitats, is evaluated below. This impact discussion focuses on resources with reasonable potential to be affected by implementing the proposed improvements. Therefore, special-status wildlife species that are unlikely to occur on the project site (because of a lack of suitable conditions, known extant range of the species, and/or lack of occurrence records) are not addressed in this discussion. Special-status plants that were evaluated are unlikely to be present because the project site lacks high quality suitable habitat and no special-status plants were observed during the June 21, 2022 surveys; therefore, special-status plants are not discussed further.

Special-status Wildlife Species

Invertebrates

The only special-status invertebrate with potential to occur on the project site is western bumble bee (*Bombus occidentalis*). 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 bumble bees could nest in underground cavities such as abandoned chipmunk burrows, but rodent burrows were not identified in 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.

Birds

Two special-status bird species, northern goshawk and bald eagle, have very low potential to occur on the project site (**Table 2**). These species are known or likely to occur in the general region, but habitat on the project site is unsuitable or only marginally suitable for bald eagle due to proximity to water source. Most importantly, project activities would occur outside the nesting season. Implementing the proposed project would not result in the removal of active nests of common or special-status bird species, because project activities, including tree removal as necessary, would occur during the Main Canal outage period of mid-November through the end of December, which is outside the nesting bird season.

Potential for special-status birds to occur onsite is likely limited to species that may forage or roost in coniferous forest or pass through the project vicinity 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 roost elsewhere if temporarily affected by construction-related disturbance.

Potential for northern goshawk and bald eagle to occur onsite is likely limited to foraging or roosting in coniferous forest or passing through the project vicinity in transit between nesting or foraging areas. No nests were observed on the project site or immediate vicinity. The CNDDB does not contain records of California spotted owl nest locations in the project site, but the project site is situated near recently documented occurrences (Figure 5; CDFW 2022a). Because extensive areas of similar or higher-quality coniferous forest habitat is present in the vicinity of the project site, if special-status species are temporarily displaced by construction activities, the result would not be substantial. Further, because the project would be implemented outside of the nesting season, disturbance would not affect nesting individuals, or their young.

Mammals

Four special-status mammals (pallid bat, Townsend's big ear bat, fringed myotis, and Pacific marten) were determined to have very low potential to occur on the project site (**Table 2**). These species prefer relatively undisturbed areas of coniferous forest. Two of the bat species evaluated, Townsend's big ear bat and fringed myotis, require roosting locations such as rock cervices or structures for roosting that are not present in the project site. Pallid bat uses a variety of roost sites, including trees. The project would be implemented outside of the maternity season, which begins in April for pallid bat, and therefore a limited number of individuals could be temporarily displaced, if present, during project implementation.

Pacific marten is a medium size carnivorous mammals that typically use trees and snags for denning. Suitable den locations for this species were not observed at the time of the field survey. Because potential for Pacific marten to occur on the project site is very low and the nearest occurrence is over 20 miles away along the shore of Lake Tahoe, they are very unlikely to be disturbed by improvements completed in the project site and minor permanent impacts, such as tree removal would not adversely affect individuals or substantially alter habitat.

Sensitive Habitats

No portion of the project site overlaps with a Protected Activity Centers (PAC) for California spotted owl. No individual California spotted owl were observed or detected during the June 2022 field visit. Project implementation may result in the removal of individual trees, but habitat alteration would be minor and would not substantially alter the PAC. Furthermore, the project will be implemented outside of the nesting season March to September for California spotted owl, so disturbance would not affect nesting individuals.

Other Potential Impacts on Biological Resources

The project site is part of a much larger extent of coniferous forest. The Main Canal corridor could facilitate wildlife movement, but because the Main Canal also consists of elevated flume structures with steep side slopes and swift currents, it does not function as an aquatic habitat corridor or nursery site for aquatic species. The Main Canal corridor also is not anticipated to serve as a key movement corridor for terrestrial species, and the project sites are not known or anticipated to serve as a nursery site for terrestrial wildlife species. Therefore, implementing the proposed project would likely not interfere with the movement of any native wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

Flume 45 section 3 is located on a special designated management area for California spotted owl, as addressed in the El Dorado Forest Land and Resource Management Plan (USFS 1988) and the Sierra Nevada Forest Plan (USDA 2006). However, management guidance states that if protocol level surveys

have been completed for the site and no California spotted owls are breeding or nesting, and no fledglings present, then the project may proceed without the Limited Operating Period during the remainder of the year of survey (USDA 2006). Because the proposed project would be implemented outside the California spotted owl nesting season and the period during which dependent fledglings could be present, project activities would not conflict with any provisions, guidelines, goals, or objectives related to California spotted owl outlined in these plans or programs. The project site is not within an area covered by an adopted Habitat Conservation Plan or Natural Community Conservation Plan.

There are two drainage features that convey ephemeral flow. These features are not likely to be subject to USACE regulation under the definitions of waters of the United States as presently in effect under the Navigable Waters Protection Rule, but these features are likely subject to regulation by RWQCB under Porter-Cologne as waters of the State. All drainages, regardless of flow duration, are subject to 1602 of the FGC. Section 1602 of the FGC also extends regulatory protections to riparian habitats, including any associated riparian trees and other vegetation, The exact extent of the flume improvements was not available at the time this report was prepared, but alteration of any drainage channel or associated riparian habitat would require authorization from USACE, RWQCB, and CDFW. Standard best management practices and erosion control measures are recommended to avoid and minimize impacts on these features.

Conclusions

There are two drainages identified along the north-facing slopes of the project site. These drainage features are likely to qualify for regulation by State agencies. If project activities, including vegetation removal, are conducted outside the bird nesting season, and drainage channel and associated riparian habitat can be avoided, implementing the proposed improvements would not result in any significant or potentially significant impacts to biological resources under CEQA or other applicable local, state, or federal regulations.

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

CDFW (California Department of Fish and Wildlife). 2022a. California Natural Diversity Database, Wildlife and Habitat Data Analysis Branch, RareFind Version 5. Commercial version. Available at: https://www.wildlife.ca.gov/Data/CNDDB. Accessed May 2022.

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Attachment A

Figure 1. Regional Location

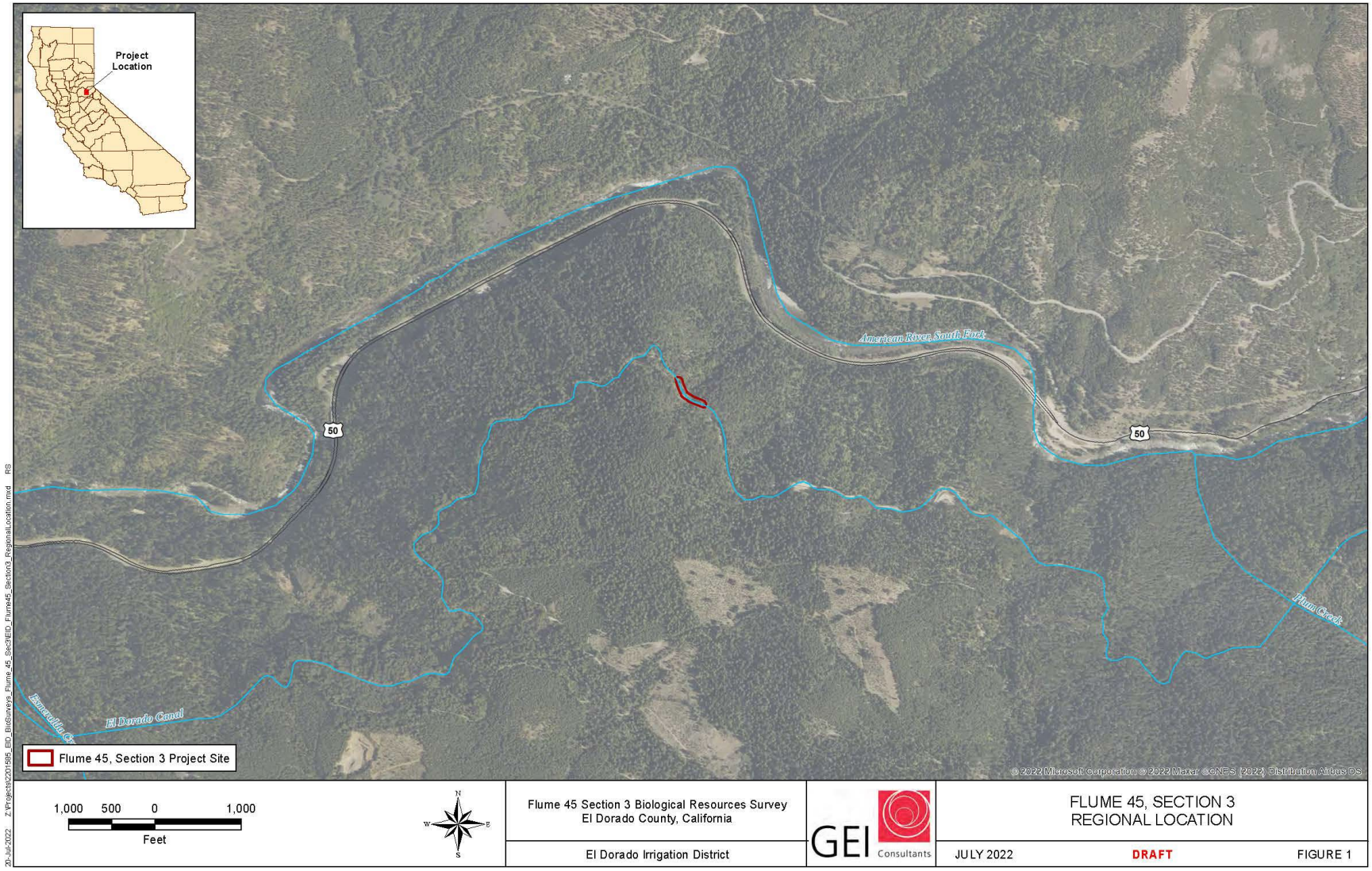
Figure 2. Topographic Map

Figure 3. Habitat Types on the Project Site

Figure 4. California Natural Diversity Database Occurrences within 5 Miles of the Project Site

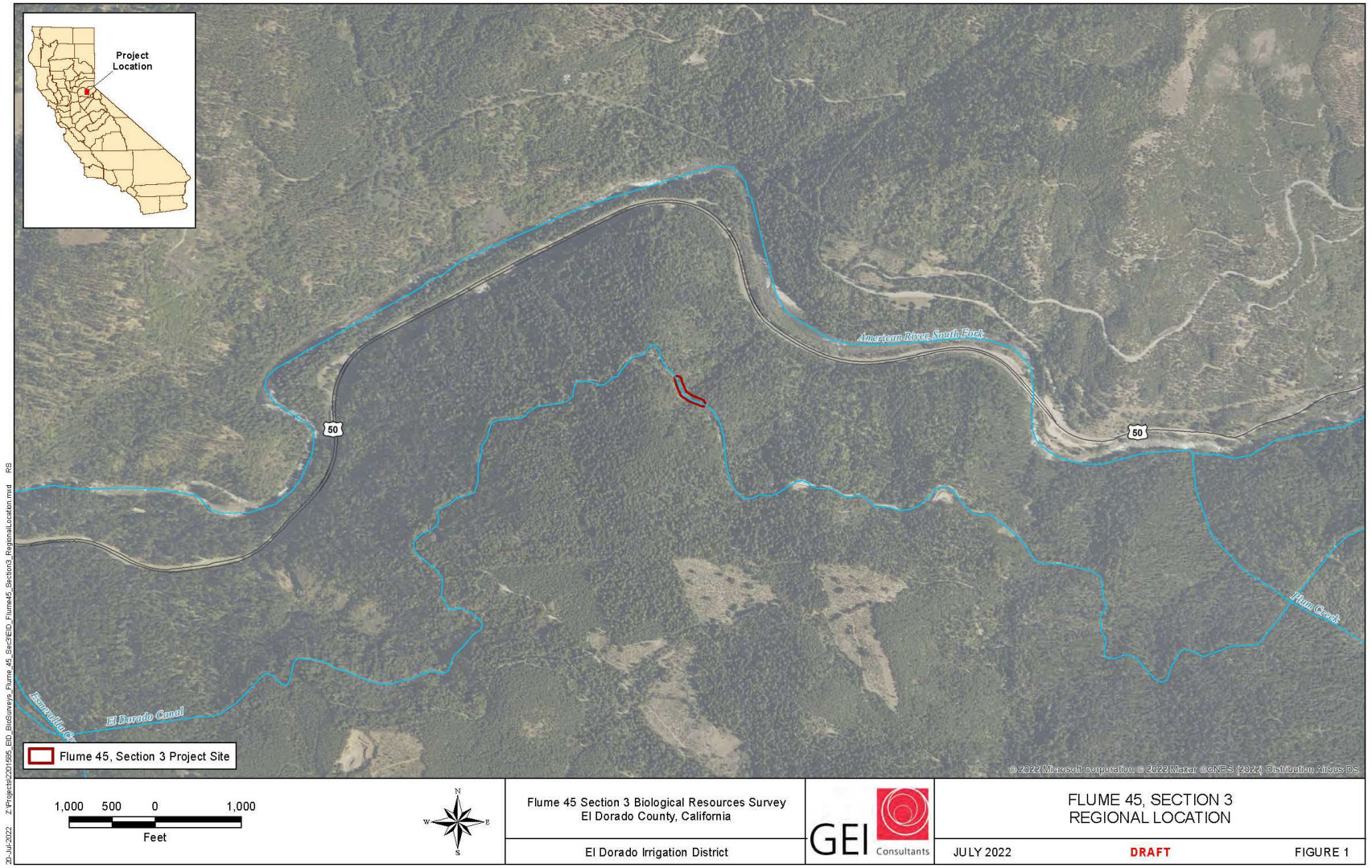
Figure 5. California Natural Diversity Database Occurrences of Spotted Owl within 5 Miles of the Project Site

Figure 1. Regional Location



Source: GEI Consultants, Inc. 2022

Figure 2. Topographic Map

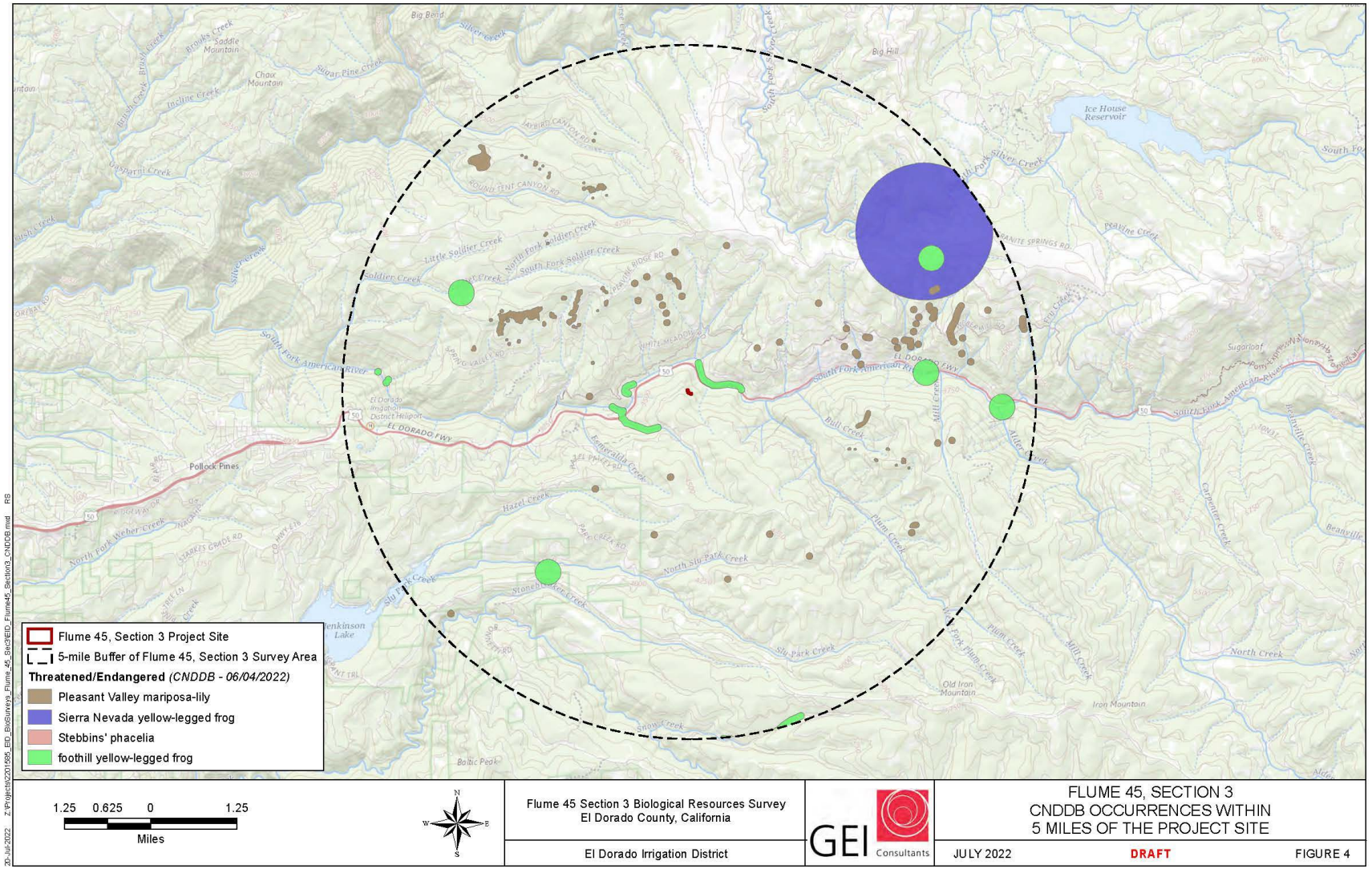


Source: GEI Consultants, Inc. 2022

Figure 3. Habitat Types on the Project Site

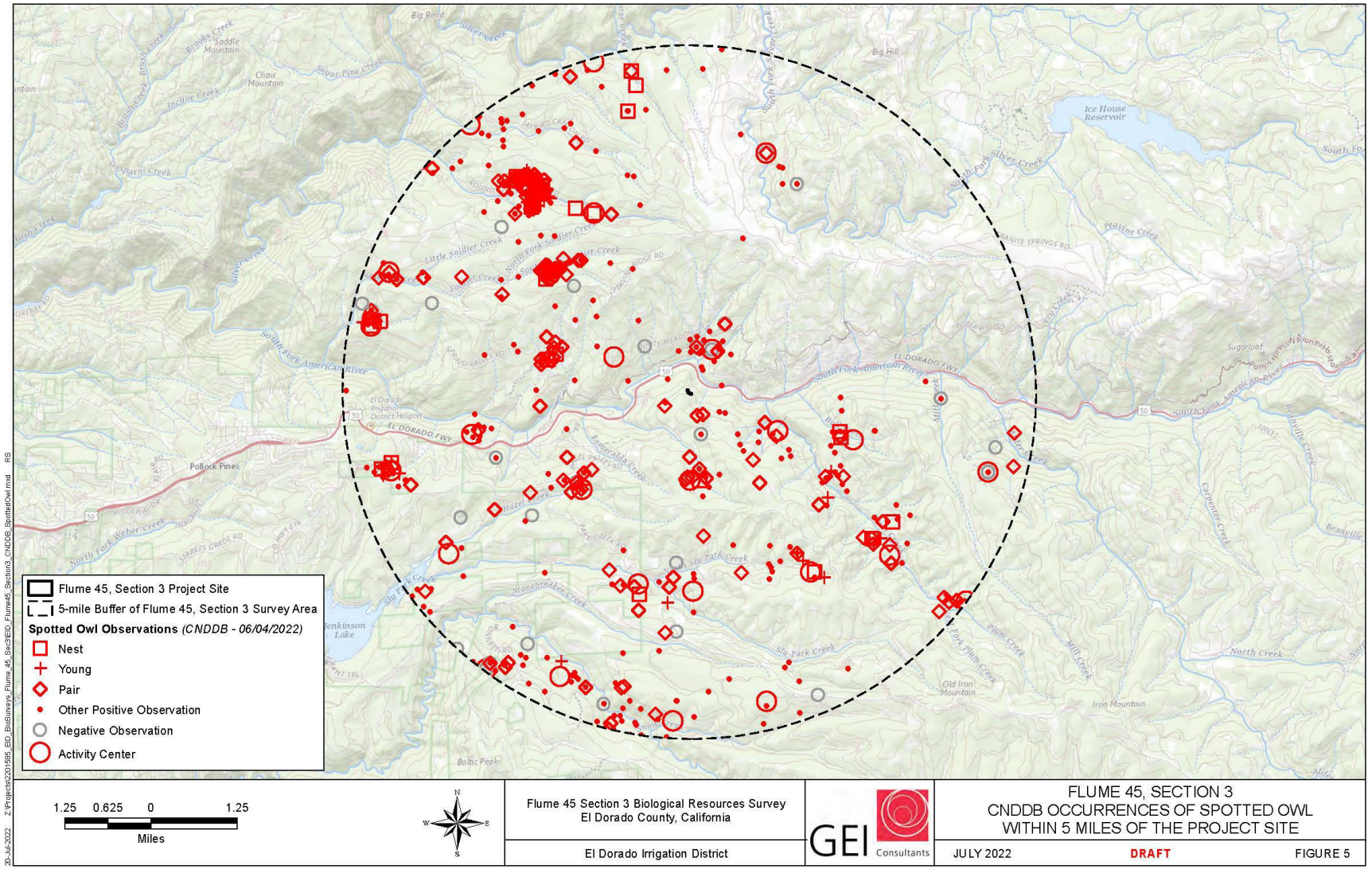
Source: GEI Consultants, Inc. 2022

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

IPaC U.S. Fish & Wildlife Service

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

El Dorado County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. 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.

The following species are potentially affected by activities in this location:

Amphibians

NAME	STATUS

California Red-legged Frog Rana draytonii — Threatened
Wherever found
There is final critical habitat for this species. Your location overlaps the critical habitat.
https://ecos.fws.gov/ecp/species/2891

Sierra Nevada Yellow-legged Frog Rana sierrae — Endangered
Wherever found
There is final critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/9529

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus Wherever found There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/321	Threatened

Flowering Plants

NAME	STATUS
Layne's Butterweed Senecio layneae Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4062	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE
California Red-legged Frog Rana draytonii https://ecos.fws.gov/ecp/species/2891#crithab	Final

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Black-throated Gray Warbler Dendroica nigrescens This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Jul 20
Cassin's Finch Carpodacus cassinii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9462	Breeds May 15 to Jul 15
Evening Grosbeak Coccothraustes vespertinus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Dec 1 to Aug 31
Oak Titmouse Baeolophus inornatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Olive-sided Flycatcher Contopus cooperi This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

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

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 ssp.	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].

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 45 section 3 project site facing west.

View of spillway and top of ephemeral drainage D2 in the project site facing southeast.

View of ephemeral drainage D1 in project site, north-facing slope.

View of rocky substrate along steep north-facing slopes in the project site below Flume 45 Section 3.

View of below Flume 45 section 3 project site facing east.

View of limited understory vegetation below flume along north slope facing west.

Attachment D

Lists of Plant and Wildlife Species Observed during the Field Survey

Plant Species Observed at the Flume 45 Section 3 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

Scientific Name[1]	Common Name	Native?
MONTIACEAE		
Claytonia parviflora	Narrow leaved miner's lettuce	yes
ONAGRACEAE		
Clarkia rhomboidea	Diamond clarkia	yes
PINACEAE Orobanchaceae		
Pinus ponderosa	Ponderosa pine	yes
Pseudotsuga menziesii	Douglas fir	yes
PHRYMACEAE		
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 Themidaceae		
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 Biological Resources Information

Table D-1. Special-Status Plant Species Evaluated for Potential Impacts in the Study Area.

Species	Blooming Period	Status[1]		Habitat Associations	Impacts Analyzed	Rationale
		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	Suitable habitat is not present in the BSA.
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	Suitable habitat is not present in the BSA.
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	No	Suitable woodland species limited in the BSA; species not observed during the 2022 or 2023 surveys.
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	Suitable habitat is not present in the BSA and 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	Suitable habitat is not present in the BSA and outside the species' known elevation range.
Common moonwort *Botrychium lunaria*	August	FSS	–	Meadows and seeps, subalpine coniferous forest, upper montane coniferous forest. Elevation: 6,500 – 11,200 feet	No	Suitable habitat is not present in the BSA and outside the species' known elevation range.

Species	Blooming Period	Status[1]		Habitat Associations	Impacts Analyzed	Rationale
		Federal	State			
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	Suitable habitat is not present in the BSA and 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	Suitable habitat is not present in the BSA and 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	Suitable habitat is not present in the BSA and 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	Suitable habitat is not present in the BSA and outside the species known geographic 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	No	Suitable habitat is limited in the BSA; no Josephine or volcanic soils on project site; species not observed during the 2022 or 2023 surveys.
Flagella-like atractylocarpus *Campylopodiella stenocarpa*	NA	–	2B.2	Seeping metamorphic rock. Elevation: 330 – 1,640 feet.	No	Suitable habitat is not present in the BSA and outside the species' known elevation range.

Species	Blooming Period	Status[1]		Habitat Associations	Impacts Analyzed	Rationale
		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	No	Suitable habitat is limited in the BSA; species not observed during the 2022 or 2023 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	Suitable habitat is not present in the BSA and outside the species' known elevation range.
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	Suitable habitat is not present in the BSA and 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	Suitable habitat is not present in the BSA and 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	Suitable habitat is not present in the BSA and outside the species' known elevation range.
Blandow's bog moss *Helodium blandowii*	NA	FSS	–	Montane bogs, fens, mires, and seeps. Elevation: 5,000-6,000 feet	No	Suitable habitat is not present in the BSA and 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	Suitable habitat is not present in the BSA and outside the species' known elevation range.

Species	Blooming Period	Status[1]		Habitat Associations	Impacts Analyzed	Rationale
		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	Suitable habitat is not present in the BSA and 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	Suitable habitat is not present in the BSA and 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. Elevation: 2,525-4,710 feet	No	Suitable habitat is limited in the BSA; moist, rocky north-facing upper slopes that border the flume where moisture leaks; species not observed during the 2022 and 2023 surveys.
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	Suitable habitat is not present in the BSA and 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	Suitable habitat is not present in the BSA and outside the species' known elevation range.
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	Suitable habitat is not present in the BSA and outside the species' known elevation range.

Species	Blooming Period	Status[1]		Habitat Associations	Impacts Analyzed	Rationale
		Federal	State			
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	No	Suitable woodland habitat is limited in the BSA; species not observed during the 2022 or 2023 surveys.
Whitebark pine *Pinus albicaulis*	NA	FSS	–	Upper red fir forest to timberline, especially subalpine forest. Elevation: above 7,300 feet	No	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	No	Suitable habitat is limited in the BSA; species not observed during the 2022 or 2023 surveys.
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	No	Suitable habitat is limited in the BSA; species not observed during 2022 or 2023 survey.

Notes:
NA = not applicable
FSS = U.S. Forest Service Region 5 Sensitive Species
– = No status
Sources:

California Department of Fish and Wildlife. 2024. California Natural Diversity Database, Wildlife and Habitat Data Analysis Branch, RareFind Version 5. Commercial version. Available at: https://www.wildlife.ca.gov/Data/CNDDB. Accessed December 19, 2024.

California Native Plant Society, Rare Plant Program (CNPS). 2024a. Rare Plant Inventory (online edition, v9-01 1.5). Available at: https://www.rareplants.cnps.org. Accessed December 19, 2024.

U.S. Forest Service. 2013. Regional Forester's Sensitive Plant Species List. 2013. Available at: https://www.fs.usda.gov/main/r5/plants-animals/plants. Accessed December 19, 2024

Table E-2 Special-Status Wildlife Species Evaluated for Potential Impacts in the Study Area.

Species	Status[1]		Habitat Associations	Impacts Analyzed	Rationale
	Federal	State			
Invertebrates					

Species	Status[1]		Habitat Associations	Impacts Analyzed	Rationale
	Federal	State			
Western bumble bee *Bombus occidentalis*	FSS	C	Historically found from sea level to 8,000 feet in California, this species is now restricted to high elevations in the Sierra Nevada Mountains and the Cascade Mountain Range. Species requires nesting, foraging, and overwintering habitat. Forages in a variety of habitat with suitable nectar sources, but often nests in open grasslands and scrub habitats in abandoned rodent nests underground or above ground in tufts of grass, old bird nests, rock piles, cavities in dead trees, hollow logs, or aboveground manmade structures. Food sources include milkweed (*Asclepias* spp.), daisy (*Chaenactis* spp.), lupine (*Lupinus* spp.), burclover (*Medicago* spp.), scorpion weed (*Phacelia* spp.), and sage (*Salvia* spp.) (Williams et al. 2014).	No	The BSA is located just below the mapped elevation range identified by CDFW. The BSA does not provide suitable foraging or nesting habitat due tomaintenance and operations of the flume such as the implementation of the Integrated Pest Management (IPM) Plan includes the use of herbicides and vegetation removal in the BSA (EID 2018). No nectar plants were documented during field surveys conducted in the blooming season. No burrows or cavities suitable were identified during fields surveys. Suitable overwintering habitat is limited within the Project site. Western bumble bees were observed in July of 2024 at Ice House Observation Point, located 3.9-miles to the northeast of the Project site, at an elevation of 5,000 feet (Bumble Bee Watch 2024; Google Earth 2024). Construction activities are planned for August to January, while the queen flight season is from October to November, therefore active construction would reduce suitability of any overwintering habitat in the BSA being selected by queens.

Species	Status[1]		Habitat Associations	Impacts Analyzed	Rationale
	Federal	State			
Monarch butterfly (Summer breeding population) *Danaus plexippus*	C	–	Overwinters along the coast from Mendocino County south into Baja California in wind-protected groves of gum (*Eucalyptus* spp.), Monterey pine (*Pinus radiata*), or Monterey cypress (*Hesperocyparis macrocarpa*) with nectar and water sources nearby. Require milkweed (*Asclepias* spp.) for egg laying and larval feeding and various nectar plants for feeding (International Environmental Law Project 2012).	No	The BSA does not provide suitable nesting or foraging habitat. Maintenance and operations of the flume such as the implementation of the IPM Plan includes the use of herbicides and vegetation removal in the BSA (EID 2018). No nectar plants were identified during the field surveys conducted in the blooming season. The BSA is located within Priority #2 Summer Breeding Zones (Western Monarch and Milkweed Occurrence Database). Construction activities are planned for August through January, when this species is overwintering on the coast and is not anticipated to be within or utilizing the BSA.
Fishes					
Pacific lamprey *Entosphenus tridentalus*	FSS	–	Cold, clear water for spawning and incubation. Adults use gravel areas to build nests, while ammocoetes need soft sediments in which to burrow during rearing. Nests are generally associated with cover, including gravel and cobble substrates, vegetation and woody debris. Prefer habitats with slow or moderately slow water velocities, such as low gradient riffles, pool tailouts and lateral scour pools (CDFW 2024).	No	Flume structure does not provide suitable habitat.

Species	Status[1]		Habitat Associations	Impacts Analyzed	Rationale
	Federal	State			
Delta smelt *Hypomesus transpacificus*	T	E	Endemic to open waters of San Francisco Bay and Sacramento-San Joaquin River Delta. Distribution includes San Pablo Bay up through Suisun Bay, upstream through the delta to the Sacramento River below Isleton, and the San Joaquin River below Mossdale. Spawning has not been observed in the wild but is thought to take place in sloughs and shallow edge-water channels in the upper delta and in Montezuma Slough near Suisun Bay (CDFW 2024).	No	Flume structure does not provide suitable habitat; 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 (CDFW 2024).	No	Flume structure does not provide suitable habitat.
Amphibians					
Southern long-toed salamander *Ambystoma macrodactylum sigillatum*	–	SSC	Forests, alpine meadows, sagebrush, and intermediate habitats between those listed. Can be found in disturbed agricultural areas. At high elevations, above 6,900 feet, inhabits permanent water bodies that are deeper than 6 feet. Hardwood forests and granitic slopes are also used for upland habitat. This species strongly prefers fishless water bodies (Thomson et al. 2016).	No	Suitable habitat is not present in the BSA. The Project site is located below the known elevation range for this species.
Yosemite Toad *Anaxyrus canorus*	T, FSS	C	Found in wet meadows and forests at elevations of 4,800 to 12,000 feet. Indigenous to CA; found in a 150 mile span of the Sierra Nevada range, from Ebbetts Pass in Alpine County, south to Fresno and northern Inyo Counties (USFWS 2016).	No	Suitable habitat is not present in the BSA and the Project site is outside this species' range.

Species	Status[1]		Habitat Associations	Impacts Analyzed	Rationale
	Federal	State			
Foothill yellow-legged frog *Rana boylii*	E, FSS	E	Ranges in the northern half of California except for the Central Valley, Modoc Plateau, and eastern side of the Sierra Nevada Mountains. Generally found in shallow flowing streams and rivers with at least cobble sized substrate. Breeding generally occurs at the margins of wide shallow channels with reduced flow variation near tributary confluences. Specifically, egg masses are placed in low flow locations on or under rocks with preferred substrates being boulders, cobbles, or gravel .	Yes	Suitable breeding habitat is not present within the and only submarginal uplands habitat is present. Occurrence records in Ogilby Creek and the South Fork American River are located downslope steep terrain from Project activities. Although, Camp P Road is planned for slight widening and will be utilized as a construction access route, it does runs parallel to Ogilby Creek.Surveys conducted in 2013, 2016, 2021, and 2023 determined foothill yellow-legged frogs could occur in uplands within 82 feet of aquatic habitat (USFWS 2024d).
California red-legged frog *Rana draytonii*	T	SSC	Ponds and streams in humid forests, woodlands, grasslands, coastal scrub, and streamsides with plant cover in lowlands or foothills. Breeding habitat includes permanent or ephemeral water sources; lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps. Ephemeral wetland habitats require animal burrows or other moist refuges for estivation when the wetlands are dry. Occurs from sea level to 5,000 feet in elevation. Occurs along the Coast Ranges from Mendocino County south to northern Baja California, and inland across the northernmost reaches of the Sacramento Valley and locally south through portions of the Sierra Nevada foothills as far south as northern Tulare County (California Herps 2024a.)	No	Suitable breeding and upland habitat is not present in the BSA.
Sierra Nevada yellow-legged frog	E FSS	T	Inhabits lakes, ponds, meadow streams, isolated pools, and sunny riverbanks in the Sierra Nevada	No	The BSA is located at a lower elevation than this species is

Species	Status[1]		Habitat Associations	Impacts Analyzed	Rationale
	Federal	State			
Rana sierrae			Mountains. Open stream and lake edges with a gentle slope up to a depth of 2 to 3 inches seem to be preferred. Waters that do not freeze to the bottom and which do not dry up are required. The elevation range for this species is 984 to 12,000 feet (California Herps 2024b.)		known to occur at in the EID district. Areas within the EID Project No. 184 FERC License boundary have been surveyed extensively for amphibians (EID 2010). Based on these surveys and occurrences of SNYLF, the District, in consultation with resource agencies and stakeholders, developed a monitoring plan to continue to document the presence and general distribution of SNYLF populations in areas around Project No. 184 facilities. The BSA does not have the suitable habitat characteristics that are present at these monitoring sites where SNYLF have been observed (e.g., high elevation, in proximity to lakes). Visual encounter surveys and biological monitoring above indicates this species occurs over 15 miles from the Project site (EID 2023).
Reptiles					

Species	Status[1]		Habitat Associations	Impacts Analyzed	Rationale
	Federal	State			
Northwestern pond turtle *Actinemys marmorata*	FC FSS	SSC	Generally, occurs in various water bodies including permanent and ephemeral systems either natural or artificial. Specially, vernal pools used by this species have an average ponding duration of 81 days, and successful recruitment occurs in ponds that last on average 21 days longer than larval development time. Pool temperature requirements are from 48 to 90 Fahrenheit. Pools with invasive species, such as crayfish or bullfrogs often, but now always, exclude this species (Thomson et al. 2016).	No	Suitable nesting and upland habitat is not present in the BSA.
Birds					
Northern goshawk *Accipiter gentilis*	FSS	SSC	Nests in mature and old-growth coniferous forests at high elevations in the Sierra Nevada, Cascade, North Coast, and Transverse Ranges. Prefers stands with Pacific Ponderosa pine (*Pinus ponderosa* var. *pacifica*), Jeffrey pine (*Pinus jeffreyi*), Lodgepole pine (*Pinus contorta*), Douglas-fir (*Pseudotsuga menziesii*), and rarely pinyon-juniper (*Pinus monophylla* and *Juniperus* spp.) or quaking aspen (*Populus tremuloides*). Prefers stands with larger trees, denser canopies, and relatively open understories (Shuford and Gardali 2008).	Yes	Suitable nesting habitat is not present in the BSA, but transient and other non-breeding individuals could occur in the area.
Willow flycatcher *Empidonax traillii*	FSS	–	Inhabits extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters; 2000-8000 ft elevation. Requires dense willow thickets for nesting/roosting. Low, exposed branches are used for singing posts/hunting perches.	No	Suitable willow habitat is not present in the BSA.

Species	Status[1]		Habitat Associations	Impacts Analyzed	Rationale
	Federal	State			
Bald eagle *Haliaeetus leucocephalus*	FSS	E FP	Permanent resident in the highest Coast Range mountains, across the Cascade Range, and down the Sierra Nevada to the eastern Transverse Ranges of San Bernardino and Riverside Counties. Uncommon migrant and winter visitor to lowland rivers, lakes, and reservoirs. Nests in large, old-growth, or dominant live trees with open branchwork, especially ponderosa pine (*Pinus ponderosa*). Requires large bodies of water or rivers with abundant fish, and adjacent snags (CWHR Program Staff 1999).	Yes	Suitable nesting habitat is not present in the BSA, but transient and other non-breeding individuals could occur in the area.
Great gray owl *Strix nebulosi*	FSS	E	Breeds in red fir (*Abies magnifica*), lodgepole pine (*Pinus contorta* ssp*. murrayana*), and mixed coniferous habitats, always near wet meadows. Nests in large, broken-topped snags usually 25 to 72 feet above the ground. A rarely seen resident at 4,500 to 7,500 feet in elevation in the Sierra Nevada Range, from the vicinity of Quincy south to the Yosemite region. (Gaines and Granholm 1990).	No	Suitable nesting habitat is not present in the BSA.
California spotted owl *Strix occidentalis occidentalis*	FSS	SSC	Older forests in areas of high canopy cover, with a multi-layered canopy, old decadent trees, a high number of large trees, and coarse downed woody debris. In California, ranges throughout the west slopes of the Sierra Nevada Mountains, and down the Coast Range Mountains from Carmel south through the Transverse Ranges nearly to Baja California (Shuford and Gardali 2008). The nesting season for spotted owls occurs between mid-February to August with most young fledging by August 31 (Verner et al. 1992).	Yes	The BSA occurs within range of the species, and suitable foraging and nesting habitat is present. Project activities will be performed in August through January, which is outside the nesting period.

Species	Status[1]		Habitat Associations	Impacts Analyzed	Rationale
	Federal	State			
Mammals					
Pallid bat *Antrozous pallidus*	FSS	SSC	Ranges across nearly all of California except for high elevation portions of the Sierra Nevada Mountains and Del Norte, western Siskiyou, Humboldt, and northern Mendocino Counties. Generally found in a wide variety of habitats but with some preference for drier areas. Most common in open, dry habitats with rocky areas for roosting. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings (Harris et al. 1990).	Yes	Suitable roosting habitat limited to hazard trees and flume structure in the BSA.
Sierra Nevada mountain beaver *Aplodontia rufa californica*	FSS –	SSC	Ranges across the Sierra Nevada Mountains from Shasta and Lassen Counties south to Tulare County. Generally found in dense riparian forests and open shrub scapes around most forest types. Specifically found in forests with open to moderate canopy cover and a dense understory near water. Requires deep friable soils and a cool moist microclimate (Polite and White 1990).	No	Suitable habitat is not present in the BSA.
Gray wolf *Canis lupus*	E	E	Wolves are habitat generalists and previously ranged throughout the northern hemisphere. Habitat preferences appear to be more ungulate prey dependent than cover dependent. Territories have a variety of topographic features. There are seven known packs of wolves in California with a total of 65 individuals (California Wolf Center 2024). Forests, open meadows, rocky ridges, and lakes or rivers all comprise a pack's territory. In the West, have been known to follow the seasonal elevational movements of ungulate herds (Snyder 1991).	No	Suitable movement habitat is present in the BSA, but dens not observed during the 2022 and 2023 surveys.

Species	Status[1]		Habitat Associations	Impacts Analyzed	Rationale
	Federal	State			
Townsend's big-eared bat *Corynorhinus townsendii*	FSS	SSC	Ranges throughout California except for high elevation portions of the Sierra Nevada Mountains. Generally prefers mesic habitats but known to occur in all non-alpine habitats of California. Roosts in the open, hanging from walls and ceilings. Extremely sensitive to human disturbance. Roosting occurs in open area, hanging from wall and ceilings of caves, tunnels, mines, buildings, or other structures and this species may use different roosting sites for day and night (CWHR Program Staff 2000).	Yes	Suitable roosting habitat is limited to the wooden flume structure in the BSA.
California wolverine *Gulo gulo*	FSS T	T FP	Scarce resident of the North Coast mountains and Sierra Nevada. Mixed coniferous woodlands, especially those with red fir (*Abies magnifica*) and lodgepole pine (*Pinus contorta*). Probably associated with subalpine conifer, alpine dwarf-shrub, wet meadow, and montane riparian habitats between 4,300 and 7,300 feet in elevation (Johnson et al. 1990).	No	Suitable habitat is not present in the BSA and is outside the known range of this species.
Pacific marten *Martes caurina*	FSS	–	Mixed coniferous forest with different-aged stands and high canopy closure, including old-growth trees and snags for denning. They may also occupy holes in dead or live trees or stumps, abandoned squirrel nests, conifer crowns, rock piles, burrows, and snow cavities (Dawson and Cook 2012).	No	Suitable habitat is not present in the BSA. Dens not observed in the BSA during the 2022 and 2023 surveys.
Fringed myotis *Myotis thysanodes*	FSS	–	Occurs in much of California except the Central Valley and Colorado and Mojave Deserts. Occurs in a wide variety of habitats; records range in elevation from sea level to 9,350 feet in New Mexico. Uses caves, mines, buildings or crevices for maternity colonies and roosts. Optimal habitats are pinyon-juniper, valley foothill hardwood, and hardwood-conifer, generally at 4,000 to 7,000 feet (Polite et al. 2005).	No	Suitable roosting habitat is not present in the BSA.

Species	Status[1]		Habitat Associations	Impacts Analyzed	Rationale
	Federal	State			
Fisher *Pekania pennanti*	FSS	SSC	Large areas of mature, dense forest stands with snags and greater than 50% canopy closure. Uncommon permanent resident of the Sierra Nevada, Cascades, and Klamath Mountains; also found in a few areas in the North Coast Ranges (USFWS 2014).	No	Suitable habitat is not present in the BSA which is outside this species' range.
Sierra Nevada red fox *Vulpes vulpes necator* pop. 2	C	T	Found in a variety of habitats, including alpine dwarf-shrub, wet meadow, subalpine conifer, lodgepole pine (*Pinus contorta* ssp. *murryana*), red fir (*Abies magnifica*), aspen, montane chaparral, montane riparian, mixed conifer, Jeffrey pine (*Pinus jeffreyi*), eastside pine, montane hardwood-conifer, and ponderosa pine (*Pinus ponderosa*). Most sightings have been above 7,000 feet in elevation, but generally ranges from 3,900 to 11,900 feet. Dens in rocky outcrops, hollow logs and stumps, and burrows in friable soil (CDFW 2019b).	No	No potential to occur; Project site is outside this species' range.

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

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