

Initial Study/Mitigated Negative Declaration

**El Dorado Irrigation District  
Flume 30 Replacement Project**

*Prepared for:*



El Dorado Irrigation District

May 2020

*Prepared by:*

**AECOM**



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**El Dorado Irrigation District  
Flume 30 Replacement Project**

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# ACRONYMS AND OTHER ABBREVIATIONS

AB	Assembly Bill
ADA	Americans with Disabilities Act
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
Central Valley RWQCB	Central Valley Regional Water Quality Control Board
CEQA	California Environmental Quality Act
CGS	California Geological Survey
CH <sub>4</sub>	methane
CHP	California Highway Patrol
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	CO <sub>2</sub> 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
EIR	Environmental Impact Report
El Dorado Project	El Dorado Federal Energy Regulatory Commission Project No. 184-CA
ENF	Eldorado National Forest
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FTA	Federal Transit Administration
FYLG	foothill yellow-legged frog
GHG	greenhouse gas
Guide	El Dorado County Air Pollution Control District Guide to Air Quality Assessment
GWP	global warming potential
HCP	Habitat Conservation Plan
IS	Initial Study
ITE	Institute of Transportation Engineers
L <sub>eq</sub>	average noise level
LOS	level of service
MCAB	Mountain Counties Air Basin
MND	Mitigated Negative Declaration
MRZ	mineral resource zone
MSE	mechanically stabilized earthen
MT	metric ton(s)
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
N <sub>2</sub> O	nitrous oxide
NAAQS	National Ambient Air Quality Standards



NO <sub>2</sub>	nitrogen dioxide
NOI	Notice of Intent
NO <sub>x</sub>	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OHWM	ordinary high-water mark
PG&E	Pacific Gas and Electric Company
PGA	peak horizontal ground acceleration
PM	particulate matter
PM <sub>10</sub>	PM equal to or less than 10 micrometers in diameter
PM <sub>2.5</sub>	PM equal to or less than 2.5 micrometers in diameter
PPV	peak particle velocity
Project	Flume 30 Replacement Project
ROG	reactive organic gases
RPW	relatively permanent water
SACOG	Sacramento Area Council of Governments
SCAQMD	South Coast Air Quality Management District
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SLF	Sacred Lands File
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMARA	Surface Mining and Reclamation Act of 1975
SO <sub>2</sub>	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
USFS	U.S. Forest Service
VdB	velocity decibel(s)





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**NOTICE OF INTENT**  
**TO ADOPT A NEGATIVE DECLARATION NOTICE OF PUBLIC HEARING**  
**EL DORADO IRRIGATION DISTRICT FLUME 30 REPLACEMENT PROJECT**

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The El Dorado Irrigation District (EID) proposes to adopt a Mitigated Negative Declaration (MND) pursuant to the California Environmental Quality Act (CEQA) (Section 15000 et seq., Title 14, California Code of Regulations) for the Flume 30 Replacement Project (proposed project). The proposed project involves replacing 350 feet of wooden flume structure with reinforced air-placed concrete, canal bench improvements, improvements to Forest Service Road 10-08YE, and construction of a new segment of access road. The Flume 30 project area is located east of the town of Pollock Pines in an unincorporated area of El Dorado County. The project area is south of U.S. Highway 50 (US 50) and east of Plum Creek, on federal lands managed by the U.S. Forest Service (USFS), in the Eldorado National Forest (ENF).

The proposed Flume 30 Replacement Project is approximately 350 feet long and consists of one ground-level and three elevated flume segments that transverse Bull Creek. The existing wooden flume and substructure would be demolished and disposed at an off-site disposal area, in accordance with applicable regulations. A new flume of precast concrete voided slab would be installed to span Bull Creek. The eastern abutment would not require additional improvements and could be used with only minor modification. The western abutment would be removed and rebuilt using a system similar to the eastern reinforced shotcrete facing and rock anchor tie backs to provide stability. Access to the project area would primarily rely on the use of existing roads. A new road of approximately 2,200 lineal feet would need to be constructed to allow access to the existing canal bench. Project construction is anticipated to take approximately 5 to 6 months. The project site is not identified on the lists specified in Government Code section 65962.5. EID is the lead agency under the CEQA for the proposed project and has directed the preparation of an Initial Study (IS) on the proposed project in accordance with the requirements of CEQA, the State CEQA Guidelines, and EID's guidelines. The IS describes the proposed project and assesses the proposed project's potentially significant adverse impacts on the physical environment. It concludes that the proposed project's potentially significant or significant adverse effects on the environment could be mitigated to less-than-significant levels; therefore, a proposed MND has been prepared.

Agencies and members of the public are invited to comment on the proposed IS/MND. The comment period is from June 1, 2020 to June 30, 2020. The proposed IS/MND can be reviewed on the EID web site at [www.eid.org/ceqa](http://www.eid.org/ceqa). Comments must be received by 5:00 p.m. on June 30, 2020. Comments can be sent to Michael Baron, Environmental Review Analyst, El Dorado Irrigation District, at 2890 Mosquito Road Placerville, CA 95667 or by email at [mbaron@eid.org](mailto:mbaron@eid.org). The EID Board of Directors will hold a public hearing to consider the IS/MND on July 13, 2020, or at a subsequent regularly scheduled board meeting. Meetings typically begin at 9:00 a.m. Please check EID's website for information regarding the meeting format: <https://www.eid.org/about-us/board-of-directors/meetings-agendas-and-minutes>.

In accordance with the Americans with Disabilities Act (ADA) and California law, it is the policy of the El Dorado Irrigation 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 for this meeting, please contact the EID ADA coordinator at 530.642.4045 or email at [adacoordinator@eid.org](mailto:adacoordinator@eid.org) at least 72 hours prior to the meeting. Advance notification within this guideline will enable the District to make reasonable accommodations to ensure accessibility.



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# 1 INTRODUCTION

## 1.1 BACKGROUND

The El Dorado Irrigation District (EID) is proposing to implement the Flume 30 Replacement Project (project), which would involve replacement of 350 feet of a wooden flume structure at Flume 30 with reinforced air-placed concrete, canal bench improvements, improvements to the existing U.S. Forest Service (USFS) Road 10-08YE, and construction of new 2,200-foot segment of access road to connect to the Flume 30 work area.

As Lead Agency, in accordance with the California Environmental Quality Act (CEQA), EID has prepared this Initial Study to support the findings and conclusions of the Mitigated Negative Declaration (MND), prepared for this project.

## 1.2 PURPOSE OF THE INITIAL STUDY

This Initial Study 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 purposes of this document are to (1) determine whether project implementation would result in potentially significant or significant effects on the environment; and (2) incorporate environmental commitments into the project design and propose feasible mitigation measures, as necessary, to eliminate the project's potentially significant or significant project effects, or to reduce them to a less-than-significant level.

An Initial Study presents environmental analysis and substantial evidence in support of its conclusions regarding the significance of environmental impacts. Substantial evidence may include expert opinion based on facts, technical studies, or reasonable assumptions based on facts. An Initial Study is neither intended nor required to include the level of detail provided in an Environmental Impact Report.

CEQA requires the State and local government agencies to consider the environmental consequences of projects that they propose to carry out or over which they have discretionary authority, before implementing or approving those projects. The public agency that has the principal responsibility for carrying out or approving a project is the lead agency for CEQA compliance (State CEQA Guidelines, Section 15367).

EID has principal responsibility for carrying out the project, and EID is the CEQA lead agency for this Initial Study. EID has prepared this Initial Study to evaluate the potential environmental effects of the project and has incorporated mitigation measures to reduce or eliminate potentially significant project-related impacts. Therefore, an MND has been prepared for this project.

## 1.3 SUMMARY OF FINDINGS

Chapter 3, "Environmental Checklist," contains the analysis and discussion of potential environmental impacts of the project. The analysis determined that the project would result in **no impacts** related to the following resource topics:

- ▶ Land Use and Planning
- ▶ Mineral Resources
- ▶ Population and Housing



- ▶ Recreation
- ▶ Utilities and Services

Potential impacts were determined to be **less than significant** for the following resource topics:

- ▶ Aesthetics
- ▶ Agriculture and Forestry
- ▶ Energy
- ▶ Greenhouse Gas Emissions
- ▶ Noise
- ▶ Transportation

The project would result in **less-than-significant impacts with mitigation incorporated** for the following resource topics:

- ▶ Air Quality
- ▶ Biological Resources
- ▶ Cultural Resources
- ▶ Geology and Soils
- ▶ Hazards and Hazardous Materials
- ▶ Hydrology and Water Quality
- ▶ Public Services
- ▶ Tribal Cultural Resources
- ▶ Wildfire

## 1.4 DOCUMENT ORGANIZATION

The purpose of this IS/MND is to evaluate the potential environmental impacts of the project. This document is divided as follows:

- ▶ **Notice of Intent to Consider Adoption of a Proposed MND and Notice of Public Hearing.** The notice of intent to consider adoption of a proposed MND provides notice to responsible and trustee agencies, interested parties, and organizations of the availability of this Initial Study and notice of the public hearing.
- ▶ **Mitigated Negative Declaration.** The MND, which precedes the Initial Study analysis, summarizes the environmental conclusions and identifies mitigation measures that would be implemented in conjunction with the project.
- ▶ **Chapter 1, “Introduction.”** This chapter briefly summarizes the project and describes the purpose of the Initial Study/MND, summarizes findings, and describes the organization of the document.
- ▶ **Chapter 2.0, “Project Description,”** describes the project in detail.
- ▶ **Chapter 3.0, “Environmental Checklist,”** describes the environmental setting for each environmental resource area; evaluates a range of impacts classified as “no impact,” “less than significant,” “less than



significant with mitigation incorporated,” or “potentially significant” in response to the environmental checklist; and provides an environmental determination for the project.

- ▶ **Chapter 4.0, “References,”** provides a bibliography of sources cited in the document.
- ▶ **Chapter 5.0, “List of Preparers,”** identifies staff members and consultants responsible for preparation of this document.



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## **2 PROJECT DESCRIPTION**

### **2.1 PROJECT CONTEXT**

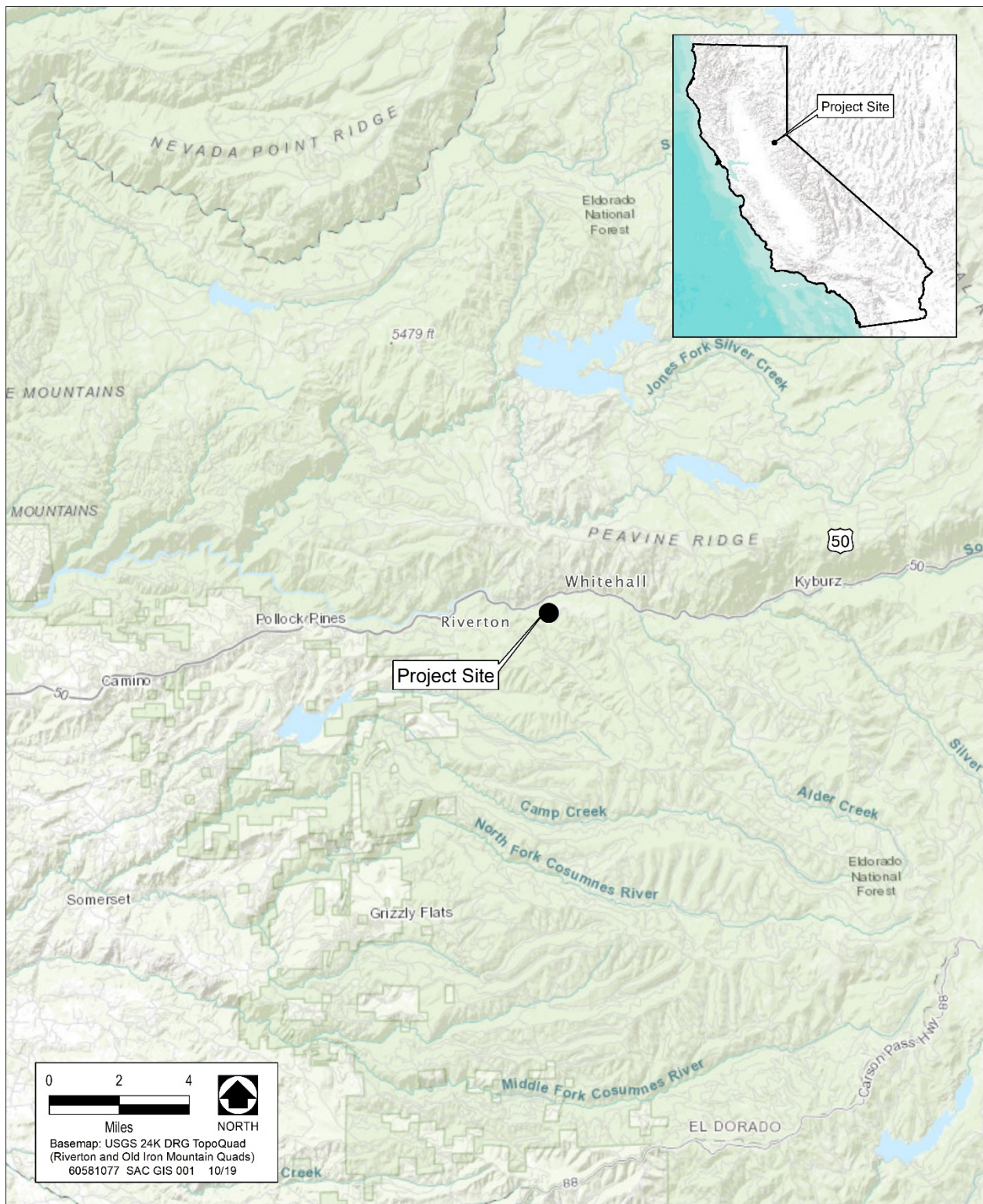
The El Dorado Irrigation District (EID) proposes to implement the Flume 30 Replacement Project (project), which would involve replacing 350 feet of a wooden flume structure at Flume 30 with reinforced air-placed concrete, canal bench improvements, improvements to Forest Service Road 10-08YE, and construction of a new 2,200-foot segment of access road. Flume 30 is part of EID's El Dorado Federal Energy Regulatory Commission (FERC) Project No. 184-CA (El Dorado Project), 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.

Flume 30 was replaced last by Pacific Gas and Electric Company (PG&E) in the early 1990s. Abutment stability measures were implemented during the flume outage of 2011, to ensure the continued integrity of the entire flume. In 2015, visual inspections were conducted and core samples of the wooden structural timbers were collected and analyzed. The findings of the inspection determined that undersized structural timber was used when the flume was replaced in the 1990s. This condition is compounded by degradation of the sills over the last 25 years, resulting in overstressing the wooden flume structure. In 2015, EID crews added additional posts and sills, and installed additional supports at each sill end to stabilize the flume and ensure safe operation until a complete replacement could occur. The flume was relined in 2017 with marine-grade plywood. Columns, stringers, sills, posts, and braces have been replaced as needed, to extend the service life of the flume. Flume 30 now has reached the end of its serviceable life and requires replacement.

### **2.2 PROJECT LOCATION AND SETTING**

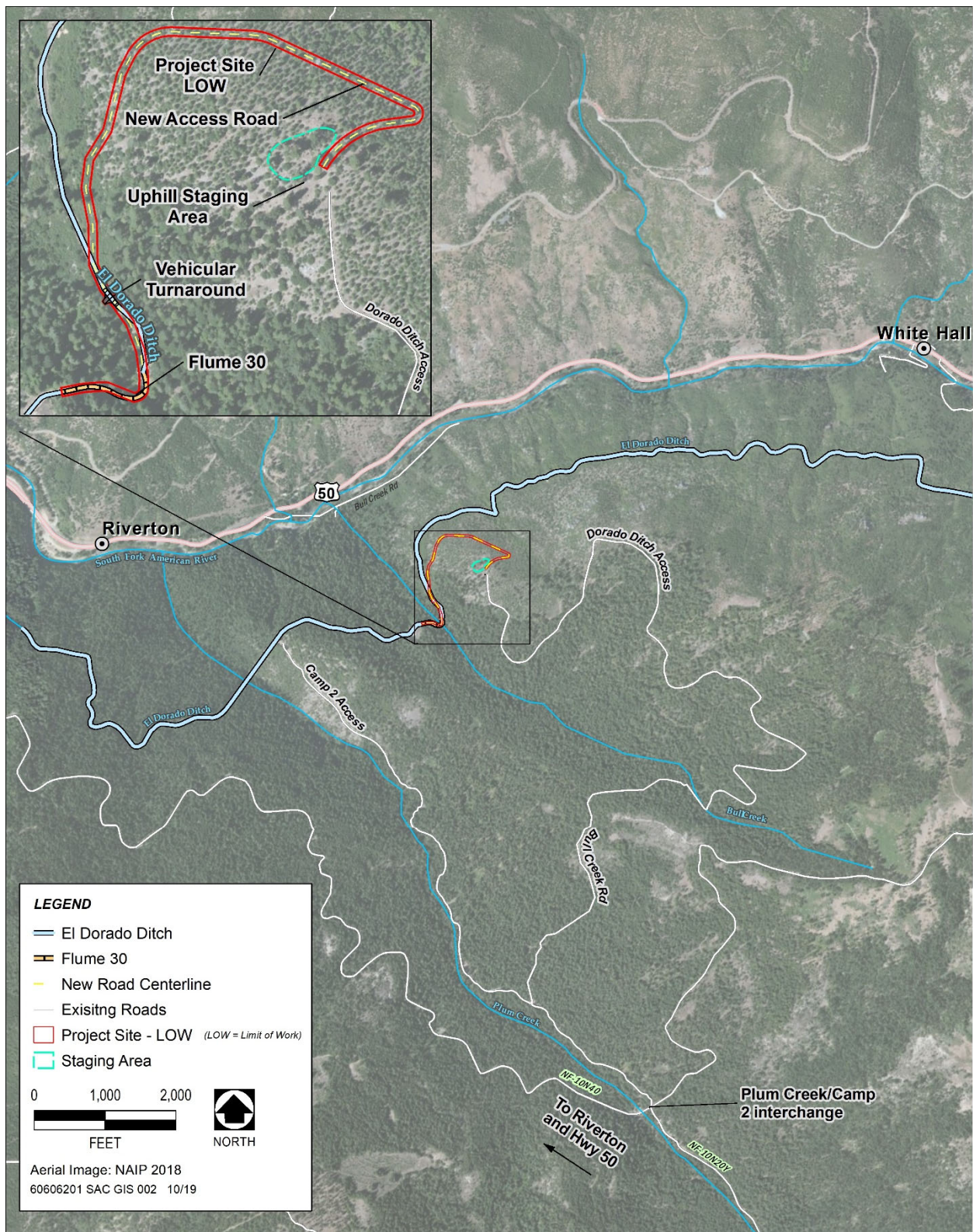
The Flume 30 project area is east of the town of Pollock Pines in an unincorporated area of El Dorado County. The project area is south of U.S. Highway 50 (US 50) and east of Plum Creek, on federal lands managed by the U.S. Forest Service (USFS), in the Eldorado National Forest (ENF) (Figure 2-1). The project area is on a northwest-facing slope approximately 0.4 mile upslope from the South Fork American River. The project area is in Township 11 north, Range 14 east, Section 33 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 3.9 acres including the staging area. The proposed project site is shown in Figure 2-2.





**Figure 2-1: Project Vicinity**





**Figure 2-2: Project Site**



## 2.3 OBJECTIVES

The project has been designed to meet the following objectives:

- ▶ protect public safety and prevent resource damage by replacing a degraded flume structure;
- ▶ ensure a reliable water supply for drinking water and hydroelectric generation;
- ▶ restore and improve the safety of the El Dorado canal system;
- ▶ ensure continued operational reliability of the El Dorado canal system; and
- ▶ improve access to the flume and minimize helicopter use for project work.

## 2.4 PROJECT COMPONENTS AND DETAILS

Flume 30 is approximately 350 feet long and consists of one ground-level and three elevated flume segments that transverse Bull Creek (Figures 2-3 and 2-4). As proposed, the wooden flume and substructure would be demolished and disposed at an off-site disposal area, in accordance with applicable regulations. Hazardous trees in the immediate vicinity of the flume would be removed. 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.

EID proposes replacing Flume 30 with a cast-in-place, reinforced air-placed concrete flume system, supported by a mechanically stabilized earthen (MSE) retaining wall.<sup>1,2</sup> Reconstruction of the canal bench would include excavation on the downslope side to native material to accommodate a footing or leveling pad for the MSE retaining wall. The segment of the canal west of Flume 30 and east of Flume 31 would be replaced with a standard, air-placed concrete canal. Fill material for the bench would be obtained from soil stockpiled at the Sierra Pacific Industries site on Plum Creek Road, Camp 5, or the Piney Point stockpile in Pollock Pines. Figure 2-5 shows a typical cross-section of a flume bed, which would consist of an excavated base with minimal or no earthen fill. Figure 2-6 shows examples of a reinforced concrete flume and standard concrete canal.

A new flume of precast concrete voided slab would be installed to span Bull Creek. Such a slab would provide the needed strength and stability at reduced cost and greater materials savings. The eastern abutment of the existing flume was upgraded using reinforced shotcrete facing and rock anchor tie backs. The eastern abutment would not require additional improvements and could be used with only minor modification. The western abutment would be removed and rebuilt using a system similar to the eastern reinforced shotcrete facing and rock anchor tie backs to provide stability. On completion of the abutment, the precast voided slab could be placed on reinforced concrete foundations on the back side of each abutment.

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<sup>1</sup> Air-placed concrete is a mixture of cement, sand, and water, applied through a pressure hose, producing a hard layer of concrete.

<sup>2</sup> MSE (or reinforced soil) is soil constructed with artificial reinforcing.



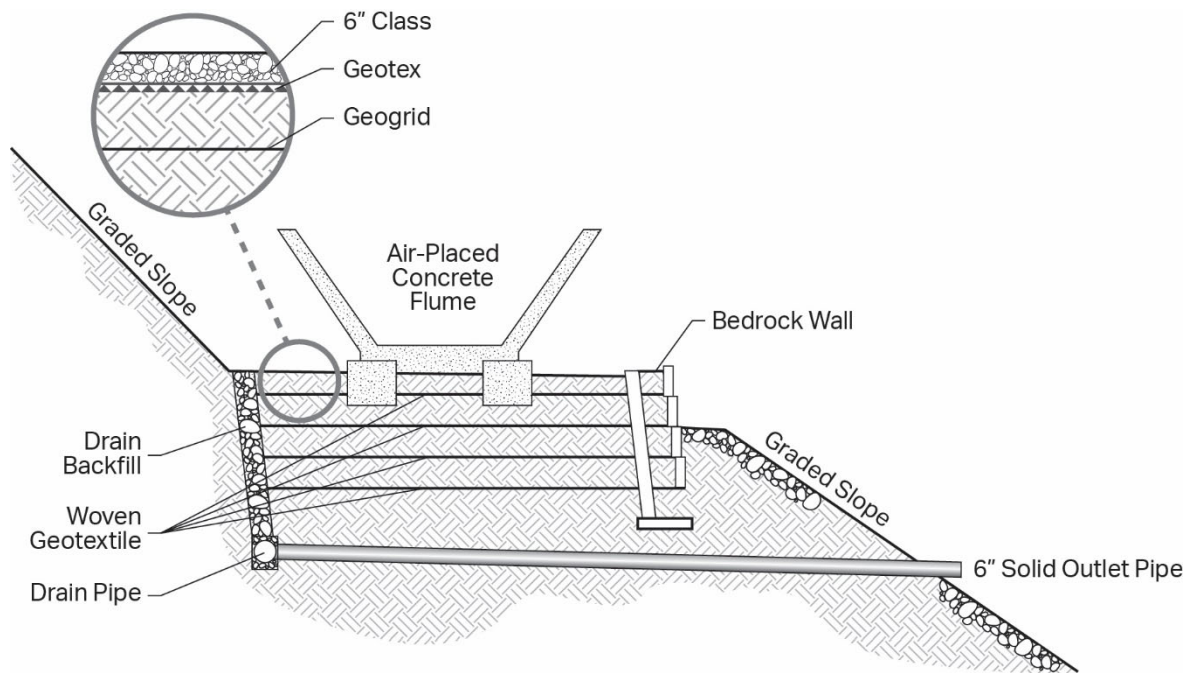


**Figure 2-3: Typical Section of Flume 30**



**Figure 2-4: Elevated Flume Segment over Bull Creek**





**Figure 2-5: Typical Cross Section of Flume Bed**



**Figure 2-6: Examples of a Reinforced Concrete Flume and Standard Concrete Canal**

The proposed reconstruction of Flume 30 would involve the earthwork and materials quantities shown in Table 2-1.



**Table 2-1. Earth work and Materials Quantities**

<b>Activity/Materials</b>	<b>Quantities</b>
Anticipated Disturbance Area	3.9 acres
Grading Cut	4,050 cubic yards
Grading Fill	820 cubic yards
Stockpile	3,230 cubic yards
MSE Wall	820 square feet
Reinforced Air-Placed Flume	350 lineal feet
Reinforced Air-Placed Concrete Canal	45 lineal feet
All-Weather Aggregate Base Surface Area	132,000 square feet (approximately 11,000 feet long by 12 feet wide)

All work would be conducted within the existing FERC license boundary, except a portion of newly constructed access road that would intersect a portion of old canal bench immediately upstream from the project site. 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. After the project is completed, the FERC license boundary would be modified to include the new staging area and access road.

## **2.5 ACCESS AND STAGING**

Access to the project area and new staging area would be via existing roads, road turnouts, and helispots identified in the approved Project No. 184 Transportation System Management Plan, including Forest Service Road 10-08YE, Camp 2 Road, and Plum Creek Road. Helicopters may be required to transport materials and equipment and would transport construction materials to the project area from helispots at Sand Flat and the SPI site (H-11).

Forest Service Road 10-08YE generally would be suitable for construction traffic to its current terminus above Flume 30. This existing portion of Forest Service Road 10-08YE would be improved using an all-weather aggregate base rock surface. However, heavy equipment and construction access to Flumes 30 would require construction of approximately 2,200 lineal feet of new roadway to access the abandoned canal bench northeast of Spillway 20 (Figure 2-7). A turn-around is proposed on the bench, from which a narrow and steep construction access spur would be constructed on the uphill side of Spillway 20. The road would be constructed to a minimum width of 12 feet and surfaced with aggregate base rock for all-weather access. A short portion of the old canal bench would be improved with the same all-weather access, to provide construction access to the upstream end of Flume 30. A new hammerhead-style turn-around would be constructed just upstream from Flume 30, to provide a point for construction traffic to turn. These improvements would be designed to minimize or eliminate helicopter use for project construction.

All project work would be completed in accordance with the Project No. 184 Transportation System Management Plan. This plan is updated at 5-year intervals and would be revised as necessary to reflect road improvements associated with the project.





**Figure 2-7: Location of New Access Road and Turn-Around behind the Spillway 20 Building**

## **2.6 CONSTRUCTION EQUIPMENT**

The following equipment is expected to be used during project construction:

- ▶ 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

## **2.7 CONSTRUCTION SCHEDULE**

Construction at Flume 30 is expected to begin in August 2020 and to be completed in December 2020.

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.

## 2.8 PERMITTING AND AGENCY REQUIREMENTS

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 approvals, permits, and plans shown in Table 2-2. Although the project area is within El Dorado County, it is a special district with equal authority; therefore, EID is exempt from the El Dorado County General Plan and Zoning Ordinance requirements. 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. Required Approvals and Permits**

<b>Responsible Agency</b>	<b>Approvals/Permits/Plans</b>
U.S. Forest Service	Fire Prevention Plan National Historic Preservation Act Consultation Section 7 Endangered Species Act Consultation
U.S. Army Corps of Engineers	Section 404 of the Clean Water Act: (Nationwide Permit for Impacts on Waters of the United States)
Regional Water Quality Control Board	Section 401 of the Clean Water Act Section 402 (National Pollutant Discharge Elimination System Permit Compliance, Notice of Intent, and Storm Water Pollution Prevention Plan)



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### 3 INITIAL STUDY CHECKLIST

PROJECT INFORMATION	
1. Project Title:	El Dorado Irrigation District Flume 30 Replacement
2. Lead Agency Name and Address:	El Dorado Irrigation District (EID) 2890 Mosquito Road Placerville, CA 95667
3. Contact Person and Phone Number:	Michael C. Baron, 530-642-4188
4. Project Location:	Township 11 north, Range 14 east, Section 33 of the U.S. Geological Survey 7.5-minute Riverton quadrangle
5. Project Sponsor's Name and Address:	AECOM 2020 L Street, Suite 400 Sacramento, CA 95811
6. General Plan Designation:	Natural Resources (El Dorado County General Plan)
7. Zoning:	Residential Estate, Rural Residential
8. Description of Project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)	<p>The project would involve replacing 350 feet of a wooden flume structure at Flume 30 with reinforced air-placed concrete, canal bench improvements, improvements to Forest Service Road 10-08YE, and construction of a new segment of access road. Flume 30 is part of EID's El Dorado Federal Energy Regulatory Commission (FERC) Project No. 184-CA, 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.</p>
9. Surrounding Land Uses and Setting: (Briefly describe the project's surroundings)	The Flume 30 project area is east of the town of Pollock Pines in an unincorporated area of El Dorado County, south U.S. Highway 50 and east of Plum Creek, on federal lands managed by the U.S. Forest Service in the Eldorado National Forest.
10: Other public agencies whose approval is required: (e.g., permits, financing approval, or participation agreement)	U.S. Forest Service, U.S. Army Corps of Engineers, California State Water Resources Control Board, California Office of Historic Preservation



**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.

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Aesthetics                         | <input type="checkbox"/> Agriculture & Forestry Resources | <input checked="" type="checkbox"/> Air Quality                     |
| <input checked="" type="checkbox"/> Biological Resources    | <input checked="" type="checkbox"/> Cultural Resources    | <input type="checkbox"/> Energy                                     |
| <input checked="" type="checkbox"/> Geology/Soils           | <input type="checkbox"/> Greenhouse Gas Emissions         | <input checked="" type="checkbox"/> Hazards and Hazardous Materials |
| <input checked="" type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning                | <input type="checkbox"/> Mineral Resources                          |
| <input type="checkbox"/> Noise                              | <input type="checkbox"/> Population/Housing               | <input checked="" type="checkbox"/> Public Services                 |
| <input type="checkbox"/> Recreation                         | <input type="checkbox"/> Transportation                   | <input checked="" type="checkbox"/> Tribal Cultural Resources       |
| <input type="checkbox"/> Utilities/Service Systems          | <input checked="" type="checkbox"/> Wildfire              | <input type="checkbox"/> Mandatory Findings of Significance         |



**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.



Signature

Michael C Baron

Printed Name

El Dorado Irrigation District

Agency

5/27/2020

Date

Environmental Review Analyst

Title



## EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an EIR is required.
4. “Negative Declaration: Less Than Significant With Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from “Earlier Analyses,” as described in (5) below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
  - a) Earlier Analysis Used. Identify and state where they are available for review.
  - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
  - c) Mitigation Measures. For effects that are “Less than Significant with Mitigation Measures Incorporated,” describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project’s environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
  - a) the significance criteria or threshold, if any, used to evaluate each question; and
  - b) the mitigation measure identified, if any, to reduce the impact to less than significance.



### 3.1 AESTHETICS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>I. Aesthetics. Except as provided in Public Resources Code Section 21099, would the project:</b>				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 3.1.1 ENVIRONMENTAL SETTING

The approximately 3.9-acre project area is in the ENF, in unincorporated El Dorado County. Most of the project area and surrounding area is heavily forested, primarily with conifers, interspersed with deciduous trees and shrubs. The proposed staging area has fewer trees and shrubs and is more open. The project area is undeveloped aside from the narrow linear footprint of the existing Flume 30 upslope from the South Fork American River.

The South Fork American River Canyon, approximately 700 feet downslope from the project area, is a popular location for whitewater rafting, fishing, picnicking, and camping. US 50, which is a major east-west corridor between Sacramento and South Lake Tahoe for travelers, is on the north side of the South Fork American River Canyon. Landscapes in the South Fork American River/US 50 viewshed fall within areas designated by the ENF's Land and Resource Management Plan (ENF 1989) as variety class A (distinctive landscapes) and variety class B (common landscapes). Foreground view areas (i.e., those that are closest to the viewer) are managed by the ENF for a visual quality objective of retention<sup>3</sup>. The middle-ground variety class B landscape is managed for a visual quality objective of partial retention<sup>4</sup>.

Ice House Road extends north from US 50 near Riverton and provides access to the Crystal Basin Recreation Area. Ice House Road is a narrow, curvilinear, two-lane roadway that extends up and around the steep slopes of

<sup>3</sup> Provides for management activities that are not visually evident. Activities may only repeat form, line, color, and texture that are frequently found in the characteristic landscape. Changes in the quality of size, amount, intensity, direction, and pattern should not be evident.

<sup>4</sup> Management activities remain visually subordinate to the characteristic landscape. Activities may repeat form, line, color, or texture common to the characteristic landscape, and may also introduce form, line, color, or texture that are found infrequently or not at all in the characteristic landscape.



Peavine Ridge, affording scenic views of the South Fork American River Canyon. The Ice House Road viewshed is managed by ENF for retention of foreground views and partial retention of middle-ground views (ENF 1989).

### 3.1.2 DISCUSSION

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

The South Fork American River Canyon presents scenic vistas, encompassing the steep, narrow canyon (approximately 900 feet high in the project vicinity); exposed rock cliff faces; flowing water and boulders in the river; and heavy 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, and to recreationists traveling on Ice House Road to the Crystal Basin Recreation Area. No officially designated scenic viewpoints are along Ice House Road or US 50 in the project vicinity.

Portions of the project area are visible from the southbound lane of Ice House Road, from the middle-ground viewpoint of recreationists leaving the Crystal Basin Recreation Area. The flume is visible only intermittently and for a few seconds, because of (1) the heavily forested hillside, (2) existing trees along Ice House Road, and (3) the curving nature of Ice House Road around the slope of Peavine Ridge, which results in constantly changing viewpoints. Because the heavily forested flume is approximately 700 feet upslope from the South Fork American River and adjacent US 50, it generally is not visible to motorists traveling on US 50 or recreationists on the South Fork American River.

The minor removal of hazard trees along the flume would not substantially detract from the existing viewshed because the area around the flume is heavily forested. 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. Because the flume can be seen only from a distance in middle ground views, the change from wood to concrete would not be noticeable. The improved abutments and flume above Bull Creek would be visually similar to the existing abutments and overcrossing. The visual presence of construction personnel and equipment would be temporary, over an approximately 5-month period, and generally would be screened from view because of the existing tree cover and topography.

The existing Flume 30 meets the ENF visual quality objective of partial retention. Although the color of the flume would change from tan/brown wood to light grey concrete, Flume 30 generally is not visible because of the dense tree cover around it. Because the proposed Flume 30 improvements would repeat the existing form, line, and texture, the modified new flume would continue to meet the ENF's visual quality objective of partial retention.

Furthermore, project-related facilities would be designed, and work would be conducted in accordance with the Project 184 Visual Resource Management Plan (EID 2008), which requires, at a minimum:

- ▶ implementing surface treatments with USFS-approved colors and natural appearing materials that would be in harmony with the surrounding landscape;
- ▶ using native plant species to screen facilities from view;
- ▶ reshaping and revegetating disturbed areas to blend with surrounding visual characteristics;
- ▶ designing new facilities to conform to the natural contours of the site's topography; and
- ▶ orienting facilities to minimize visual exposure within the viewshed.



For all of the reasons stated above, the project would not substantially detract from the existing scenic vistas. The impact would be **less than significant**. No mitigation measures are required.

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

From the government center interchange in Placerville to the South Lake Tahoe city limit, US 50 is a State-designated scenic highway (Caltrans 2017). For the same reasons described in item a) above, the project would not substantially damage scenic resources within a state scenic highway. Therefore, the impact would be **less than significant**. No mitigation measures are required.

**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?**

The project area is not in an urbanized area. For the same reasons described in item a) above, the project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. Therefore, the impact would be **less than significant**. No mitigation measures are required.

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

Project construction activities may, if necessary, occur on a 24-hour basis at various times. Nighttime lighting for these activities would be shielded and directed downward, to reduce light spillover. The proposed construction staging area is on the plateau upslope and south of the South Fork American River Canyon, and therefore would not be visible to motorists or residents in the canyon or on Ice House Road. Because any necessary nighttime lighting along the flume would be approximately 700 feet in elevation upslope from US 50 and approximately 1,100 feet south of the roadway, such lighting would not represent a nighttime light or glare hazard for motorists. No nighttime lighting would be required during the project's operational phase. Therefore, the project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. The impact would be **less than significant**. No mitigation measures are required.



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## 3.2 AGRICULTURE AND FORESTRY RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>II. Agriculture and Forestry Resources.</b>				
<p>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.</p> <p>Would the project:</p>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### 3.2.1 ENVIRONMENTAL SETTING

Most of the project area and adjacent land are heavily forested, primarily with conifers, interspersed with deciduous trees and shrubs. The proposed staging area has fewer trees and shrubs, and is more open (see Section 3.11, "Land Use and Planning," for further discussion). USFS manages the ENF, which encompasses more than



786,900 acres in El Dorado, Alpine, and Placer counties. The majority of these lands are forested timberlands, including more than 122,000 acres of old-growth forest.

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 2016a). No active agricultural land uses are in or adjacent to the project area. The project area and adjacent land are not zoned for agricultural uses or under a Williamson Act contract (DOC 2016b).

### 3.2.2 DISCUSSION

**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?**

The project area is not designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland on the El Dorado County Important Farmland map (DOC 2016a). **No impact** would occur.

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

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 (DOC 2016b). Therefore, the project would not conflict with existing zoning for agricultural uses or a Williamson Act contract. **No impact** would occur.

**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))?**

The project area is not zoned as forestland, timberland, or in a Timberland Production Zone. Therefore, the project would not conflict with existing zoning for, or cause rezoning of, forestry resources. **No impact** would occur.

**d) Result in the loss of forest land or conversion of forest land to non-forest use?**

As discussed in Section 3.4, "Biological Resources," approximately 2.60 acres of the project area consists of mixed conifer forest habitat. Approximately 0.66 acre of this forest land would be converted to a permanent access road. After the final access road alignment is determined, EID would complete a tree survey and notify USFS of proposed tree removal activities on USFS property (Baron, pers. comm., 2019). EID would obtain formulate a timber sale agreement with the USFS, if necessary.

The conversion of approximately 0.66 acre of forest land would be an unavoidable effect of the project; however, this loss of forest acreage would be negligible in relation to the surrounding forested timberland acreage in the ENF. Use of ENF lands to establish the access road would serve to provide permanent access for ongoing operations and maintenance of water conveyance facilities as well as provide permanent access for ENF personnel and equipment to manage emergency situations (e.g., wildfires) in the area. The impact would be **less than significant**.



**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?**

See responses to items a) and d) above. Because no agricultural land uses occur in or adjacent to the project area, project implementation would not result in other changes in the physical environment that would cause conversion of agricultural land, including Important Farmland, to nonagricultural uses.

The conversion of 0.66 acre of forest land because of new access road construction would be an unavoidable effect of the project; however, this loss of forest acreage would not conflict with the purposes of the forest and would be negligible in relation to the surrounding forested timberland acreage of the ENF. Use of the ENF lands for power generation purposes is consistent with the multiple use policy of USFS and subject to USFS permit requirements. The impact would be **less than significant**.



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### 3.3 AIR QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>III. Air Quality.</b>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 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. El Dorado County has hilly and mountainous terrain that affects airflow patterns throughout the county. These mountain and hill formations 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 traffic-heavy areas.

Various air pollutants may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation. Criteria air pollutants have been identified by the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (ARB) as being of concern, both on a nationwide and statewide level. These include: ozone; carbon monoxide (CO); nitrogen dioxide (NO<sub>2</sub>); sulfur dioxide (SO<sub>2</sub>); 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<sub>10</sub>) and PM equal to or less than 2.5 micrometers in diameter (PM<sub>2.5</sub>). In addition to criteria air pollutants, EPA and ARB regulate toxic air contaminants (TACs), also known as hazardous air pollutants. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health.

Serpentine is a mineral commonly found in seismically active regions of California, usually in association with ultramafic rocks and along associated faults. Certain types of serpentine occur naturally in a fibrous form, known generically as asbestos. According to the Asbestos Review Area Map for El Dorado County, naturally occurring



asbestos-bearing serpentine is not found typically in the geological formations present in the project area (EDCAQMD 2018).

Federal, State, and local plans, policies, laws, and regulations provide a framework for addressing aspects of air quality that would be affected by the project.

Health-based air quality standards have been established for the criteria air pollutants by EPA at the national level, and by ARB at the state level; these are referred to as the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS), respectively.

The MCAB is designated as a nonattainment area for ozone, and as an attainment or unclassified area for all other pollutants. With respect to the CAAQS, the MCAB currently is designated as a nonattainment area for ozone and PM<sub>10</sub>, and as an attainment or unclassified area for all other pollutants.

EPA requires each state with regions that have not attained the NAAQS to prepare a State Implementation Plan (SIP), detailing how each local area will meet these standards. ARB is the lead agency for developing California's SIP and oversees the activities of local air quality management agencies. Emission reduction programs and measures are described in air quality attainment plans (AQAPs) or air quality management plans (AQMPs) that the air districts submit to ARB for review and approval. ARB incorporates the AQAPs and AQMPs from local air districts into the SIP for EPA approval.

The El Dorado County Air Quality Management District (EDCAQMD) is responsible for maintaining air quality conditions in El Dorado County. EDCAQMD was formerly known as the El Dorado County Air Pollution Control District. After the El Dorado County Air Pollution Control District Guide to Air Quality Assessment (Guide) was published, the name of the air district was changed to EDCAQMD. Therefore, all references to the air district in this analysis, with the exception of the Guide, are EDCAQMD.

EDCAQMD requires all projects to implement Rule 202 (Visible Emissions), Rule 205 (Nuisance), Rule 223 (Fugitive Dust—General Requirements), Rule 223-1 (Fugitive Dust—Construction, Bulk Material Handling, Blasting, Other Earthmoving Activities and Carryout and Trackout Prevention), and Rule 223-2 (Fugitive Dust—Asbestos Hazard Mitigation).

### **3.3.2 DISCUSSION**

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

Project consistency is based on the determination of whether the project would conflict with or obstruct implementation of the air quality plan and/or applicable portions of the SIP, which would lead to increases in the frequency or severity of existing air quality violations. The region's AQAP was developed pursuant to California Clean Air Act requirements and identifies feasible emissions control measures to provide expeditious progress in attaining the ozone standard. Assumptions about land use development used in the AQAP are taken from local and regional planning documents, including general plan land use designations and zoning. Consistency with the AQAP is determined by analyzing a project with the assumptions in the AQAP. The project would involve the temporary use of off-road equipment, haul trucks, and worker commute trips. The project would not substantially increase mobile-source emissions that previously were included in the AQAP. Therefore, emissions associated with project implementation have been accounted in the emissions modeling for the current AQAP and would be



accounted in future AQAPs. Accordingly, project implementation would not exceed the assumptions used to develop the current plan and would not obstruct or conflict with the AQAP.

Appendix A presents the air pollutant emissions that would occur with implementation of the proposed project as calculated using the CalEEMod Air Quality Model. The CalEEMod Air Quality model is a statewide land use emissions computer model designed to provide a uniform platform to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. The modeling results finds that the project also would not exceed the recommended thresholds of significance for emissions of ozone precursors (reactive organic gases [ROG] and oxides of nitrogen [NO<sub>x</sub>]). Because the project would not result in a significant increase in ROG and NO<sub>x</sub> emissions, the project would not conflict with or obstruct implementation of the AQAP and SIP. This construction-related impact would be **less than significant**. No mitigation is required.

The project implementation would not require or result in additional operation and maintenance activities beyond existing conditions. Therefore, **no impact** would occur.

**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?**

The cumulative analysis focuses on the determination of whether a specific project would result in cumulatively considerable increase in emissions. By its very nature, air pollution generally is a cumulative impact. The nonattainment status of regional pollutants is from past and present development in the MCAB, and this regional impact is cumulative rather than being attributable to any one source. A project's emissions may be individually limited but cumulatively considerable when taken in combination with past, present, and future development projects.

The EDCAQMD approach for determining whether a proposed project would have a significant cumulative impact is by determining whether the project would be consistent with an approved plan or mitigation program of regional application in place for the pollutants emitted by the proposed project. This applies to both the construction and operation phases of a project. With regard to ROG and NO<sub>x</sub> emissions, a project would be considered consistent with the AQAP and not to have a significant cumulative impact if it:

- ▶ does not require a change in the existing land use designation (e.g., a general plan amendment or rezone), and projected emissions of ROG and NO<sub>x</sub> from the project are equal to or less than the emissions anticipated for the site if developed under the existing land use designation;
- ▶ does not exceed the “project alone” significance criteria;
- ▶ includes any applicable emission reduction measures contained in and/or derived from the AQAP; and
- ▶ complies with all applicable air district rules and regulations.

A project would not be considered significant for cumulative impacts of PM<sub>10</sub> if the project:

- ▶ is not significant for “project alone” emissions of these pollutants (i.e., does not exceed CAAQS or NAAQS);
- ▶ complies with all applicable rules and regulations of the EDCAQMD; and
- ▶ is not cumulatively significant for ROG, NO<sub>x</sub>, and CO, based on the criteria set forth above.



As discussed previously, the project would generate construction-related emissions of criteria air pollutants, but at levels that would not exceed EDCAQMD thresholds. EDCAQMD's thresholds of significance are relevant to whether a project's individual emissions would result in a cumulatively considerable incremental contribution to the existing air quality conditions. These thresholds are designed to identify projects that would result in significant levels of air pollution on a project level that would impede and obstruct the region in attaining and maintaining the applicable CAAQS and NAAQS. Because the emission estimates shown in Table 3.3-1 would not exceed any EDCAQMD project-level significance thresholds for air quality, the project would not impede or obstruct attainment and maintenance of the ambient air quality standards. Therefore, the cumulative impact would be **less than significant**. No mitigation is required.

The project implementation would not require or result in additional operation and maintenance activities beyond existing conditions. Therefore, **no impact** would occur.

### c) Expose sensitive receptors to substantial pollutant concentrations?

Some members of the population—children, older adults, and persons with pre-existing respiratory or cardiovascular illness—are especially sensitive to air pollutant emissions. Such people are given additional consideration when the impacts of projects on air quality are evaluated. Therefore, at-risk land uses sensitive to poor air quality would include residences, schools, daycare centers, playgrounds, medical facilities, and nursing homes. Recreational land uses, such as parks, also are considered moderately sensitive to air pollution. The land uses surrounding the project area consist of uninhabited open space and forestland.

Construction emissions are described as “short term” or temporary; however, they have the potential to represent a significant impact with respect to air quality. Project construction temporarily would generate ROG, CO, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions. During construction, criteria air pollutants and precursors would be emitted temporarily and intermittently by a variety of sources: off-road equipment, on-road haul trucks, worker vehicles, and soil disturbance.

As shown in Table 3.3-1, average daily construction emissions for the project are estimated to be less than 1 pound of ROG, approximately 6 pounds of NO<sub>x</sub>, 4 pounds of CO, 1 pound of PM<sub>10</sub>, and 1 pound of PM<sub>2.5</sub>. Additional emission modeling assumptions and details are provided in Appendix A.

**Table 3.3-1. Average Daily Construction Emission**

Construction Phase	Average Daily Emissions (pounds per day)				
	ROG	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>
Average daily emissions	1.4	8.9	6.4	1.8	1.1
Threshold of significance	82	82	AAQS	AAQS	NA
Significant Impact?	No	No	No	No	No
Notes: AAQS = ambient air quality standards; CO = carbon monoxide; NA = not applicable; NO <sub>x</sub> = oxides of nitrogen; PM <sub>10</sub> = particulate matter equal to or less than 10 micrometers in diameter; PM <sub>2.5</sub> = particulate matter equal to or less than 2.5 micrometers in diameter; ROG = reactive organic gases.					
Source: Modeled by AECOM in 2019					



As shown in Table 3-1, construction-related emissions would not exceed the thresholds of significance, would not violate any air quality standard, and would not contribute substantially to an existing or projected air quality violation. Furthermore, according to the EDCAQMD Guide, construction-related fugitive dust emissions are not considered to be significant if mitigation is part of a project, or a mandatory condition of a project. To make this finding, the project must commit to implementing fugitive dust control measures sufficient to prevent visible dust beyond the project's property lines. According to the EDCAQMD Guide, this commitment can be satisfied if the project complies with the requirements of the South Coast Air Quality Management District's (SCAQMD) Rule 403. Mitigation Measure AQ-1 would require EID and its contractors to meet the requirements of the SCAQMD. Therefore, the generation of project construction-related emissions and fugitive dust would result in an impact that would be **less than significant with implementation of Mitigation Measure AQ-1**.

#### ***Mitigation Measure AQ-1. Implement SCAQMD Rule 403 Requirements.***

During project construction, EID and its contractors would implement applicable fugitive dust control measures identified in the SCAQMD Rule 403. Measures may include applying water to disturbed soils, replanting disturbed areas as soon as practical, restricting vehicle speeds on unpaved roads, and other measures, as deemed appropriate, to control fugitive dust.

#### ***Diesel Particulate Matter***

The greatest potential for TAC emissions from the project would be related to emissions of diesel particulate matter (diesel PM) during operation of heavy-duty construction equipment. Health effects from carcinogenic TACs usually are described in terms of individual cancer risk, which is based on a 70-year lifetime exposure to TACs.

Project construction would last up to 5 months. Heavy-duty construction equipment would operate at different locations in the 5.5-acre project area, and at varying distances from different sensitive receptors surrounding the project area. Therefore, individual receptors are not expected to be exposed to TAC emissions for the entire construction period. Construction emissions would occur intermittently throughout the day, as construction equipment is required, rather than as a constant plume of emissions from the site.

Because heavy-duty construction equipment would operate only intermittently during that time frame, the project would not result in long-term (i.e., 70-year lifetime exposure period) emissions of TACs in the immediate vicinity of sensitive receptors. All construction emissions would cease after project completion. Thus, because the duration of potentially harmful construction activities near a sensitive receptor would be about 1 year, the exposure would be approximately 2 percent of the total exposure period required for typical health risk calculations (i.e., 70 years). Therefore, the project would not expose sensitive receptors to substantial concentrations of diesel PM. **No impact** would occur.

#### ***Naturally Occurring Asbestos***

During project construction, site preparation, grading, and excavation activities would disturb soil and generate dust. As discussed previously, the project site is not in areas designated as "likely to contain asbestos," and thus it would not expose nearby receptors to substantial asbestos concentrations. Because of the project location, the distance of the project area to sensitive receptors, and the implementation of Mitigation Measure AQ-1, the project would not expose nearby receptors to increased asbestos emissions. **No impact** would occur.



The project implementation would not require or result in additional operation and maintenance activities beyond existing conditions. Therefore, the generation of project construction-related emissions and fugitive dust would result in an impact that would be **less than significant**.

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

The occurrence and severity of odor impacts depend on numerous factors: the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause physical harm, they still can be very unpleasant, create a nuisance, and can generate citizen complaints to local governments and regulatory agencies.

Exhaust from diesel construction equipment may emit odors during project construction. However, because of the temporary nature of these emissions and the highly diffusive properties of diesel exhaust, nearby receptors would not likely be adversely affected by project-related diesel exhaust odors. Odors from these sources would be localized and generally confined to the immediate area surrounding the project site, and the odors would be typical of most construction sites and temporary in nature. Thus, the project would not create objectionable odors affecting a substantial number of people. The impact would be **less than significant**. No mitigation is required.

The project implementation would not require or result in additional operation and maintenance activities beyond existing conditions. Therefore, **no impact** would occur.



### 3.4 BIOLOGICAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>IV. Biological Resources. Would the project:</b>				
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.4.1 ENVIRONMENTAL SETTING

The project area is approximately 0.5 mile south of US 50 and 8.5 miles east of Fresh Pond in El Dorado County, California (Figure 2-2).

##### REGIONAL SETTING AND DESCRIPTION OF THE AREA

The project area is in the Central Sierra Mid-Montane Forest within the Sierra Nevada ecoregion of California (Griffith et al. 2016). The project site is on a northwest-facing slope, approximately 0.4 mile upslope from the South Fork American River. Common habitats in the region include mixed conifer forest, chaparral, annual grassland, and riparian. Much of the region is managed for timber harvest, agriculture (e.g., cattle grazing), rural residential, and recreational uses.



Biological surveys were conducted by AECOM biologists on June 19, June 21, and July 12, 2019, during which the entire project site and adjacent areas were evaluated for vegetation type, wetlands/other waters, rare plants, riparian habitat, wildlife habitats, and generally were observed for wildlife use. The biological study area encompassed the project site and access roads, as well as adjacent lands (i.e., up to a 50-foot buffer beyond the project footprint).

The study area elevation ranges from approximately 3,900 to 4,200 feet above mean sea level. Soils in the study area consist of Chaix coarse sandy loam, 30 to 75 percent slopes and McCarthy-Ledmont association (gravelly sandy loam), 2 to 30 percent slopes (NRCS 2019). Vegetation is characterized primarily by mixed conifer forest habitat with a moderate to dense tree canopy. Surrounding land use is forested land, used by public and private entities. The project site is on EID-owned property, while proposed access roads are on lands owned and managed by USFS (ENF).

## HABITAT TYPES

Five habitat types occur in the project area: mixed conifer forest; annual brome grassland; deerbrush shrubland; wetland/riparian; and developed lands. The majority of the project site is characterized by mixed conifer forest habitat with Ponderosa pine (*Pinus ponderosa*) and incense cedar (*Calocedrus decurrens*) codominant in the tree canopy. Wildlife species that generally inhabit mixed conifer forest include: numerous bird species, such as raptors, woodpeckers, and passerines; large carnivorous mammals such as foxes, mountain lions, and wolverines; smaller mammals, such as squirrels, beavers, woodrats, and field mice; and reptiles and/or amphibians, such as frogs, salamanders, and snakes. The canopy cover provides adequate protection for smaller birds from larger raptor predators, and provides adequate cover and ideal nest substrate for large raptors to build nests.

Areas of the project area that have been disturbed previously are dominated by annual grassland vegetation. This habitat is found near the proposed staging area and in the proposed vehicle access and turnaround. The staging area at the terminus of Bull Creek Road/Dorado Ditch Access (Forest Road 10-08YE) consists of disturbed gravel substrate and a sparse layer of herbaceous grassland species, dominated by nonnative annual grasses and a few native forbs. The western portion of the proposed access road intersects with an old canal bench that extends north and east of the project site. The bench is completely flat and devoid of large trees, and is covered by plastic mesh erosion-control fabric. Conditions in this area are sunny and dry, with vegetation dominated by annual grasses and forbs, and a few scattered shrubs and seedling incense cedar. Annual grasslands provide habitat for a variety of wildlife species. Most common species observed in annual grasslands include: burrowing rodents, such as gophers, squirrels, kangaroo rats, and field mice; mule deer; ground-nesting birds; and large predators, such as coyote, gray fox, and badger. Grasslands provide food for herbivorous wildlife and nesting substrate for passerines that nest on the ground.

Deerbrush shrubland is mapped overlapping the western portion of the proposed access road. The shrub canopy is continuous in this habitat, with greater than 50 percent relative cover of deerbrush (*Ceanothus integerrimus*) and a sparse to intermittent herbaceous layer. Emergent trees are present at low cover, including ponderosa pine, canyon live oak (*Quercus chrysolepis*), and interior live oak (*Quercus wislizeni*). Small openings in the shrub layer are present on steep, west-facing slopes and are dominated by mountain phacelia (*Phacelia hastata*) and large-flowered woolly sunflower (*Eriophyllum lanatum* var. *grandiflorum*). Shrublands provide food sources, nesting locations, and shelter for a variety of wildlife. Animals typically encountered in shrublands include bobcats, mountain lions, coyotes, mule deer, gray fox, burrowing rodents, passerines, and reptiles.

Hydrologic features mapped in the study area include the unvegetated El Dorado Canal and Bull Creek. Bull Creek crosses the study area from southeast to northwest, passing underneath the eastern portion of the wooden



Flume 30 structure. The Bull Creek diversion dam and associated rigid metal conduit structure, immediately southeast of the project footprint, function to divert a portion of Bull Creek's flows into Flume 30, as regulated under FERC Project No. 184 license conditions.

The creek channel is a moderate to high-gradient, relatively permanent stream, confined by steep slopes of granite boulders and bedrock. The channel itself is dominated by boulders and cobble, and is sparsely vegetated, with a few natural waterfalls and occasional cascade or step pools (i.e., small falls, or steps, with pools). Channel banks are characterized by moss-covered rocks and ferns, with a few herbaceous species adapted to mesic conditions. Riparian vegetation in the Bull Creek corridor contains the same overstory species as the mixed conifer forest and includes occasional white alder (*Alnus rhombifolia*), with a sparse understory of thimbleberry (*Rubus parviflorus*), wild rose (*Rosa gymnocarpa*), hazelnut (*Corylus cornuta*), and mountain dogwood (*Cornus nuttallii*).

Riparian vegetation along stream habitats provides cover and structure for nesting birds, mammals, and reptiles/amphibians. Along with providing cover, riparian areas and streams also provide a food and water source for the wildlife that move through these habitats and also can be used as movement corridors. These corridors help connect wildlife to new habitat, food sources, or genetically dissimilar populations for interbreeding.

Developed lands are those that have been modified by humans and lack vegetation. In the study area, developed land includes El Dorado canal and the flume structure, the Bull Creek diversion dam and rigid metal conduit, the Spillway 20 building, and the forest roads.

## **SPECIAL-STATUS SPECIES**

Before conducting biological surveys at the project site, AECOM biologists searched the Information for Planning and Conservation (USFWS 2019b) project planning tool and USFS Region 5 Regional Forester's 2013 Sensitive Plant Species List (USFS 2013), as well as the Inventory of Rare and Endangered Plants of California (CNPS 2019) and California Natural Diversity Database (CDFW 2019a) in the Riverton and eight surrounding U.S. Geological Survey 7.5 minute quadrangles for records of special-status species occurring in the project region, and to assess their potential to occur in the project area. For this analysis, special-status species are plants and wildlife included in any of the following categories:

- ▶ species that are listed under the federal Endangered Species Act and/or California Endangered Species Act as rare, threatened, or endangered;
- ▶ species considered as candidates and proposed for federal or State listing as threatened or endangered;
- ▶ wildlife designated by the California Department of Fish and Wildlife (CDFW) as fully protected and/or species of special concern;
- ▶ birds protected under the Migratory Bird Treaty Act and Fish and Game Code Sections 3503, 3503.5, 3800(a), and 3513;
- ▶ bats designated by the Western Bat Working Group as high (red) or medium (yellow) priority; and
- ▶ plants ranked by California Native Plant Society to be rare, threatened, or endangered in California, and/or by the Eldorado National Forest as sensitive (USFS 2013).

CDFW recommends, and local governments may require, that CEQA reviews of proposed projects address plants on Lists 1A, 1B, and 2 of the CNPS California Rare Plant Ranks, defined as follows:

- ▶ List 1A—plant species presumed to be extinct in California;



- List 1B—plant species considered rare, threatened, or endangered in California and elsewhere; and
- List 2—plant species considered rare, threatened, or endangered in California but more common elsewhere.

Tables 3.4-1 and 3.4-2 identify the special-status plant and wildlife species, respectively, with potential to occur in the study area. Those special-status species determined not likely to occur or with no potential to occur in the study area are not shown in Tables 3.4-1 and 3.4-2, but full lists are provided in the *Flume 30 Habitat Assessment for Special-Status Plants/Floristic Inventory* and *Flume 30 Wildlife Habitat Assessment* letter reports, prepared by AECOM and submitted to EID for the project in September 2019 (Appendices B and C).

Based on database search results, eight species of special-status plants and seven species of special-status wildlife have potential to occur in or near the project area. The results of the comprehensive botanical survey carried out in and adjacent to the project footprint in June and July 2019 concluded that special-status plants are not present in the study area (EID 2019a) (Table 3.4-1). The wildlife habitat assessment, conducted on July 12, 2019, determined that habitat exists in the project site for seven special-status wildlife species (Table 3.4-2) (EID 2019b). These special-status wildlife species include foothill yellow-legged frog (FYLF), northern goshawk, bald eagle, California spotted owl, hoary bat, long-legged myotis, and fringed myotis.

### **SPECIAL-STATUS RAPTORS**

No special-status raptors were observed during the field visit. Three raptor species, northern goshawk, California spotted owl, and bald eagle have the potential to occur in the project area. Of the special-status species that may nest in the project area and could be affected by the project, the California spotted owl and northern goshawk have high potential to occur and are known to occur and nest in or nearby the project area.

The California spotted owl most often is found nesting in large, old trees and snags with high canopy cover and at least two canopy layers. California spotted owl will also nest in cavities, abandoned nests, broken tree tops, and occasionally use mistletoe broom platforms in large conifers, oaks, and snags (Verner et al. 1992). California spotted owl foraging habitat consists of more open conifer stands with 40–50 percent canopy cover and downed woody debris, which provides habitat for woodrats, the main prey of the spotted owl (Verner et al. 1992). Multiple occurrences of California spotted owl have been documented in the CNDDDB Spotted Owl Observations database (between 2014 and 2017), ranging from 0.47 to 2.42 miles near the project boundaries (CDFW 2019b). A pair of California spotted owls and two fledglings were observed in 2019 along the access road by USFS personnel (Yasuda pers. comm. 2019).

Northern goshawk nests in large, mature conifers with dense canopy and open understory, typically near water. There are historic occurrences of nesting northern goshawk within the project area along the access road. The most recent occurrence of nesting was in the 2018 season. Surveys were conducted along the portion of the access road within the northern goshawk activity center in 2019 by USFS personnel, but none were encountered (Yasuda pers. comm. 2019). Bald eagle also has some potential to occur in the project boundaries. Similar to northern goshawk this species nests in large, mature conifers with dense canopy and open understory, typically near water. The project area does not appear to have bodies of water nearby large enough to provide adequate habitat for foraging bald eagles. The nearest occurrence of bald eagle is well over 10 miles from the project boundaries, and most likely this species would occur as flyovers or use the project site for roosting but could possibly use it for nesting habitat.



## **SPECIAL-STATUS AMPHIBIANS**

No special-status reptiles or amphibians were observed during the site visit. A low potential exists for FYLF to occur in the portion of Bull Creek that crosses the project area. The habitat observed along Bull Creek is marginal for FYLF, made up of small, shallow, slow-flowing pools with small cobbles and boulders. Larger pools and more suitable habitat is found downstream from the project area in the South Fork American River. The nearest recorded occurrence of FYLF is 1.57 miles northwest of the project boundaries in the South Fork American River, where adults, egg masses, tadpoles, metamorphs, and juveniles have been observed in repeated surveys from 1965–2003 (CDFW 2019a). Breeding habitat for FYLF is described as gently flowing, low-gradient stream sections, with variable substrate predominated by cobbles and/or boulders (Yarnell 2005). During the non-breeding season, FYLF reside in terrestrial riparian habitat, generally within a short distance of flowing water. Not many studies have focused on overwintering habitat; however, generally FYLF have been observed to reside both in the water and along stream-edge habitat, beneath rocks, leaf litter, and other riparian vegetation (Van Wagner 1996).

## **SPECIAL-STATUS BATS**

The project site overlaps the ranges of four bat species of conservation concern: hoary bat, long-legged myotis, Yuma myotis, and fringed myotis. Fringed myotis is a USFS sensitive species. Long-legged myotis and fringed myotis are designated as highest priority for funding, planning, and conservation actions by the Western Bat Working Group. Hoary bat is designated as medium priority and Yuma myotis as low to medium priority, indicating a level of concern for the species, and more research and conservation efforts are required (WBWG 2019).

All four bat species have a low potential to roost within the project boundaries. These species prefer coniferous forests and will roost in trees, snags, rock crevices, and sloughing tree bark. Yuma myotis maternity colonies are found in caves, mines, buildings, or crevices. No roosting bats were observed during the field survey; however, suitable roosting habitat exists on site in the form of large, dense conifers, large dead trees with snags, and trees with sloughing bark. Acoustic surveys previously completed near Bull Creek documented the presence of Yuma myotis, fringed myotis, and long-legged myotis in the area (EID 2003).



**Table 3.4-1. Special Status Plant Species with Potential to Occur in the Study Area**

Species		Regulatory Status <sup>1</sup>			Habitat Requirements	Elevation Range (feet AMSL <sup>2</sup> )	Bloom Period	2019 Botanical Survey Results <sup>3</sup>
Scientific Name	Common Name	Federal	State	CRPR				
<i>Botrychium ascendens</i>	Upswept moonwort	USFS S	–	2B.3	Mesic sites in lower montane coniferous forest; meadows and seeps	3,655–9,990	(Jun) Jul–Aug	<b>Not present;</b> although suitable habitat exists near Bull Creek, this species was not found during the survey conducted during its blooming period.
<i>Carex cyrtostachya</i>	Sierra arching sedge	–	–	1B.2	Riparian forest margins, meadows and seeps, marshes and swamps	2,000–4,460	May–Aug	<b>Not present;</b> although suitable habitat exists near Bull Creek, this species was not found during the survey conducted during its blooming period. The only <i>Carex</i> species present in the study area were <i>Carex bolanderi</i> and <i>C. fracta</i> .
<i>Chlorogalum grandiflorum</i>	Red Hills soaproot	–	–	1B.2	Chaparral and cismontane woodland; lower montane coniferous forest typically on serpentinite and gabbroic soils and other rocky soil types	800–5,545	May–Jun	<b>Not present;</b> although marginally suitable habitat is in the study area, this species was not found during the survey conducted during its blooming period. The only <i>Chlorogalum</i> species found was <i>Chlorogalum pomeridianum</i> .
<i>Cypripedium montanum</i>	Mountain lady's slipper	USFS S	–	4.2	Broadleaved upland forest, cismontane woodland, lower montane coniferous forest, and North Coast coniferous forest	605–7,300	Mar–Aug	<b>Not present;</b> although marginally suitable habitat is in the study area, this species was not found during the survey conducted during its blooming period.
<i>Lewisia serrata</i>	Saw-toothed lewisia	USFS S	–	1B.1	North-facing, mostly shaded, moss-covered and metamorphic rock cliffs and ledges in steep gorges along relatively permanent streams	2,525–4,710	May–Jun	<b>Not present;</b> potential habitat in study area is very limited; this species was not found during the survey conducted during its blooming period.
<i>Monardella linoides</i> ssp. <i>oblonga</i>	Tehachapi monardella	USFS S	–	1B.3	Pinyon and juniper woodland, lower and upper montane coniferous forest	2,950–8,105	(May) Jun–Aug	<b>Not present;</b> although suitable habitat is in the study area, this species was not found during the survey conducted during its blooming period.



Species		Regulatory Status <sup>1</sup>			Habitat Requirements	Elevation Range (feet AMSL <sup>2</sup> )	Bloom Period	2019 Botanical Survey Results <sup>3</sup>
Scientific Name	Common Name	Federal	State	CRPR				
<i>Phacelia stebbinsii</i>	Stebbins' phacelia	USFS S	–	1B.2	Shady, moss-covered metamorphic rock outcrops or meadows with rocky or gravelly soils	2,000–6,595	May–Jul	<b>Not present</b> ; potential habitat in study area is very limited, and this species was not found during the survey conducted during its blooming period. No unidentified <i>Phacelia</i> species was present.
<i>Poa sierrae</i>	Sierra blue grass	USFS S	–	1B.3	Shady, moist, rocky slopes in lower montane coniferous forest; often on mossy rocks in canyons	1,195–4,920	Apr–Jun	<b>Not present</b> ; potential habitat in study area is very limited and this species was not found during the survey conducted during its blooming period. No unidentified <i>Poa</i> species was present.

**Notes:**

**1. Regulatory Status:**

**Federally Listed Species:**

USFS S = U.S. Forest Service Sensitive

– No designation

**California State-Listed Species:**

– No designation

**California Rare Plant Rank (CRPR) Categories:**

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

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

4 Plants of limited distribution (a watch list)

**CRPR Threat Rank Extensions:**

.1 Seriously endangered in California (>80% of occurrences are threatened and/or high degree and immediacy of threat)

.2 Fairly endangered in California (20 to 80% of occurrences are threatened)

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

2. AMSL = above mean sea level

Source: AECOM 2019, CDFW 2019a, CNPS 2019



**Table 3.4-2. Special-Status Wildlife Species with Potential to Occur in the Study Area**

Special-Status Species	Regulatory Status (Federal/State/Other)	Habitat Requirements	Potential for Occurrence in the Study Area
<b>Amphibians &amp; Reptiles</b>			
Foothill yellow-legged frog <i>Rana boylei</i>	--/CT, SSC/USFS-S	Streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands; sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools. Breeding occurs exclusively in streams and rivers and requires cobble-sized substrate for eggs and minimum 15 weeks of water for larval development.	<b>Low;</b> suitable aquatic habitat is present at Bull Creek. The nearest known occurrences are in the South Fork American River approximately 1 mile downstream and 2 miles upstream from the confluence with Bull Creek. Egg masses, adults, juveniles, and tadpoles have been observed in these locations during regular EID monitoring efforts (EID 2017).
<b>Birds</b>			
Northern goshawk <i>Accipiter gentilis</i>	--/SSC/USFS-S	Prefers to nest in mature and old-growth coniferous and deciduous forest with dense canopy and large trees with relatively open understory, nearby openings and meadows, typically near water.	<b>High;</b> suitable foraging and nesting habitat is present in the dense forests in the study area. A historic nest along the access road has been occupied as recently as 2018, though none were observed in the 2019 season.
Bald Eagle <i>Haliaeetus leucocephalus</i>	FD/SE, CFP/USFS-S	Large trees close to lakes and large rivers.	<b>Low;</b> suitable foraging and nesting habitat is present. However, bald eagles prefer to be close to large bodies of water. The closest reported sighting was at Wright Lake, approximately 11 miles northeast of the study area (eBird 2019).
California spotted owl <i>Strix occidentalis</i>	--/SSC/USFS-S	Nests in dense, mature, multi-layered coniferous forest, typically near water. Foraging habitat is associated with large trees and snags and is more open than nesting habitat. Wintering habitat is generally lower in elevation and less structurally complex.	<b>High;</b> suitable foraging and nesting habitat is present in dense forests adjacent to the study area. Multiple occurrences of this species have been documented within 0.47 mile of the project sites (CNDDDB 2019).
<b>Mammals</b>			
Hoary bat <i>Lasiurus cinereus</i>	--/--/WBWG-M	Resides in broad-leaved upland forest, cismontane woodland, lower montane coniferous forest, and north coast coniferous forest. Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	<b>Low;</b> This species prefers to roost in large conifers adjacent to large open habitats for foraging. The Flume 30 uphill staging area fits the description of an area where hoary bat potentially may roost.



Special-Status Species	Regulatory Status (Federal/State/Other)	Habitat Requirements	Potential for Occurrence in the Study Area
Long-legged myotis <i>Myotis volans</i>	--/--/WBWG-H	Upper montane coniferous forest. Most common in woodland and forest habitats above 4,000 feet. Trees are important day roosts; caves and mines are night roosts. Nursery colonies usually are found under bark or in hollow trees, but occasionally in crevices or buildings.	<b>Low</b> ; suitable day roost and night roost habitat is found throughout the study area.
Fringed myotis <i>Myotis thysanodes</i>	--/--/USFS-S, WBWG-H	Found in desert shrublands, sagebrush-grassland, and woodland habitats consisting of Douglas-fir, oak, and pine trees. Use a wide variety of structures, such as caves, mines, and buildings as day roosts during the summer months. Roosting behaviors during the winter months generally are unknown. Although most recorded day roosts have been in rock crevices, those living in the Pacific Northwest often can be found roosting in tree snags.	<b>Low</b> ; may forage in the study area; no suitable day roosting or maternity roosting sites are present, but winter roosting cannot be ruled out because winter behaviors are unknown.
Yuma myotis <i>Myotis yumanensis</i>	--/--/WBWG-L to M	Lower montane coniferous forest, riparian forest, riparian woodland, and upper montane coniferous forest. Optimal habitats are open forests and woodlands with sources of water over which to feed. Distribution is associated with permanent sources of water, typically rivers and streams. Maternity colonies are found in caves, mines, buildings, or crevices.	<b>Low</b> ; trees in and adjacent to the study area may provide suitable roosting sites.

Notes:

Federally Listed Species:  
FE = federal endangered  
FC = candidate  
FT = federal threatened  
PT = proposed threatened  
USFS S = U.S. Forest Service Sensitive  
FPD = proposed for delisting  
DPS = Distinct Population Segment  
FD = delisted  
BCC=Birds of Conservation Concern  
— No designation  
Source: AECOM 2019, CDFW 2019a

California State-Listed Species:  
CE = California state endangered  
CT = California state threatened  
CR = California state rare  
SCC = California Species of Special Concern  
CFP = California fully protected  
SC = State candidate for listing  
CD= delisted  
WL = CDFW watch list  
— No designation

Other:  
USFS-S: U.S. Forest Service Sensitive species  
WBWG-H: Western Bat Working Group high priority species  
WBWG-M: Western Bat Working Group medium priority species  
WBWG-L: Western Bat Working Group low priority species



## SENSITIVE HABITATS

Sensitive habitats are those that are of special concern to resource agencies or afforded specific consideration in the State CEQA Guidelines, Section 1602 of the California Fish and Game Code, Section 404 of the Clean Water Act, and the State's Porter-Cologne Act.

### Riparian Habitat

Riparian habitat consists of herbaceous plants, shrubs, and/or trees growing along waterways. Because the section of Bull Creek that intersects the project site is a high-gradient stream, confined by steep slopes of granite boulders and bedrock, the extent of associated riparian habitat is limited to a narrow upland corridor along creek banks and consists of the same mixed conifer forest vegetation found throughout the remainder of the project area.

Vegetation in this area is relatively sparse, consisting of mosses and ferns growing on rocks, a few herbaceous and shrub species, and a canopy of coniferous trees.

### Wetlands and Other Waters

A wetland delineation of the project site was conducted by AECOM on June 19, 2019 (EID 2019c). The wetland delineation report provides details regarding the wetland delineation methodology, maps, and descriptions of each aquatic feature occurring in the project site. All the aquatic features were mapped and potentially are subject to USACE jurisdiction under Section 404 of the Clean Water Act, and/or may be considered waters of the State under the Porter-Cologne Act and subject to regulation by the Central Valley RWQCB. Streams (drainages) and associated riparian habitat are subject to regulation by CDFW under Section 1602 of the California Fish and Game Code.

Two relatively permanent water (RPW) features were mapped by AECOM in the project site (EID 2019c). RPWs in the study area consist of approximately 0.14 acre (421.1 linear feet) of the El Dorado Canal and 0.09 acre (265.6 linear feet) of Bull Creek. Bull Creek was delineated based on the ordinary high-water mark (OHWM), and the El Dorado Canal was delineated based on bank-full width (EID 2019c). No wetland habitats were observed or mapped as part of the wetland delineation; all delineated features are bounded by nonjurisdictional upland habitat (i.e., not dominated by hydrophytic vegetation, does not have indicators of wetland hydrology or hydric soils, and/or is located outside an OHWM).

### Sensitive Natural Communities

California natural communities are organized by CDFW and partner organizations, such as CNPS, based on vegetation type classification, and are ranked using the same system to assign global and State rarity ranks for plant and wildlife species in the CNDDDB. Natural communities that are ranked S1–S3 are considered to be sensitive natural communities by CDFW, to be addressed in the environmental review process. Three vegetation alliance communities are present in the project area: *Pinus ponderosa-Calocedrus decurrens* forest alliance; *Bromus (diandrus, hordeaceus, madritensis)* herbaceous alliance; and *Ceanothus integerrimus* shrubland alliance. None of these vegetation communities are categorized as sensitive natural communities (CDFW 2018).



### 3.4.2 DISCUSSION

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

No special-status plant or wildlife species were observed in the project area or the study area during the biological habitat assessment and botanical resources surveys. No special-status plants are present within or adjacent to the project footprint. Eight special-status wildlife species could occur in or adjacent to the project area. Suitable habitats are found for the following special-status species: foothill yellow-legged frog, northern goshawk, bald eagle, California spotted owl, and special-status bats including hoary bat, long-legged myotis, Yuma myotis, and fringed myotis.

Furthermore, the numerous trees, shrubs, ruderal areas, and structures in the project area could provide suitable nesting substrate for migratory birds. Project construction-related disruption or destruction of migratory bird nests would be a violation of the Migratory Bird Treaty Act and Section 3503 of the California Fish and Game Code. Disruption or destruction of active raptor nests would be a violation of Section 3503.5 of the California Fish and Game Code.

Approximately 3.9 acres of temporary and permanent disturbance would occur with the project. This would include approximately 3.1 acres of temporary disturbance associated with project staging, access, and construction; and 0.8 acre of permanent disturbance associated with installation of permanent project components (i.e., the 12-foot-wide access road, Mechanically Stabilized Earth walls, and vehicle turnaround). Temporary impacts related to project staging and laydown areas and permanent impacts related to installation of project components would result in removal or trimming of existing vegetation in forest and scrub habitats. Trees and shrubs within the project footprint may be indirectly (i.e., trimmed) or directly (i.e., removed) affected by project construction, potentially resulting in removal or destruction of nests and/or nesting birds and raptors. During construction, temporary increases in noise levels from equipment mobilization, trenching, grading, and earth-moving, as well as increased levels of human movement could disrupt the nesting and foraging behavior of birds and raptors within the project footprint, causing adults to abandon nests or neglect young chicks. The impact would be potentially significant.

USFS has reported northern goshawk and spotted owl activity centers with a historic northern goshawk nest on Forest Road 10-08YE, which EID plans to use as an access road to the project site (Yasuda pers. comm. 2019). CNDDDB spotted owl viewer also shows 10 nearby pairs of spotted owls, ranging in distance from 0.47 to 1.94 miles of the project site (CDFW, 2019b); therefore, the impact of tree removal and construction noise on northern goshawk and California spotted owl may be potentially significant.

No records of nesting bald eagle have been found near or within the project boundaries. Although construction noise and tree removal may adversely affect foraging behaviors of this raptor species, because this species is able to flee or avoid the area and is unlikely to be nesting in the area, the impact would be **less than significant**.

Not much is known about behavior of special-status bats in the area, but suitable roosting habitat is present throughout the project area, and special-status species have been known to occur near or within the project boundaries. Construction activities, such as increased noise levels, tree removal, and grading, could adversely



affect special-status bats that are foliage, cavity, or leaf litter roosters. Hoary bat, fringed myotis, Yuma myotis, and long-legged myotis potentially could occur in the project area; therefore, if construction activities occur during the maternity season or overwintering season when these species are less mobile and able to escape danger, the impact may be **potentially significant**.

Flume improvements to the canal portion that crosses Bull Creek potentially may adversely affect FYLF. During the breeding season and the overwintering season, the species may be found moving along or taking cover in terrestrial habitat near water bodies. In addition, aquatic life in the creek or drainage could be affected if water quality of the creek is affected by construction activities. Therefore, the impact would be **potentially significant**.

***Mitigation Measure BIO-1: Conduct Preconstruction Surveys for Migratory Birds and Raptors.***

Trees and vegetation will be removed outside the nesting season, March 1 through August 15. If tree or vegetation removal, or commencement of construction occurs between March 15 and August 15, EID or its contractor 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. Preconstruction surveys for spotted owl will be carried out separately, in accordance with **Mitigation Measure BIO-2**, over a longer survey period in the months before the start of project-related construction.

If active nests are found, EID or its contractor shall consult with a qualified biologist 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.

***Mitigation Measure BIO-2: Avoid Impacts on California Spotted Owl.***

USFS has reported a spotted owl activity center on Forest Road 10-08YE, which EID plans to use as an access road to the project site. CNDDDB spotted owl viewer also shows 10 nearby pairs of spotted owls, ranging in distance from 0.47 to 1.94 miles of the project site (CDFW, 2019b). Several pairs of California spotted owl have been recorded near the project site. Direct adverse effects on this species may occur during access road construction and improvements, and during tree and vegetation removal throughout the project.

EID or its contractor shall avoid working on the access road or removing vegetation during the California spotted owl breeding season, from February 15 through August 15. If work is scheduled to occur during California spotted owl breeding season, then EID shall conduct preconstruction surveys for California spotted owl following the survey protocol (USFWS 2012) for the closely related species, the state and federally listed as threatened northern spotted owl (*Strix occidentalis caurina*), which can be adapted to survey for California spotted owl.



### ***Mitigation Measure BIO-3: Avoid and Minimize Impacts on Special-Status Bats.***

Potential tree-roosting habitat was observed during the field survey of the project area. The potential exists for hoary bat, fringed myotis, Yuma myotis, and long-legged myotis to roost in tree foliage or the bark of trees found throughout the project site, or on the flume structure. Direct adverse effects on these special-status bat species may occur during construction, when tree removal and road improvements occur. The bat maternity season is from May 1 to August 31 and the overwintering season from November 1 to March 15.

A bat habitat assessment shall be conducted early in the spring prior to construction. The survey will include all trees to be removed, the flume structure itself, and a small buffer. If highly suitable habitat is present, then camera inspection as well as an emergence (exit survey with night optics) and/or acoustic survey shall be conducted in the summer prior to construction, which provides the best opportunity to determine if roosting bats are present.

If bats are found during the survey(s), then removal of roost habitat will be delayed until the end of maternity season (August 31) or until the young are capable of flights, as determined by a qualified bat biologist. Any removal of highly suitable roost habitat should be conducted during the shoulder season, September 1 to October 31, to avoid harm to the species. If a highly suitable roost tree or structure is to be removed, trees and/or structures surrounding the roost habitat should be removed first, allowing any bats that may be present time to leave the area. A qualified monitor shall be present during removal of the habitat tree or structure.

### ***Mitigation Measure BIO-4: Avoid and Minimize Impacts on Special-Status Amphibians.***

Potential terrestrial habitat for special-status amphibians and reptiles is defined as being within 500 feet of suitable aquatic habitat. This buffer is based on the average distance traveled by FYLF when moving overland and is meant to reflect a conservative and reasonable approach to quantifying where special-status amphibians may occur in uplands. Direct adverse effects from project construction on these species may include trampling or crushing of adults, juveniles, and eggs in aquatic and terrestrial habitats by foot traffic, vehicles, and/or equipment.

Before project implementation, EID shall conduct preconstruction surveys for all areas of project-related ground disturbance that could support special-status amphibian populations. If FYLF is found during the preconstruction surveys, EID shall consult with CDFW to prepare site-specific measures to avoid take. EID shall not begin work until CDFW has provided written approval of the proposed avoidance measures.

If no special-status amphibians are found during preconstruction surveys, and surface water is present during the preconstruction surveys, a qualified biologist will survey the work site each day before the start of work activities when equipment and/or material may come in contact with FYLF in streams or riparian habitat.

If FYLF is observed during construction, EID shall halt work in the immediate area and contact CDFW. EID shall not resume construction activities until CDFW has given written approval of the proposed avoidance measures.

Implementation of **Mitigation Measures BIO-1 through BIO-4** would reduce the impact on migratory birds and raptors, and on special-status wildlife species that may be present in the vicinity of project-related construction activities. Implementation of **Mitigation Measures BIO-1 and BIO-2** would require preconstruction surveys to identify whether active nests are present and would delineate no-construction buffer zones to avoid impacts on nesting raptors and/or other birds. Furthermore, implementation of **Mitigation Measure BIO-2** would avoid and minimize direct impacts on spotted owl. Implementation of **Mitigation Measure BIO-3** would require bat



surveys to identify potential trees or structures that could support maternal roosting bats. Implementation of **Mitigation Measure BIO-4** would require preconstruction surveys for FYLF, to identify whether or not the species is present and delineate buffer zones to avoid impacts on the species. Implementation of **Mitigation Measure GEO-1** requires preparation of SWPPP, which would be prepared with best management practices (BMPs) specifically designed to control and minimize erosion and downstream pollutant transport and to protect water quality, thereby eliminating impacts on water quality and riparian habitat (see Section 3.7, “Geology and Soils,” and more detailed discussion in item b) below. Implementation of these measures would reduce the potential impacts to these special status species to a **less than significant** level.

**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?**

No sensitive natural vegetation communities are present in the study area. Limited riparian habitat is present along Bull Creek. Riparian habitat is under the jurisdiction of CDFW, under Section 1600 of the California Fish and Game Code, and includes vegetation growing in association with waterways (e.g., creeks and drainages). Project construction-related activities would result in no direct temporary or permanent loss of riparian habitat or removal of riparian vegetation, and no construction activities are proposed to occur in Bull Creek. However, temporary disturbance associated with demolition of the existing shotcrete and rock retaining wall on the downstream portion of the flume along the western bank of Bull Creek and installation of a new abutment retaining wall at this location could cause indirect impacts on riparian habitat. Earth-moving equipment and mobilization activities near Bull Creek during removal and replacement of the above-mentioned project components could result in erosion of creek banks and/or cause the release of sediment downstream that could smother riparian plants and/or weaken root structures, release fugitive dust that could accumulate on vegetation, and potentially contribute to the introduction and spread of nonnative invasive plant species. Furthermore, accidental spills of fuel, oil, or other hazardous materials associated with construction equipment could harm surrounding riparian soils and vegetation.

EID and its contractors would implement **Mitigation Measure GEO-1** that requires preparation of a SWPPP and implementation of associated BMPs, specifically designed to reduce construction-related erosion (see Section 3.7, “Geology and Soils”). In addition, **Mitigation Measure GEO-1** requires that construction techniques and BMPs be included as part of the project design to reduce runoff and erosion, which would protect nearby riparian habitat, minimize site disturbance, control water flow over the construction site, stabilize bare soil, and ensure proper site cleanup; and requires installation of BMP materials, such as silt fences, staked straw bales/wattles, geofabric, trench plugs, terraces, water bars, soil stabilizers, and mulching before and for the duration of project construction activities. EID and its contractors also would comply with **Mitigation Measure HAZ-1**, which would require implementation of measures designed to prevent accidental spills and procedures to quickly cleanup spills if they occur (see Section 3.9, “Hazards and Hazardous Materials”).

To control the potential introduction of non-native invasive weeds into riparian habitat, EID and its contractors would comply with measures prescribed in **Mitigation Measure BIO-5** that requires implementing measures designed to prevent and control the introduction of noxious weeds, such as limiting seed sources, equipment cleaning, and **Mitigation Measure BIO-6** that requires re-seeding using a USFS-approved seed mix to revegetate disturbed areas after completion of project construction. Furthermore, the project design would include a 20-foot riparian protection zone, measured from the centerline of Bull Creek, that EID and its contractors would establish via installation of exclusion fencing before project implementation. The impact would be **less than significant with incorporation of mitigation**.



### ***Mitigation Measure BIO-5: Prepare and Implement a Noxious Weed Plan.***

EID and its construction contractor shall clean and inspect all construction equipment to ensure it is weed-free before being transported to the project site. After construction activities are completed, EID and its construction contractor shall complete noxious weed surveys and implement appropriate treatments in all areas of project construction activity.

### ***Mitigation Measure BIO-6: Revegetate Disturbed Areas.***

After completion of construction activities, EID and its construction contractor shall revegetate disturbed areas with a USFS-approved, weed-free seed mix after completion of construction activities to reduce the potential for soil erosion.

#### **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?**

The wetland delineation mapped 0.23 acre of potentially jurisdictional waters on the project site. These features consist of the El Dorado Canal (0.14 acre [421.14 linear feet]), including flume 30 which is approximately 336.18 linear feet, and Bull Creek (0.09 acre [265.60 linear feet]). The Canal is unvegetated, and Bull Creek supports minimal hydrophytic vegetation. EID's contractor would provide wood or metal plating over the drainage channel in the flume access area, to avoid any impact on this feature from equipment staging and movement. The Flume 30 structure is elevated above Bull Creek and would be replaced in the same position, with no work proposed within the creek. Equipment mobilization and staging areas for the proposed vegetation removal activities would be in existing access roads and uplands (i.e., mixed conifer forest, annual grassland, and deerbrush scrub), so that these activities would not directly affect any State or federally protected wetlands or waters. However, project activities (i.e., shotcrete/rock wall demolition and retaining wall construction) encroaching on aquatic features could result in indirect impacts on vegetation, degradation of water quality, and/or changes in hydrology. Construction-related spills, worker errors, and soil erosion in or near aquatic features would be other potential sources of indirect impacts on State or federally protected wetlands. Introduction of dust and settling of contaminants associated with vehicular emissions during project activities also may indirectly affect aquatic resources.

EID would apply for a Streambed Alteration Agreement from CDFW, Nationwide Permit from the U.S. Army Corps of Engineers and a Water Quality Certification from the Regional Water Quality Control Board for impacts to potentially jurisdictional waters of the U.S. and/or State. The terms and conditions of these permits would require avoidance and minimization measures, implementation of which would ensure that project impacts on federally regulated Waters of the U.S. and/or State would be less than significant. Furthermore, as required by **Mitigation Measure GEO-1**, which required preparation of a SWPPP and implementation of BMPs designed to control stormwater runoff and reduce erosion, combined with **Mitigation Measure HAZ-1**, which would require implementation of measures designed to prevent accidental spills and procedures to quickly cleanup spills if they occur, **Mitigation Measure BIO-5**, which requires implementing measures designed to prevent and control the introduction of noxious weeds, and **Mitigation Measure BIO-6**, which requires re-seeding using a USFS-approved seed mix to revegetate disturbed areas, as well as installation and maintenance of a 20-foot riparian setback, discussed above, would avoid and minimize any indirect impact on any other State or federally protected wetlands or waters in the project vicinity. The impact would be **less than significant with incorporation of mitigation**.



**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?**

Wildlife movement corridors in the region typically are associated with rivers and creeks supporting riparian vegetation, which are available elsewhere, including the neighboring American River. Project implementation temporarily would impede wildlife use of the project site; however, these project effects would be localized and would not substantially affect wildlife movements. The project would not substantially alter the path of a stream or drainage channel and would maintain the integrity of Bull Creek; therefore, the project would not interfere substantially with the movement of any native resident or migratory fish. No established or known native wildlife nursery sites are in the project site. The impact would be **less than significant**. No mitigation is required.

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

No local policies or ordinances for the protection of biological resources apply to the Project and no conflict with local policies and ordinances protecting biological resources would occur. **No impact** would occur.

**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?**

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.



## 3.5 CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>V. Cultural Resources. Would the project:</b>				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 3.5.1 ENVIRONMENTAL SETTING

The following information is based on a preliminary investigation of the project location, which included a records search of the ENF, Placerville District, FERC Project No. 184 Historic Properties Management Plan, and research in AECOM's cultural library. The cultural resources records search that was conducted at the ENF garnered background information regarding previous resources or studies that have been reported at the project site and vicinity, and information that may contribute to the project's cultural sensitivity assessment. Because the entire project is located on lands managed by ENF, a CHRIS records search was not required (Serin, pers comm., 2019).

#### PREHISTORIC SETTING

Archaeological research in the Sierra Nevada over the past several decades has resulted in numerous proposals, developed in attempts to trace cultural and technological change during prehistory. This section summarizes the prehistoric setting, and a more detailed discussion is presented in the cultural technical memo (Appendix E). An absence of well-defined components or single component sites exist that date prior to 7,000 years Before Present. The Early and Middle Sierran Patterns (circa 3,200–600 B.P.) are interpreted with reservation to indicate an increase in regional land use and the regular use of certain locales. An increase in the exploitation of resources during the latter portion of this period (circa post-1,400 B.P.) is marked by the adoption of mortar technology. The Late Sierran Period (circa 600–150 B.P.) is characterized by continued intensive use of the western slope of the Sierra Nevada, including significant use of acorns.

#### ETHNOGRAPHIC SETTING

Ethnographically, the project area is situated near the boundaries of Nisenan (sometimes referred to as the Southern Maidu) and Washoe territory (d'Azevedo 1986; Waechter et al. 2003; Wilson and Towne 1978). A more detailed summary of the ethnographic setting can be found in Appendix E.



## **HISTORIC SETTING**

The project area is in El Dorado County, one of the original 27 counties created when California became a State in 1850. Originally, the county's boundaries included parts of present-day Amador, Alpine, and Placer counties. By 1919, California adopted the current boundary lines that are marked to the east by the State of Nevada and to the west by Sacramento and Placer counties. Gold mining was the predominant industry in western El Dorado County for many years. Other mineral products in the region included large deposits of slate, granite, lime, and asbestos, as well as building stones. By the turn of the twentieth century, lumbering, raising livestock, and farming had joined mining as the principal industries at the lower elevations of the county. These historic-era themes along with the development of transportation systems and recreation are furthered discussed in the cultural memo Appendix E.

## **PREVIOUS INVESTIGATIONS**

The entire project area is within ENF lands, and the ENF Placerville District concluded that an additional pedestrian survey was not required (Serin, pers. comm., 2019). Results of background research that was conducted at the ENF Placerville District Office and AECOM's cultural library indicated that six previously conducted cultural resource investigations have occurred within portions of the project site, and one addressed resources within 0.25 mile of the project site (Table 3.5-1). Other than the El Dorado Canal, no cultural resources have been recorded previously at the project site. However, one historic-era resource, the Upper Ogilby Grade, has been documented within 0.25 mile of the project site (Table 3.5-2). The Upper Ogilby Grade originally was a private toll road and operated from the 1860s. This site is not located in the project area and would not be affected by the project.

The eligibility status of the El Dorado Rock Wall Discontiguous District was re-affirmed in 2008. In 2008, PAR Environmental Services, Inc. prepared an National Register of Historic Places (NRHP) evaluation report for EID's FERC 184 hydroelectric system, which included the El Dorado Canal (canal flumes, spillways, tunnels, siphons) (PAR Environmental Services 2008). The study concluded that El Dorado Canal (canal flumes, spillways, tunnels, siphons), which includes Flume 30 and other FERC Project 184 features, was not eligible for listing on the NRHP. The study also concluded that two resources, Lake Aloha Dam Complex and the El Dorado Rock Wall Discontiguous District are individually eligible for inclusion in the NRHP. In August 2008, State Historic Preservation Officer (SHPO) concurred with the findings of the study. Flume 30 is supported by a rock wall; however, the segment of rock wall at Flume 30 is not a component of the El Dorado Rock Wall Discontiguous District as identified in the study (PAR Environmental Services 2008).



**Table 3.5-1. Previously Recorded Cultural Resources Inventories**

ENF Report Number	Year	Author(s)	Report Title
<b>Previous Studies Conducted within 0.25 mile of the Project Site</b>			
R1984050300017	1984	El Dorado National Forest	Bull-Plum Timber Sale
R1993050300058	1993	El Dorado National Forest	Cleveland Fire Area Recovery Project
	1994	BioSystems Analysis, Inc.	Archaeological Survey of the Upper Ogilby Grade, FS 05-03-56-723 Road II
	1990	Shoup, L.	Historical Overview and Significance Evaluation of the El Dorado Canal, El Dorado County, California, Volume 1. Prepared for Pacific Gas and Electric Company
	2003	Waechter, S. A., S. Wee, and M. Rucks	Proposed Relicensing of the El Dorado Hydroelectric Project (FERC Project 184) Resource Report 4, Attachment A: Cultural Resources Investigations
	2016	Deis, R., and J Rogers	Cultural Resources Assessment for the El Dorado Irrigation District Project No. 184 Streamgange Installation Project at No Name, Bull, and Ogilby Creeks
<b>Previous Studies Conducted near the Project Site</b>			
	2003	Hildebrandt, W. R., and S. A. Waechter	Proposed Relicensing of the El Dorado Hydroelectric Project (FERC Project 184) Historic Properties Management Plan
Note: ENF = El Dorado National Forest Source: El Dorado National Forest 2019 and AECOM in 2019			

**Table 3.5-2. Previously Recorded Cultural Resources**

Trinominal Number	Primary Number	ENF Number	Description
<b>Resources at Project Site</b>			
CA-ELD-511H	P-9-0599		El Dorado Canal
<b>Resources within 0.25 mile of the Project Site</b>			
		FS 05-0356-723	Upper Ogilby Grade
Source: El Dorado National Forest 2019; compiled by AECOM in 2019			

## 3.5.2 DISCUSSION

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

Cultural resource investigations of the project site have not resulted in the identification of historical resources; therefore, as defined by Section 15064.5 of CEQA. **No impact** would occur.



**b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?**

The project would not involve disturbance to any known archaeological resources. However, although unlikely, soil disturbance during project construction could damage previously unrecorded archaeological resources. With implementation of Mitigation Measure CUL-1, which describes measures to protect archaeological resources, project impacts associated with disturbance of previously undiscovered archaeological resources would be **less than significant**.

***Mitigation Measure CUL-1: Address Previously Undiscovered Historic Properties and Archaeological Resources.***

EID and its contractor shall implement the following measure to reduce or avoid impacts on undiscovered historic properties and archaeological resources. If interested Native American Tribes provide information demonstrating the significance of the project location and tangible evidence supporting the determination that the site is highly sensitive for prehistoric archaeological resources, EID shall retain a qualified archaeologist to: 1) monitor for potential prehistoric archaeological resources during initial ground disturbing activities, 2) prepare a worker awareness brochure, and 3) invite tribal representatives to review the worker awareness brochure.

If buried or previously unidentified historic properties or archaeological resources are discovered during project construction, all work within a 100-foot radius of the find will cease. EID shall retain a professional archaeologist who meets the Secretary of the Interior's Professional Standards for Archaeologists to assess the discovery and recommend for what, if any, further treatment or investigation will be necessary for the find. Interested Native American Tribes also shall be contacted. Any necessary treatment/investigation will be developed, with interested Native American Tribes providing recommendations in coordination with the SHPO, if necessary, and will be completed before construction continues in the vicinity of the find.

**c) Disturb any human remains, including those interred outside of formal cemeteries?**

No indication or evidence has shown that the area has been used for human burials in the recent or distant past; therefore, human remains are unlikely to be encountered. With implementation of Mitigation Measure CUL-2, which prescribes measures to protect human remains in the event of an inadvertent discovery, project impacts would be **less than significant**.

***Mitigation Measure CUL-2: Avoid Potential Effects on Undiscovered Burials.***

EID and its contractor shall implement the following measures to reduce or avoid impacts related to undiscovered burials. In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, all potentially damaging ground disturbance in the area of the burial and a 100-foot radius will be halted and the El Dorado County Coroner will 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 (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, then federal laws governing the disposition of those remain will come into effect. Specifically, the Native American Graves Protection and Repatriation Act (NAGPRA), Public Law 101-601, 25 U.S. Code 3001 et seq., 104 Statute 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. NAGPRA also 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.

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. EID shall ensure that the procedures for the treatment of Native American human remains that are contained in Sections 7050.5 and 7052 of the California Health and Safety Code and Section 5097 of the Public Resources Code are followed.



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## 3.6 ENERGY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VI. Energy. Would the project:</b>				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 3.6.1 ENVIRONMENTAL SETTING

Flume 30 is part of the EID's 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, 2019).

### 3.6.2 DISCUSSION

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

The project would not include construction or operation of facilities that would require electricity from a regional or local utility provider. The project would increase consumption of energy for the duration of construction in the form of fossil fuels (e.g., gasoline, diesel fuel). The primary energy demands during construction would be associated with hand-held machinery, heavy-duty construction equipment, and vehicle fueling. Energy in the form of fuel would be consumed during this period by construction vehicles and equipment operating on site, trucks delivering equipment and supplies to the project area, and construction workers driving to and from the area during construction.

Project construction fuel consumption is not expected to be any more inefficient, wasteful, or unnecessary than at other construction sites in the region. Construction activities would not result in long-term depletion of nonrenewable energy resources and would not permanently increase reliance on energy resources that are not renewable.

The project would rehabilitate Flume 30 to ensure that a reliable supply of hydroelectric power would be available to the regional utility grid. The project would not change canal operations or capacity, and it would not require or result in additional operations and maintenance activities above existing conditions. Therefore, the impact would be **less than significant**. No mitigation is required.



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

State and local authorities regulate energy use and consumption through various programs. These regulations at the State level are intended to reduce energy use and GHG emissions. As discussed in Section 3.8, “Greenhouse Gas Emissions,” the project would not conflict with or obstruct any applicable plan intended to reduce GHG emissions. The project would not require or result in additional operations and maintenance activities above existing conditions. Thus, **no impact** would occur.



### 3.7 GEOLOGY AND SOILS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VII. Geology and Soils. Would the project:</b>				
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.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.7.1 ENVIRONMENTAL SETTING

##### GEOLOGY AND SOILS

The project site is along the steep south side of the South Fork American River Canyon in the Sierra Nevada. Elevations at the project site range from approximately 3,900 to 4,200 feet above mean sea level. The flume is on a narrow bench, cut into the side of the hillslope. Downhill from the flume is a steep slope that is approximately 700 feet to the river below.



The project site is in an area that is highly susceptible to landslides. The 1997 Mill Creek slide, on the east side of Mill Creek, resulted in the removal of more than 350,000 cubic yards of material that temporarily blocked the South Fork American River and resulted in the closure of US 50 for nearly a month. A small area of landslide deposits has been mapped in the project site, and a larger area of landslide deposits is present adjacent to the site along the unnamed creek to the east (Wagner and Spittler 1997; EID 2002). The nearest active fault is the West Tahoe Fault near Echo Lake, approximately 21 miles northeast of the project site.

Natural Resources Conservation Service (NRCS 2018) soil survey data indicates that the project site is composed primarily of Chaix coarse sandy loam, 30–75% slopes soil type. Near the proposed uphill staging area, the soil consists of the McCarthy-Ledmount association, 2–30% slopes. The Chaix and McCarthy-Ledmount soils have a high to moderately high permeability, are well drained, have a low water erosion hazard, and have a moderate stormwater runoff potential. These soils are dusty, are found on steep slopes, and have a shallow depth to bedrock.

## **PALEONTOLOGICAL RESOURCES**

Flume 30 and the proposed access road location are in Mesozoic-age plutonic granitic rocks (Wagner et al. 1981; Busch 2001; EID 2002). This type of rock originated from magma, which slowly crystallized below the Earth's surface. Therefore, these rocks do not contain fossils.

### **3.7.2 DISCUSSION**

- a) **Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:**
  - i) **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)**

The closest Alquist-Priolo Earthquake Fault Zone is the West Tahoe Fault near Echo Lake (CGS 2017), approximately 21 miles northeast of the project site. A portion of Flume 30 in the project area and the proposed access road area are underlain by an unnamed pre-Quaternary fault. This fault trends north-south and extends northward from the project site across the South Fork American River Canyon and across Peavine Ridge, where it terminates underneath Ice House Reservoir (Jennings and Bryant, 2010). Pre-Quaternary faults have exhibited evidence of movement more than 2.5 million years Before Present, and therefore are not considered to be active. No other details regarding this pre-Quaternary fault are available.

Geologists have determined that the greatest potential for surface fault rupture is from active faults (CGS 2003). Faults classified as “potentially active,” where evidence of movement has occurred in the last 1.8–2.5 million years before present, have a lower potential for surface fault rupture and strong seismic ground shaking. Pre-Quaternary faults are not considered to represent a surface fault rupture or strong seismic ground-shaking hazard. Because of the long distance to the nearest active fault and the pre-Quaternary age of the fault underlying the project site, fault rupture at the project site is unlikely. The impact would be **less than significant**. No mitigation is required.



## ii) Strong seismic ground shaking?

The intensity of ground shaking depends on the distance from the earthquake epicenter to the site, the magnitude of the earthquake, and site soil conditions. Peak horizontal ground acceleration (PGA), which is a measure of the projected intensity of ground-shaking from seismic events, can be estimated by probabilistic method using a computer model. The CGS Probabilistic Seismic Hazards Assessment Model (CGS 2008) indicates that a 1-in-10 probability exists for an earthquake within 50 years to result in a PGA of approximately 0.182g (where g is a percentage of gravity) in the project vicinity, indicating that a low level of seismic shaking would be anticipated. Furthermore, the project would not include any buildings intended for human occupancy. The unnamed fault that runs through the project site is of pre-Quaternary age, and therefore would be unlikely to cause strong seismic ground-shaking. Improvements to the flume would be designed and constructed in accordance with standard engineering practices, which consider the potential for strong seismic ground-shaking. Therefore, the impact would be **less than significant**. No mitigation is required.

## iii) Seismic-related ground failure, including liquefaction?

Liquefaction is most likely to occur in low-lying areas where the substrate consists of poorly consolidated to unconsolidated water-saturated sediments, recent Holocene-age sediments, or deposits of artificial fill. Additional factors that determine the liquefaction potential are the distance to an active seismic source and the depth-to-groundwater. The project site consists of granitic bedrock. Groundwater in the project area is held in small pores within the fractured bedrock; therefore, the project site does not overlie an “aquifer” with a large pool of water at a shallow depth that could contribute to instability. Based on the type of groundwater and the fact that the proposed facilities would be constructed in bedrock, along with the long distance to an active fault, liquefaction and seismically-induced settlement at the project site would not represent a hazard. Thus, **no impact** would occur.

## iv) Landslides?

The project site is on a steep hillside uphill from the South Fork American River. The new access road would be constructed uphill from the flume at the top of the canyon. The project site is in area of unstable slopes where landslides have been known to occur (Wagner and Spittler 1997; EID 2002). The proposed access road would traverse a mapped landslide deposit (Wagner and Spittler 1997; EID 2002). EID would excavate and remove the landslide deposits traversed by the proposed access road. Stability of the road in the landslide area would be provided by creating a compacted flat bench and installing slope stabilization measures that could include adding draped mesh, post-mounted cable net, flexible barrier, anchored mesh, or drilled and grouted lateral anchors through the upslope wall.

The concrete flume would be installed on the existing Flume 30 bench along the hillslope, which has been cut out of bedrock. The concrete retaining walls supporting the flume would be secured to the slope by stability measures, such as drilled and grouted lateral anchors through the upslope wall and adding a permanent facing, such as shotcrete. The new western abutment at Bull Creek would be constructed with reinforced shotcrete facing and rock anchor tie backs to provide stability.

Adherence to standard engineering and design practices, which would include slope stabilization measures (e.g., retaining walls, tie backs, soil nails, and controlling surface water runoff) where necessary would reduce the potential for loss of life and property from landslide hazards on the project site. Mitigation Measure BIO-6 would require disturbed areas downslope from the flume bench and canal to be revegetated after project construction,



using a USFS-approved seed mix to reduce erosion potential and help provide slope stability. Therefore, impacts associated with the potential for landslides will be **less than significant with implementation of Mitigation Measure BIO-6.**

***Mitigation Measure GEO-1. Implement Mitigation Measure Bio-6.***

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

The project would require grubbing existing vegetation, removing hazard trees, grading, installing mechanical stabilization and concrete at the flume, and constructing approximately 2,200 feet of new gravel access road that would tie-in with existing access roads. 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 downstream sedimentation.

The project would be subject to the requirements of the NPDES program. This program would require EID to submit a Notice of Intent, apply for a waste discharge permit, comply with waste discharge requirements issued by the Central Valley RWQCB, and implement a stormwater pollution prevention plan (SWPPP) during construction to reduce stormwater runoff and erosion. EID and its contractor would be required to comply with the County's erosion and control ordinance, which regulates grading, erosion, and sediment control. In addition, **Mitigation Measures BIO-6 and GEO-2** would reduce impacts to a **less-than-significant** level by requiring revegetation of disturbed areas using a USFS-approved seed mix and by requiring preparation of a SWPPP and implementation of associated BMPs specifically designed to reduce construction-related erosion.

***Mitigation Measure GEO-2. Prepare and Implement a Stormwater Pollution Prevention Plan and Associated Best Management Practices.***

EID or its approved construction contractor shall file a Notice of Intent (NOI) with the Central Valley Regional Water Quality Control Board, to discharge in compliance with the statewide National Pollutant Discharge Elimination System (NPDES) Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 2009-009-DWQ, as amended by Order 2012-0006-DWQ).

EID or its contractor also shall prepare a SWPPP and implement associated BMPs that are specifically designed to reduce construction-related erosion. Construction techniques that may be implemented to reduce the potential for stormwater runoff include minimizing site disturbance, controlling water flow over the construction site, stabilizing bare soil, and ensuring proper site cleanup. BMPs that may be implemented to reduce erosion include silt fences, staked straw bales/wattles, silt/sediment basins and traps, geofabric, trench plugs, terraces, water bars, soil stabilizers and re-seeding and mulching to revegetate disturbed areas.

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

As previously described, the project site is in an area of unstable slopes where landslides have been known to occur (Wagner and Spittler 1997; EID 2002). The proposed access road would cross a mapped landslide deposit on the north side of the hill. Mechanical stabilization of the new concrete-lined portion of the flume would be necessary because of the steep slope and shallow bench, as necessary to carry the weight of the concrete and the water.



As described in Chapter 2, “Project Description,” the concrete flume would be installed on the existing Flume 30 bench, which has been cut out of bedrock. The concrete retaining walls supporting the flume would be secured to the slope by stability measures, such as drilled and grouted lateral anchors through the upslope wall and adding a permanent facing, such as shotcrete. The new western abutment at Bull Creek would be constructed with reinforced shotcrete facing and rock anchor tie backs to provide stability. Furthermore, EID would excavate and remove the landslide deposits in the area traversed by the proposed access road. Stability of the road in the landslide area would be provided by creating a compacted flat bench and installing slope stabilization measures that could include adding draped mesh, post-mounted cable net, flexible barrier, anchored mesh, or drilled and grouted lateral anchors through the upslope wall and adding a permanent facing, such as shotcrete. The stabilization measures would be implemented with adherence to standard engineering practices, designed to provide slope stability and prevent hazards related to unstable soils from proposed flume modifications and the proposed access road. The impact would be **less than significant**. No mitigation is required.

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

Based on a review of NRCS (2018), soil survey data, the Chaix and McCarthy-Ledmount soil types present at the project site are not considered to be expansive. Therefore, **no impact** would occur.

**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?**

The project would not require installation of wastewater treatment systems. Temporary portable restrooms would be provided for construction workers. Therefore, **no impact** would occur.

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

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. **No impact** would occur.



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### 3.8 GREENHOUSE GAS EMISSIONS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VIII. Greenhouse Gas Emissions. Would the project:</b>				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 3.8.1 ENVIRONMENTAL SETTING

Certain gases in Earth’s atmosphere, classified as GHGs, play a critical role in determining Earth’s surface temperature. A portion of the solar radiation that enters the atmosphere is absorbed by 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 in the atmosphere; therefore, infrared radiation released from Earth that otherwise would have escaped back into space instead is “trapped,” resulting in warming of the atmosphere. This phenomenon, known as the “greenhouse effect,” is responsible for maintaining a habitable climate on Earth. Without the naturally occurring greenhouse effect, Earth would not be able to support life as we know it. However, GHG emissions associated with human activities likely are responsible for intensifying the greenhouse effect and have led to a trend of unnatural warming of Earth’s atmosphere and oceans, with corresponding effects on global circulation patterns and climate (IPCC, 2014).

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. The following are the GHGs that are widely accepted to be the principal contributors to human-induced global climate change:

- ▶ carbon dioxide (CO<sub>2</sub>)
- ▶ methane (CH<sub>4</sub>)
- ▶ nitrous oxide (N<sub>2</sub>O)
- ▶ hydrofluorocarbons
- ▶ perfluorocarbons
- ▶ sulfur hexafluoride

Global warming potential (GWP) is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to CO<sub>2</sub>. The concept of CO<sub>2</sub> equivalents (CO<sub>2</sub>e) is used to account the different GWP potentials of GHGs to absorb infrared radiation. The GWP of a GHG is based on several factors, including the relative effectiveness of a gas in absorbing infrared radiation and the length of time (i.e., lifetime) that the gas remains in the atmosphere (“atmospheric lifetime”). The reference gas for GWP is CO<sub>2</sub>; therefore, CO<sub>2</sub> has a GWP of 1. The other main GHGs that have been attributed to human activity are CH<sub>4</sub>, which has a GWP of 21, and N<sub>2</sub>O, which has a GWP of 310 (UNFCCC, 2013). For example, 1 ton of CH<sub>4</sub> has the same contribution to the greenhouse effect as approximately 21 tons of CO<sub>2</sub>. GHGs with lower emissions rates than CO<sub>2</sub> still may



contribute to climate change because they are more effective at absorbing outgoing infrared radiation than CO<sub>2</sub> (i.e., high GWP).

Impacts of GHGs are borne globally, as opposed to localized air quality effects of criteria air pollutants and TACs. The quantity of GHGs that it takes to ultimately result in climate change is not known precisely; however, the quantity is enormous, and no single project alone would contribute measurably to a noticeable incremental change in the global average temperature, or to a global, local, or micro-climate. From the standpoint of CEQA, GHG-related effects on global climate change are inherently cumulative.

## **MANDATORY GREENHOUSE GAS REPORTING RULE**

On October 30, 2009, EPA published the final version of the Mandatory Greenhouse Gas Reporting Rule in the Federal Register. In general, compliance with this national reporting requirement is intended to provide EPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons (MT) or more of CO<sub>2</sub> per year. An estimated 85 percent of the total U.S. GHG emissions, from approximately 10,000 facilities, are covered by this final rule. Subsequent rulings have expanded the emissions sources that are required to report emissions data, and now include oil and natural gas industries, industrial wastewater treatment plants, and industrial landfills.

## **EXECUTIVE ORDER S-3-05**

The goal of this Executive Order, enacted in June 2005, was to reduce California's GHG emissions to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below the 1990 levels by the year 2050. In 2006, this goal was reinforced with passage of Assembly Bill (AB) 32.

## **GLOBAL WARMING SOLUTIONS ACT OF 2006 AND EXECUTIVE ORDER S-20-06**

The Global Warming Solutions Act of 2006 set the same overall GHG emissions reduction goals as outlined in Executive Order S-3-05. The act further requires that ARB create a plan which includes market mechanisms and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06, enacted in October 2006, further directed State agencies to begin implementing the act, including the recommendations made by the State's Climate Action Team.

## **SENATE BILL 97**

Senate Bill 97 (Chapter 185, Statutes of 2007) 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 in March 2010.

The EDCAQMD has no regulations addressing GHG emissions. EDCAQMD has not established quantitative significance thresholds for evaluating GHG emissions in CEQA analyses. Each project is evaluated on a case-by-case basis, using the most up-to-date calculation and analysis methods. Therefore, to establish additional context in which to consider the order of magnitude of the project's construction-related GHG emissions, this analysis considers the following guidelines on the levels of GHG emissions that would constitute a cumulatively considerable incremental contribution to climate change:



- ▶ The San Luis Obispo Air Pollution Control District has adopted 1,150 MT CO<sub>2</sub>e as a project-level GHG significance threshold that would apply to annual operational and amortized construction emissions from land use development projects (SLOAPCD, 2012).
- ▶ The Sacramento Metropolitan Air Quality Management District (SMAQMD) GHG Working Group has proposed a significance screening level of 3,000 MT CO<sub>2</sub> per year for residential and commercial projects (SMAQMD 2015).

Many California air districts, such as the SMAQMD and South Coast Air Quality Management District (SCAQMD), recommend that construction emissions associated with a project be amortized over the life of the project (typically 30 years) and added to the operational emissions. EDCAQMD's CEQA Guide to Air Quality Assessment includes numerous references to methodologies developed by SMAQMD and SCAQMD for criteria pollutant emissions. Therefore, because of lack of a specific GHG threshold or guidance from EDCAQMD, it is considered appropriate to reference methodologies and guidance from those agencies when discussing GHG emissions. The information regarding other jurisdictions' thresholds are provided for comparative purposes only. These thresholds are not applicable to the project and are not intended to be used for assessing the environmental impact of associated GHG emissions.

This analysis includes a quantification of total modeled, construction-related GHG emissions. Those emissions are then amortized and evaluated as a component of the project's operational emissions over the 30-year life expectancy of the project. The intent of this analysis is to put project-generated GHG emissions into the appropriate statewide context, with regard to whether the project's contribution to GHG emissions would reach a level that would have a considerable incremental contribution to global climate change.

### 3.8.2 DISCUSSION

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

Short-term project construction would generate GHG emissions, generated by vehicle engine exhaust from construction equipment, haul trips, and construction worker trips. These GHG emissions primarily would consist of CO<sub>2</sub>. Emissions of other GHGs, such as CH<sub>4</sub> and N<sub>2</sub>O, would be important with respect to global climate change; however, even when considering the higher GWPs of these other GHGs, their contribution to total GHG emissions would be small compared with CO<sub>2</sub> emissions from project emission sources (i.e., construction equipment and on-road vehicles). However, where appropriate emission factors were available, emissions of CH<sub>4</sub> and N<sub>2</sub>O were included in the project analysis.

Based on modeling conducted for the project, as presented in Appendix A, project construction would generate approximately 206 MT CO<sub>2</sub>e over the entire construction period, which would last up to 5 months. These emissions would include heavy-duty construction equipment, haul trucks, and construction worker vehicles. To estimate amortized construction emissions, the total construction-related GHG emissions of 206 MT CO<sub>2</sub>e associated with the project were divided by 30 years (approximately 7.9 MT CO<sub>2</sub> per year).

As mentioned previously, many air districts recommend that construction-related GHG emissions be amortized over the lifetime of the project and compared to the thresholds of significance along with operational GHG emissions. Because the project would not include additional GHG emissions associated with operations, the



amortized, construction-related emissions of 7.9 MT CO<sub>2</sub>e need to be compared to any proposed or adopted GHG thresholds of significance. Because EID and EDCAQMD do not have adopted thresholds, the amortized construction emissions are discussed in a statewide context with regard to other proposed or adopted thresholds. The amortized, construction-related GHG emissions would be less than the adopted or proposed GHG levels. Therefore, the project would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment. The impact would be **less than significant**. No mitigation is required.

Furthermore, project implementation would not require or result in additional operations and maintenance activities above existing conditions. Therefore, no impact would occur.

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

None of the measures listed in the ARB Climate Change Scoping Plan (ARB 2008), which contains the main strategies that California uses to achieve emission reductions necessary to meet the goals of AB 32, relate directly to construction activities. The scoping plan includes some measures that indirectly address GHG emissions levels associated with construction activity, such as the phasing of cleaner technology for diesel engine fleets (including construction equipment) and development of a low-carbon fuel standard. However, successful implementation of these measures depends primarily on development of laws and policies at the State level. Those policies formulated under the mandate of AB 32 that apply to construction-related activity, either directly or indirectly, would be implemented during project construction, if those policies and laws are developed and adopted before the start of project construction. Therefore, project construction is not expected to conflict with the scoping plan.

As discussed previously, the project would not generate GHG emissions that would have a significant impact on the environment. Neither EID nor any other agency with project jurisdiction has adopted climate change or GHG reduction measures with which the project would conflict. The project would not conflict with any applicable plan, policy, or regulation for reducing GHG emissions. Therefore, the impact would be **less than significant**. No mitigation is required.

Project implementation would not require or result in additional operations and maintenance activities above existing conditions. Therefore, no impact would occur.



### 3.9 HAZARDS AND HAZARDOUS MATERIALS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>IX. Hazards and Hazardous Materials. Would the project:</b>				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### 3.9.1 ENVIRONMENTAL SETTING

AECOM performed a search of publicly available databases maintained under Section 65962.5 of the Public Resources Code (i.e., the “Cortese List”), 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. The nearest closed site is on the north side of the South Fork American River Canyon (SWRCB Site No. T060170054), approximately 0.65 mile north 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 (CAL FIRE) fire hazard severity zone map, the project site is in an area of federal responsibility; it has not been rated for fire hazard severity (CAL FIRE 2007).<sup>5</sup> Most of the project site is heavily forested, primarily with conifers, interspersed with deciduous trees and shrubs. The proposed staging area has fewer trees and shrubs, with less dense vegetation.

### 3.9.2 DISCUSSION

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

Project construction would entail the routine transport, use, and disposal of small amounts of hazardous materials, such as fuel, hydraulic oil, solvents, motor oil, glues and adhesives, and coatings. Transportation of hazardous materials on area roadways is regulated by the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans), and use of these materials is regulated by DTSC, as outlined in Title 22 of the California Code of Regulations.

EID and its contractors would be required to use, store, and transport hazardous materials in compliance with applicable federal and State regulations during project construction and operation. The project would be required to implement and comply with existing hazardous material regulations, and each of these regulations is specifically designed to protect public health through improved procedures for handling hazardous materials, better technology in equipment used to transport these materials, and a better coordinated, quicker response to emergencies. Thus, the impact would be **less than significant**. No mitigation is required.

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

Project construction would entail use of small amounts of hazardous materials, such as fuel, hydraulic oil, solvents, motor oil, glues and adhesives, and coatings.

***Mitigation Measure HAZ-1: Prepare and Implement a Hazardous Substances Plan.***

EID and its contractors would comply with the measures prescribed by the FERC Project 184 Hazardous Substances Plan (EID 2008), requiring compliance with all applicable environmental and safety laws and regulations.

The plan requires that all practicable measures are taken to minimize the potential for and consequences of a spill in the project area. This includes the responsibility for EID and its contractors to maintain spill kits, provide training to personnel to prevent spills and pollution, follow proper spill cleanup procedures, store fuels and oils away from watercourse and sensitive biological resources, monitor vehicles for leaks and perform regular

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<sup>5</sup> CAL FIRE's Online Fire Hazard Severity Zone viewer was accessed on August 25, 2019, to confirm the hazard severity zone rating for the project area (<http://egis.fire.ca.gov/FHSZ/>).



maintenance, perform periodic inspections of the construction site, and complete a final site inspection after construction completion to certify that no unreported spills have occurred.

If a spill occurs in the project area, the ENF would be notified immediately of the nature, time, date, location, and action for any spill affecting its lands, and any applicable agencies also would be notified as to the type, day and time, and response to all spills under their jurisdictions. A list of agencies requiring notification, including current phone numbers, would be kept at the project site. All spills, if any occur, would be documented using an Oil and Hazardous Substances Spill Notification Form, which would be included as part of the plan.

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

No schools are within 0.25 mile of the project site. Thus, there would be **no impact**.

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

Based on a search of hazardous waste databases, the project site is not on or within 0.25 mile of a hazardous materials site included in the Cortese List (DTSC 2019; SWRCB 2019). Thus, **no impact** would occur.

**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?**

The project site is not within an area covered by an airport land use plan. The nearest airport is the Placerville Airport—a public, general aviation airport—approximately 17.5 miles west of the project site. Thus, **no impact** would occur.

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

The approximately 3.9-acre project site is in an undeveloped area of the ENF. The site is accessed by existing dirt and gravel roads that were created to provide access to the FERC Project 184 facilities, and for logging activities on surrounding forest land. The project would include construction of an additional 2,200 feet of road, to provide appropriate access to the project site. The project site is not in an area that is subject to an adopted emergency response or evacuation plan. No residences are in the project vicinity. Because of the rural, undeveloped nature of the project area, the short-term, temporary presence of construction vehicles on the access roads would have no effects on access for emergency response vehicles or evacuation access. Thus, **no impact** would occur.

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

The USFS is the federal agency with the primary responsibility for providing fire-fighting services to the project site. Most of the site is heavily forested, primarily with conifers, interspersed with deciduous trees and shrubs. Uncontrolled sparks from project-related construction equipment could result in a wildland fire. Implementation of **Mitigation Measure HAZ-2** would reduce potential impacts associated wild fires to a **less than significant**



level by requiring project-related construction activities to be conducted in compliance with a fire prevention plan, approved by USFS.

***Mitigation Measure HAZ-2: Prepare and Implement a Fire Prevention Plan.***

Prior to commencement of construction activities, EID shall prepare a fire prevention plan, per ENF 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.



### 3.10 HYDROLOGY AND WATER QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>X. Hydrology and Water Quality. Would the project:</b>				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that there the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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;	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.10.1 ENVIRONMENTAL SETTING

Elevations at the project site range from approximately 3,900 to 4,200 feet above mean sea level. The climate is generally Mediterranean, with cool, wet winters and hot, dry summers. Precipitation occurs primarily in winter, generally between November and April, with little precipitation during the summer except for occasional thundershowers.

The project area is within the 850-square-mile South Fork American River watershed. The project site is partially on the steep south side of the South Fork American River canyon, and the flume is on a plateau at the top of the south side of the canyon. The South Fork American River is downslope from Flume 30, at the base of a steep hillside approximately 700 feet from the flume. The river flows from east to west, with numerous tributaries entering from both sides of the canyon.



The route of Flume 30 follows the contour of the slope on the south side of the canyon and crosses Bull Creek, which is tributary to the South Fork American River. Flows in the South Fork American River vary widely, depending on the season. Flows are highest during the spring runoff and lowest at the end of summer.

The project site has been mapped by the Federal Emergency Management Agency (FEMA) as being in flood hazard Zone D—an area of undetermined flood hazards (FEMA, 2008).

Water quality in the South Fork American River Watershed is regulated by the Central Valley Regional Water Quality Control Board (Central Valley RWQCB), governed by the Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan) (Central Valley RWQCB 2018). As part of the FERC 184 project, EID is required to monitor water quality at various locations in the South Fork American River watershed, including two locations above and below the Bull Creek Diversion Dam. The 2018 Water Quality Monitoring Report (EID 2019) presents the most recent water quality data for the project area. Data above (site number WQ 15) and below (site number WQ 16) the Bull Creek Diversion Dam are shown in Table 3.10-1.

**Table 3.10-1. Water Quality Data in the Project Area**

Parameter (units of measurement)	Monitoring Location					
	WQ 15 Above Bull Creek Diversion Dam			WQ 16 Below Bull Creek Diversion Dam <sup>1</sup>		
	Average	Minimum	Maximum	Average	Minimum	Maximum
Temperature (degrees Fahrenheit)	10.3	4.8	16.8	10.7	5.3	16.4
Dissolved Oxygen (milligrams per liter)	9.4	7.7	10.9	9.4	7.8	11.1
Conductivity <sup>2</sup> (microsiemens per cubic centimeter)	62	26	77	71	7	94
pH	7.9	7.7	8.1	7.9	7.7	8.2
Turbidity (nephelometric turbidity units)	1.5	0.3	4.3	1.3	0.2	3.6
Alkalinity (milligrams per liter)	32.5	19.0	41.0	37.6	24.0	51.0
Hardness, measured as calcium carbonate (milligrams per liter)	24.6	18.0	28.0	32.1	20.0	37.0

Notes:

<sup>1</sup> WQ 16 is at the confluence of Bull Creek and the South Fork American River.

<sup>2</sup> Conductivity is a measure of water's ability to pass electrical flow, which is a way to indirectly measure salinity.

Source: EID 2019

All of the measured water quality parameters shown in Table 3.10-1 are within the Basin Plan limits and/or EPA goals (EID 2019). In addition, the 2018 water quality monitoring results for these two locations on Bull Creek indicated that the levels of total suspended solids, nitrate, copper, aluminum, and E. coli bacteria also were within Basin Plan limits or EPA goals (EID 2019).

## 3.10.2 DISCUSSION

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

The project would be subject to the requirements of the NPDES program. This program would require EID to submit a Notice of Intent, apply for a waste discharge permit, comply with waste discharge requirements issued



by the Central Valley RWQCB, and implement an SWPPP during construction, to ensure that runoff from the project site would not violate any waste discharge requirements or Basin Plan water quality standards.

Implementation of Mitigation Measure GEO-1 requires preparation of SWPPP, in compliance with the SWRCB's General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 2009-009-DWQ as amended by Order 2012-0006-DWQ) (SWRCB 2012). As part of the SWPPP, EID would implement BMPs specifically designed to prevent erosion and downstream pollutant transport, and to protect water quality. The Construction General Permit also would require implementation of BMPs, designed to prevent accidental spills of hazardous materials during project construction to the maximum extent practicable, and the SWPPP would need to include procedures for immediate cleanup if any releases occurred.

EID and its contractors also would be required to comply with measures prescribed by the Project 184 Hazardous Substances Plan (EID 2008), by implementing measures designed to prevent accidental spills and procedures to quickly cleanup spills if they occurred. Waterbars would be constructed along the steeply sloping areas of the new access road, to prevent erosion during the project operations.

The existing wooden flume is composed of an impermeable surface, and the new concrete flume (also an impermeable surface) would be a similar size, would be operated in the same way with the same amount of water, and would be in the same location as the existing flume. Therefore, operation of the new concrete flume would not result in increased erosion or sedimentation as compared to existing conditions.

The total carrying capacity of the new flume design would include a minimum freeboard allowance (including direct rainfall into the flume), to prevent overtopping. At the conclusion of project-related activities, disturbed areas would be revegetated with a USFS-approved seed mix as required by Mitigation Measure BIO-6. Therefore, the project would not violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality. Therefore, the impact would be **less than significant with implementation of Mitigation Measure HYD-1.**

***Mitigation Measure HYD-1: Implement BIO-6 and Geo-1.***

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

No on-site groundwater wells exist. The project would not require installation of new on-site or off-site groundwater wells, and the amount of water transported in Flume 30 would not change. The existing flume was constructed of wood, which is an impermeable surface, and therefore the new concrete flume would not change any surface to groundwater flows. Furthermore, the new 2,200-foot access road would be constructed with a gravel surface, which would continue to allow some stormwater to percolate down into the microfractures in the bedrock, where groundwater is held. Thus, the project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge. **No impact** would occur.



**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;**

The project would result in minor alterations to existing drainage patterns, resulting from construction of the new access road. Construction disturbance (e.g., excavation, grading, equipment use, and hazard tree removal for the access road and the replacement flume) would result in a minor redirection of some sheet flow drainage. The new 2,200-foot access road would be constructed with a gravel surface, which would continue to allow some stormwater to percolate through the soil. Waterbars would be constructed in the steeply sloping areas along the new access road as necessary to prevent erosion.

The new concrete flume would be installed along the existing bench that was created previously for the existing wooden flume. On completion of project construction, disturbed areas would be revegetated with a USFS-approved seed mix as required by Mitigation Measure BIO-6. Furthermore, as required by Mitigation Measure GEO-1, EID would prepare and implement an SWPPP with associated BMPs specifically designed to prevent erosion. Therefore, the minor project-related alteration of drainage patterns would not result in substantial on-site or off-site erosion or siltation. The impact would be **less than significant with implementation of Mitigation Measures HYD-1.**

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

The project would not construct large amounts of new impervious surfaces that would substantially increase the rate or amount of surface runoff or result in flooding. The new access road (2,200 lineal feet) would be constructed with a gravel surface, continuing to allow some stormwater to percolate through the soil. The existing wooden flume has an impermeable surface, and the new concrete flume would be of similar size and would be installed along the existing bench that was created previously for the existing wooden flume. The project site is in an area of undetermined flood hazards (FEMA 2008); however, the project site is approximately 700 feet above the South Fork American River, and therefore flooding would not represent a hazard. Therefore, the impact would be **less than significant.** No mitigation is required.

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

The project area is undeveloped and does not contain existing or planned stormwater drainage systems. For the same reasons stated in items a) and c) i) and ii) above, the project would not result in substantial additional sources of polluted runoff. The impact would be **less than significant.** No mitigation is required.

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

The project site has been classified by FEMA as Zone D, which is an area of undetermined flood hazards (FEMA 2008); however, the project site is approximately 700 feet above the South Fork American River, and therefore



flooding would not represent a hazard. Because of the long distance to the Pacific Ocean and the nearest active seismic source, the project site also is not subject to tsunami or seiche hazards. Thus, **no impact** would occur.

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

For the same reasons stated in items a) and c) i) above, the project would not conflict with or obstruct implementation of a water quality control plan. For the same reasons stated in item b) above, the project would not conflict with or obstruct implementation of a groundwater management plan. Thus, **no impact** would occur.



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## 3.11 LAND USE AND PLANNING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XI. Land Use and Planning. Would the project:</b>				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 3.11.1 ENVIRONMENTAL SETTING

The project area is east of the town of Pollock Pines in an unincorporated area of El Dorado County, south of US 50 and east of Plum Creek, on federal lands in the ENF, managed by USFS. Flume 30 is part of the EID's El Dorado Project, 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.

The approximately 3.9-acre project site is in an undeveloped area of the ENF, aside from the narrow linear footprint of the existing Flume 30 upslope from the South Fork American River. Most of the area and surrounding lands are heavily forested, primarily with conifers, interspersed with deciduous trees and shrubs. The proposed staging area has fewer trees and shrubs and is more open.

Several scattered 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 0.4 mile northeast of the project site. Established neighborhoods in the community of Pollock Pines are located approximately 8 miles west of the project area.

### 3.11.2 DISCUSSION

#### a) Physically divide an established community?

The approximately 3.9-acre project site is in a undeveloped area of the ENF. Established communities are not within or adjacent to the project boundaries. Therefore, the project would not physically divide an established community. **No impact** would occur.

#### 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?

The project would rehabilitate Flume 30 and construct a new 2,200-foot access road, helping ensure a reliable water supply for drinking water and hydroelectric power generation to continue to meet the existing water and energy demands in El Dorado County. The project would result in no change in canal operations or capacity.

Flume 30, the proposed access road, and proposed staging areas are on USFS lands, which are not subject to County General Plan policies. 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. Specific impacts on other resources and issue areas are addressed in each resource section of Chapter 3, “Environmental Checklist,” as appropriate. These technical sections provide a detailed analysis of other relevant physical environmental effects that could result from the project. Land use inconsistencies would not be physical effects on the environment. Therefore, **no impact** would occur.



## 3.12 MINERAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XII. Mineral Resources. Would the project:</b>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 3.12.1 ENVIRONMENTAL SETTING

Under California's Surface Mining and Reclamation Act of 1975 (SMARA), the State Mining and Geology Board may designate certain mineral deposits as being regionally significant, to satisfy future needs. The Board's decision to designate an area is based on a classification report that was prepared by the California Geological Survey (CGS) and on input from agencies and the public. The project site is included in a mineral land classification report for El Dorado County (Busch 2001).

In compliance with SMARA, CGS has established the mineral resource zone (MRZ) classification system (shown in Table 3.12-1) to denote both the location and significance of key extractive resources. Mineral resource classifications at the project site also are shown in Table 3.12-1.

The project area is not in a designated regionally important area of known mineral resources (i.e., MRZ-2). No active mining claims or activities are within or adjacent to the project area. The former Deep Gravel hydraulic mine, a historic placer gold mine (in 1896), was along Plum Creek, approximately 1 mile south of the project site. Mountain Aggregate's Marin Quarry is on the north side of the South Fork American River canyon, approximately 1.8 miles northeast of the project site. The quarry produces rock, sand, gravel, and riprap for road building and maintenance. (Busch 2001)



**Table 3.12-1. Mineral Land Classification at the Project Site**

Classification	Description	Type of Mineral Resource
MRZ-1	Areas where available geologic information indicates that little likelihood exists for the presence of significant mineral resources.	Limestone, construction aggregate, placer gold, and gold deposits formed from volcanogenic <sup>1</sup> processes.
MRZ-2a	Areas underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present.	---
MRZ-2b	Areas underlain by mineral deposits where geologic data indicate that significant inferred resources are present.	---
MRZ-3a	Areas containing known mineral occurrences of undetermined mineral resource significance.	---
MRZ-3b	Areas containing inferred mineral resources of undetermined mineral resource significance.	---
MRZ-4	Areas of no known mineral occurrences but where geologic information does not rule out either the presence or absence of significant mineral resources.	Gold formed from hydrothermal processes and from contact metasomatic processes.

Notes: MRZ = Mineral Resource Zone

1. Volcanogenic deposits originate as minerals from volcanic magma and volcanic ash. These deposits serve primarily as sources of copper, lead, and zinc, but gold and silver are frequent byproducts of the mining process.

Source: Busch 2001

### 3.12.2 DISCUSSION

**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?**

The project site is in an undeveloped area of the ENF and is classified as either MRZ-1 (areas where no significant minerals are present) or MRZ-4 (areas of no known mineral occurrences with inadequate geologic information) (Busch, 2001). The project site is not in a designated regionally important area of known mineral resources (i.e., MRZ-2), and no former or active mining claims are within or adjacent to the project site. Thus, **no impact** would occur.

**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?**

The project site is not within a designated locally important area of known mineral resources, designated in the El Dorado County General Plan (El Dorado County, 2004). Thus, **no impact** would occur.



### 3.13 NOISE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XIII. Noise. Would the project result in:</b>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.13.1 ENVIRONMENTAL SETTING

The area surrounding the project site is undeveloped and consists of forest and open space. No buildings, residences, or business are in the immediate project vicinity.

#### 3.13.2 DISCUSSION

**a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?**

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 (El Dorado County 2004). Project construction activities may result in temporary noise level increases from operation of heavy construction equipment and possible periodic helicopter noise. The noise levels during non-transportation construction activities may reach 80 to 84 dB, when measured at 50 feet from the source.

The nearest sensitive receptors to proposed clearing and grubbing areas are north of US 50, approximately 2,000 feet northeast from the project site, with shielding because of intervening topography. Noise levels decrease with distance from the source and shielding effects provided by natural topography. Accounting the distance effect only, the temporary project construction activities would result in hourly and maximum noise levels of approximately 46 A-weighted decibels  $L_{eq}$ , at the nearest noise-sensitive receptor. Project construction 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. Thus, the impact would be **less than significant**. No mitigation is required.



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

Project construction activities may generate temporary groundborne vibration from equipment movement and operation. The Federal Transit Administration (FTA) has developed criteria for human annoyance, and Caltrans has developed criteria for potential structural damage to adjacent buildings. To determine a project's potential vibration impacts for human annoyance and structural damage, these FTA and Caltrans standards commonly are applied as an industry standard. FTA recommends 72 velocity decibels (VdB) at residential uses, to avoid human annoyance (FTA 2018); Caltrans recommends 0.3-inch-per-second peak particle velocity (PPV) at residential uses, to avoid structural damage to newer buildings (Caltrans 2013).

Based on FTA reference vibration levels, vibration levels associated with the use of a large bulldozer is 0.089 inch per second PPV (87 VdB) at 25 feet. The nearest vibration-sensitive uses to the project area are north of US 50, approximately 2,000 feet northeast from the project site. At this distance, the highest vibration levels that would be generated by project construction equipment would attenuate to 0.0001 PPV and 30 VdB. The vibration generated by project equipment is not anticipated to be excessive.

Long-term operation-related activities (e.g., maintenance) would not include any major new sources of groundborne noise or vibration. Furthermore, the nearest vibration-sensitive receptors are more than 2,000 feet away from the project area, a sufficient distance for potential groundborne vibration and groundborne noise to attenuate and dampen noise impacts.

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, the impact would be **less than significant**. No mitigation is required.

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

The project site is not in the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, and the project would not expose people residing or working in the project area to excessive noise levels. The Van Vleck Tells Peak Airport is located approximately 14 miles northeast of the project site. Therefore, **no impact** would occur.



### 3.14 POPULATION AND HOUSING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XIV. Population and Housing. Would the project:</b>				
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.14.1 ENVIRONMENTAL SETTING

The project area is in unincorporated El Dorado County in the federally owned ENF, managed by USFS. No housing is in or adjacent to the project site. Scattered rural residences are outside the ENF and several privately-owned cabins are on ENF lands that are located approximately 0.4 mile northeast of the project site. The nearest residences are along US 50, approximately 2 miles east of the proposed staging area. Established neighborhoods are in the community of Pollock Pines, approximately 8 miles west of the project area.

#### 3.14.2 DISCUSSION

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

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 rehabilitate Flume 30, to ensure a reliable water supply for drinking water and hydroelectric power generation, continuing to meet water and energy demands in El Dorado County. The new 2,200-foot-long access road would provide access only to the canal bench northeast of Spillway 20. The project would cause no change in canal operations or capacity. Therefore, the project would not directly or indirectly induce substantial unplanned population growth. **No impact** would occur.

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

No people are residing, and no houses are within or adjacent to the project boundaries. Rehabilitation of Flume 30 and construction of the proposed access road would not displace people or residences. **No impact** would occur.



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### 3.15 PUBLIC SERVICES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XV. Public Services. Would the project:</b>				
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.15.1 ENVIRONMENTAL SETTING

USFS is responsible for fire prevention and suppression in the ENF and privately-owned lands within the forest boundaries. The project area is in the Placerville Ranger District, and the nearest ranger station is the Kyburz Station, approximately 6 miles east of the project area. The Kyburz Station has one engine crew and one Type III wildfire engine. (See Section 3.20, "Wildfire," for further discussion of wildfire suppression.)

USFS is responsible for prevention of crimes and enforcement of federal laws and regulations in the ENF and on adjacent lands. USFS provides general law enforcement, not directly related to visitor safety, such as drug eradication; criminal and fire investigations; and detecting and responding to all serious crimes including felonies, serious misdemeanors, and threats to employees or government property.

Local law enforcement is provided to the project area by the El Dorado County Sheriff's Department. The Sheriff's Department serves approximately 1,750 square miles of unincorporated El Dorado County, from its headquarters in Placerville and substations in South Lake Tahoe, El Dorado Hills, and Georgetown (El Dorado County Sheriff's Department, 2018). The nearest substation is in Pollock Pines, approximately 8 miles west of the project area.



### 3.15.2 DISCUSSION

- a) **Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:**

i) **Fire protection?**

Fire protection would be provided by the Kyburz Station (see Section 3.20, “Wildfire,” for further discussion). The project would not include new housing or businesses that would increase population levels and result in an increase demand for fire protection services and facilities. As required by Mitigation Measure HAZ-1, project construction crews would implement a fire prevention plan that identifies requirements for fire protection, equipment maintenance, and fire hazard avoidance. Therefore, the project would not affect local fire district response times or other performance objectives, and it would not result in construction of new, or expansion of existing fire protection facilities. This impact would be **less than significant with implementation of Mitigation Measure PUB-1**.

***Mitigation Measure PUB-1: Implement HAZ-2.***

ii) **Police protection?**

Law enforcement services would be provided by USFS and the El Dorado County Sheriff’s Department. The project would not increase the population in the area because no housing would be constructed. Project construction would be temporary and would not induce population growth in the area. Furthermore, project construction would not increase demand for police protection services or require additional Sheriff Department staffing to maintain its officer-to-population service ratio. Therefore, the project would not generate the need for construction of new, or expansion of existing police protection facilities. **No impact** would occur.

iii) **Schools?**

The nearest school to the project area is Sierra Ridge Middle School, approximately 8 miles to the southwest. Project implementation would not result in new housing that would generate new students or increase the demand for school services and facilities. **No impact** would occur.

iv) **Parks?**

No neighborhoods or community parks are in the project vicinity. The project would not induce population growth, and therefore would not increase the need for parks. **No impact** would occur.

v) **Other public facilities?**

No other public facilities, such as libraries, are in the project vicinity. Project construction and operation would not create a need for additional public facilities. **No impact** would occur.



### 3.16 RECREATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVI. Recreation.</b>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.16.1 ENVIRONMENTAL SETTING

The project is in the ENF, which encompasses approximately 794,000 acres, including approximately 178,000 acres of privately owned or other agency-owned lands (USFS 2019). Visitors use the ENF for numerous recreation opportunities. A range of developed recreation sites includes campgrounds, picnic grounds, boat ramps, and observation and interpretive sites. Streams, natural lakes, and human-made reservoirs are key features that provide a substantial share of recreation activities. Approximately 611 fishable streams are found in the ENF, as well as 888 lakes, reservoirs, and ponds. Approximately 400 miles of hiking trails—some that can be used for horseback riding, bicycling, and snowshoeing—pass through the ENF (USFS 2016). In winter, recreation opportunities include cross-country and downhill skiing, snowboarding, sledding, and snowshoeing in the higher elevations of the Sierra Nevada.

The South Fork American River canyon, approximately 700 feet downslope from the project area, is a popular location for whitewater rafting, fishing, picnicking, and camping. The project site and surrounding area are not used by the public for recreation, vehicle access is restricted by locked gates, and public access to the canal facilities is discouraged because of potential hazards associated with water flowing through the various conveyance facilities (e.g., flumes, canals, siphons, tunnels).

#### 3.16.2 DISCUSSION

- 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?**

No community parks are in the project area or vicinity. The project would not create additional recreational demand that would increase the use of existing neighborhood and regional parks or other recreational facilities. The project site and surrounding area are not readily accessible for recreation. **No impact** would occur.



**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?**

The project would not increase the population in the project area resulting from new housing or employment opportunities. Furthermore, it would not build or expand recreational facilities that would have an adverse physical effect on the environment. **No impact** would occur.



### 3.17 TRANSPORTATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVII. Transportation. Would the project:</b>				
a) Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 3.17.1 ENVIRONMENTAL SETTING

The key roadway in the project area to be affected by project-related traffic is US.50. Main vehicle access to the project site would be from Forest Service Road 10-08YE, Camp 2 Road, and Plum Creek Road (see Figure 2-1). Helicopters may be used to transport materials and equipment from helispots at Sand Flat and the SPI site (H-11).

Forest Service Road 10-08YE generally would be suitable for construction traffic to its current terminus uphill from Flume 30. This existing portion of Forest Service Road 10-08YE would be improved using all-weather aggregate base rock surface. However, heavy equipment and construction access to the project site would require construction of approximately 2,200 lineal feet of new roadway to access the abandoned canal bench northeast of Spillway 20. After reaching the bench, a turn-around is proposed from which a narrow and steep construction access spur would be constructed on the uphill side of Spillway 20. The new access road would be constructed to a minimum width of 12 feet and surfaced with aggregate base rock for all-weather access.

According to the El Dorado County Bicycle Transportation Plan (El Dorado County Transportation Commission 2010), bikeways are not planned in the project area along Hazel Valley Road. No transit facilities and no railroads are in the project area. The project area is approximately 14 miles southwest of the Van Vleck Tells Peak Airport. Furthermore, as noted in Section 3.12, "Noise," the project area is outside the area of influence for the Van Vleck Tells Peak Airport.

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

Operation of a roadway system typically is described in terms of level of service (LOS), designated by the letters A through F, with A corresponding to the lowest levels of congestion, and F corresponding to the highest level of congestion. At LOS A, traffic is free-flowing at or above the speed limit. At LOS F, traffic is very slow, and each vehicle moves only when traffic around it moves. Traffic frequently slows and stops. The concept LOS is F for Segment 13.



The Sacramento Area Council of Governments (SACOG) is an association of local governments in the six-county Sacramento region that provides transportation planning and funding for the region. SACOG is the metropolitan planning organization that is responsible for developing the State and federally required metropolitan transportation plan every 4 years. The Metropolitan Transportation Plan/Sustainable Communities Strategy 2035 (SACOG 2012) also was adopted by the El Dorado County Transportation Commission to serve as the County regional transportation plan.

Government Code Section 53091 states that building and zoning ordinances do not apply to “construction of facilities for the production, generation, storage, treatment, or transmission of water, wastewater, or electrical energy by a local agency.” Public utility projects that serve the facilities described above would not be subject to local plans, policies, regulations, or ordinances. Local goals and policies related to transportation resources were used to assist with CEQA review significance thresholds for evaluating potential impacts associated with the project.

The Transportation and Circulation Element of the El Dorado County General Plan requires that County-maintained roads and State highways within the unincorporated areas of the county should not be worse than LOS E in the community regions, or LOS D in rural centers and rural regions (El Dorado County 2009). In addition, the county is to strive to provide safe, continuous, and accessible sidewalks and pedestrian facilities as a viable alternative transportation mode.

Operations following project completion would not change compared to existing conditions. Therefore, an analysis of project-related traffic impacts using LOS was not performed, because LOS primarily is used for analyzing long-term effects of projects on traffic flow. This analysis used the recommended screening criterion from the Institute of Transportation Engineers (ITE 1988) for assessing the effects of construction projects that create temporary traffic increases. To account the large percentage of heavy trucks associated with typical construction projects, ITE recommends a threshold level of 50 or more new peak-direction (one-way) trips during the peak hour.

All work would be completed in accordance with the FERC Project No. 184 Transportation System Management Plan. The FERC Project No. 184 Transportation System Management Plan is updated at 5-year intervals and will be revised as necessary to reflect road improvements associated with the proposed project.

### **3.17.2 DISCUSSION**

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

Project construction would require equipment/materials hauling and worker commute trips to and from the project area along local surface streets. Potential traffic increases would be limited to temporary construction-related activities associated with installing the project facilities. Construction activities are expected to generate up to 34 average daily trips (i.e., 68 trips per day, assuming a passenger car equivalent value of 2.0), including 20 worker trips and 14 vendor trips per day (workers and vendors 68 trips per day), and a total of 454 truck trips for equipment/materials hauling during the 5-month construction period.

These trips generally would occur on US 50, local roadways, and access roads. Increased construction traffic would be temporary, would occur from approximately August 2020 to the end of December 2020, and typically would 12 hours per day and 5 to 7 days per week, although construction activities could occur up to 24 hours a



day if required. Project construction activities may add as many as 132 total daily trips to area roadways over the course of the 12-hour daily work window. This would result in a maximum of 11 additional trips on area roadways during peak hours.

Because the project would not result in more than 50 new trips during the AM or PM peak hours, it is not anticipated to cause an increase in traffic that would be substantial in relation to the existing traffic load and capacity of the street system. Therefore, the project would not result in substantial trip-generated traffic congestion.

Local roads serving the project site are lightly traveled, and project construction would be temporary and would not result in a substantial increase in traffic that could degrade any roadway or intersection LOS. No increase in traffic would occur after project construction is complete. Therefore, the project would not conflict with adopted applicable policies or plans related to the performance of the circulation system. The impact would be **less than significant**. No mitigation is required.

**b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?**

The impact under the threshold above would be significant if the project would generate work vehicle miles traveled per employee exceeding 15 percent below the existing average work vehicle miles traveled per employee in the jurisdiction of the Area Planning Commission in which the project is located. The project would not require a change to existing land use designations. Project operations would not change compared to existing conditions. Project implementation would not require or result in additional activities for operations and maintenance, beyond existing conditions. Therefore, **no impact** would occur.

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

The Project would not affect air traffic patterns, result in no changes to public roadways or change in existing land uses, and would improve vehicular access to the flume by improving roads. **No impact** would result from hazards or safety risks associated with any change in air traffic patterns, roadway design or incompatible uses, inadequate emergency access, or conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities.

It is estimated that the Project would generate up to 34 average daily trips, including 20 worker trips and 14 vendor trips per day and a total of 454 truck materials and equipment haul trips over the life of the proposed project. These trips would generally occur on US 50 and local roadways and access roads. Increased construction traffic would be temporary and would occur from approximately August through December in 2020. No increase in traffic would occur once construction of the Project is complete.

Local roads serving the project site are lightly traveled and construction would be temporary and would not result in a substantial increase in traffic that would be anticipated to degrade any roadway or intersection level of service and impacts are expected to be **less than significant**.



**d) Result in inadequate emergency access?**

Emergency access to roadways in the project area could be reduced by activities associated with the project. Slow-moving trucks entering and exiting the project site along Hazel Valley Road could delay the movement of emergency vehicles between US 50 ramps and the project site. However, flaggers would be deployed in this area, to control truck traffic in the event of an emergency to allow unimpeded movement of emergency vehicles. Therefore, the impact would be **less than significant**. No mitigation is required.



### 3.18 TRIBAL CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVIII. Tribal Cultural Resources. Would the project:</b>				
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### 3.18.1 ENVIRONMENTAL SETTING

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.

AB 52 requires the lead agency to begin consultation with any California Native American tribe that is traditionally and culturally affiliated with the geographic area of a proposed project if: (1) the California Native American tribe requests to the lead agency, in writing, to be informed by the lead agency through formal notification of a proposed project(s) in the geographic area that is affiliated traditionally and culturally with the tribe; and (2) the California Native American tribe responds, in writing, within 30 days of receipt of the formal notification and requests the consultation (Public Resources Code, Section 21080.3.1[d]).



### 3.18.2 DISCUSSION

- 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).**

Tribal consultation was conducted by EID and AECOM. On May 15, 2019, tribes requesting consultation pursuant to AB 52 were notified by EID about the project. These tribes included the Shingle Springs Band of Miwok Indians, United Auburn Indian Community of the Auburn Rancheria, Wopumnes Nisenan-Mewuk Nation of El Dorado County, Torres Martinez Desert Cahuilla Indians, and Wilton Rancheria.

Wilton Rancheria responded and requested that if any artifacts and or human remains were encountered during project construction, work should stop immediately and Wilton Rancheria should be contacted along with the appropriate federal and State agencies. The Torres-Martinez Desert Cahuilla Indians sent a letter stating his tribe's deferral of "all future project notifications to Tribes that are closer" to the project area. The Shingle Springs Band of Miwok Indians provided a letter stating that the tribe is not aware of any known cultural resources on this site and requested to be provided with updates as the project progresses.

On September 26, 2019, the Native American Heritage Commission (NAHC) was contacted by AECOM, requesting a search of the Sacred Lands File (SLF) and a local government and Tribal consultation list. The NAHC responded on October 15, 2019 and indicated that a search of the SLF was negative.

Consultation with interested Native American groups and the NAHC did not identify tribal cultural resources (TCRs) or historical resources that would be affected by project implementation. Therefore, **no impact** would occur.

- 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?**

Although unlikely because of the project location, soil disturbance during project construction could damage previously unrecorded Tribal cultural resources. Project impacts would be **less than significant with implementation of Mitigation Measure TRI-1.**

***Mitigation Measure TRI-1: Implement CUL-1 and CUL-2***



### 3.19 UTILITIES AND SERVICE SYSTEMS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XIX. Utilities and Service Systems. Would the project:</b>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.19.1 ENVIRONMENTAL SETTING

The project area is undeveloped and does not contain telecommunications facilities, or stormwater drainage systems. Electrical power and propane gas is used to service EID equipment and facilities. In addition, the project site is not served by a municipal water or wastewater treatment service provider.

#### 3.19.2 DISCUSSION

- 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?**

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.



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

The project would not include new development that would increase water supply demand. **No impact** would occur.

- 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?**

The project would not generate wastewater flows. Therefore, the project would not exceed a wastewater treatment provider's capacity. **No impact** would occur.

- 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?**

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 regulations.

**No impact** would occur.

- e) Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?**

As discussed in item d), the existing wooden flume structure would be disposed of in accordance with applicable regulations. Therefore, **no impact** would occur.



## 3.20 WILDFIRE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XX. Wildfire. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:</b>				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 3.20.1 ENVIRONMENTAL SETTING

Lands south, east, and west of the project area are within a State Responsibility Area (SRA) and are rated as a High Fire Hazard Severity Zone by CAL FIRE (CAL FIRE 2007). An SRA is an area where the State is financially responsible for the prevention and suppression of wildfires. According to the CAL FIRE 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).<sup>6</sup>

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. The Kyburz Station has one engine crew and one Type III wildfire engine (USFS 2019). 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. The Sly Park Station has two engine crews and two Type III wildfire engines. The engine crews perform a variety of wildfire tasks: serving as initial attack forces, responding to all risk incidents, and assisting with fuel management projects (USFS 2019).

<sup>6</sup> CAL FIRE's Online Fire Hazard Severity Zone viewer was accessed on August 25, 2019, to confirm the hazard severity zone rating for the project area (<http://egis.fire.ca.gov/FHSZ/>).



## 3.20.2 DISCUSSION

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

As discussed in Section 3.9, “Hazards and Hazardous Materials,” the project area is not in an area that is subject to an adopted emergency response or evacuation plan. Because of the undeveloped character of the area, the short-term presence of construction vehicles on the access roads would not impede access for emergency response vehicles or evacuation. Thus, **no impact** would occur.

### 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?**

The topography of the project area is steeply sloped. Flume 30 is on a steep hillside, upslope from the South Fork American River. The proposed access road would be constructed uphill from the flume at the top of the canyon, with steep slopes on the west and north sides. As discussed in Section 3.7, “Geology and Soils,” the new concrete flume would be installed on the existing Flume 30 bench along the canyon wall, which has been cut out of bedrock. The project would adhere to standard engineering and design practices, which would include slope stabilization measures (e.g., retaining walls, tie backs, soil nails, and controlling surface water runoff) where necessary, to minimize the risk of landslides and slope failure.

The project site is heavily forested, primarily with conifers, interspersed with deciduous trees and shrubs. During construction, equipment and on-site diesel fuel 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.

As required by Mitigation Measure HAZ-2, a fire prevention plan would be prepared before the start of construction activities. Fire safe measures included in the fire prevention plan would be followed throughout project construction. Measures included in the plan would require maintaining fire suppression equipment and keeping it accessible to project work crews at all times. Furthermore, spark arrestors would be installed on vehicles and equipment, non-sparking tools would be used, and fire-safe practices would be implemented for construction work, among other measures. Implementation of the protective measures in the fire prevention plan would minimize the risk of wildland fire. Therefore, the impact would be **less than significant with implementation of Mitigation Measure WIL-1**.

#### ***Mitigation Measure WIL-1: Implement HAZ-2.***

### 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?**

The project would not require installation of fuel breaks, emergency water sources, power lines, or other utilities that could exacerbate fire risk.

The project site is accessible by existing dirt and gravel roads that were established to provide access to the FERC Project 184 hydroelectric project facilities. The project would construct an additional 2,200 feet of access roadway, for access to the Flume 30 segment. The new road would be stabilized by creating a compacted flat bench and installing slope stabilization measures (e.g., adding draped mesh, post-mounted cable net, flexible



barrier, anchored mesh, or drilled and grouted lateral anchors; see Section 3.7, “Geology and Soils,” for further discussion). Access road construction and maintenance work would comply with measures prescribed in the FERC Project 184 Transportation System Management Plan, which includes provisions to ensure that road construction and maintenance meet USFS specifications (see also item b). Therefore, installation of the new access road would not exacerbate fire risk and may provide increased access in the event of a fire by fire suppression crews and equipment. The impact would be **less than significant**. No mitigation is required.

**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?**

The approximately 3.9-acre project area is in an undeveloped area of the ENF. No residences or structures are in the project area or vicinity. Therefore, the project would not expose people or structures to significant risks from runoff, post-fire slope instability, or drainage changes. **No impact** would occur.



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### 3.21 MANDATORY FINDINGS OF SIGNIFICANCE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XXI. Mandatory Findings of Significance.</b>				
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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; <i>Sundstrom v. County of Mendocino</i> (1988) 202 Cal.App.3d 296; <i>Leonoff v. Monterey Board of Supervisors</i> (1990) 222 Cal.App.3d 1337; <i>Eureka Citizens for Responsible Govt. v. City of Eureka</i> (2007) 147 Cal.App.4th 357; <i>Protect the Historic Amador Waterways v. Amador Water Agency</i> (2004) 116 Cal.App.4th at 1109; <i>San Franciscans Upholding the Downtown Plan v. City and County of San Francisco</i> (2002) 102 Cal.App.4th 656.				

#### 3.21.1 DISCUSSION

- a) **Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?**

The project would not substantially degrade the quality of the environment, reduce the habitat of fish or wildlife species, or cause a fish or wildlife population to drop below self-sustaining levels. **Mitigation Measures BIO-1 through BIO-6**, described in Section 3.4, “Biological Resources,” would mitigate potentially significant impacts on migratory birds and raptors, California spotted owl, other special-status wildlife species, and protected trees to a **less-than-significant** level. **Mitigation Measures CUL-1 and CUL-2**, described in Section 3.5, “Cultural Resources,” would mitigate potentially significant impacts on previously undiscovered historic properties,



archaeological resources, and undiscovered burials to a **less-than-significant** level. Therefore, the impact would be **less than significant with mitigation incorporated**.

**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.)**

Sections 3.1 through 3.20 of this Initial Study present an analysis of the project’s potential environmental impacts and includes mitigation measures, where necessary, to reduce potentially significant impacts to a less-than-significant level. The project would rehabilitate Flume 30 and construct a new 2,200-foot access road. Construction activities would be temporary, and they are expected to begin in August 2020 and to be completed in December 2020. All project work would be conducted within the existing FERC Project 184 license boundary, except a portion of the proposed access road that would intersect a portion of old canal bench immediately upstream from the project site. The project would not change canal operations or capacity, and it would not require or result in additional operations and maintenance activities beyond existing conditions.

Replacement of Flume 30 is one of a series of projects being proposed or already implemented by EID to replace and upgrade the FERC Project 184 hydroelectric facility water conveyance system. In the past 11 years, EID has made similar improvements to nine other flume segments, including flume segments 31 and 31a, 38, 39, 40, 42, 43, 44, and 45. The total length of these segments is about 2,958 feet. In addition, EID also relined about 1,889 feet of existing flume to maintain continued operation of the water conveyance system. In a manner similar to the Flume 30 replacement project, each of these other projects has incorporated/will incorporate BMPs and other mitigation measures to avoid significant adverse impacts on the environment.

Thus, the cumulative effect of implementing the remaining flume replacement and relining projects would be less than significant. Implementation of the Flume 30 project would not contribute considerably to a cumulative significant environmental impact. The impact would be **less than significant**. No mitigation is required.

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

As discussed in Section 3.3, “Air Quality,” the project area is not an area designated as “likely to contain asbestos” and would not expose sensitive receptors to substantial pollutant concentrations. As specified in Section 3.9, “Hazards and Hazardous Materials,” EID and its contractors would comply with the appropriate BMPs in the FERC Project 184 Hazardous Substances Plan and also would comply with applicable federal and State regulations during project construction, thereby reducing potential hazards to the public from accidental release of hazardous materials. Therefore, the project would not have substantial adverse effects on people, either directly or indirectly. The impact would be **less than significant**. No mitigation is required.



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None

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None

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None



## 4.19 UTILITIES AND SERVICE SYSTEMS

None

## 4.20 WILDFIRE

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## 4.21 MANDATORY FINDINGS

None



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## 5 LIST OF PREPARERS

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## **6 APPENDICES**



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## **APPENDIX A**

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### California Air Quality Modeling Output



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## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

### Flume 30 Replacement Project

#### El Dorado-Mountain County County, Annual

## 1.0 Project Characteristics

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	5.50	Acre	5.50	239,580.00	0

### 1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	70
Climate Zone	14			Operational Year	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

### 1.3 User Entered Comments & Non-Default Data



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

## Project Characteristics -

Land Use - There is no specific Land Use Type for Flume, so Other Non-Asphalt Surfaces is used, that is equipment foundation and loading docks.

Construction Phase - The phases are taken from the project description. Total work days should be taken from construction schedule.

Off-road Equipment - The phases are taken from the project description. Total work days should be taken from construction schedule.v

## Off-road Equipment -

Off-road Equipment - The phases are taken from the project description. Total work days should be taken from construction schedule.

Off-road Equipment - The phases are taken from the project description. Total work days should be taken from construction schedule.

Off-road Equipment - The equipment type are taken from project description and flume 38 - 40 project.

Off-road Equipment - The phases are taken from the project description. Total work days should be taken from construction schedule.

Off-road Equipment - The phases are taken from the project description. Total work days should be taken from construction schedule.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	230.00	30.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	10.00	8.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	AcresOfGrading	5.00	10.00
tblOffRoadEquipment	HorsePower	221.00	84.00
tblOffRoadEquipment	HorsePower	85.00	81.00
tblOffRoadEquipment	HorsePower	97.00	81.00



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

tblOffRoadEquipment	LoadFactor	0.50	0.74
tblOffRoadEquipment	LoadFactor	0.78	0.73
tblOffRoadEquipment	LoadFactor	0.37	0.73
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
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tblTripsAndVMT	VendorTripNumber	0.00	39.00
tblTripsAndVMT	VendorTripNumber	39.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	3.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	5.00
tblTripsAndVMT	WorkerTripNumber	20.00	13.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00

## 2.0 Emissions Summary

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## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2549	1.6100	1.1553	2.3400e-003	0.2496	0.0765	0.3260	0.1216	0.0718	0.1934	0.0000	204.6843	204.6843	0.0443	0.0000	205.7917
Maximum	0.2549	1.6100	1.1553	2.3400e-003	0.2496	0.0765	0.3260	0.1216	0.0718	0.1934	0.0000	204.6843	204.6843	0.0443	0.0000	205.7917

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2549	1.6100	1.1553	2.3400e-003	0.2496	0.0765	0.3260	0.1216	0.0718	0.1934	0.0000	204.6840	204.6840	0.0443	0.0000	205.7915
Maximum	0.2549	1.6100	1.1553	2.3400e-003	0.2496	0.0765	0.3260	0.1216	0.0718	0.1934	0.0000	204.6840	204.6840	0.0443	0.0000	205.7915

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	8-1-2020	9-30-2020	0.7832	0.7832
		Highest	0.7832	0.7832

## 2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0238	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.0000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0238	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.0000e-004



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**2.2 Overall Operational****Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0238	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.0000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0238</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-004</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**3.0 Construction Detail****Construction Phase**



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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2020	8/24/2020	6	20	
2	Clearing the pathway	Site Preparation	8/25/2020	9/2/2020	6	8	
3	Stablizing the pathway	Site Preparation	9/3/2020	9/14/2020	6	10	
4	Grading	Grading	9/14/2020	10/17/2020	6	30	
5	Construction	Building Construction	10/17/2020	11/20/2020	6	30	
6	Aggregated base surface area	Grading	11/21/2020	12/14/2020	6	20	
7	Architectural Coating	Architectural Coating	12/15/2020	12/25/2020	6	10	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 15**

**Acres of Paving: 5.5**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 14,375 (Architectural Coating – sqft)**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Air Compressors	1	2.00	78	0.48
Demolition	Bore/Drill Rigs	1	6.00	84	0.74
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Crushing/Proc. Equipment	1	4.00	81	0.73
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	81	0.73
Clearing the pathway	Concrete/Industrial Saws	1	8.00	81	0.73
Clearing the pathway	Cranes	1	8.00	231	0.29



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Clearing the pathway	Rubber Tired Dozers	1	8.00	247	0.40
Clearing the pathway	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Stablizing the pathway	Graders	1	8.00	187	0.41
Stablizing the pathway	Rubber Tired Dozers	1	8.00	247	0.40
Stablizing the pathway	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Forklifts	1	8.00	89	0.20
Grading	Generator Sets	1	12.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Grading	Rollers	1	6.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Welders	1	8.00	46	0.45
Construction	Cement and Mortar Mixers	1	10.00	9	0.56
Construction	Cranes	1	7.00	231	0.29
Construction	Forklifts	1	8.00	89	0.20
Construction	Generator Sets	1	8.00	84	0.74
Construction	Pumps	1	6.00	84	0.74
Construction	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Construction	Welders	1	8.00	46	0.45
Aggregated base surface area	Aerial Lifts	1	6.00	63	0.31
Aggregated base surface area	Dumpers/Tenders	1	12.00	16	0.38
Aggregated base surface area	Excavators	1	8.00	158	0.38
Aggregated base surface area	Graders	1	8.00	187	0.41
Aggregated base surface area	Off-Highway Trucks	1	10.00	402	0.38
Aggregated base surface area	Other Construction Equipment	1	8.00	172	0.42
Aggregated base surface area	Rubber Tired Dozers	1	8.00	247	0.40



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Aggregated base surface area	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	7	3.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Clearing the pathway	4	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Stablizing the pathway	3	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	13.00	39.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Construction	7	101.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Aggregated base surface area	8	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**3.2 Demolition - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0262	0.2529	0.2013	3.3000e-004		0.0136	0.0136		0.0128	0.0128	0.0000	28.9118	28.9118	7.0700e-003	0.0000	29.0886
<b>Total</b>	<b>0.0262</b>	<b>0.2529</b>	<b>0.2013</b>	<b>3.3000e-004</b>		<b>0.0136</b>	<b>0.0136</b>		<b>0.0128</b>	<b>0.0128</b>	<b>0.0000</b>	<b>28.9118</b>	<b>28.9118</b>	<b>7.0700e-003</b>	<b>0.0000</b>	<b>29.0886</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.4000e-004	1.4200e-003	0.0000	3.7000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3255	0.3255	1.0000e-005	0.0000	0.3258
<b>Total</b>	<b>2.1000e-004</b>	<b>1.4000e-004</b>	<b>1.4200e-003</b>	<b>0.0000</b>	<b>3.7000e-004</b>	<b>0.0000</b>	<b>3.7000e-004</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.3255</b>	<b>0.3255</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.3258</b>



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**3.2 Demolition - 2020****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0262	0.2529	0.2013	3.3000e-004		0.0136	0.0136		0.0128	0.0128	0.0000	28.9117	28.9117	7.0700e-003	0.0000	29.0885
<b>Total</b>	<b>0.0262</b>	<b>0.2529</b>	<b>0.2013</b>	<b>3.3000e-004</b>		<b>0.0136</b>	<b>0.0136</b>		<b>0.0128</b>	<b>0.0128</b>	<b>0.0000</b>	<b>28.9117</b>	<b>28.9117</b>	<b>7.0700e-003</b>	<b>0.0000</b>	<b>29.0885</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.4000e-004	1.4200e-003	0.0000	3.7000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3255	0.3255	1.0000e-005	0.0000	0.3258
<b>Total</b>	<b>2.1000e-004</b>	<b>1.4000e-004</b>	<b>1.4200e-003</b>	<b>0.0000</b>	<b>3.7000e-004</b>	<b>0.0000</b>	<b>3.7000e-004</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.3255</b>	<b>0.3255</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.3258</b>



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**3.3 Clearing the pathway - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0241	0.0000	0.0241	0.0132	0.0000	0.0132	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.6400e-003	0.0885	0.0489	9.0000e-005		4.4300e-003	4.4300e-003		4.1400e-003	4.1400e-003	0.0000	8.2720	8.2720	2.1200e-003	0.0000	8.3249
<b>Total</b>	<b>8.6400e-003</b>	<b>0.0885</b>	<b>0.0489</b>	<b>9.0000e-005</b>	<b>0.0241</b>	<b>4.4300e-003</b>	<b>0.0285</b>	<b>0.0132</b>	<b>4.1400e-003</b>	<b>0.0174</b>	<b>0.0000</b>	<b>8.2720</b>	<b>8.2720</b>	<b>2.1200e-003</b>	<b>0.0000</b>	<b>8.3249</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>



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**3.3 Clearing the pathway - 2020****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0241	0.0000	0.0241	0.0132	0.0000	0.0132	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.6400e-003	0.0885	0.0489	9.0000e-005		4.4300e-003	4.4300e-003		4.1400e-003	4.1400e-003	0.0000	8.2719	8.2719	2.1200e-003	0.0000	8.3248
<b>Total</b>	<b>8.6400e-003</b>	<b>0.0885</b>	<b>0.0489</b>	<b>9.0000e-005</b>	<b>0.0241</b>	<b>4.4300e-003</b>	<b>0.0285</b>	<b>0.0132</b>	<b>4.1400e-003</b>	<b>0.0174</b>	<b>0.0000</b>	<b>8.2719</b>	<b>8.2719</b>	<b>2.1200e-003</b>	<b>0.0000</b>	<b>8.3248</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>



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**3.4 Stabilizing the pathway - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0354	0.0000	0.0354	0.0171	0.0000	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.8200e-003	0.0988	0.0411	9.0000e-005		4.4500e-003	4.4500e-003		4.1000e-003	4.1000e-003	0.0000	8.0324	8.0324	2.6000e-003	0.0000	8.0973
<b>Total</b>	<b>8.8200e-003</b>	<b>0.0988</b>	<b>0.0411</b>	<b>9.0000e-005</b>	<b>0.0354</b>	<b>4.4500e-003</b>	<b>0.0399</b>	<b>0.0171</b>	<b>4.1000e-003</b>	<b>0.0212</b>	<b>0.0000</b>	<b>8.0324</b>	<b>8.0324</b>	<b>2.6000e-003</b>	<b>0.0000</b>	<b>8.0973</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.1000e-004	1.1800e-003	0.0000	3.1000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2713	0.2713	1.0000e-005	0.0000	0.2715
<b>Total</b>	<b>1.8000e-004</b>	<b>1.1000e-004</b>	<b>1.1800e-003</b>	<b>0.0000</b>	<b>3.1000e-004</b>	<b>0.0000</b>	<b>3.1000e-004</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.2713</b>	<b>0.2713</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2715</b>



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**3.4 Stabilizing the pathway - 2020****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0354	0.0000	0.0354	0.0171	0.0000	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.8200e-003	0.0988	0.0411	9.0000e-005		4.4500e-003	4.4500e-003		4.1000e-003	4.1000e-003	0.0000	8.0323	8.0323	2.6000e-003	0.0000	8.0973
<b>Total</b>	<b>8.8200e-003</b>	<b>0.0988</b>	<b>0.0411</b>	<b>9.0000e-005</b>	<b>0.0354</b>	<b>4.4500e-003</b>	<b>0.0399</b>	<b>0.0171</b>	<b>4.1000e-003</b>	<b>0.0212</b>	<b>0.0000</b>	<b>8.0323</b>	<b>8.0323</b>	<b>2.6000e-003</b>	<b>0.0000</b>	<b>8.0973</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.1000e-004	1.1800e-003	0.0000	3.1000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2713	0.2713	1.0000e-005	0.0000	0.2715
<b>Total</b>	<b>1.8000e-004</b>	<b>1.1000e-004</b>	<b>1.1800e-003</b>	<b>0.0000</b>	<b>3.1000e-004</b>	<b>0.0000</b>	<b>3.1000e-004</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.2713</b>	<b>0.2713</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2715</b>



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**3.5 Grading - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0488	0.4774	0.3213	5.9000e-004		0.0238	0.0238		0.0223	0.0223	0.0000	51.0504	51.0504	0.0126	0.0000	51.3658
<b>Total</b>	<b>0.0488</b>	<b>0.4774</b>	<b>0.3213</b>	<b>5.9000e-004</b>	<b>0.0983</b>	<b>0.0238</b>	<b>0.1221</b>	<b>0.0505</b>	<b>0.0223</b>	<b>0.0728</b>	<b>0.0000</b>	<b>51.0504</b>	<b>51.0504</b>	<b>0.0126</b>	<b>0.0000</b>	<b>51.3658</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3600e-003	0.0703	0.0239	1.4000e-004	3.4400e-003	3.9000e-004	3.8200e-003	9.9000e-004	3.7000e-004	1.3600e-003	0.0000	13.6677	13.6677	3.0000e-004	0.0000	13.6751
Worker	1.3700e-003	8.9000e-004	9.2400e-003	2.0000e-005	2.3900e-003	2.0000e-005	2.4100e-003	6.4000e-004	2.0000e-005	6.5000e-004	0.0000	2.1159	2.1159	6.0000e-005	0.0000	2.1175
<b>Total</b>	<b>3.7300e-003</b>	<b>0.0712</b>	<b>0.0331</b>	<b>1.6000e-004</b>	<b>5.8300e-003</b>	<b>4.1000e-004</b>	<b>6.2300e-003</b>	<b>1.6300e-003</b>	<b>3.9000e-004</b>	<b>2.0100e-003</b>	<b>0.0000</b>	<b>15.7836</b>	<b>15.7836</b>	<b>3.6000e-004</b>	<b>0.0000</b>	<b>15.7926</b>



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**3.5 Grading - 2020****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0488	0.4774	0.3213	5.9000e-004		0.0238	0.0238		0.0223	0.0223	0.0000	51.0503	51.0503	0.0126	0.0000	51.3657
<b>Total</b>	<b>0.0488</b>	<b>0.4774</b>	<b>0.3213</b>	<b>5.9000e-004</b>	<b>0.0983</b>	<b>0.0238</b>	<b>0.1221</b>	<b>0.0505</b>	<b>0.0223</b>	<b>0.0728</b>	<b>0.0000</b>	<b>51.0503</b>	<b>51.0503</b>	<b>0.0126</b>	<b>0.0000</b>	<b>51.3657</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3600e-003	0.0703	0.0239	1.4000e-004	3.4400e-003	3.9000e-004	3.8200e-003	9.9000e-004	3.7000e-004	1.3600e-003	0.0000	13.6677	13.6677	3.0000e-004	0.0000	13.6751
Worker	1.3700e-003	8.9000e-004	9.2400e-003	2.0000e-005	2.3900e-003	2.0000e-005	2.4100e-003	6.4000e-004	2.0000e-005	6.5000e-004	0.0000	2.1159	2.1159	6.0000e-005	0.0000	2.1175
<b>Total</b>	<b>3.7300e-003</b>	<b>0.0712</b>	<b>0.0331</b>	<b>1.6000e-004</b>	<b>5.8300e-003</b>	<b>4.1000e-004</b>	<b>6.2300e-003</b>	<b>1.6300e-003</b>	<b>3.9000e-004</b>	<b>2.0100e-003</b>	<b>0.0000</b>	<b>15.7836</b>	<b>15.7836</b>	<b>3.6000e-004</b>	<b>0.0000</b>	<b>15.7926</b>



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**3.6 Construction - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0278	0.2402	0.2056	3.6000e-004		0.0130	0.0130		0.0125	0.0125	0.0000	30.7682	30.7682	5.3300e-003	0.0000	30.9014
<b>Total</b>	<b>0.0278</b>	<b>0.2402</b>	<b>0.2056</b>	<b>3.6000e-004</b>		<b>0.0130</b>	<b>0.0130</b>		<b>0.0125</b>	<b>0.0125</b>	<b>0.0000</b>	<b>30.7682</b>	<b>30.7682</b>	<b>5.3300e-003</b>	<b>0.0000</b>	<b>30.9014</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0107	6.9000e-003	0.0718	1.8000e-004	0.0185	1.4000e-004	0.0187	4.9300e-003	1.3000e-004	5.0600e-003	0.0000	16.4386	16.4386	5.0000e-004	0.0000	16.4511
<b>Total</b>	<b>0.0107</b>	<b>6.9000e-003</b>	<b>0.0718</b>	<b>1.8000e-004</b>	<b>0.0185</b>	<b>1.4000e-004</b>	<b>0.0187</b>	<b>4.9300e-003</b>	<b>1.3000e-004</b>	<b>5.0600e-003</b>	<b>0.0000</b>	<b>16.4386</b>	<b>16.4386</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>16.4511</b>



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**3.6 Construction - 2020****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0278	0.2402	0.2056	3.6000e-004		0.0130	0.0130		0.0125	0.0125	0.0000	30.7682	30.7682	5.3300e-003	0.0000	30.9013
<b>Total</b>	<b>0.0278</b>	<b>0.2402</b>	<b>0.2056</b>	<b>3.6000e-004</b>		<b>0.0130</b>	<b>0.0130</b>		<b>0.0125</b>	<b>0.0125</b>	<b>0.0000</b>	<b>30.7682</b>	<b>30.7682</b>	<b>5.3300e-003</b>	<b>0.0000</b>	<b>30.9013</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0107	6.9000e-003	0.0718	1.8000e-004	0.0185	1.4000e-004	0.0187	4.9300e-003	1.3000e-004	5.0600e-003	0.0000	16.4386	16.4386	5.0000e-004	0.0000	16.4511
<b>Total</b>	<b>0.0107</b>	<b>6.9000e-003</b>	<b>0.0718</b>	<b>1.8000e-004</b>	<b>0.0185</b>	<b>1.4000e-004</b>	<b>0.0187</b>	<b>4.9300e-003</b>	<b>1.3000e-004</b>	<b>5.0600e-003</b>	<b>0.0000</b>	<b>16.4386</b>	<b>16.4386</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>16.4511</b>



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**3.7 Aggregated base surface area - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0347	0.3650	0.2158	4.9000e-004		0.0161	0.0161		0.0148	0.0148	0.0000	42.4690	42.4690	0.0136	0.0000	42.8079
<b>Total</b>	<b>0.0347</b>	<b>0.3650</b>	<b>0.2158</b>	<b>4.9000e-004</b>	<b>0.0655</b>	<b>0.0161</b>	<b>0.0816</b>	<b>0.0337</b>	<b>0.0148</b>	<b>0.0485</b>	<b>0.0000</b>	<b>42.4690</b>	<b>42.4690</b>	<b>0.0136</b>	<b>0.0000</b>	<b>42.8079</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**3.7 Aggregated base surface area - 2020****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0347	0.3650	0.2158	4.9000e-004		0.0161	0.0161		0.0148	0.0148	0.0000	42.4689	42.4689	0.0136	0.0000	42.8078
<b>Total</b>	<b>0.0347</b>	<b>0.3650</b>	<b>0.2158</b>	<b>4.9000e-004</b>	<b>0.0655</b>	<b>0.0161</b>	<b>0.0816</b>	<b>0.0337</b>	<b>0.0148</b>	<b>0.0485</b>	<b>0.0000</b>	<b>42.4689</b>	<b>42.4689</b>	<b>0.0136</b>	<b>0.0000</b>	<b>42.8078</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**3.8 Architectural Coating - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0833					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
<b>Total</b>	<b>0.0845</b>	<b>8.4200e-003</b>	<b>9.1600e-003</b>	<b>1.0000e-005</b>		<b>5.5000e-004</b>	<b>5.5000e-004</b>		<b>5.5000e-004</b>	<b>5.5000e-004</b>	<b>0.0000</b>	<b>1.2766</b>	<b>1.2766</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>1.2791</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-004	4.6000e-004	4.7400e-003	1.0000e-005	1.2200e-003	1.0000e-005	1.2300e-003	3.3000e-004	1.0000e-005	3.3000e-004	0.0000	1.0851	1.0851	3.0000e-005	0.0000	1.0859
<b>Total</b>	<b>7.0000e-004</b>	<b>4.6000e-004</b>	<b>4.7400e-003</b>	<b>1.0000e-005</b>	<b>1.2200e-003</b>	<b>1.0000e-005</b>	<b>1.2300e-003</b>	<b>3.3000e-004</b>	<b>1.0000e-005</b>	<b>3.3000e-004</b>	<b>0.0000</b>	<b>1.0851</b>	<b>1.0851</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>1.0859</b>



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**3.8 Architectural Coating - 2020****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0833					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
<b>Total</b>	<b>0.0845</b>	<b>8.4200e-003</b>	<b>9.1600e-003</b>	<b>1.0000e-005</b>		<b>5.5000e-004</b>	<b>5.5000e-004</b>		<b>5.5000e-004</b>	<b>5.5000e-004</b>	<b>0.0000</b>	<b>1.2766</b>	<b>1.2766</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>1.2791</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-004	4.6000e-004	4.7400e-003	1.0000e-005	1.2200e-003	1.0000e-005	1.2300e-003	3.3000e-004	1.0000e-005	3.3000e-004	0.0000	1.0851	1.0851	3.0000e-005	0.0000	1.0859
<b>Total</b>	<b>7.0000e-004</b>	<b>4.6000e-004</b>	<b>4.7400e-003</b>	<b>1.0000e-005</b>	<b>1.2200e-003</b>	<b>1.0000e-005</b>	<b>1.2300e-003</b>	<b>3.3000e-004</b>	<b>1.0000e-005</b>	<b>3.3000e-004</b>	<b>0.0000</b>	<b>1.0851</b>	<b>1.0851</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>1.0859</b>

**4.0 Operational Detail - Mobile**



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**4.1 Mitigation Measures Mobile**

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

**4.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

**4.3 Trip Type Information**

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

**4.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.521731	0.039973	0.225427	0.136952	0.032686	0.006663	0.016461	0.009421	0.001593	0.001171	0.005476	0.000813	0.001634



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

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



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail****6.1 Mitigation Measures Area**



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0238	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.0000e-004
Unmitigated	0.0238	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.0000e-004

## 6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	8.3300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0155					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.0000e-004
<b>Total</b>	<b>0.0238</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-004</b>



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**6.2 Area by SubCategory****Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	8.3300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0155					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.0000e-004
<b>Total</b>	<b>0.0238</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-004</b>

**7.0 Water Detail****7.1 Mitigation Measures Water**



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

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

## 7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**7.2 Water by Land Use****Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**8.0 Waste Detail****8.1 Mitigation Measures Waste****Category/Year**

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



## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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## Flume 30 Replacement Project - El Dorado-Mountain County County, Annual

**10.0 Stationary Equipment**

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**Fire Pumps and Emergency Generators**

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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**11.0 Vegetation**

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## **APPENDIX B**

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Botanical Survey Report



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September 6, 2019

Michael Baron  
Environmental Review Analyst  
El Dorado Irrigation District  
2890 Mosquito Road  
Placerville, CA 95667

**Subject:     Habitat Assessment for Special-status Plants and Floristic Inventory for the El Dorado Irrigation District  
              Flume 30 Replacement Project, El Dorado County, California**

Dear Mr. Baron:

The El Dorado Irrigation District (EID) contracted with AECOM to conduct biological surveys to assist EID with environmental compliance requirements for the EID Flume 30 Replacement Project (Project). The proposed Project involves replacement of approximately 350 feet of elevated and ground-level wooden flume structures at Flume 30 with reinforced concrete canal, construction of approximately 2,200 feet of new access road, a new parking/turnaround area adjacent to the existing Spillway 20 building, improvements to the existing canal bench upstream from Flume 30, installation of a new precast voided slab to span Bull Creek, and a rebuilt downstream abutment along Bull Creek.

This letter report summarizes the methods and results of botanical surveys conducted in the study area to identify all of the plant species present in the study area to a level necessary to determine if they have special status. Results of reconnaissance-level wildlife surveys to assess potential habitat for special-status wildlife species within the study area, and a wetland delineation, are presented in separate letter reports.

## **Project and Study Area Description**

The Flume 30 Project site is located approximately 0.5 mile south of Highway 50 and 8.5 miles east of Fresh Pond in an unincorporated area of El Dorado County, California (Appendix A, Exhibit 1). The South Fork of the American River is located 0.4 mile to the north. The project site is located in Township 11 north, Range 14 east, Sections 28, 29, and 32 of the United States Geological Survey 7.5-minute Riverton quadrangle. The Project site is defined as where construction may occur, and includes Flume 30, a new access road, and an approximately 0.59 acre proposed staging area at the terminus of Forest Road 10-08YE above the Flume and canal bench. The study area for biological surveys included a 50-foot buffer of the construction footprint (Appendix A, Exhibit 2).

Construction and improvements would consist of demolition and disposal of the existing flume structure, and vegetation removal, grading, and earth-moving within the proposed access road alignment. Prior to placement of the new concrete flume, the Flume 30 support bench will be reconstructed and slightly elevated using a mechanically-stabilized earth (MSE) retaining wall system and a prefabricated concrete block system. This will require excavation on the downslope side of the flume to native material to accommodate a footing or leveling pad for the MSE retaining wall. Reinforced concrete canal segments and fill material will be imported from off-site locations. The portion of the study area that will be used for staging and access roads is on federal lands managed by the U.S. Forest Service (El Dorado National Forest). The Flume 30 project site is on EID property.

El Dorado County is located within the California Floristic Province, which is characterized by a Mediterranean climate with cool, wet winters and hot, dry summers. Elevation of the study area ranges from approximately 4,000 to 4,200 feet above mean sea level. Soils in the study area consist of Chaix coarse sandy loam, 30 to 75 percent slopes; and McCarthy-Ledmont association (gravelly sandy loam), 2 to 30 percent slopes (NRCS 2019). Vegetation is characterized primarily by mixed conifer forest habitat with a moderate to dense tree canopy. Surrounding land use is forested land utilized by public and private entities.



## Methods

Before the site visit, AECOM biologists searched the following sources for records of special-status plants occurring within a nine-quadrangle area containing and surrounding the study area: California Native Plant Society (CNPS 2019a), California Natural Diversity Database (CDFW 2019), the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation project planning tool (USFWS 2019), and U.S. Forest Service (USFS) Region 5 Regional Forester's 2013 Sensitive Plant Species List (USFS 2013).

AECOM botanists Kristin Asmus and Jasmine Greer accompanied by Michael Baron, Environmental Compliance Analyst from EID, walked the study area as defined above in Setting and Site Description during three separate visits: June 19, June 21, and July 12, 2019. Weather conditions were sunny and warm with temperatures ranging from 60-80° Fahrenheit and winds of 0-7 miles per hour. Plant communities in the study area were characterized and evaluated for their potential to support the target special-status species identified during the pre-field investigation. Every plant encountered in the study area was identified to the taxonomic level necessary to determine if it was a special-status species. The potential for additional target species to be found later in the season was also evaluated.

## Results

### Habitats

The Flume 30 Project site represents a wooden flume structural portion of the El Dorado Canal, an artificial man-made water conveyance facility consisting primarily of gunite/concrete-lined and earthen canal that follows the contour of the north- to northeast-facing slope above the South Fork American River. Flume 30 is unvegetated. Bull Creek, a relatively permanent stream, intersects the study area and is directly tributary to the South Fork American River.

Four habitat types occur within the approximately 3.1 acre biological study area and are described below and depicted in Appendix A, Exhibit 3: mixed conifer forest; annual brome grassland; deerbrush shrubland; and wetland/riparian. Table 1, below, summarizes the total acreages of each habitat type mapped within the project footprints. All four of these habitat types within the study area are also associated with moderate levels of human disturbance, including access roads, water conveyance structures, and maintenance facilities that comprise the developed land cover type.

**Table 1. Habitat Type Acreages within the Flume 30 Study Area**

Land Cover Type	Acres
Mixed Conifer Forest	2.60
Annual Brome Grassland	0.15
Deerbrush Shrubland	0.18
Riparian Habitat	0.01
Developed	0.16
TOTAL	3.1

**Source: AECOM 2019**

### Mixed Conifer Forest

The majority of the study area is characterized by mixed conifer forest habitat, approximately 2.60 acres, that is best described as a *Pinus ponderosa-Calocedrus decurrens* forest alliance according to the Manual of California Vegetation (CNPS 2019b). Ponderosa pine (*Pinus ponderosa*) and incense cedar (*Calocedrus decurrens*) are codominant in the tree canopy. Other tree species present include white fir (*Abies concolor*), Douglas fir (*Pseudotsuga menziesii*), black oak (*Quercus kelloggii*), canyon live oak (*Quercus chrysolepis*), interior live oak (*Quercus wislizeni*), and big-leaf maple (*Acer macrophyllum*). Associate shrub species include mountain dogwood (*Cornus nuttallii*), deerbrush (*Ceanothus integrerrimus*), American dogwood (*Cornus sericea*), American hazelnut (*Corylus cornuta*), thimbleberry (*Rubus parviflorus*), Sierra gooseberry (*Ribes roezlii*), mountain misery (*Chamaebatia foliolosa*), and creeping snowberry (*Symphoricarpos mollis*).



The tree canopy of this community is dense and a thick layer of duff carpets the ground. The herbaceous layer therefore consists of sparse cover of grasses and forbs. Commonly observed herbaceous species include Sierra starflower (*Lysimachia latifolia*), mountain sweet cicely (*Osmorhiza berteroi*), trail plant (*Adenocaulon bicolor*), and feathery false lily of the valley (*Mainantheum recemosum*).

### **Deerbrush Shrubland**

Approximately 0.18 acre of Deerbrush chaparral is mapped within the western portion of the proposed access road. This habitat is best described as *Ceanothus integerrimus* shrubland alliance according to the Manual of California Vegetation (CNPS 2019b). The shrub canopy is continuous in this habitat, with greater than 50 percent relative cover of deerbrush and a sparse to intermittent herbaceous layer. Other shrubs present include green leaf manzanita (*Arctostaphylos patula*) and creeping snowberry. Emergent trees are present at low cover, including ponderosa pine, canyon live oak, and interior live oak. Small openings in the shrub layer are present in patches on steep, west-facing slopes where trees or shrubs have fallen, and are dominated by mountain phacelia (*Phacelia hastata*) and large-flowered woolly sunflower (*Eriophyllum lanatum* var. *grandiflorum*).

### **Annual Brome Grassland**

Approximately 0.15 acre of the proposed project site have been previously disturbed and are dominated by annual grassland vegetation. The vegetation in these areas is best described as a *Bromus* (*diandrus*, *hordeaceus*, *madritensis*) herbaceous alliance according to the Manual of California Vegetation (CNPS 2019b). This habitat is mapped within the proposed staging area and along the western portion of the proposed access road, and is associated with existing forest access roads and EID water conveyance infrastructure. The staging area is located at the terminus of Forest Road 10-08YE and consists of disturbed gravel substrate and a sparse layer of herbaceous species dominated by nonnative annual grasses and a few native forbs. Dominant species include softchess brome (*Bromus hordeaceus*), cheatgrass (*Bromus tectorum*), bristly dogtail grass (*Cynosurus echinatus*), barbed goatgrass (*Aegilops triuncialis*), field hedge parsley (*Torilis arvensis*), Torrey's monkeyflower (*Diplacus toreyi*), whiskerbrush (*Leptosiphon ciliatus*), tiny trumpet (*Collomia linearis*), and white-flowered hawkweed (*Hieracium albiflorum*).

The western portion of the proposed access road overlaps with an existing flume support bench that extends to the north and east of the Flume 30 project site. This constructed bench follows a mid-elevation contour along the side of a west-facing slope. Historically, this bench supported a section of Flume 30; however, it was burned about 20 years ago and replaced with an underground water conveyance tunnel (M. Baron, pers. comm.). Although the burned portion of the flume structure was removed following the fire, the supporting bench was left in place and allowed to revegetate naturally. The bench is completely flat and devoid of large trees, and covered by plastic mesh erosion-control fabric. Conditions in this area are sunny and dry, with vegetation dominated by annual grasses and forbs, and a few scattered shrubs and seedling incense cedar. Dominant species include bristly dogtail grass, ripgut brome (*Bromus diandrus*), field hedge parsley, sheep sorrel (*Rumex acetosella*), prickly lettuce (*Lactuca serriola*), small tarweed (*Madia exigua*), blue wild rye (*Elymus glaucus*), and deerbrush.

### **Riparian Habitat**

Bull Creek crosses the study area from south to north, passing underneath the eastern portion of the wooden Flume 30 structure, where it encompasses approximately 0.01 acre of riparian habitat including creek channel. A wetland delineation is being prepared for this project under separate cover. The wooden Bull Creek Diversion Dam and associated rigid metal conduit structure, located immediately to the southeast of the project footprint, function to divert a portion of Bull Creek's flows into Flume 30 (part of the El Dorado Hydroelectric Project) as regulated under Federal Energy Regulatory Commission (FERC) Project No. 184 license conditions (EID 2003). The creek channel is a moderate- to high-gradient, relatively-permanent stream confined by steep slopes of granite boulders and bedrock. It is sparsely vegetated and dominated by boulders and cobble, with a few natural waterfalls and occasional cascade or step pools (ie., small falls, or steps, with pools). The creek is a v-shaped drainage that appears to be capable of conveying rapid flows during periods of wet winter rainfall. At the time of the biological surveys, surface water ranged between four to six inches deep.

Riparian vegetation within the Bull Creek corridor contains the same overstory species as described previously for the mixed conifer forest alliance, and also includes occasional white alder (*Alnus rhombifolia*) with a sparse understory of



thimbleberry, wild rose, hazelnut, and dogwood. The channel is mostly unvegetated, and high flows appear to preclude establishment of vegetation. There is no marsh or floating aquatic vegetation present within the creek. Channel banks are characterized by moss-covered rocks and ferns, including brittle fern (*Cystopteris fragilis*) and Sierra Nevada maiden fern (*Thelypteris nevadensis*), and a few herbaceous species adapted to mesic conditions such as western rush (*Juncus occidentalis*), Lemmon's wild ginger (*Asarum lemmonii*), crimson columbine (*Aquilegia formosa*), and miner's lettuce (*Claytonia perfoliata*).

### **Special-Status Plant Species**

No special-status plant species were observed on or adjacent to the study area during the surveys. Table 1 provides a list of special-status plant species that were determined to have potential to occur in the general project region based on the pre-field investigation (database and literature review). The following criteria were applied to assess the potential for species occurrence in the study area:

- ▶ **Present:** Species known to occur onsite, based on occurrence records, and/or was observed onsite during the field survey(s).
- ▶ **High:** Species is known to occur near the site or within the site (based on occurrence records within five miles, and/or based on professional expertise specific to the site or species) and suitable habitat is present onsite.
- ▶ **Low:** Species has been documented in the vicinity of the study area, but habitat onsite is marginal or other factors make the potential for occurrence low.
- ▶ **No:** The site is outside of the species known elevation limits or geographic range and/or there is no suitable habitat for the species onsite, or species was surveyed for during the appropriate season with negative results.



**Table 1. Special-Status Plant Species Potentially Occurring in the Study Area**

Species		Regulatory Status			Habitat Requirements	Elevation Range (ft)	Bloom Period	Potential for Occurrence in the Study Area
Scientific Name	Common Name	Federal	State	CRPR				
<i>Arctostaphylos nissenana</i>	Nissenan manzanita	USFS S	--	1B.2	Open, rocky shale ridges in closed-cone coniferous forest and chaparral	1,475-3,610	Feb-Mar(Jun)	<b>No</b> ; outside of elevation range of this species and no suitable habitat (rocky shale ridges) is present.
<i>Allium tribracteatum</i>	Three-bracted onion	USFS S	--	1B.2	Volcanic soils in chaparral, lower and upper montane coniferous forest	1,100-9,845	Apr-Aug	<b>No</b> ; no suitable habitat (volcanic soils) is present within the study area.
<i>Balsamorhiza macrolepis</i>	Big-scale balsamroot	USFS S	--	1B.2	Chaparral, cismontane woodland, valley and foothill grassland; sometimes on serpentine soils	145-5,100	Mar-Jun	<b>No</b> ; no suitable habitat (chaparral, woodland, or valley/foothill grassland) is present within the study area.
<i>Bolandra californica</i>	Sierra bolandra	--	--	4.3	Mesic, rocky sites in lower and upper montane coniferous forest	3,195-8,040	Jun-Jul	<b>No</b> ; although suitable habitat is present in the study area near Bull Creek, this species was not found during the survey conducted during its blooming period.
<i>Botrychium ascendens</i>	Upswept moonwort	USFS S	--	2B.3	Mesic sites in lower montane coniferous forest; meadows and seeps	3,655-9,990	(Jun)Jul-Aug	<b>No</b> ; although suitable habitat is present in the study area near Bull Creek, this species was not found during the survey conducted during its blooming period.
<i>Botrychium crenulatum</i>	Scalloped moonwort	USFS S	--	2B.2	Bogs and fens, meadows and seeps, marshes and swamps (freshwater) in lower and upper montane coniferous forest	4,160-10,760	Jun-Sep	<b>No</b> ; no suitable habitat (bogs, fens, meadows, seeps, marshes or swamps) is present within the study area.
<i>Botrychium lunaria</i>	Common moonwort	USFS S	--	2B.3	Meadows and seeps in subalpine and upper montane coniferous forest	6,495-11,155	Aug	<b>No</b> ; outside of elevation range of this species.
<i>Botrychium minganense</i>	Mingan moonwort	USFS S	--	2B.2	Bogs and fens, meadows and seeps (edges), mesic sites in lower and upper montane coniferous forest	4,770-7,150	Jul-Sep	<b>No</b> ; outside of elevation range of this species.



**Table 1. Special-Status Plant Species Potentially Occurring in the Study Area**

Species		Regulatory Status			Habitat Requirements	Elevation Range (ft)	Bloom Period	Potential for Occurrence in the Study Area
Scientific Name	Common Name	Federal	State	CRPR				
<i>Botrychium montanum</i>	Western goblin	USFS S	--	2B.1	Meadows and seeps, mesic sites in lower and upper montane coniferous forest	4,805-7,150	Jul-Sep	<b>No</b> ; outside of elevation range of this species.
<i>Botrychium paradoxum</i>	Paradox moonwort	USFS S	--	2B.1	Alpine boulder and rock field (limestone and marble), and moist sites in upper montane coniferous forest	5,705-13,780	Aug	<b>No</b> ; outside of elevation range of this species.
<i>Botrychium pendunculolum</i>	Stalked moonwort	USFS S	--	2B.1	Granitic, volcanic, and andesitic soils in meadows and seeps in upper montane coniferous forest	Unknown	Aug	<b>No</b> ; no suitable habitat (meadows or seeps) is present within the study area.
<i>Bruchia bolanderi</i>	Bolander's bruchia	USFS S	--	4.2	Damp soil in meadows and seeps in lower and upper montane coniferous forest	5,575-9,150	None	<b>No</b> ; outside of elevation range of this species.
<i>Calochortus clavatus</i> var. <i>avius</i>	Pleasant Valley mariposa lily	USFS S	--	1B.2	Open oak and pine forest habitats on Josephine silt loam and volcanic soils	1,000-5,905	May-Jul	<b>No</b> ; no suitable habitat (Josephine silt loam or volcanic soils) is present within the study area.
<i>Carex cyrtostachya</i>	Sierra arching sedge	--	--	1B.2	Riparian forest margins, meadows and seeps, marshes and swamps	2,000-4,460	May-Aug	<b>No</b> ; although suitable habitat present in the study area near Bull Creek, this species was not found during the survey conducted during its blooming period. The only <i>Carex</i> species present in the study area were <i>Carex bolanderi</i> and <i>C. fracta</i> .
<i>Carex davyi</i>	Davy's sedge	--	--	1B.3	Dry, often sparse meadows within subalpine or upper montane coniferous forest	4,920-10,500	May-Aug	<b>No</b> ; outside of elevation range of this species.
<i>Carex limosa</i>	Mud sedge	--	--	2B.2	Floating bogs, soggy meadows, lake edges, and swamps in lower and upper montane coniferous forest	3,950-8,900	Jun-Aug	<b>No</b> ; no suitable habitat (bogs, meadows, lake edges, or swamps) is present within the study area.



**Table 1. Special-Status Plant Species Potentially Occurring in the Study Area**

Species		Regulatory Status			Habitat Requirements	Elevation Range (ft)	Bloom Period	Potential for Occurrence in the Study Area
Scientific Name	Common Name	Federal	State	CRPR				
<i>Ceanothus fresnensis</i>	Fresno ceanothus	--	--	4.3	Rocky slopes and flats; openings in cismontane woodland and lower montane coniferous forest	2,950-6,900	May-Jul	<b>No</b> ; although suitable habitat present in the study area, species not found during the survey conducted during its blooming period. The only <i>Ceanothus</i> species present in the study area was <i>Ceanothus integerrimus</i> .
<i>Chlorogalum grandiflorum</i>	Red Hills soaproot	--	--	1B.2	Chaparral and cismontane woodland; lower montane coniferous forest typically on serpentinite and gabbroic soils and other rocky soil types	800-5,545	May-Jun	<b>No</b> ; although marginally suitable habitat present in the study area, species not found during the survey conducted during its blooming period. The only <i>Chlorogalum</i> species found was <i>Chlorogalum pomeridianum</i> .
<i>Clarkia virgata</i>	Sierra clarkia	--	--	4.3	Cismontane woodland, lower montane coniferous forest	1,310-5,300	May-Aug	<b>No</b> ; although suitable habitat present in the study area, species not found during the survey conducted during its blooming period. The only <i>Clarkia</i> species present in the study area are <i>Clarkia rhomboidea</i> and <i>C. unguiculata</i> .
<i>Claytonia parviflora</i> ssp. <i>grandiflora</i>	Streambank spring beauty	--	--	4.2	Rocky, vernal moist sites in cismontane woodland	820-3,935	Feb-May	<b>No</b> ; although suitable habitat present in the study area, only <i>Claytonia parviflora</i> ssp. <i>parviflora</i> was identified in the study area. Other <i>Claytonia</i> species found include <i>C. perfoliata</i> and <i>C. rubra</i> ssp. <i>depressa</i> .
<i>Cypripedium montanum</i>	Mountain lady's slipper	USFS S	--	4.2	Broadleaved upland forest, cismontane woodland, lower montane coniferous forest, and North Coast coniferous forest	605-7,300	Mar-Aug	<b>No</b> ; although marginally suitable habitat present in the study area, species not found during the survey conducted during its blooming period.



**Table 1. Special-Status Plant Species Potentially Occurring in the Study Area**

Species		Regulatory Status			Habitat Requirements	Elevation Range (ft)	Bloom Period	Potential for Occurrence in the Study Area
Scientific Name	Common Name	Federal	State	CRPR				
<i>Draba asterophora</i> <i>var. asterophora</i>	Tahoe draba	USFS S	--	1B.2	Alpine boulder and rock field, subalpine coniferous forest	8,200-11,500	Jul-Aug(Sep)	<b>No</b> ; outside of elevation range of this species.
<i>Draba asterophora</i> <i>var. macrocarpa</i>	Cup Lake draba	USFS S	--	1B.1	Rocky sites in subalpine coniferous forest	8,200-9,235	Jul-Aug(Sep)	<b>No</b> ; outside of elevation range of this species.
<i>Eriogonum luteolum</i> <i>var. saltuarium</i>	Jack's wild buckwheat	USFS S	--	1B.2	Sandy, granitic soils in upper montane coniferous forest and Great Basin scrub	5,575-7,875	Jul-Sep	<b>No</b> ; outside of elevation range of this species.
<i>Eriogonum tripodum</i>	Tripod buckwheat	USFS S	--	4.2	Chaparral and cismontane woodland, often on serpentine soils	655-5,250	May-Jul	<b>No</b> ; no suitable habitat (chaparral, cismontane woodland; serpentine) is present within the study area
<i>Helodium blandowii</i>	Blandow's bog moss	USFS S	--	2B.3	Damp soil in meadows and seeps in subalpine coniferous forest	6,100-8,860	None	<b>No</b> ; outside of elevation range of this species.
<i>Horkelia parryi</i>	Parry's horkelia	USFS S	--	1B.2	lone formation and other soils in chaparral and cismontane woodland	260-3,510	Apr-Sep	<b>No</b> ; outside of elevation range of this species.
<i>Lewisia kelloggii</i> <i>ssp. hutchisonii</i>	Hutchison's lewisia	USFS S	--	3.2	Decomposed granite, slate, volcanic rubble in montane coniferous forest	2,505-7,7760	(Apr)May-Aug	<b>No</b> ; no suitable habitat (decomposed granite, slate, or volcanic rubble) is present in the study area.
<i>Lewisia kelloggii</i> <i>ssp. kelloggii</i>	Kellogg's lewisia	USFS S	--	3.2	Decomposed granite, volcanic ash, rubble in montane coniferous forest	4,805-7,760	(Apr)May-Aug	<b>No</b> ; outside of elevation range of this species.
<i>Lewisia longipetala</i>	Long-petaled lewisia	USFS S	--	1B.3	Granitic soils in alpine boulder and rock fields; mesic, rocky sites in subalpine coniferous forest	8,200-9,600	Jul-Aug(Sep)	<b>No</b> ; outside of elevation range of this species.
<i>Lewisia serrata</i>	Saw-toothed lewisia	USFS S	--	1B.1	North-facing, mostly shaded, moss-covered and metamorphic rock cliffs and ledges in steep gorges along relatively permanent streams	2,525-4,710	May-Jun	<b>No</b> ; potential habitat within study area is very limited; this species was not found during the survey conducted during its blooming period.



**Table 1. Special-Status Plant Species Potentially Occurring in the Study Area**

Species		Regulatory Status			Habitat Requirements	Elevation Range (ft)	Bloom Period	Potential for Occurrence in the Study Area
Scientific Name	Common Name	Federal	State	CRPR				
<i>Meesia triquetra</i>	Three-ranked hump moss	--	--	4.2	Bogs and fens, meadows and seeps in subalpine and upper montane coniferous forest	4,265-9,690	Jul	<b>No</b> ; no suitable habitat (bogs, fens, meadows or seeps) is present in the study area.
<i>Meesia uliginosa</i>	Broad-nerved hump moss	USFS S	--	2B.2	Damp soil in bogs and fens, meadows and seeps, in subalpine and upper montane coniferous forest	4,000-9,200	Jul, Oct	<b>No</b> ; no suitable habitat (bogs, fens, meadows or seeps) is present in the study area.
<i>Monardella linoides ssp. oblonga</i>	Tehachapi monardella	USFS S	--	1B.3	Pinyon and juniper woodland, lower and upper montane coniferous forest	2,950-8,105	(May)Jun-Aug	<b>No</b> ; although suitable habitat is present in the study area, species was not found during the survey conducted during its blooming period.
<i>Myrica hartwegii</i>	Sierra sweet bay	--	--	4.3	Streambanks, riparian forest, in cismontane woodland and lower montane coniferous forest	490-5,740	May-Jun	<b>No</b> ; although suitable habitat is present in the study area near Bull Creek, species was not found during the survey conducted during its blooming period.
<i>Navarretia prolifera ssp. lutea</i>	Yellow bur navarretia	USFS S	--	4.3	Dry, rocky flats (decomposed granite) near drainage channels within chaparral and cismontane woodland	2,795-4,600	May-Jul	<b>No</b> ; specific microhabitat (decomposed granitic soil) is not present and this species was not found during the survey conducted during its blooming period. No <i>Navarretia</i> species were found in the study area.
<i>Ophioglossum pusillum</i>	Northern adder's-tongue	USFS S	--	2B.2	Meadows and seeps, marshes and swamps (margins)	3,280-6,560	Jul	<b>No</b> ; no suitable habitat (meadows, seeps, marshes, or swamps) is present.
<i>Peltigera gowardii</i>	Veined water lichen	USFS S	--	4.2	On rocks in cold water creeks with little or no sediment or disturbance in riparian forest	3,495-8,595	None	<b>No</b> ; outside of elevation range of this species and no suitable habitat (creek with little or no disturbance) present in the study area.



**Table 1. Special-Status Plant Species Potentially Occurring in the Study Area**

Species		Regulatory Status			Habitat Requirements	Elevation Range (ft)	Bloom Period	Potential for Occurrence in the Study Area
Scientific Name	Common Name	Federal	State	CRPR				
<i>Phacelia stebbinsii</i>	Stebbins' phacelia	USFS S	--	1B.2	Shady, moss-covered metamorphic rock outcrops or meadows with rocky or gravelly soils	2,000-6,595	May-Jul	<b>No</b> ; potential habitat within study area is very limited, and this species was not found during the survey conducted during its blooming period. There were no unidentified <i>Phacelia</i> species present.
<i>Pinus albicaulis</i>	Whitebark pine	USFS S	--	CBR	Upper montane coniferous forest and subalpine coniferous forest, to timberline	6,560-12,140	Jul-Aug	<b>No</b> ; outside of elevation range of this species.
<i>Piperia colemanii</i>	Coleman's rein orchid	--	--	4.3	Often sandy soils in chaparral, lower montane coniferous forest	3,395-7,545	Jun-Aug	<b>No</b> ; although suitable habitat is present in the study area, species was not found during the survey conducted during its blooming period. The only <i>Piperia</i> species found were <i>Piperia transversa</i> and <i>P. unalascensis</i> .
<i>Poa sierrae</i>	Sierra blue grass	USFS S	--	1B.3	Shady, moist, rocky slopes in lower montane coniferous forest; often on mossy rocks in canyons	1,195-4,920	Apr-Jun	<b>No</b> ; potential habitat within study area is very limited and this species was not found during the survey conducted during its blooming period. There were no unidentified <i>Poa</i> species present.
<i>Pseudostellaria sierra</i>	Sierra starwort	--	--	4.2	Meadows, dry understory of mixed oak or coniferous forest	4,015-7,200	May-Aug	<b>No</b> ; although suitable habitat is present in the study area, species was not found during the survey conducted during its blooming period.
<i>Rhynchospora capitellata</i>	Brownish beaked-rush	--	--	2B.2	Meadows, seeps, marshes, and swamps in montane coniferous forest	145-6,560	Jul-Aug	<b>No</b> ; no suitable habitat (Meadows, seeps, marshes, or swamps) present in the study area.



**Table 1. Special-Status Plant Species Potentially Occurring in the Study Area**

Species		Regulatory Status			Habitat Requirements	Elevation Range (ft)	Bloom Period	Potential for Occurrence in the Study Area
Scientific Name	Common Name	Federal	State	CRPR				
<i>Viola tomentosa</i>	Felt-leaved violet	--	--	4.2	Gravelly soils in lower montane coniferous forest, subalpine coniferous forest, and upper montane coniferous forest.	4,705-6,560	(Apr)May-Oct	<b>No</b> ; outside of elevation range of this species and species was not found during the survey conducted during its blooming period.
<p><b>Notes:</b></p> <div> <div> <p><b>Federally Listed Species:</b></p> <p>USFS S = US Forest Service Sensitive</p> <p>– No designation</p> </div> <div> <p><b>California State Listed Species:</b></p> <p>– No designation</p> </div> <div> <p><b>California Rare Plant Rank (CRPR) Categories:</b></p> <p>1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)</p> <p>2B Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA)</p> <p>3 Plants about which more information is needed (a review list)</p> <p>4 Plants of limited distribution (a watch list)</p> <p>CRPR Threat Rank Extensions:</p> <p>.1 Seriously endangered in California (&gt;80% of occurrences are threatened and/or high degree and immediacy of threat)</p> <p>.2 Fairly endangered in California (20 to 80% of occurrences are threatened)</p> <p>.3 Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known)</p> <p>– No designation</p> <p>CBR = considered but rejected</p> </div> </div>								

Source: CDFW 2019, CNPS 2019a, USFS 2013, USFWS 2019



***Special-status Plant Species***

No populations of special-status plant species were identified during the field survey. Potentially suitable habitat for some special-status plants is present in the study area, as noted in Table 1; however, none of the special-status plants that could occur in these habitats were found. The other special-status plant species identified in Table 1 were determined to have no potential to occur in the study area either because there is no suitable habitat present for these species or because the study area is outside of the species' known elevation or geographic range. A comprehensive plant species list of all taxa observed in the study area is included in Appendix B.

**Conclusions and Recommendations**

No special-status plants were found during the floristic survey. Many of the special-status plant species listed in Table 1 can be eliminated from further consideration because the study area is outside of the species known elevation or geographic range. Based on the results of the survey, several additional species can be eliminated from further consideration because there is no suitable habitat in the study area. All of the remaining species for which suitable habitat is present in the study area are considered to be absent from the study area because they were not found during the floristic survey conducted during their blooming period.

We appreciate this opportunity to assist EID with environmental compliance requirements for this project. If you have any questions, please do not hesitate to call Jasmine Greer at (916) 414-5800.

Sincerely,

Jasmine Greer  
Botanist



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# **APPENDIX A**

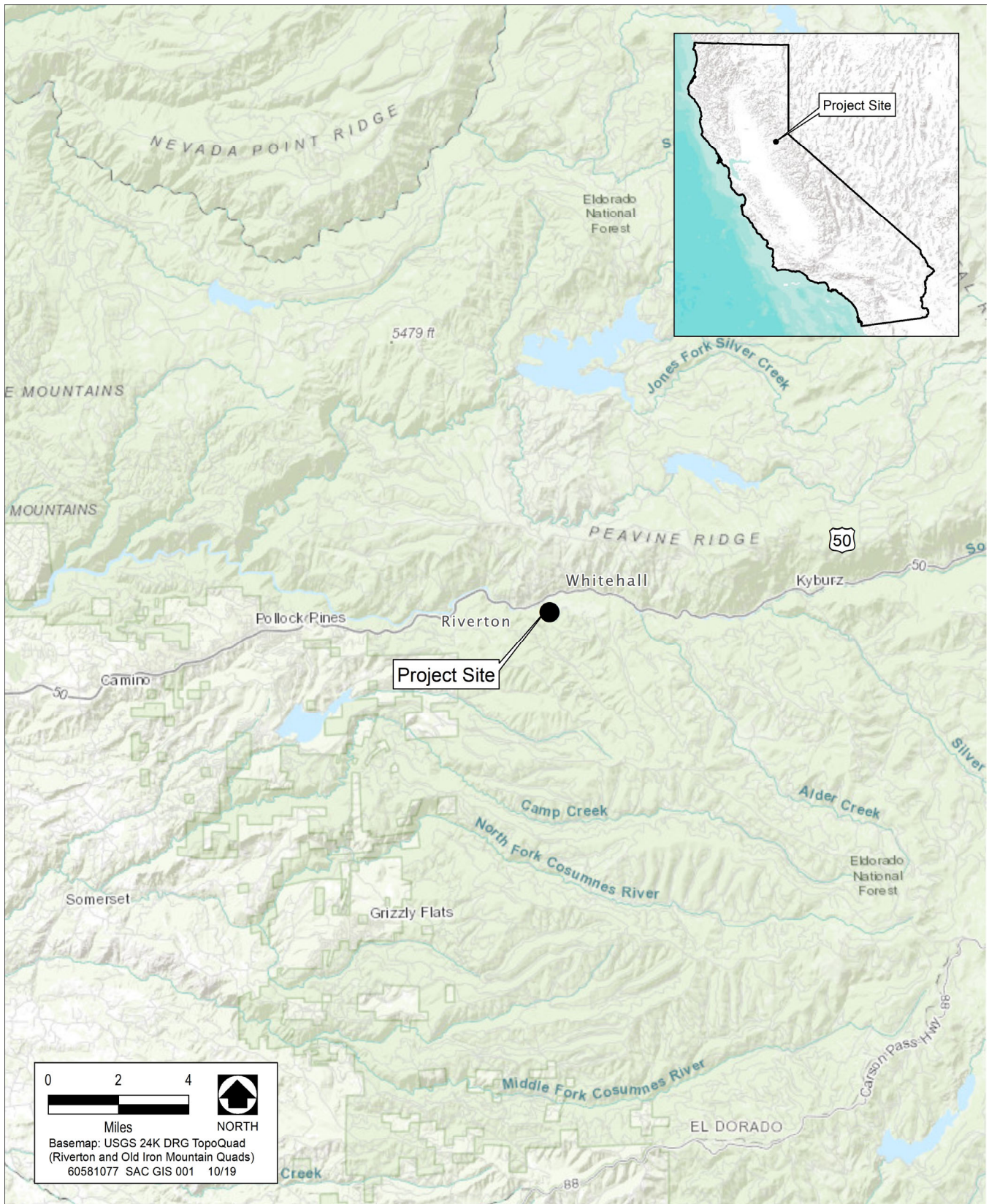
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## Exhibits



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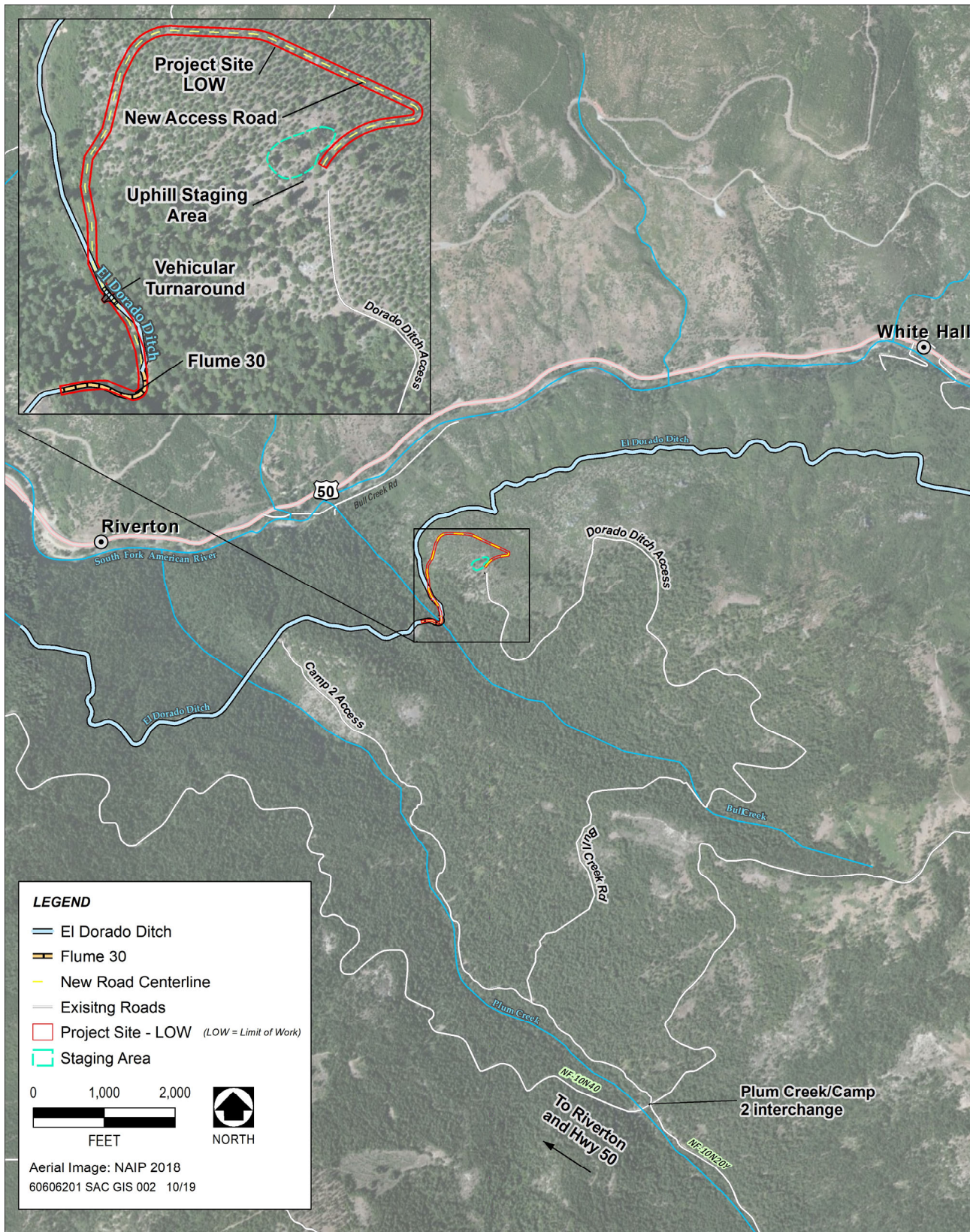




Source: AECOM 2019

**Exhibit 1. Project Location**





Source: AECOM 2019

## Exhibit 2. Study Area



## **APPENDIX B**

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### Plant Species Observed



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**Table B-1 .Plant Species Observed in the EID Flume 30 Project Study Area during June and July 2019**

Family	Scientific Name	Common Name	Indicator Status
Agavaceae	<i>Chlorogalum pomeridianum</i> var. <i>pomeridianum</i>	wavyleaf soap plant	NL
Apiaceae	<i>Osmorhiza berteroi</i>	mountain sweet cicely	FACU
Apiaceae	<i>Torilis arvensis</i>	field hedge parsley	NL
Aristolochiaceae	<i>Asarum caudatum</i>	creeping wild ginger	FAC
Aristolochiaceae	<i>Asarum hartwegii</i>	Hartweg's wild ginger	NL
Aristolochiaceae	<i>Asarum lemmonii</i>	Lemmon's wild ginger	OBL
Asteraceae	<i>Adenocaulon bicolor</i>	trail plant	NL
Asteraceae	<i>Agoseris retrorsa</i>	spearleaf mountain dandelion	NL
Asteraceae	<i>Anaphalis margaritacea</i>	pearly everlasting	FACU
Asteraceae	<i>Artemisia douglasiana</i>	mugwort	FACW
Asteraceae	<i>Cirsium vulgare</i>	bull thistle	FACU
Asteraceae	<i>Eriophyllum lanatum</i> var. <i>grandiflorum</i>	large-flowered woolly sunflower	NL
Asteraceae	<i>Hieracium albiflorum</i>	white flowered hawkweed	NL
Asteraceae	<i>Hypochaeris radicata</i>	rough cat's ear	FACU
Asteraceae	<i>Lactuca serriola</i>	prickly lettuce	FACU
Asteraceae	<i>Leucanthemum vulgare</i>	ox-eye daisy	UPL
Asteraceae	<i>Madia exigua</i>	small tarweed	NL
Asteraceae	<i>Madia glomerata</i>	mountain tarweed	FACU
Asteraceae	<i>Pseudognaphalium thermale</i>	small headed cudweed	NL
Asteraceae	<i>Sonchus asper</i>	spiny leaf sow-thistle	FAC
Asteraceae	<i>Tragopogon dubius</i>	yellow salsify	NL
Betulaceae	<i>Alnus rhombifolia</i>	white alder	FACW
Betulaceae	<i>Corylus cornuta</i>	beaked hazelnut	FACU
Boraginaceae	<i>Draperia systyla</i>	violet draperia	NL
Boraginaceae	<i>Hydrophyllum occidentale</i>	western waterleaf	FACW
Boraginaceae	<i>Nemophila heterophylla</i>	variable-leaved nemophila	NL
Boraginaceae	<i>Phacelia cicutaria</i>	caterpillar phacelia	NL
Boraginaceae	<i>Phacelia hastata</i>	mountain phacelia	NL
Boraginaceae	<i>Phacelia heterophylla</i> var. <i>virgata</i>	varied leaf phacelia	FACU



**Table B-1 .Plant Species Observed in the EID Flume 30 Project Study Area during June and July 2019**

Family	Scientific Name	Common Name	Indicator Status
Boraginaceae	<i>Plagiobothrys nothofulvus</i>	rusty popcorn flower	FAC
Brassicaceae	<i>Erysimum capitatum</i> var. <i>capitatum</i>	wallflower	NL
Campanulaceae	<i>Asyneuma prenanthioides</i>	California harebell	NL
Caprifoliaceae	<i>Symphoricarpos mollis</i>	creeping snowberry	FACU
Carssulaceae	<i>Sedum spathulifolium</i>	Pacific stonecrop	NL
Caryophyllaceae	<i>Cerastium glomeratum</i>	mouse ear chickweed	FACU
Caryophyllaceae	<i>Silene invisa</i>	short-petaled campion	NL
Caryophyllaceae	<i>Silene laciniata</i> ssp. <i>californica</i>	California Indian pink	NL
Cornaceae	<i>Cornus nuttallii</i>	mountain dogwood	FACU
Cornaceae	<i>Cornus sericea</i>	American dogwood	NL
Cupressaceae	<i>Calocedrus decurrens</i>	incense cedar	NL
Cyperaceae	<i>Carex bolanderi</i>	Bolander's sedge	FAC
Cyperaceae	<i>Carex fraxta</i>	fragile-sheathed sedge	FAC
Dennstaedtiaceae	<i>Pteridium aquilinum</i>	Western brackenfern	FACU
Ericaceae	<i>Arctostaphylos patula</i>	green leaf manzanita	NL
Ericaceae	<i>Pyrola asphylla</i>	leafless wintergreen	NL
Fabaceae	<i>Acmispon americanus</i>	Spanish clover	UPL
Fabaceae	<i>Acmispon glaber</i>	deerweed	NL
Fabaceae	<i>Acmispon nevadensis</i>	Sierra lotus	NL
Fabaceae	<i>Acmispon parviflorus</i>	hill lotus	NL
Fabaceae	<i>Lathyrus nevadensis</i>	Sierra pea	NL
Fabaceae	<i>Lupinus adsurgens</i>	Drew's silky lupine	NL
Fabaceae	<i>Lupinus latifolius</i>	broad-leaf lupine	FACW
Fabaceae	<i>Trifolium breweri</i>	Brewer's clover	NL
Fabaceae	<i>Trifolium hirtum</i>	rose clover	NL
Fabaceae	<i>Vicia americana</i>	American purple vetch	FAC
Fagaceae	<i>Quercus chrysolepis</i>	canyon live oak	NL
Fagaceae	<i>Quercus kelloggii</i>	California black oak	NL
Fagaceae	<i>Quercus wislizeni</i>	interior live oak	NL



**Table B-1 .Plant Species Observed in the EID Flume 30 Project Study Area during June and July 2019**

Family	Scientific Name	Common Name	Indicator Status
Grossulariaceae	<i>Ribes roezlii</i>	Sierra gooseberry	NL
Hypericaceae	<i>Hypericum scouleri</i>	Scouler's St. John's-wort	FACW
Hypericaceae	<i>Hypericum perforatum</i>	Common St. John's-wort	FACU
Iridaceae	<i>Iris hartwegii</i>	Hartweg's iris	FACU
Juncaceae	<i>Juncus saximontanus</i>	Rocky Mountain rush	FACW
Juncaceae	<i>Juncus occidentalis</i>	western rush	FACW
Juncaceae	<i>Luzula comosa</i>	Pacific woodrush	FAC
Liliaceae	<i>Fritillaria affinis</i>	checker lily	NL
Liliaceae	<i>Lilium washingtonianum ssp. washingtonianum</i>	typical Washington lily	NL
Liliaceae	<i>Prosartes hookeri</i>	drops of gold	NL
Montiaceae	<i>Claytonia parviflora ssp. parviflora</i>	narrow-leaved miner's lettuce	FACU
Montiaceae	<i>Claytonia perfoliata</i>	miner's lettuce	FAC
Montiaceae	<i>Claytonia rubra ssp. depressa</i>	red-stemmed spring beauty	NL
Myrsinaceae	<i>Lysimachia latifolia</i>	Pacific starflower	FAC
Onagraceae	<i>Clarkia rhomboidea</i>	diamond petaled clarkia	NL
Onagraceae	<i>Clarkia unguiculata</i>	woodland clarkia	NL
Orchidaceae	<i>Corallorhiza maculata</i>	spotted coralroot	UPL
Orchidaceae	<i>Piperia transversa</i>	mountain piperia	NL
Orchidaceae	<i>Piperia unalascensis</i>	Alaska rein orchid	FACU
Phrymaceae	<i>Diplacus torreyi</i>	Torrey's monkeyflower	NL
Pinaceae	<i>Abies concolor</i>	white fir	NL
Pinaceae	<i>Pinus ponderosa</i>	ponderosa pine	FACU
Pinaceae	<i>Pseudotsuga menziesii</i>	Douglas fir	FACU
Plantaginaceae	<i>Plantago lanceolata</i>	English plantain	FACU
Poaceae	<i>Aegilops triuncialis</i>	goatgrass	NL
Poaceae	<i>Aira caryophyllea</i>	silvery hairgrass	FACU
Poaceae	<i>Avena barbata</i>	slim oat	NL
Poaceae	<i>Bromus carinatus var. carinatus</i>	California brome	NL
Poaceae	<i>Bromus diandrus</i>	ripgut brome	NL



**Table B-1 .Plant Species Observed in the EID Flume 30 Project Study Area during June and July 2019**

Family	Scientific Name	Common Name	Indicator Status
Poaceae	<i>Bromus hordeaceus</i>	soft chess brome	FACU
Poaceae	<i>Bromus laevipes</i>	Chinook brome	NL
Poaceae	<i>Bromus tectorum</i>	cheatgrass	NL
Poaceae	<i>Cynosurus echinatus</i>	bristly dogtail grass	NL
Poaceae	<i>Elymus glaucus</i>	blue wildrye	FACU
Poaceae	<i>Elymus triticoides</i>	beardless wildrye	FAC
Poaceae	<i>Festuca microstachys</i>	small fescue	NL
Poaceae	<i>Festuca myuros</i>	rattail six-weeks grass	FACU
Poaceae	<i>Festuca occidentalis</i>	western fescue	FACU
Poaceae	<i>Melica californica</i>	California melic	NL
Poaceae	<i>Poa pratensis</i>	Kentucky blue grass	FAC
Poaceae	<i>Poa secunda ssp. secunda</i>	pine bluegrass	FACU
Polemoniaceae	<i>Collomia grandiflora</i>	large-flowered collomia	NL
Polemoniaceae	<i>Collomia linearis</i>	tiny trumpet	FACU
Polemoniaceae	<i>Gilia capitata ssp. mediomontana</i>	blue field gilia	NL
Polemoniaceae	<i>Leptosiphon ciliatus</i>	whiskerbrush	NL
Polygalaceae	<i>Polygala cornuta</i>	Sierra milkwort	NL
Polygonaceae	<i>Rumex acetosella</i>	common sheep sorrel	FACU
Pteridaceae	<i>Pellaea mucronata</i>	bird's foot fern	NL
Ranunculaceae	<i>Aquilegia formosa</i>	crimson columbine	FAC
Rhamnaceae	<i>Ceanothus integerrimus</i>	deerbrush	NL
Rhamnaceae	<i>Frangula californica</i>	California coffeeberry	NL
Rhamnaceae	<i>Frangula rubra</i>	red buckthorn	NL
Rosaceae	<i>Chamaebatia foliolosa</i>	mountain misery	NL
Rosaceae	<i>Dryocallis glandulosa</i>	sticky cinquefoil	FAC
Rosaceae	<i>Fragaria vesca</i>	woodland strawberry	FACU
Rosaceae	<i>Rosa gymnocarpa</i>	wood rose	FACU
Rosaceae	<i>Rubus glaucifolius</i>	wax leaf raspberry	NL
Rosaceae	<i>Rubus leucodermis</i>	western raspberry	FACU



**Table B-1 .Plant Species Observed in the EID Flume 30 Project Study Area during June and July 2019**

Family	Scientific Name	Common Name	Indicator Status
Rosaceae	<i>Rubus parviflorus</i>	thimbleberry	FACU
Rosaceae	<i>Rubus ursinus</i>	California blackberry	FAC
Rubiaceae	<i>Galium aparine</i>	common bedstraw	FACU
Rubiaceae	<i>Galium californicum</i>	California bedstraw	NL
Rubiaceae	<i>Galium porrigens</i>	climbing bedstraw	NL
Rubiaceae	<i>Galium sparsiflorum</i>	Sequoia bedstraw	NL
Rubiaceae	<i>Galium triflorum</i>	sweet bedstraw	FACU
Ruscaceae	<i>Maianthemum racemosum</i>	feathery false lily of the valley	FAC
Sapindaceae	<i>Acer macrophyllum</i>	big leaf maple	FACU
Saxifragaceae	<i>Boykinia occidentalis</i>	western boykinia	FAC
Saxifragaceae	<i>Heuchera micrantha</i>	crevice alumroot	NL
Scrophulariaceae	<i>Verbascum thapsus</i>	woolly mullein	FACU
Selaginellaceae	<i>Selaginella hansenii</i>	Hansen's spike moss	NL
Thelypteridaceae	<i>Thelypteris nevadensis</i>	Sierra Nevada maiden fern	FAC
Themidaceae	<i>Dichelostemma multiflorum</i>	many flowered brodiaea	NL
Violaceae	<i>Viola bakeri</i>	Baker's violet	NL
Violaceae	<i>Viola lobata</i>	pine violet	NL
Woodsiaceae	<i>Athyrium filix-femina</i> var. <i>cyclosorum</i>	common lady fern	FAC
Woodsiaceae	<i>Cystopteris fragilis</i>	brittle fern	FACU

Source: AECOM 2019



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## **APPENDIX C**

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### Wildlife Habitat Assessment



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September 18, 2019  
Michael Baron  
Environmental Review Analyst  
El Dorado Irrigation District  
2890 Mosquito Road  
Placerville, CA 95667

**Subject: Habitat Assessment for Special-Status Wildlife for the El Dorado Irrigation District Flume 30 Replacement Project, El Dorado County, California**

Dear Mr. Baron:

The El Dorado Irrigation District (EID) contracted with AECOM to conduct biological surveys to assist EID with environmental compliance requirements for the EID Flume 30 Replacement Project (Project). The proposed Project involves replacement of approximately 350 linear feet of elevated and ground-level wooden flume structures at Flume 30 on the El Dorado Canal with reinforced concrete canal, and construction of approximately 2,200 linear feet of new access road. This letter report summarizes the methods and results of the reconnaissance-level wildlife survey to assess potential habitat for special-status wildlife species within the study area.

## **Project and Study Area Description**

The Flume 30 Project site is located approximately 0.5 mile south of Highway 50 and 8.5 miles east of Fresh Pond in an unincorporated area of El Dorado County, California (Appendix A, Exhibit 1). The South Fork of the American River is located 0.4 mile to the north. The project site is located in Township 11 north, Range 14 east, Sections 28, 29, and 32 of the United States Geological Survey 7.5-minute Riverton quadrangle. The Project site is defined as where construction may occur, and includes Flume 30, a new access road, and an approximately 0.59 acre proposed staging area at the terminus of Forest Road 10-08YE above the Flume and canal bench. The study area for biological surveys included a 50-foot buffer of the construction footprint (Appendix A, Exhibit 2).

Construction and improvements would consist of demolition and disposal of the existing flume structure, and vegetation removal, grading, and earth-moving within the proposed access road alignment. Prior to placement of the new concrete flume, the Flume 30 support bench will be reconstructed and slightly elevated using a mechanically-stabilized earth retaining wall system and a prefabricated concrete block system. Reinforced concrete canal segments and fill material will be imported from off-site locations. The portion of the study area that will be used for staging and access roads is on federal lands managed by the U.S. Forest Service (Eldorado National Forest). The Flume 30 project site is on EID property.

El Dorado County is located within the California Floristic Province, which is characterized by a Mediterranean climate with cool, wet winters and hot, dry summers. Elevation of the study area ranges from approximately 4,000 to 4,200 feet above mean sea level. Soils in the study area consist of Chaix coarse sandy loam, 30 to 75 percent slopes; and McCarthy-Ledmont association (gravelly sandy loam), 2 to 30 percent slopes (NRCS 2019). Vegetation is characterized primarily by mixed conifer forest habitat with a moderate to dense tree canopy. Surrounding land use is forested land utilized by public and private entities.

## **Methods**

Before the site visit, AECOM biologists searched the following sources for records of special-status wildlife occurring within a nine-quadrangle area containing and surrounding the study area: California Natural Diversity Database (CDFW 2019), the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation project planning tool (USFWS 2019), Western Bat Working Group database (WBWG 2019), eBIRD (2019) and U.S. Forest Service (USFS) Region 5 Regional Forester's 2013 Sensitive Wildlife Species List (USFS 2013).

AECOM biologists Vanessa Tucker and Jasmine Greer accompanied by Michael Baron, Environmental Compliance Analyst from EID, walked the study area as defined above in Setting and Site Description on July 12, 2019. Weather conditions were



sunny and warm with temperatures ranging from 75-80° Fahrenheit and winds of 0-5 miles per hour. The study area was evaluated for its potential to support special-status wildlife species.

## **Results**

### **Special-Status Wildlife Species**

No special-status wildlife species were observed on or adjacent to the study area during the survey. Table 1 provides a list of special-status wildlife species that were determined to have potential to occur or are known to occur in the general project region based on the pre-field investigation (database and literature review). The following criteria were applied to assess the potential for species occurrence in the study area:

- ▶ Present: Species known to occur onsite, based on occurrence records, and/or was observed onsite during the field survey(s).
- ▶ High: Species is known to occur near the site or within the site (based on occurrence records within five miles, and/or based on professional expertise specific to the site or species) and suitable habitat is present onsite.
- ▶ Low: Species has been documented in the vicinity of the study area, but habitat onsite is marginal or other factors make the potential for occurrence low.
- ▶ No: The site is outside of the species known elevation limits or geographic range and/or there is no suitable habitat for the species onsite, or species was surveyed for during the appropriate season with negative results.



Table 1. Special-Status Species Potentially Occurring in the Study Area			
Special-Status Species	Regulatory Status (Federal/State/ Other)	Habitat Requirements	Potential for Occurrence in the Study Area
<b>Amphibians &amp; Reptiles</b>			
Southern long-toed salamander <i>Ambystoma macrodactylum sigillatum</i>	--/SSC/--	Aquatic larvae occur in ponds and lakes. Outside of breeding season adults are terrestrial and associated with underground burrows of mammals and moist areas under logs and rocks. High elevation meadows and lakes in the Sierra Nevada, Cascade, and Klamath mountains.	<b>No</b> ; outside of elevation range of this species. Nearest occurrence is approximately 18 miles northeast of the study area.
Western pond turtle <i>Emys marmorata</i>	--/SSC/USFS-S	Inhabits permanent and intermittent waters, including marshes, streams, rivers, ponds, and lakes with emergent logs or boulders for basking. Nests in sandy banks along large slow-moving streams or upland in a variety of soils.	<b>No</b> ; no suitable aquatic habitat or terrestrial non-breeding dispersal habitat is located in the study area.
Foothill yellow-legged frog <i>Rana boylei</i>	--/CT, SSC/USFS-S	Streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands; sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools. Breeding occurs exclusively in streams and rivers and requires cobble-sized substrate for eggs and minimum 15 weeks of water for larval development.	<b>Low</b> ; suitable aquatic habitat is present at Bull Creek. The nearest known occurrences are in the South Fork American River approximately 1 mile downstream and 2 miles upstream of the confluence with Bull Creek. Egg masses, adults, juveniles and tadpoles have been observed in these locations during regular EID monitoring efforts (EID 2016).
California red-legged frog <i>Rana draytonii</i>	FT/SSC/--	Sierran populations inhabit still or slow-moving water with deep (generally $\geq 2$ ft.) pools and emergent or overhanging vegetation. Breeds in wetlands, ponds, lakes, and slow-moving, low-gradient stream reaches. Requires minimum 11-20 weeks of water for larval development and upland refugia for aestivation if no permanent water is present.	<b>No</b> ; no suitable aquatic habitat or terrestrial non-breeding dispersal habitat is located in the study area. The stream reaches within and immediately adjacent to the study area are moderate to high gradient with shallow pools, and little to no emergent or overhanging vegetation. The study area is located greater than 9 miles from the nearest known population.



**Table 1. Special-Status Species Potentially Occurring in the Study Area**

Special-Status Species	Regulatory Status (Federal/State/ Other)	Habitat Requirements	Potential for Occurrence in the Study Area
Sierra Nevada yellow-legged frog <i>Rana sierrae</i>	FE/ST/USFS-S	Prefers sunny riverbanks, meadow streams, isolated pools, and lake borders in high Sierra Nevada. Prefers sloping banks with rocks or vegetation to water's edge. Seldom found more than few feet from water. Also occurs in ponds and low gradient streams with deep pools and undercut banks, generally above 4,500 to 12,000 feet in elevation.	<b>No</b> ; no suitable aquatic habitat present. The stream reaches within and immediately adjacent to the study area are moderate to high gradient with insufficient depth for adequate refuge and overwintering habitat. Only one population of this species is known from below 4,500 feet and it is found in Plumas County (CNDDDB 2019).
<b>Birds</b>			
Northern goshawk <i>Accipiter gentilis</i>	--/SSC/USFS-S	Prefers to nest in mature and old-growth coniferous and deciduous forest with dense canopy and large trees with relatively open understory, nearby openings and meadows, typically near water.	<b>High</b> ; suitable foraging and nesting habitat is present in the dense forests within the study area. there are known occurrences and a historic nesting site in the project area.
Bald Eagle <i>Haliaeetus leucocephalus</i>	FD/SE, CFP/USFS-S	Large trees close to lakes and large rivers.	<b>Low</b> ; suitable foraging and nesting habitat is present. However, bald eagles prefer to be close to large bodies of water. Closest reported sighting is in Wright Lake approximately 11 miles northeast of the study area (eBird 2019).
California spotted owl <i>Strix occidentalis occidentalis</i>	--/SSC/USFS-S	Nests in dense, mature, multi-layered coniferous forest, typically near water. Foraging habitat is associated with large trees and snags and is more open than nesting habitat. Wintering habitat is generally lower in elevation and less structurally complex.	<b>High</b> ; suitable foraging and nesting habitat is present in dense forests adjacent to the study area. There are multiple known occurrences of this species within 0.47 mile of the Project sites (CNDDDB 2019).
<b>Mammals</b>			
Pallid bat <i>Antrozous pallidus</i>	--/SSC/USFS-S	A wide variety of low-elevation habitats such as grasslands, shrublands, and woodlands. Roosts in caves, mines, tunnels, or other man-made structures.	<b>No</b> ; may forage within the study area, but no suitable roosting sites are present.
Sierra Nevada mountain beaver <i>Aplodontia rufa californica</i>	--/SSC/--	Occurs in dense growth of small deciduous trees and shrubs in wet soil for burrowing. Requires dense understory and proximity to water.	<b>No</b> ; no suitable habitat is present in the study area. Tends to occur above 4,500 feet in elevation.



<b>Table 1. Special-Status Species Potentially Occurring in the Study Area</b>			
<b>Special-Status Species</b>	<b>Regulatory Status (Federal/State/ Other)</b>	<b>Habitat Requirements</b>	<b>Potential for Occurrence in the Study Area</b>
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	--/SSC/USFS-S	Variety of habitats throughout California, including coniferous forests. Requires caves, mines, tunnels, or other man-made structures.	<b>No</b> ; may forage in the study area, but no suitable roosting sites are present.
California wolverine <i>Gulo gulo luteus</i>	--/--/USFS-S	Occurs between 1,600 to 14,200 feet above MSL with most sightings at the mean elevation of 8,000 feet. Occurs in coniferous forests at higher elevations, generally with open areas at or above timber line. Habitat typically consists of open terrain above the timber line and generally includes remote forested and alpine areas.	<b>No</b> ; no suitable subalpine forest habitat is present within the study area.
Silver-haired bat <i>Lasionycteris noctivagans</i>	--/--/WBWG-M	Resides in lower montane coniferous forests with old growth and/or riparian forest. Primarily a coastal and montane forest dweller, feeding over streams, ponds & open brushy areas. Roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes, and rarely under rocks. Needs drinking water.	<b>No</b> ; Trees within and adjacent to the study area may provide suitable roosting sites but the species is not likely to occur in the area.
Hoary bat <i>Lasiurus cinereus</i>	--/--/WBWG-M	Resides in broadleaved upland forest, cismontane woodland, lower montane coniferous forest, and north coast coniferous forest. Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	<b>Low</b> ; This species prefers to roost in large conifers adjacent to large open habitats for foraging. The Flume 30 uphill staging area fits the description of an area where hoary bats may potentially roost.
Sierra marten <i>Martes caurina sierrae</i>	--/--/USFS-S	Occurs in dense coniferous forests or mixed conifer-hardwood forests and deciduous trees including spruce, birch, maple, and white fir.	<b>No</b> ; no suitable habitat is present within the study area. Martens require large-diameter ground debris and snags for denning.



**Table 1. Special-Status Species Potentially Occurring in the Study Area**

Special-Status Species	Regulatory Status (Federal/State/ Other)	Habitat Requirements	Potential for Occurrence in the Study Area
Long-legged myotis <i>Myotis volans</i>	--/--/WBWG-H	Upper montane coniferous forest. Most common in woodland and forest habitats above 4000 ft. Trees are important day roosts; caves and mines are night roosts. Nursery colonies usually under bark or in hollow trees, but occasionally in crevices or buildings.	<b>Low</b> ; suitable day roost and night roost habitat is found throughout the study area.
Fringed myotis <i>Myotis thysanodes</i>	--/--/USFS-S, WBWG-H	Found in desert shrublands, sagebrush-grassland, and woodland habitats consisting of Douglas-fir, oak, and pine trees. Use a wide variety of structures such as caves, mines, and buildings as day roosts during the summer months. Roosting behaviors during the winter months are largely unknown. While most recorded day roosts have been in rock crevices, those members living in the Pacific northwest can often be found roosting in tree snags.	<b>Low</b> ; may forage within the study area; no suitable day roosting or maternity roosting sites are present, but winter roosting cannot be ruled out since winter behaviors are unknown.
Yuma myotis <i>Myotis yumanensis</i>	--/--/WBWG-L to M	Lower montane coniferous forest   Riparian forest   Riparian woodland   Upper montane coniferous forest. Optimal habitats are open forests and woodlands with sources of water over which to feed. Distribution is associated with permanent sources of water, typically rivers and streams. Maternity colonies in caves, mines, buildings or crevices.	<b>Low</b> ; Trees within and adjacent to the study area may provide suitable roosting sites.
Fisher -West Coast DPS <i>Pekania pennanti</i>	--/ST, SCC/USFS-S	Occurs in dense, closed canopy coniferous forest and riparian habitats in the Sierra Nevada, Cascade Range, and Klamath Mountains. Species dens in rotting logs, hollow trees, and rock crevices in old-growth forests. Only two native populations are known to occur today, one around the western California/Oregon border and the other, a southern Sierra Nevada population.	<b>No</b> ; the study area is not located within a known current population. The closest known occurrence is approximately 10 miles north of the study area.



**Table 1. Special-Status Species Potentially Occurring in the Study Area**

Special-Status Species	Regulatory Status (Federal/State/ Other)	Habitat Requirements	Potential for Occurrence in the Study Area
Sierra Nevada red fox <i>Vulpes vulpes necator</i>	FC/ST/USFS-S	Coniferous forests above 7,000 feet elevation with open meadows. Prefers meadow complexes interspersed with a variety of forest types for optimum hunting and foraging opportunities. The availability of prey items such as rabbits and rodents limit populations. Fire exclusion is thought to have resulted in dense forests adjacent to meadows.	<b>No</b> ; the study area is not located within the known elevation range of this species; suitable open meadow habitat intermixed with forested habitat is not present.

**Notes**

**Federally Listed Species:**

FE = federal endangered  
FC = candidate  
FT = federal threatened  
PT = proposed threatened  
USFS S = US Forest Service Sensitive  
FPD = proposed for delisting  
DPS = Distinct Population Segment  
FD = delisted  
BCC=Birds of Conservation Concern  
– No designation

**California State Listed Species:**

CE = California state endangered  
CT = California state threatened  
CR = California state rare  
SCC = California Species of Special Concern  
CFP = California fully protected  
SC = State candidate for listing  
CD= delisted  
WL = CDFW watch list  
– No designation

**Other:**

USFS-S: United States Forest Service Sensitive species  
WBWG-H: Western Bat Working Group high priority species  
WBWG-M: Western Bat Working Group medium priority species  
WBWG-L: Western Bat Working Group low priority species

Source: CNDDDB 2019, USFS 2019, USFWS 2019, WBWG 2019, EID 2016

## Special-status Wildlife Species

No populations of special-status wildlife species were identified during the field survey. However, potentially suitable habitat for some special-status wildlife is present in the study area, as noted in Table 1. Foothill yellow-legged frog has a low potential to occur within the study area, though suitable aquatic habitat is present in Bull Creek and there are known populations nearby. The nearest known occurrences are in the South Fork American River approximately 1 mile downstream and 2 miles upstream from its confluence with Bull Creek. Adult foothill-yellow legged frog, juveniles, tadpoles, and egg masses have been found during regular EID monitoring efforts (EID 2017). There are no occurrences in the watershed upstream of Bull Creek, and the nearest occurrences in any adjacent watersheds are more than 2 miles away over steep, rugged terrain.

California spotted owl is known to occur within the study area. USFS has reported a spotted owl activity center in the vicinity of the project site. The active nest successfully fledged two juvenile northern spotted owls' this year (Baron, pers. comm, 2019). CNDDDB spotted owl viewer also shows ten nearby pairs of spotted owls ranging in distance from 0.47 miles of the project site to 1.94 miles of the project site (CDFW 2019). Northern goshawk is also known to be present and has historically nested in the study area as recently as 2018. No goshawks were documented in surveys conducted in 2019 (Yasuda 2019). Lastly, there is low potential for some special-status bats to be roosting in the study area. Acoustic surveys previously completed near Bull Creek have documented the presence of Yuma myotis, fringed myotis, and long-legged myotis in the area (EID 2003). Hoary bat also has potential to occur in the area. Large conifers with snags and/or sloughing bark, and dense foliage provide adequate cover and microhabitats for bats to roost in, however not enough information is known to definitively conclude there is presence of roosting bats within the study area, more information is needed (i.e. emergence surveys). Special-status raptors such as the bald eagle also has a low potential to occur within the study area. There is suitable foraging and nesting habitat for both species, however the nearest occurrences of both species is well over 10 miles from the study area and both prefer large open bodies of water in close proximity of their nest sites.



## Conclusions and Recommendations

No special-status wildlife was observed during the survey however, potential habitat for northern spotted owl, special-status raptors, foothill yellow-legged frog, and special-status bats is present within the project site. Based on the results of the survey and desktop research, it is recommended that EID conducts nesting bird surveys if working during the nesting bird season (March 15 to August 15), avoids construction activity on the access road to the project site during the spotted owl nesting season (February 15 to August 15), conducts bat acoustic and emergence surveys to assess the study area for special-status bats, and avoids working within Bull Creek to avoid impacts to FYLF.

We appreciate this opportunity to assist EID with environmental compliance requirements for this project. If you have any questions, please do not hesitate to call Vanessa Tucker or Kristin Asmus at (916) 414-5800.

Sincerely,

Vanessa Tucker  
Wildlife Biologist



## References

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# **APPENDIX A**

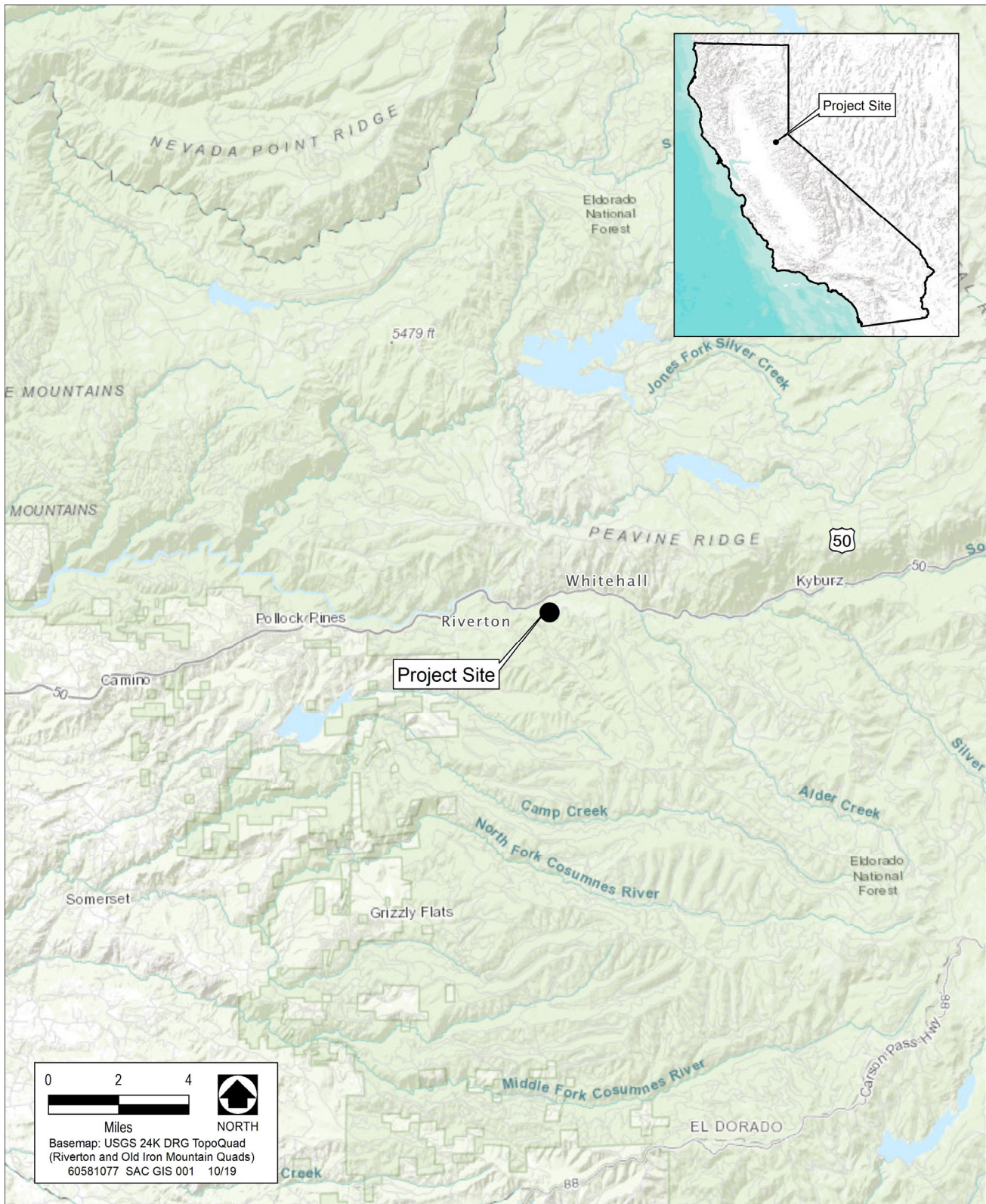
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## Exhibits



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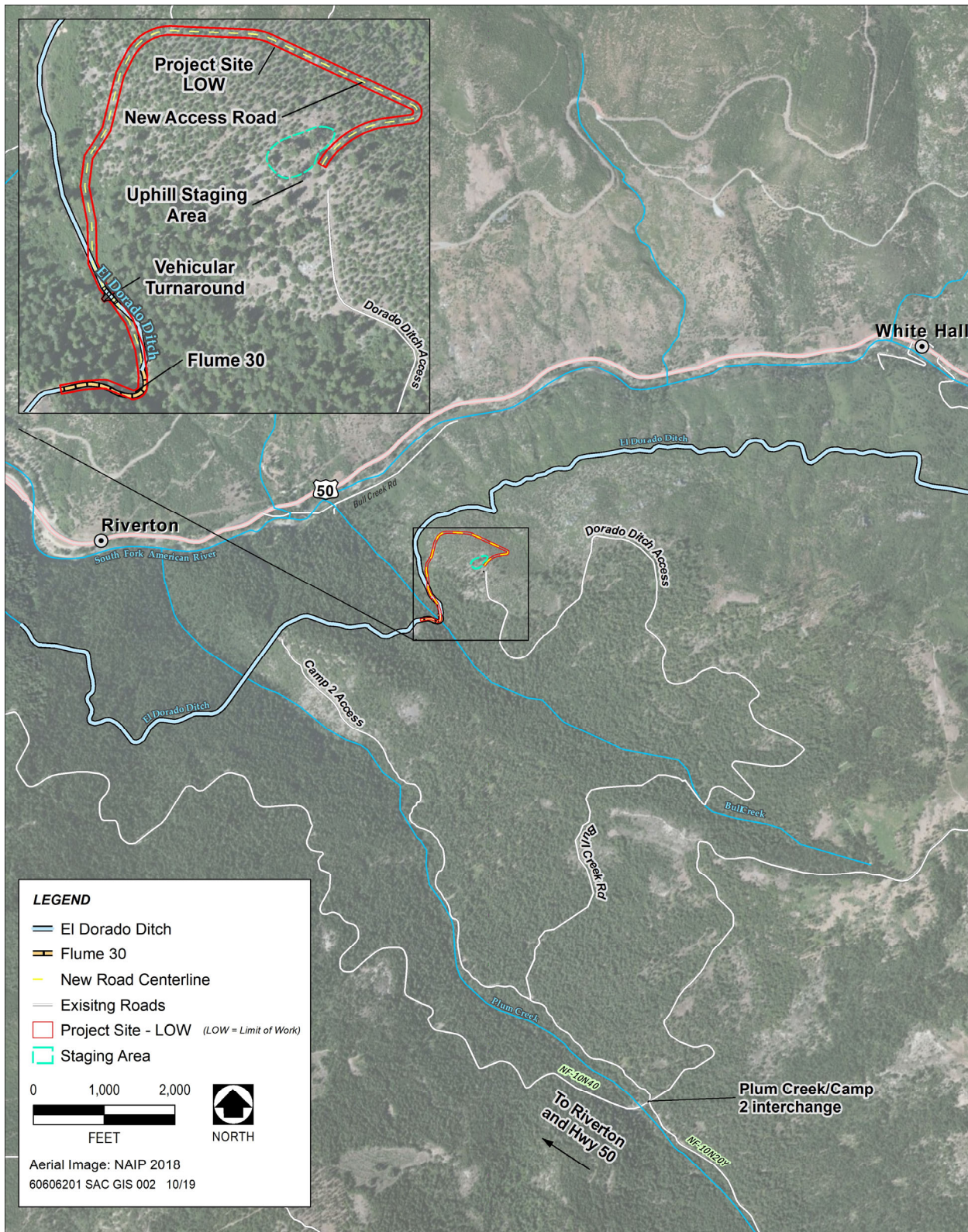




Source: AECOM 2019

## Exhibit 1. Project Location





Source: AECOM 2019

## Exhibit 2. Study Area



## **APPENDIX B**

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### Wildlife Species Observed



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Wildlife Species Observed During the July 12, 2019 Field Survey

Scientific Name	Common Name
<i>Otospermophilus beecheyi</i>	California ground squirrel
<i>Odocoileus hemionus californicus</i>	California Mule deer
<i>Ursus americanus</i>	American black bear (scat)
<i>Urocyon cinereoargenteus</i>	Gray fox (prints, scat, den)
<i>Canis latrans</i>	Coyote (scat)
<i>Sylvilagus auduboni</i>	Cottontail rabbit
<i>Vireo cassinii</i>	Cassin's vireo
<i>Junco hyemalis</i>	dark eyed-junco
<i>Dryocopus pileatus</i>	Pilated woodpecker
<i>Pipilo maculatus</i>	Spotted towhee
<i>Cathartes aura</i>	turkey vulture
<i>Zenaidura macroura</i>	mourning dove
<i>Streptopelia decaocto</i>	Eurasian collared-dove
<i>Haemorhous mexicanus</i>	house finch
<i>Apelocoma californica</i>	California scrub-jay
<i>Tyrannus verticalis</i>	western kingbird
<i>Empidonax difficilis</i>	pacific slope flycatcher
<i>Callipepla californica</i>	California quail
<i>Melospiza crissalis</i>	California towhee
<i>Sayornis nigricans</i>	black phoebe
<i>Spinus tristis</i>	American goldfinch
<i>Thryomanes bewickii</i>	Bewick's wren
<i>Corvus corax</i>	common raven
<i>Setophaga townsendi</i>	Townsend's warbler
<i>Meleagris gallopavo</i>	wild turkey
<i>Sceloporus occidentalis</i>	western fence lizard



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## **APPENDIX D**

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### Wetland Delineation Report







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Wetland Delineation

# El Dorado Irrigation District Flume 30 Replacement Project



Prepared for:  
El Dorado Irrigation District



## El Dorado Irrigation District Flume 30 Replacement Project



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**AECOM**

September 2019



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## ACRONYMS AND ABBREVIATIONS

CWA	Clean Water Act
EID	El Dorado Irrigation District
EPA	Environmental Protection Agency
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
Final Rule	Clean Water Rule: Definition of Waters of the United States
GPS	Global Positioning System
NL	Not Listed
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OBL	Obligate
OHWM	Ordinary High Water Mark
Plan	EID Streamflow and Reservoir Storage Gaging Plan
project	EID Streamgage Installation Project
RPW	Relatively Permanent Water
TNW	Traditional Navigable Water
UPL	Upland
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey



# INTRODUCTION

The El Dorado Irrigation District (EID) contracted with AECOM to conduct biological surveys to assist EID with environmental compliance requirements for the EID Flume 30 Replacement Project (Project). The proposed Project involves replacement of approximately 350 linear feet of elevated and ground-level wooden flume structures at Flume 30 on the El Dorado Canal with reinforced concrete canal, and construction of approximately 2,200 linear feet of new access road.

## PROJECT AND STUDY AREA DESCRIPTION

The Flume 30 Project site is located approximately 0.5 mile south of Highway 50 and 8.5 miles east of Fresh Pond in an unincorporated area of El Dorado County, California (Exhibit 1). The South Fork of the American River is located 0.4 mile to the north. The project site is located in Township 11 north, Range 14 east, Sections 28, 29, and 32 of the United States Geological Survey 7.5-minute Riverton quadrangle (Exhibit 2). The Project site is defined as where construction may occur, and includes Flume 30, a new access road, and an approximately 0.59 acre proposed staging area at the terminus of Forest Road 10-08YE above the Flume and canal bench. The study area for the wetland delineation included the construction footprint plus short lengths of Bull Creek and its riparian corridor up and downstream. (Exhibit 3).

Construction and improvements would consist of demolition and disposal of the existing flume structure, and vegetation removal, grading, and earth-moving within the proposed access road alignment. Prior to placement of the new concrete flume, the Flume 30 support bench will be reconstructed and slightly elevated using a mechanically-stabilized earth retaining wall system and a prefabricated concrete block system. Reinforced concrete canal segments and fill material will be imported from off-site locations. The portion of the study area that will be used for staging and access roads is on federal lands managed by the U.S. Forest Service (Eldorado National Forest). The Flume 30 project site is on EID property.

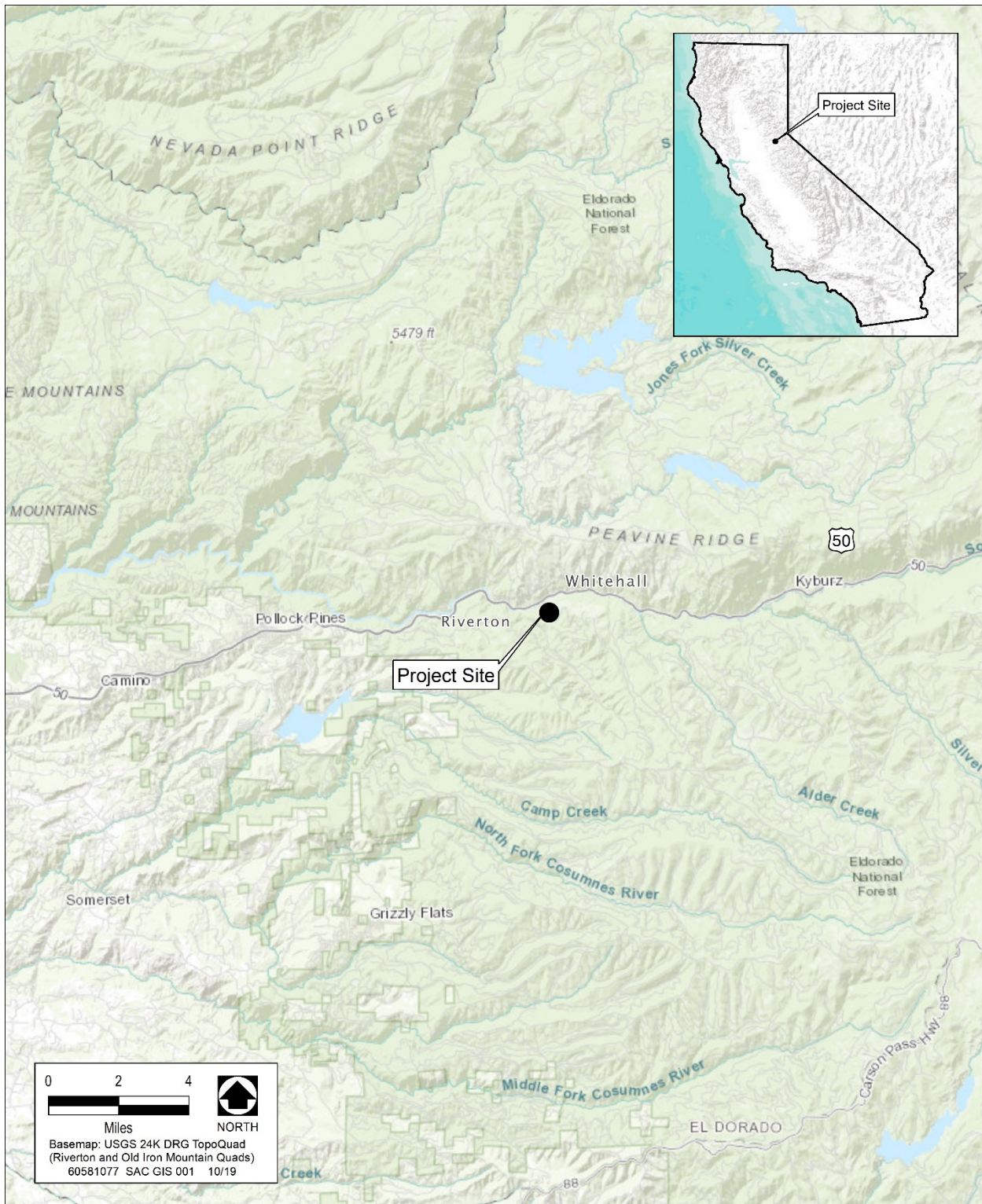
El Dorado County is located within the California Floristic Province, which is characterized by a Mediterranean climate with cool, wet winters and hot, dry summers. Site topography is generally steep with flat topography occurring only on constructed canal benches. Elevation of the study area ranges from approximately 4,000 to 4,200 feet above mean sea level. Bull Creek flows under Flume 30 and is situated on a northwest-facing slope approximately 0.4 miles upslope of the South Fork American River, to which it is a tributary. Soils in the study area consist of Chaix coarse sandy loam, 30 to 75 percent slopes; and McCarthy-Ledmont association (gravelly sandy loam), 2 to 30 percent slopes (NRCS 2019a). Vegetation is characterized primarily by mixed conifer forest habitat with a moderate to dense tree canopy. Surrounding land use is forested land utilized by public and private entities. The study area is located on an easement within U.S. Forest Service Lands (El Dorado National Forest).

The purpose of this report is to provide an accurate quantification and delineation of waters of the United States, including wetlands, as defined by Title 33 of the Code of Federal Regulations Part 328.3 (33 CFR §328.3) and a preliminary determination of U.S. Army Corps of Engineers (USACE) jurisdiction pursuant to the Clean Water Act Section 404 for the Project. This wetland delineation and preliminary jurisdictional determination is considered draft until verified by the Sacramento District of the USACE.



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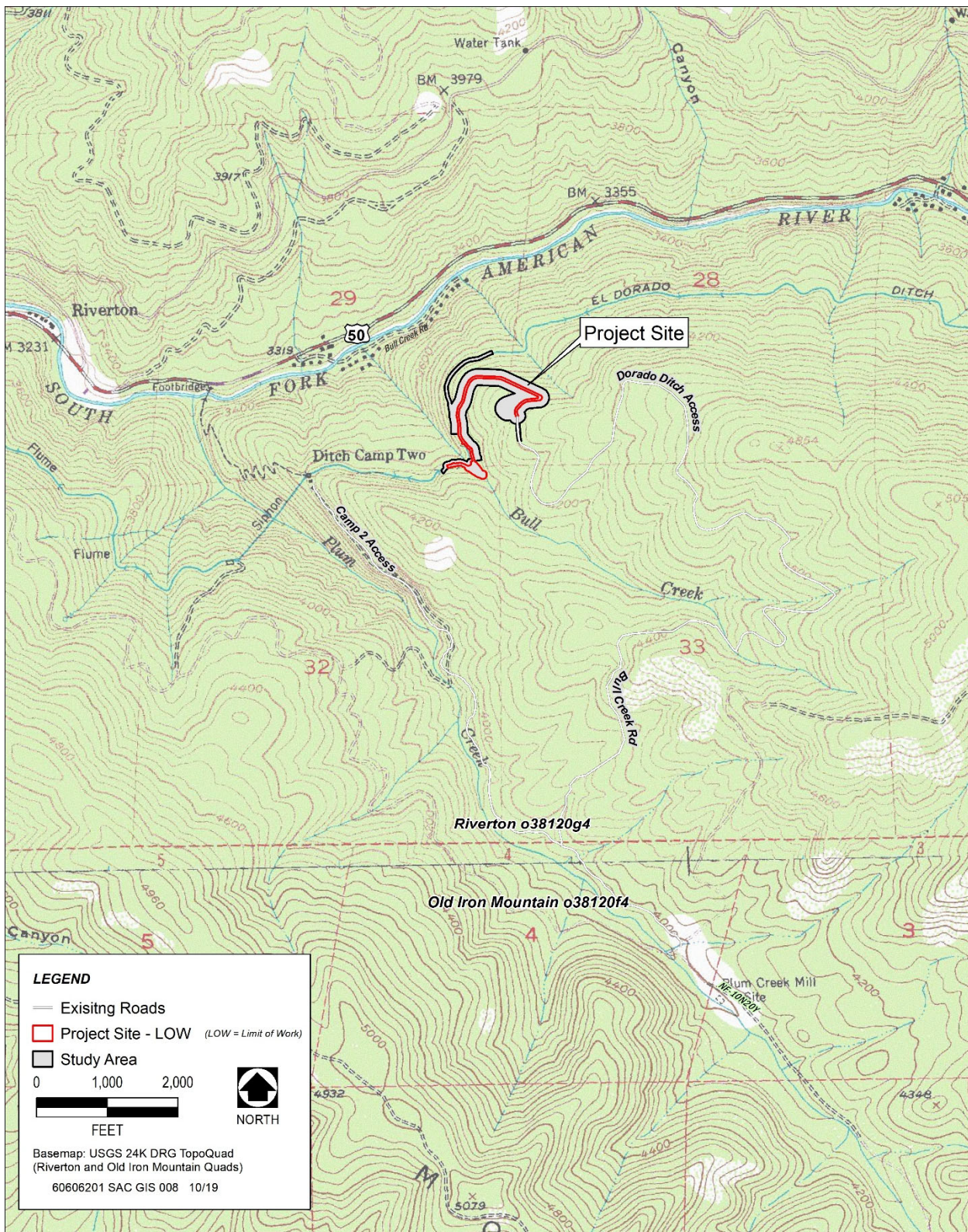
Source: AECOM 2019

**Exhibit 1. Regional Location of the Study Area**



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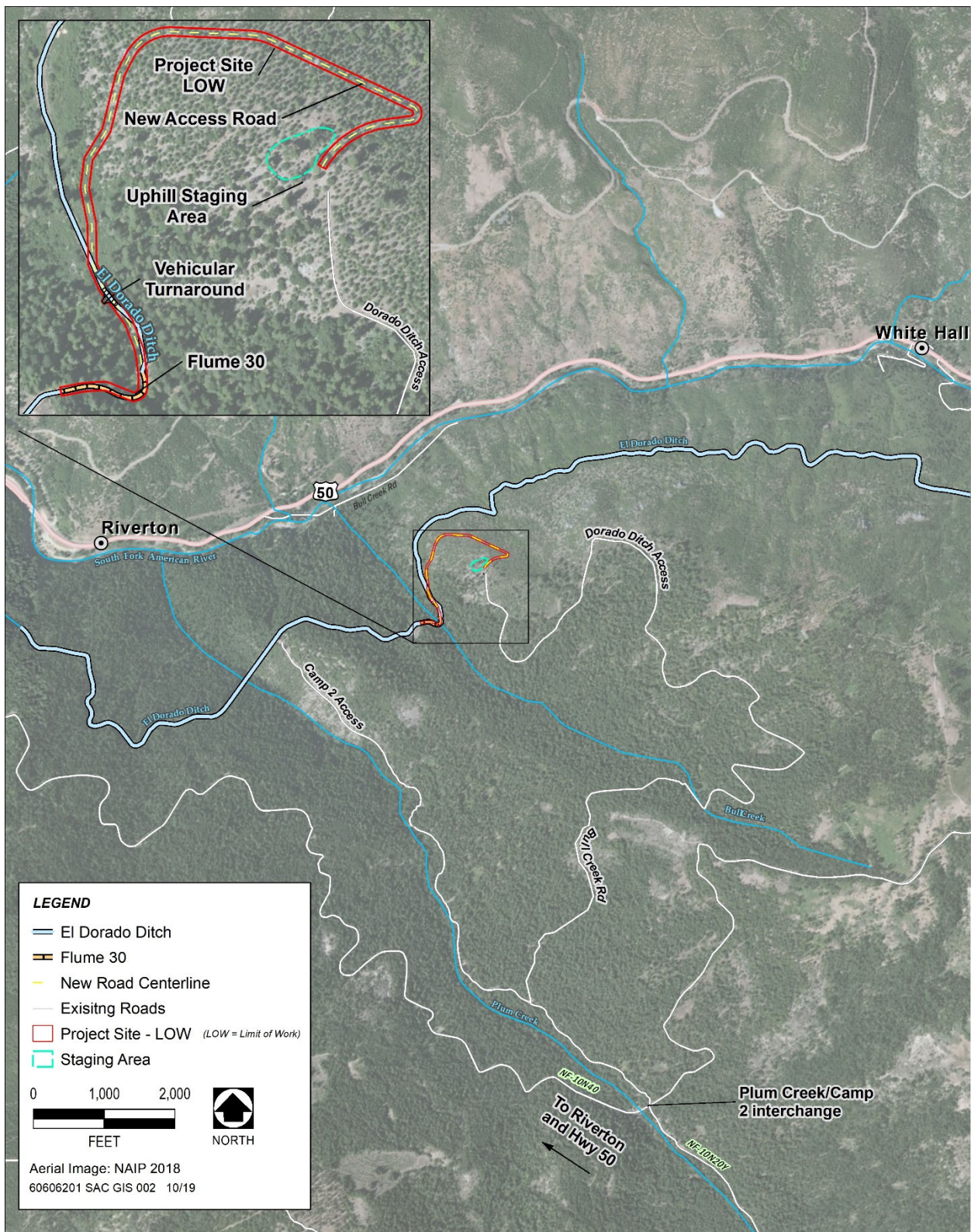
Source: AECOM 2019

## Exhibit 2. Study Area Topography



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Source: AECOM 2019

### Exhibit 3. Study Area and Vicinity Map



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## DELINEATION METHODS

Before conducting the field delineation survey of the study area, an AECOM biologist reviewed color aerial imagery of the study area on Google Earth, National Wetlands Inventory (NWI) data, and the Natural Resources Conservation Service's (NRCS) soil survey of *El Dorado National Forest Area, California* (NRCS Web Soil Survey 2016) to determine areas of potential USACE jurisdiction. The wetland delineation was conducted in the study area on June 19, 2019 by AECOM biologist Kristin Asmus. Aquatic features were mapped and an Ordinary High-Water Mark (OHWM) data form was completed for Bull Creek during this delineation field survey. During the field survey weather conditions were sunny and warm with temperatures in the low to mid 70° Fahrenheit range with winds of 4-14 miles per hour. No measurable precipitation occurred in more than 14 days prior to the field survey. Precipitation in the American River hydrologic region, as measured at Pacific House, was at 149 percent of historic average for the water year overall as of June 30, 2019 (DWR 2019).

The USACE 1987 wetlands delineation manual (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Environmental Laboratory 2010) were used to delineate wetlands that are potentially subject to USACE jurisdiction under Section 404 of the CWA. The 1987 manual and 2010 Western Mountains, Valleys, and Coast Supplement provide technical guidelines and methods for the three-parameter approach to determining the location and boundaries of jurisdictional wetlands. This approach requires that an area support positive indicators of hydrophytic vegetation, hydric soils, and wetland hydrology to be considered a jurisdictional wetland. Potential jurisdictional areas were identified and mapped in the field and later digitized onto aerial imagery. Any sample point locations were recorded digitally using a global positioning system (GPS) data logger (Trimble XH) and imported onto an electronic version of the aerial photograph. GPS data were recorded in North American Datum of 1983.

Waters of the United States were delineated based on the OHWM. A drainage feature's OHWM typically corresponds with characteristics such as shelving, scour lines, and other natural linear features which define the bed and bank portion of the channel that floods under normal conditions (USACE 2005). In addition, any potentially jurisdictional areas were evaluated in terms of their status as a navigable waterway or their adjacency or hydrological connection to a navigable waterway. An OHWM data form was completed for one aquatic resource, Bull Creek, and is provided in Appendix A.

The soil survey of Eldorado National Forest Area (NRCS 2019a) was consulted to identify soil units mapped in the study area by the Natural Resources Conservation Service and these soils were cross referenced to The National Hydric Soils List (NRCS 2019b) to determine if any of the mapped soil units are listed as hydric.

The *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* was consulted to aid the preliminary determination that an area would be subject to USACE jurisdiction under CWA Section 404 (USACE 2007). The significant nexus test—outlined in a memorandum jointly authored by the U.S. Environmental Protection Agency (EPA) and USACE—was applied to each potentially jurisdictional habitat type (Grumbles and Woodley 2008). To facilitate jurisdictional determination consistent with the guidance, each water body delineated was evaluated as a Traditional Navigable Water (TNW), Relatively Permanent Water (RPW), or non-RPW based on the following definitions:



- ▶ *TNWs*—all waters subject to the ebb and flow of the tide, or waters that are presently used, have been used in the past, or may be used in the future to transport interstate or foreign commerce, and all waters that are navigable in fact under federal law for any purpose
- ▶ *RPWs*—waters that flow continuously at least seasonally (typically at least 3 months of the year) and are not *TNWs*
- ▶ *Non-RPWs*—waters that do not have continuous flow at least seasonally

The following types of water bodies are subject to CWA jurisdiction:

- ▶ all *TNWs* and adjacent wetlands,
- ▶ relatively permanent tributaries of *TNWs* and wetlands with a continuous surface connection to such tributaries, and
- ▶ Non-relatively permanent tributaries of *TNWs*.

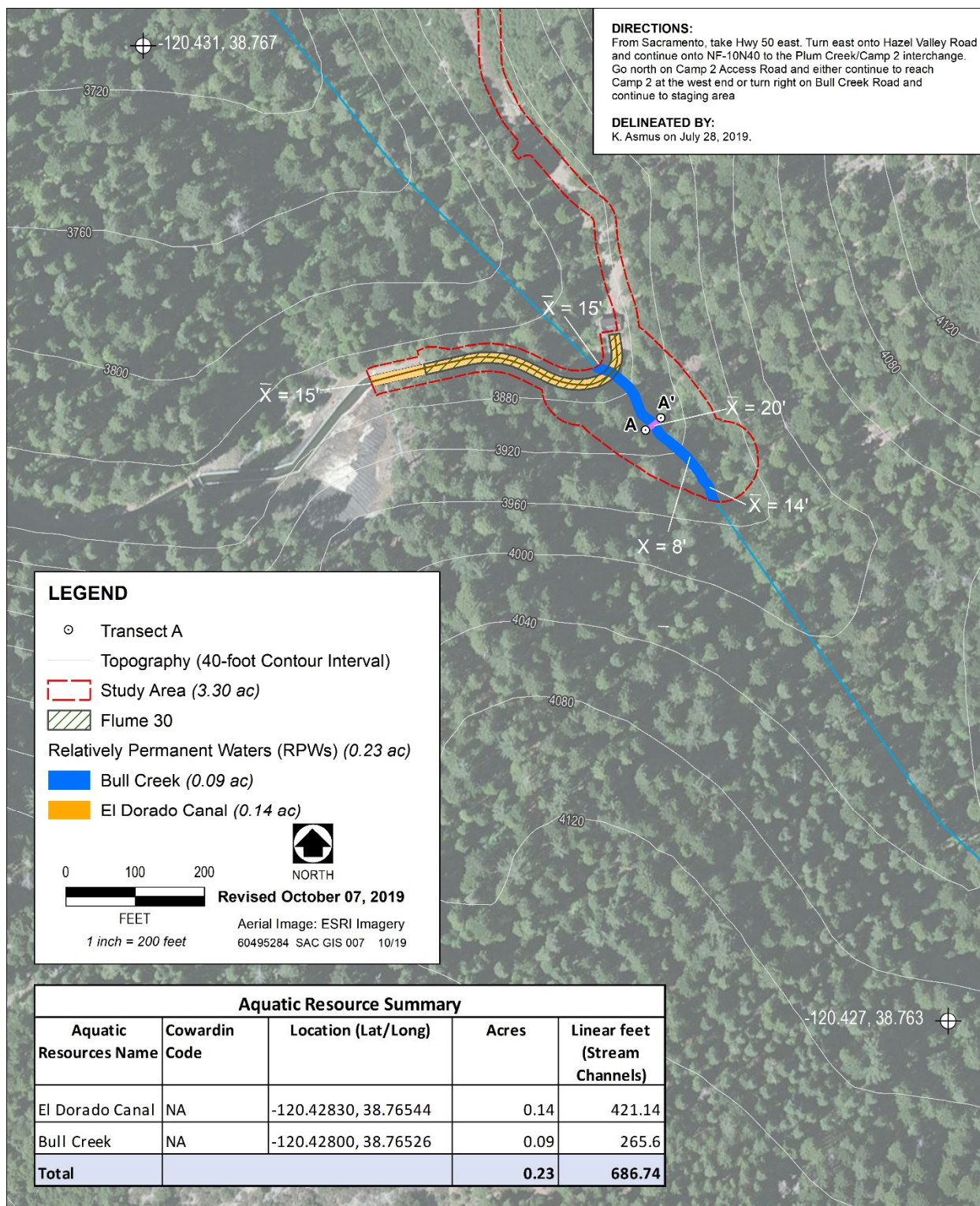
## SOIL SURVEY RESULTS

According to the Web Soil Survey (NRCS 2019a), soils within the study area belong to the Chaix coarse sandy loam, 30 to 75 percent slopes and the McCarthy-Ledmount association, 2 to 30% slopes. These soils are not included on the National Hydric Soils List (NRCS 2015). The locations of the soil units within the study area, as mapped by NRCS, are depicted on the soils map (Appendix B, Exhibit B-1).

The Chaix soil series consist of moderately deep, somewhat excessively drained soils that formed in material weathered from acid intrusive igneous rock, mainly granite or granodiorite. These soils are on mountain slopes at elevations of 1,200 to 6,500 feet. These soils become dry in all parts at a depth of 10 to 30 inches sometime in June or the first few days in July and remain dry until October. These soils are classified as coarse-loamy, mixed, superactive, mesic Typic Dystrocherepts.

The McCarthy-Ledmount association comprises roughly 60% McCarthy series and 30% Ledmount series. The McCarthy series consists of moderately deep, well drained soils formed in material weathered from andesitic mudflows. The texture is sandy loam or loam throughout and may be gravelly or cobbly. These soils are classified as medial-skeletal, amorphic, mesic Humic Haploxerands. The Ledmount, series consists of shallow, well to somewhat excessively drained soils formed in material weathered from andesitic tuff breccia. Outcrops of breccia are common. The texture is sandy loam to gravelly sandy loam. These soils are classified as medial, amorphic, mesic Lithic Haploxerands.





Source: AECOM 2019

#### Exhibit 4. Wetland Delineation Map



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## DELINEATION RESULTS

Bull Creek was the only aquatic resource delineated in the study area and it is depicted on the wetland delineation map, Exhibit 5. The ordinary high-water mark data form is provided in Appendix A. Habitat descriptions for waters of the United States and nonjurisdictional habitats are included below; a habitat map is provided in Appendix B (Exhibit B-2). Representative photographs of habitat types described below are provided in Appendix C and a list of plant species observed during the field survey is provided in Appendix D. A copy of the aquaticresources excel table listing all potentially jurisdictional features, their Cowardin classification code, HGM code, linear feet within the study area, water type, and latitude and longitude is provided in Appendix E.

## JURISDICTIONAL HABITAT TYPES

A total of 0.23 acres of potentially jurisdictional waters of the United States are present within the study area (Table 1). The study area contains approximately 0.40 acres of RPW in the El Dorado Canal and Bull Creek.

<b>Table 1. Potentially Jurisdictional Features</b>	
<b>Waters of the United States</b>	<b>Acres</b>
<b>Relatively Permanent Waters (RPW)</b>	<b>0.23</b>
El Dorado Canal	0.14
Bull Creek	0.09
<b>Total Potentially Jurisdictional Features</b>	<b>0.23</b>

Source: Data compiled by AECOM in 2019

## WATERS OF THE UNITED STATES

### Relatively Permanent Waters

RPWs are tributaries to TNWs that typically have continuous flow for at least 3 months of the year. These features meet the criteria of waters of the United States and are likely subject to USACE jurisdiction under Section 404 of the CWA. RPWs in the study area consist of approximately 421.14 linear feet of the El Dorado Canal and 265.6 linear feet of Bull Creek. Bull Creek was delineated based on its OHWM. The El Dorado Canal was delineated based on “bank-full” width.

The El Dorado Canal is a primarily gunite/concrete-lined earthen canal that was created in uplands to divert water from the South Fork American River for consumptive water supply and hydroelectric power generation. Water is diverted from the South Fork American River into the canal near Kyburz and tailwater is discharged back into the South fork American River at the El Dorado Powerhouse. The canal follows a contour of the north- to northeast-facing slopes approximately 0.40 mile above the South Fork American River and flows east to west roughly parallel to the river. In some areas, the canal is conveyed through wooden flume structures and some stretches are encased underground. The canal is approximately 15 feet wide at bank-full width and up to 10 feet deep. The canal is dewatered at least once annually for maintenance. Because the canal is lined and maintained, it is unvegetated. Approximately 0.14 acre of the canal is present in the study area.



Bull Creek flows in a west- northwesterly direction from its headwaters approximately 1.25 miles upslope of the study area. Bull Creek is directly tributary to the South Fork American River less than half a mile downslope of the study area. This stream has a v-shaped, bedrock channel with large boulders and cobble and contains a low terrace with some fine sand. There are also a few natural waterfalls and step pools. At the time of this field delineation survey, surface water ranged between four to six inches deep in Bull Creek. Approximately 0.09 acre of Bull Creek is present in the study area. The average width of its OHWM is 15 feet, but it ranges from 8 feet to 20 feet in width. The creek is supported by groundwater sources and surface runoff.

The channel is mostly unvegetated, and high flows appear to preclude establishment of much vegetation. There is no marsh or floating aquatic vegetation present within the creek. Channel banks are characterized by moss-covered rocks and ferns, including brittle fern (*Cystopteris fragilis*) (FACU) and Sierra Nevada maiden fern (*Thelypteris nevadensis*) (FAC). Occasional trees and shrubs are rooted within the OHWM, including white alder (*Alnus rhombifolia*) (FACW) and American dogwood (*Cornus sericea*) (NL). A few herbaceous species adapted to mesic conditions are present such as western rush (*Juncus occidentalis*) (FACW), Lemmon's wild ginger (*Asarum lemmonii*) (OBL), crimson columbine (*Aquilegia formosa*) (FAC), and miner's lettuce (*Claytonia perfoliata*) (FAC).

Riparian vegetation within the Bull Creek corridor contains the same mixed conifer overstory species as the upper banks and is characterized by Ponderosa pine (*Pinus ponderosa*) (FACU), incense cedar (*Calocedrus decurrens*) (NL), Douglas fir (*Pseudotsuga menziesii*) (FACU), mountain dogwood (*Cornus nuttallii*) (FACU), American dogwood (NL), and big leaf maple (*Acer macrophyllum*) (FACU) and also includes occasional white alder (*Alnus rhombifolia*) (FACW) with a sparse understory of thimbleberry (*Rubus parviflorus*) (FACU), wild rose (*Rosa gymnocarpa*) (FACU), hazelnut (*Corylus cornuta*) (FACU), and dogwood. The Ponderosa pine-incense cedar forest habitat found on the creek banks is described in further detail under Nonjurisdictional Habitats below

Bull Creek may be classified, according to the Cowardin Classification System (Cowardin 1979), as intermittent streambed system with rock bottom composed of rubble (stones and boulders in combination with bedrock cover 75% or more of the surface). El Dorado Canal and Bull Creek were delineated as RPW features potentially subject to USACE jurisdiction under Section 404 of the CWA because they have an OHWM, support continuous uninterrupted flow for a portion of the year, and are hydrologically connected to a TNW (i.e., the South Fork American River). This delineation and preliminary jurisdictional determination is considered draft until verified by the USACE.

## NONJURISDICTIONAL HABITATS

A total of approximately 3.84 acres of nonjurisdictional upland habitat consisting of mixed conifer forest, deerbrush shrubland, and annual brome grassland are present in the study area (Table 2). All three of these habitat types within the study area are also associated with moderate levels of human disturbance, including access roads, water conveyance structures (in addition to El Dorado Canal), and maintenance facilities that comprise the developed land cover type. These habitats are determined to be nonjurisdictional because they are not dominated by hydrophytic vegetation, do not have indicators of wetland hydrology or hydric soils, and/or are located outside an OHWM.



<b>Table 2. Nonjurisdictional Habitats</b>	
<b>Upland Habitat Types</b>	<b>Acres</b>
Mixed Conifer Forest	3.50
Annual Brome Grassland	0.15
Deerbrush Shrubland	0.18
Developed Land	0.01
<b>Total Nonjurisdictional Features</b>	<b>3.84</b>

Source: Data compiled by AECOM in 2019

## Mixed Conifer Forest

The majority of the study area is characterized by mixed conifer forest habitat (3.5 acres) that is best described as a *Pinus ponderosa-Calocedrus decurrens* forest alliance according to the Manual of California Vegetation (Sawyer et al., 2009). Ponderosa pine and incense cedar are codominant in the tree canopy. Other tree species present include white fir (*Abies concolor*), Douglas fir, black oak (*Quercus kelloggii*), canyon live oak (*Quercus chrysolepis*), interior live oak (*Quercus wislizeni*), and big-leaf maple. Associate shrub species include mountain dogwood (*Cornus nuttallii*), deerbrush (*Ceanothus integerrimus*), American dogwood, American hazelnut (*Corylus cornuta*), thimbleberry (*Rubus parviflorus*), Sierra gooseberry (*Ribes roezlii*), mountain misery (*Chamaebatia foliolosa*), and creeping snowberry (*Symphoricarpos mollis*).

The tree canopy of this community is dense and a thick layer of duff carpets the ground. The herbaceous layer therefore consists of sparse cover of grasses and forbs. Commonly observed herbaceous species include Sierra starflower (*Lysimachia latifolia*), mountain sweet cicely (*Osmorhiza berteroi*), trail plant (*Adenocaulon bicolor*), and feathery false lily of the valley (*Mainantheum recemosum*).

## Deerbrush Shrubland

Deerbrush chaparral is mapped within the western portion of the proposed access road (0.18 acres). This habitat is best described as *Ceanothus integerrimus* shrubland alliance according to the Manual of California Vegetation (CNPS 2019b). The shrub canopy is continuous in this habitat, with greater than 50 percent relative cover of deerbrush and a sparse to intermittent herbaceous layer. Other shrubs present include green leaf manzanita (*Arctostaphylos patula*) and creeping snowberry. Emergent trees are present at low cover, including ponderosa pine, canyon live oak, and interior live oak. Small openings in the shrub layer are present in patches on steep, west-facing slopes where trees or shrubs have fallen, and are dominated by mountain phacelia (*Phacelia hastata*) and large-flowered woolly sunflower (*Eriophyllum lanatum* var. *grandiflorum*).

## Annual Brome Grassland

Approximately 0.15 acres of the proposed project site have been previously disturbed and are dominated by annual grassland vegetation. The vegetation in these areas is best described as a *Bromus (diandrus, hordeaceus, madritensis)* herbaceous alliance according to the Manual of California Vegetation (Sawyer et al., 2009). This habitat is mapped within the proposed staging area and along the western portion of the proposed access road, and is associated with existing forest access roads and EID water conveyance infrastructure. The staging area is located at the terminus of Forest Road 10-08YE and consists of disturbed gravel substrate and a sparse layer of



herbaceous species dominated by nonnative annual grasses and a few native forbs. Dominant species include softchess brome (*Bromus hordeaceus*), cheatgrass (*Bromus tectorum*), bristly dogtail grass (*Cynosurus echinatus*), barbed goatgrass (*Aegilops triuncialis*), field hedge parsley (*Torilis arvensis*), Torrey's monkeyflower (*Diplacus toreyi*), whiskerbrush (*Leptosiphon ciliatus*), tiny trumpet (*Collomia linearis*), and white-flowered hawkweed (*Hieracium albiflorum*).



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## **APPENDIX A**

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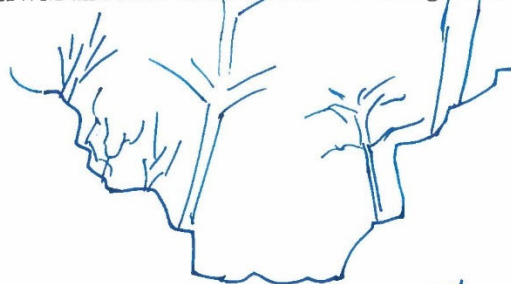
### Ordinary High Water Mark Data Form



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**Transect (cross-section) drawing:** (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



60'-70'  
Douglas fir dominant forest  
Big leaf maple  
Cornus, Rosa  
Ferns

20' - 25' average 15'  
OHWM @ cross section is ~20'

Section is between water diversion for streamflow gauge & flume

**Break in Slope at OHWM:** ☒ Sharp ( $> 60^\circ$ ) | ☐ Moderate ( $30-60^\circ$ ) | ☐ Gentle ( $< 30^\circ$ ) | ☐ None  
Notes/Description:

**Sediment Texture:** Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 - 2mm	Gravel 2mm - 1cm	Cobbles 1 - 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	<5	<5	<5	20	25	Yes
Below OHWM	0	0	<5	20	55	No

Notes/Description: ~~As noted in Leamy/Duffy~~ Some gravel probably mixed clay further from stream. Near bedrock

**Vegetation:** Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	65	40	30	70
Below OHWM	5	10	5	95

Notes/Description:

**Other Evidence:** List/describe any additional field evidence and/or lines of reasoning used to support your delineation

Undercut bank, exposed tree roots; vertical bank



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## **APPENDIX B**

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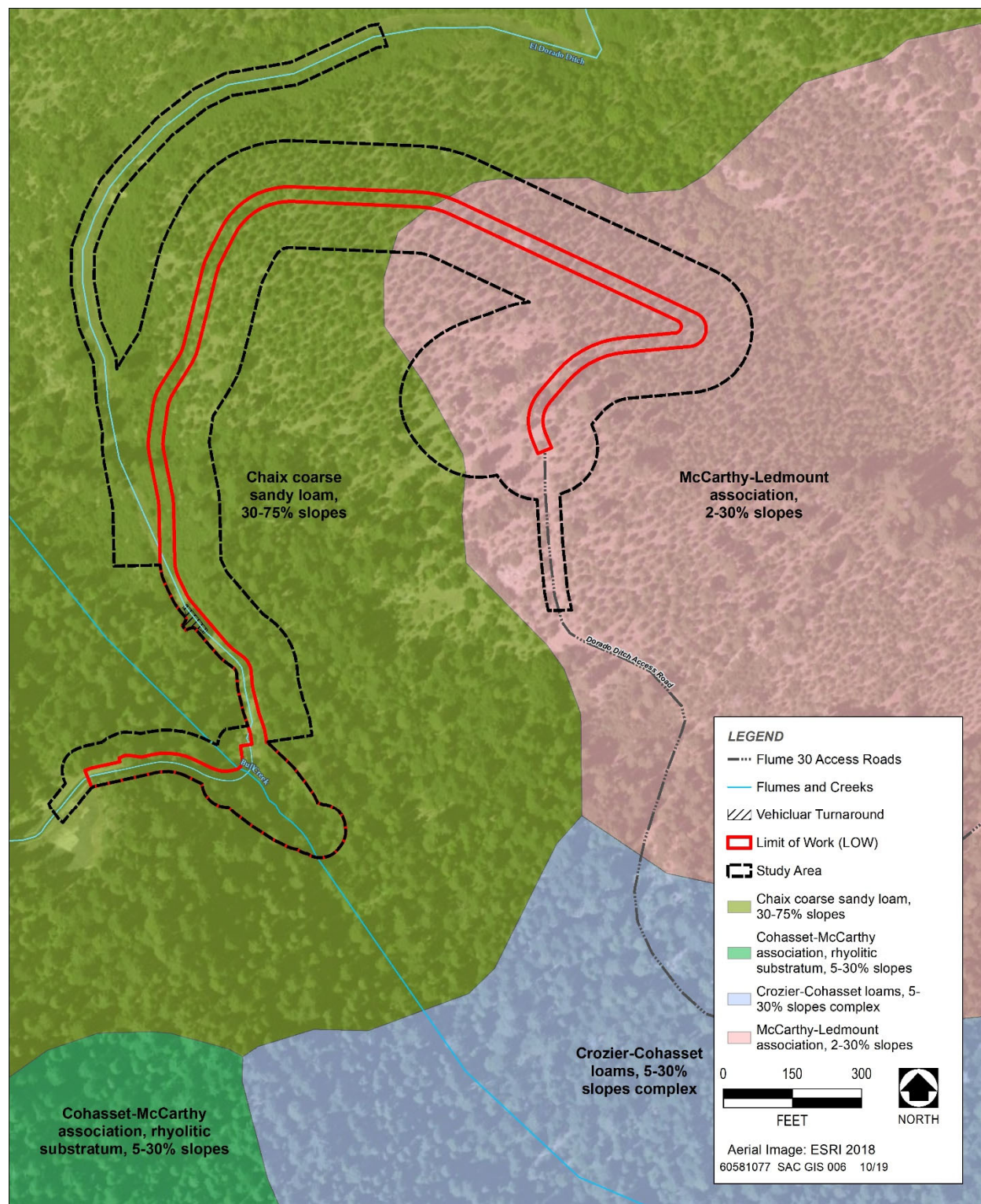
Additional Exhibits



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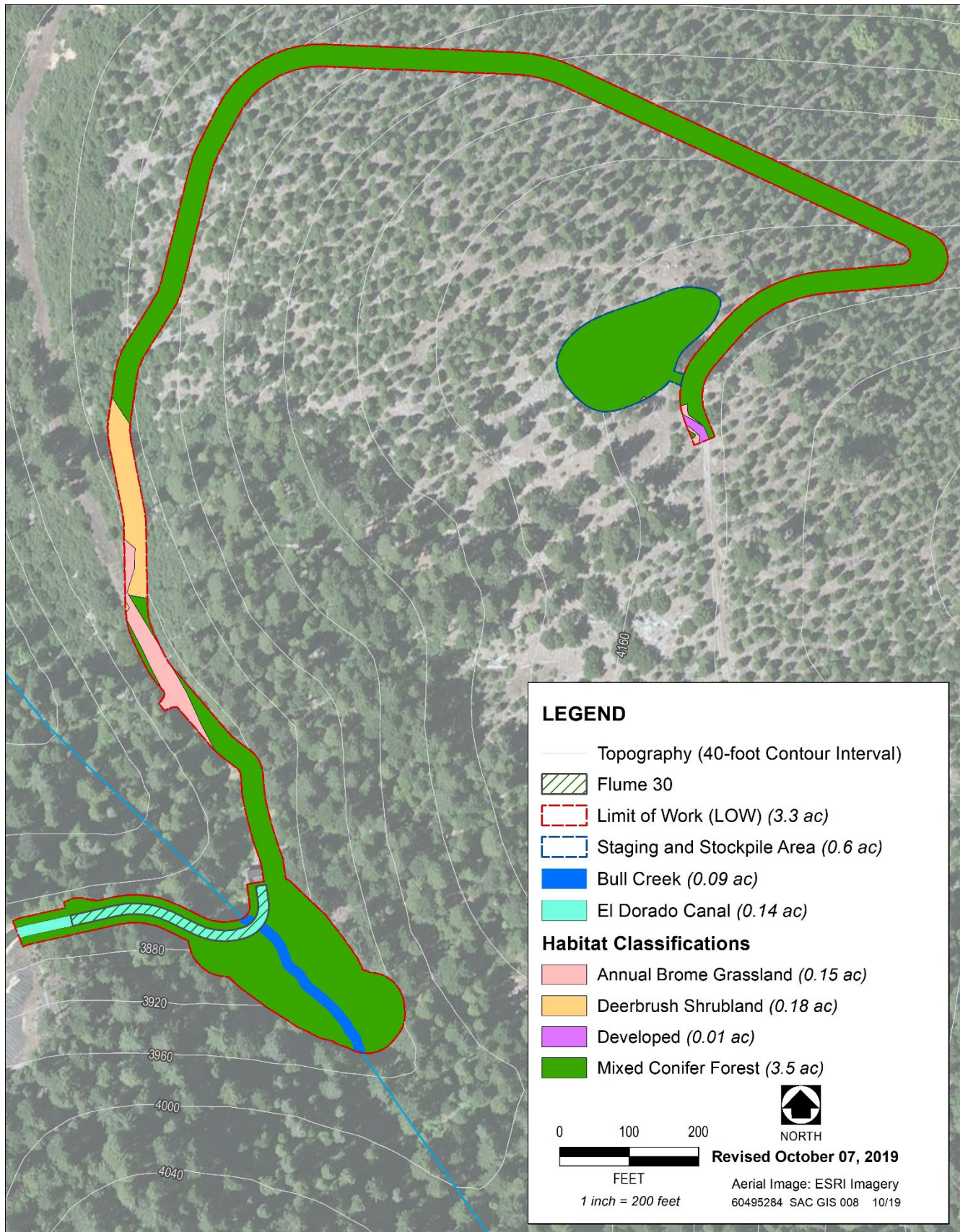


# Exhibit B1. Soils Map





## Exhibit B1. Habitat Map





## **APPENDIX C**

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### Representative Photographs



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El Dorado Canal at Bull Creek crossing. The Spillway 20 building is seen in the background.



Bull Creek looking downstream to Flume 30.

## Appendix C Flume 30 Wetland Delineation Representative Photographs





Bull Creek as it flows under Flume 30.

## Appendix C Flume 30 Wetland Delineation Representative Photographs





Bull Creek streamguage and diversion pipe.

## Appendix C Flume 30 Wetland Delineation Representative Photographs



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## **APPENDIX D**

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Plant Species Observed



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<b>Table D-1 Plant Species Observed in the EID Flume 30 Project Study Area during June and July 2019</b>			
<b>Family</b>	<b>Scientific Name</b>	<b>Common Name</b>	<b>Indicator Status</b>
Agavaceae	<i>Chlorogalum pomeridianum</i> var. <i>pomeridianum</i>	wavyleaf soap plant	NL
Apiaceae	<i>Osmorhiza berteroi</i>	mountain sweet cicely	FACU
Apiaceae	<i>Torilis arvensis</i>	field hedge parsley	NL
Aristolochiaceae	<i>Asarum caudatum</i>	creeping wild ginger	FAC
Aristolochiaceae	<i>Asarum hartwegii</i>	Hartweg's wild ginger	NL
Aristolochiaceae	<i>Asarum lemmonii</i>	Lemmon's wild ginger	OBL
Asteraceae	<i>Adenocaulon bicolor</i>	trail plant	NL
Asteraceae	<i>Agoseris retrorsa</i>	spearleaf mountain dandelion	NL
Asteraceae	<i>Anaphalis margaritacea</i>	pearly everlasting	FACU
Asteraceae	<i>Artemisia douglasiana</i>	mugwort	FACW
Asteraceae	<i>Cirsium vulgare</i>	bull thistle	FACU
Asteraceae	<i>Eriophyllum lanatum</i> var. <i>grandiflorum</i>	large-flowered woolly sunflower	NL
Asteraceae	<i>Hieracium albiflorum</i>	white flowered hawkweed	NL
Asteraceae	<i>Hypochaeris radicata</i>	rough cat's ear	FACU
Asteraceae	<i>Lactuca serriola</i>	prickly lettuce	FACU
Asteraceae	<i>Leucanthemum vulgare</i>	ox-eye daisy	UPL
Asteraceae	<i>Madia exigua</i>	small tarweed	NL
Asteraceae	<i>Madia glomerata</i>	mountain tarweed	FACU
Asteraceae	<i>Pseudognaphalium thermale</i>	small headed cudweed	NL
Asteraceae	<i>Sonchus asper</i>	spiny leaf sow-thistle	FAC
Asteraceae	<i>Tragopogon dubius</i>	yellow salsify	NL
Betulaceae	<i>Alnus rhombifolia</i>	white alder	FACW
Betulaceae	<i>Corylus cornuta</i>	beaked hazelnut	FACU
Boraginaceae	<i>Draperia systyla</i>	violet draperia	NL
Boraginaceae	<i>Hydrophyllum occidentale</i>	western waterleaf	FACW
Boraginaceae	<i>Nemophila heterophylla</i>	variable-leaved nemophila	NL
Boraginaceae	<i>Phacelia cicutaria</i>	caterpillar phacelia	NL
Boraginaceae	<i>Phacelia hastata</i>	mountain phacelia	NL
Boraginaceae	<i>Phacelia heterophylla</i> var. <i>virgata</i>	varied leaf phacelia	FACU
Boraginaceae	<i>Plagiobothrys nothofulvus</i>	rusty popcorn flower	FAC



<b>Table D-1 Plant Species Observed in the EID Flume 30 Project Study Area during June and July 2019</b>			
<b>Family</b>	<b>Scientific Name</b>	<b>Common Name</b>	<b>Indicator Status</b>
Brassicaceae	<i>Erysimum capitatum</i> var. <i>capitatum</i>	wallflower	NL
Campanulaceae	<i>Asyneuma prenanthioides</i>	California harebell	NL
Caprifoliaceae	<i>Symphoricarpos mollis</i>	creeping snowberry	FACU
Carssulaceae	<i>Sedum spathulifolium</i>	Pacific stonecrop	NL
Caryophyllaceae	<i>Cerastium glomeratum</i>	mouse ear chickweed	FACU
Caryophyllaceae	<i>Silene invisa</i>	short-petaled campion	NL
Caryophyllaceae	<i>Silene laciniata</i> ssp. <i>californica</i>	California Indian pink	NL
Cornaceae	<i>Cornus nuttallii</i>	mountain dogwood	FACU
Cornaceae	<i>Cornus sericea</i>	American dogwood	NL
Cupressaceae	<i>Calocedrus decurrens</i>	incense cedar	NL
Cyperaceae	<i>Carex bolanderi</i>	Bolander's sedge	FAC
Cyperaceae	<i>Carex frakta</i>	fragile-sheathed sedge	FAC
Dennstaedtiaceae	<i>Pteridium aquilinum</i>	Western brackenfern	FACU
Ericaceae	<i>Arctostaphylos patula</i>	green leaf manzanita	NL
Ericaceae	<i>Pyrola aphylla</i>	leafless wintergreen	NL
Fabaceae	<i>Acmispon americanus</i>	Spanish clover	UPL
Fabaceae	<i>Acmispon glaber</i>	deerweed	NL
Fabaceae	<i>Acmispon nevadensis</i>	Sierra lotus	NL
Fabaceae	<i>Acmispon parviflorus</i>	hill lotus	NL
Fabaceae	<i>Lathyrus nevadensis</i>	Sierra pea	NL
Fabaceae	<i>Lupinus adsurgens</i>	Drew's silky lupine	NL
Fabaceae	<i>Lupinus latifolius</i>	broad-leaf lupine	FACW
Fabaceae	<i>Trifolium breweri</i>	Brewer's clover	NL
Fabaceae	<i>Trifolium hirtum</i>	rose clover	NL
Fabaceae	<i>Vicia americana</i>	American purple vetch	FAC
Fagaceae	<i>Quercus chrysolepis</i>	canyon live oak	NL
Fagaceae	<i>Quercus kelloggii</i>	California black oak	NL
Fagaceae	<i>Quercus wislizeni</i>	interior live oak	NL
Grossulariaceae	<i>Ribes roezlii</i>	Sierra gooseberry	NL
Hypericaceae	<i>Hypericum scouleri</i>	Scouler's St. John's-wort	FACW



<b>Table D-1 Plant Species Observed in the EID Flume 30 Project Study Area during June and July 2019</b>			
<b>Family</b>	<b>Scientific Name</b>	<b>Common Name</b>	<b>Indicator Status</b>
Hypericaceae	<i>Hypericum perforatum</i>	Common St. John's-wort	FACU
Iridaceae	<i>Iris hartwegii</i>	Hartweg's iris	FACU
Juncaceae	<i>Juncus saximontanus</i>	Rocky Mountain rush	FACW
Juncaceae	<i>Juncus occidentalis</i>	western rush	FACW
Juncaceae	<i>Luzula comosa</i>	Pacific woodrush	FAC
Liliaceae	<i>Fritillaria affinis</i>	checker lily	NL
Liliaceae	<i>Lilium washingtonianum</i> ssp. <i>washingtonianum</i>	typical Washington lily	NL
Liliaceae	<i>Prosartes hookeri</i>	drops of gold	NL
Montiaceae	<i>Claytonia parviflora</i> ssp. <i>parviflora</i>	narrow-leaved miner's lettuce	FACU
Montiaceae	<i>Claytonia perfoliata</i>	miner's lettuce	FAC
Montiaceae	<i>Claytonia rubra</i> ssp. <i>depressa</i>	red-stemmed spring beauty	NL
Myrsinaceae	<i>Lysimachia latifolia</i>	Pacific starflower	FAC
Onagraceae	<i>Clarkia rhomboidea</i>	diamond petaled clarkia	NL
Onagraceae	<i>Clarkia unguiculata</i>	woodland clarkia	NL
Orchidaceae	<i>Corallorhiza maculata</i>	spotted coralroot	UPL
Orchidaceae	<i>Piperia transversa</i>	mountain piperia	NL
Orchidaceae	<i>Piperia unalescens</i>	Alaska rein orchid	FACU
Phrymaceae	<i>Diplacus torreyi</i>	Torrey's monkeyflower	NL
Pinaceae	<i>Abies concolor</i>	white fir	NL
Pinaceae	<i>Pinus ponderosa</i>	ponderosa pine	FACU
Pinaceae	<i>Pseudotsuga menziesii</i>	Douglas fir	FACU
Plantaginaceae	<i>Plantago lanceolata</i>	English plantain	FACU
Poaceae	<i>Aegilops triuncialis</i>	goatgrass	NL
Poaceae	<i>Aira caryophyllea</i>	silvery hairgrass	FACU
Poaceae	<i>Avena barbata</i>	slim oat	NL
Poaceae	<i>Bromus carinatus</i> var. <i>carinatus</i>	California brome	NL
Poaceae	<i>Bromus diandrus</i>	ripgut brome	NL
Poaceae	<i>Bromus hordeaceus</i>	soft chess brome	FACU
Poaceae	<i>Bromus laevipes</i>	Chinook brome	NL
Poaceae	<i>Bromus tectorum</i>	cheatgrass	NL



<b>Table D-1 Plant Species Observed in the EID Flume 30 Project Study Area during June and July 2019</b>			
<b>Family</b>	<b>Scientific Name</b>	<b>Common Name</b>	<b>Indicator Status</b>
Poaceae	<i>Cynosurus echinatus</i>	bristly dogtail grass	NL
Poaceae	<i>Elymus glaucus</i>	blue wildrye	FACU
Poaceae	<i>Elymus triticoides</i>	beardless wildrye	FAC
Poaceae	<i>Festuca microstachys</i>	small fescue	NL
Poaceae	<i>Festuca myuros</i>	rattail six-weeks grass	FACU
Poaceae	<i>Festuca occidentalis</i>	western fescue	FACU
Poaceae	<i>Melica californica</i>	California melic	NL
Poaceae	<i>Poa pratensis</i>	Kentucky blue grass	FAC
Poaceae	<i>Poa secunda ssp. secunda</i>	pine bluegrass	FACU
Polemoniaceae	<i>Collomia grandiflora</i>	large-flowered collomia	NL
Polemoniaceae	<i>Collomia linearis</i>	tiny trumpet	FACU
Polemoniaceae	<i>Gilia capitata ssp. mediomontana</i>	blue field gilia	NL
Polemoniaceae	<i>Leptosiphon ciliatus</i>	whiskerbrush	NL
Polygalaceae	<i>Polygala cornuta</i>	Sierra milkwort	NL
Polygonaceae	<i>Rumex acetosella</i>	common sheep sorrel	FACU
Pteridaceae	<i>Pellaea mucronata</i>	bird's foot fern	NL
Ranunculaceae	<i>Aquilegia formosa</i>	crimson columbine	FAC
Rhamnaceae	<i>Ceanothus integerrimus</i>	deerbrush	NL
Rhamnaceae	<i>Frangula californica</i>	California coffeeberry	NL
Rhamnaceae	<i>Frangula rubra</i>	red buckthorn	NL
Rosaceae	<i>Chamaebatia foliolosa</i>	mountain misery	NL
Rosaceae	<i>Drymocallis glandulosa</i>	sticky cinquefoil	FAC
Rosaceae	<i>Fragaria vesca</i>	woodland strawberry	FACU
Rosaceae	<i>Rosa gymnocarpa</i>	wood rose	FACU
Rosaceae	<i>Rubus glaucifolius</i>	wax leaf raspberry	NL
Rosaceae	<i>Rubus leucodermis</i>	western raspberry	FACU
Rosaceae	<i>Rubus parviflorus</i>	thimbleberry	FACU
Rosaceae	<i>Rubus ursinus</i>	California blackberry	FAC
Rubiaceae	<i>Galium aparine</i>	common bedstraw	FACU
Rubiaceae	<i>Galium californicum</i>	California bedstraw	NL



<b>Table D-1 Plant Species Observed in the EID Flume 30 Project Study Area during June and July 2019</b>			
<b>Family</b>	<b>Scientific Name</b>	<b>Common Name</b>	<b>Indicator Status</b>
Rubiaceae	<i>Galium porrigens</i>	climbing bedstraw	NL
Rubiaceae	<i>Galium sparsiflorum</i>	Sequoia bedstraw	NL
Rubiaceae	<i>Galium triflorum</i>	sweet bedstraw	FACU
Ruscaceae	<i>Maianthemum racemosum</i>	feathery false lily of the valley	FAC
Sapindaceae	<i>Acer macrophyllum</i>	big leaf maple	FACU
Saxifragaceae	<i>Boykinia occidentalis</i>	western boykinia	FAC
Saxifragaceae	<i>Heuchera micrantha</i>	crevice alumroot	NL
Scrophulariaceae	<i>Verbascum thapsus</i>	woolly mullein	FACU
Selaginellaceae	<i>Selaginella hansenii</i>	Hansen's spike moss	NL
Thelypteridaceae	<i>Thelypteris nevadensis</i>	Sierra Nevada maiden fern	FAC
Themidaceae	<i>Dichelostemma multiflorum</i>	many flowered brodiaea	NL
Violaceae	<i>Viola bakeri</i>	Baker's violet	NL
Violaceae	<i>Viola lobata</i>	pine violet	NL
Woodsiaceae	<i>Athyrium filix-femina</i> var. <i>cyclosorum</i>	common lady fern	FAC
Woodsiaceae	<i>Cystopteris fragilis</i>	brittle fern	FACU



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## **APPENDIX E**

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Aquatic Resource Excel Sheet



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Aquatic Resource Excel Sheet									
Waters_Name	State	Cowardin_Code <sup>1</sup>	HGM_Code	Meas_Type	Amount	Units	Waters_Type <sup>2</sup>	Latitude	Longitude
Bull Creek	California	R4SB2	Riverine	Linear	265.6	Foot	RPW	38.76526000	-120.42800000
El Dorado Canal at Bull	California	R4SB	Riverine	Linear	421.14	Foot	RPW	38.76544000	-120.42830000

Notes:

HGM = hydrogeomorphic

<sup>1</sup> **Cowardin Code**

R4SB = Streambed, Intermittent, Riverine

R4SB2 = Rubble, Streambed, Intermittent, Riverine

<sup>2</sup> **Water Type**

RPW = Relatively Permanent Waters (RPWs) that flow directly or indirectly into traditional navigable water

Source: AECOM 2016



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## **APPENDIX F**

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### Cultural Resources Inventory Report



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## Memorandum

**To:** Brian Deason, Hydroelectric Compliance Analyst, El Dorado Irrigation District  
**From:** Richard Deis, Senior Archaeologist, AECOM  
**Date:** February 12, 2020  
**Subject:** Cultural Resources Assessment for the El Dorado Irrigation District  
Flume 30 Project

### INTRODUCTION

As part of routine maintenance, the El Dorado Irrigation District (EID) is proposing to make repairs and upgrades to Flume 30. The project site consists of a staging area, access road including 10 feet on each side of the road, and the footprint of the flume. EID, as the lead agency responsible for compliance with the California Environmental Quality Act (CEQA), commissioned AECOM to prepare a cultural resource report suitable to support CEQA.

AECOM completed a cultural resources study for the proposed project, consisting of a cultural records research. This memorandum summarizes the project, methodology, findings, and recommendations that constitute the cultural resources study.

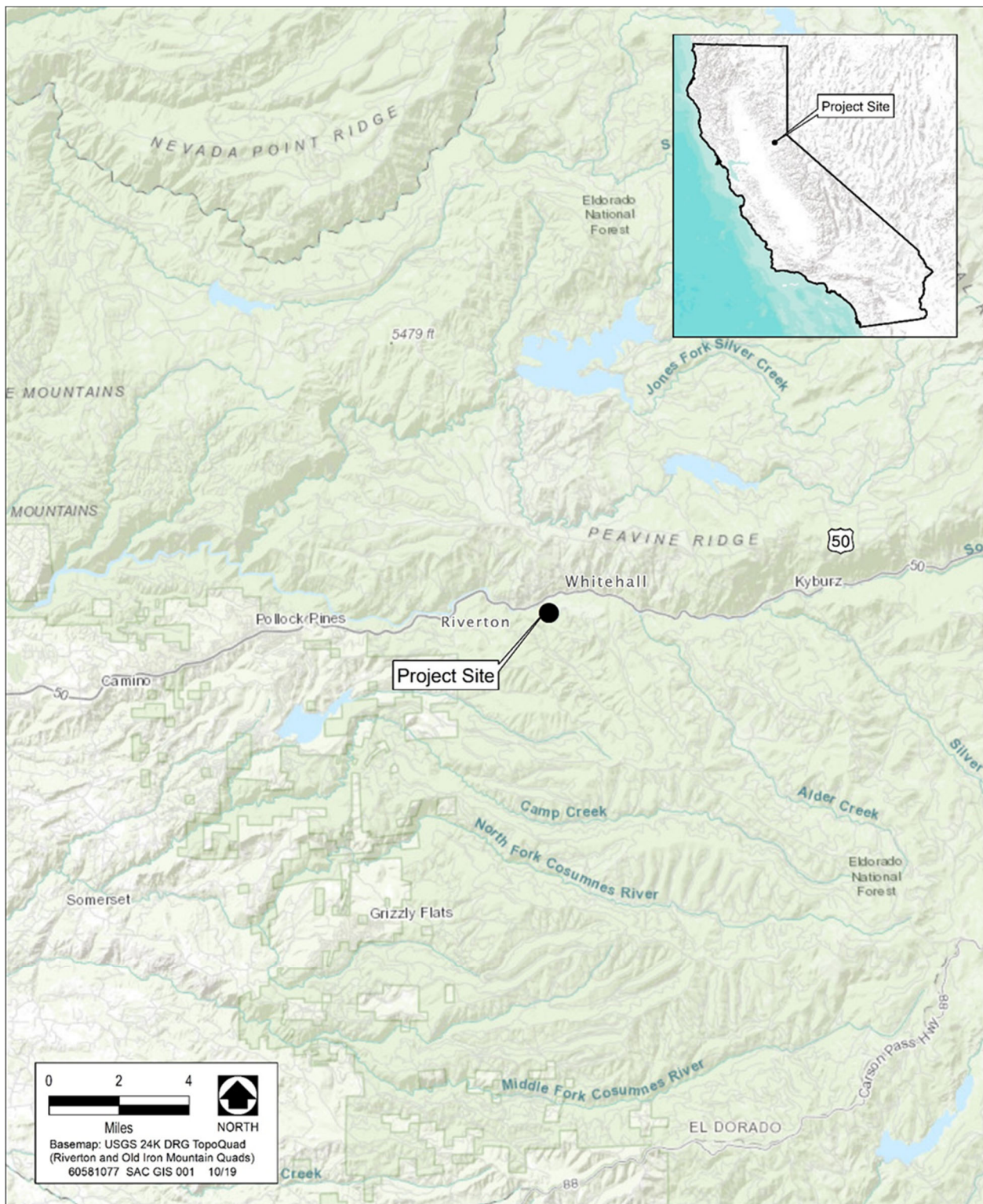
### PROJECT LOCATION

The Flume 30 project area is east of the town of Pollock Pines in an unincorporated area of El Dorado County. The project area is south of U.S. Highway 50 (US 50) and east of Plum Creek, on federal lands managed by the U.S. Forest Service (USFS), in the Eldorado National Forest (ENF) (Figure 1). The project area is on a northwest-facing slope approximately 0.4-mile upslope from the South Fork American River. The project area is in Township 11 north, Range 14 east, Section 33 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.

### Project Description

The proposed Flume 30 Replacement Project is approximately 350 feet long and consists of one ground-level and three elevated flume segments that transverse Bull Creek. The existing wooden flume and substructure would be demolished and disposed at an off-site disposal area, in accordance with applicable regulations. A new flume of precast concrete voided slab would be installed to span Bull Creek. The eastern abutment would not require additional improvements and could be used with only minor modification. The western abutment would be removed and rebuilt using a system similar to the eastern reinforced shotcrete facing and rock anchor tie backs to provide stability. Access to the project area would primarily rely on the use of existing roads. A new road of approximately 2,200 lineal feet would need to be constructed to allow access to the existing canal bench. The total project footprint encompasses approximately 3.9 acres including the staging area (Figure 2).

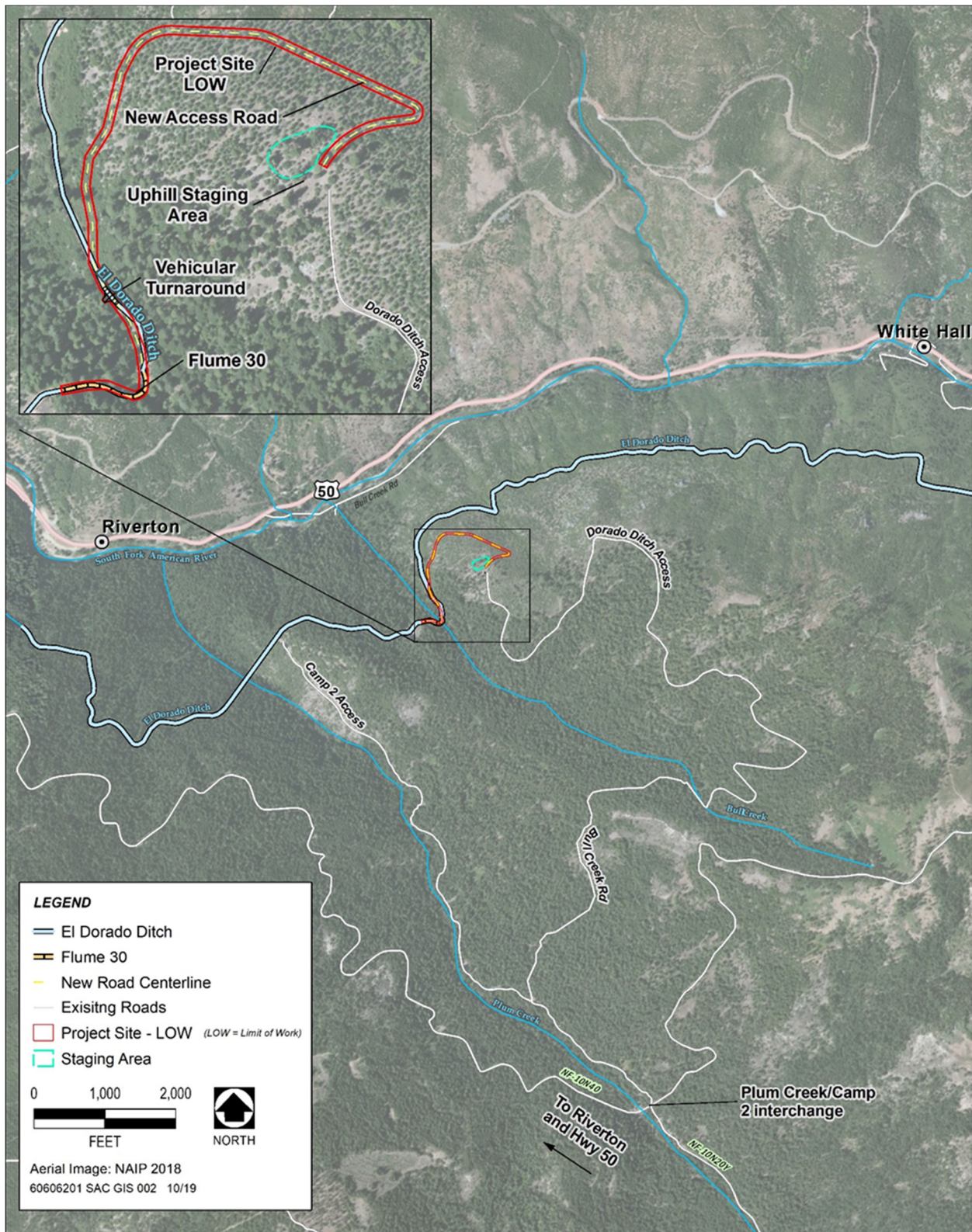




Source: Compiled by AECOM in 2019

**Figure 8. Project Site Vicinity Map**





Source: Compiled by AECOM in 2019

**Figure 9. Project Site Location**



## REGULATORY CONTEXT

### California Environmental Quality Act

CEQA offers directives regarding impacts on historical resources and unique archaeological resources. Generally, CEQA states that if implementation of a project would result in significant environmental impacts, then public agencies should determine whether such impacts can be substantially lessened or avoided through feasible mitigation measures or feasible alternatives. This general mandate applies equally to significant environmental effects related to certain cultural resources.

Only significant cultural resources (e.g., “historical resources” and “unique archaeological resources”) need to be addressed. The State CEQA Guidelines define a “historical resource” as “a resource listed or eligible for listing in the California Register of Historical Resources” (CEQA Guidelines, Section 15064.5, subdivision [a][1]; see also Public Resources Code [PRC] Sections 5024.1, 21084.1). A historical resource may be eligible for inclusion in the California Register of Historical Resources (CRHR), as determined by the State Historical Resources Commission or the lead agency, if the resource:

1. Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage; or
2. Is associated with the lives of persons important in our past; or
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.

In addition, a resource is presumed to constitute a “historical resource” if it is included in a “local register of historical resources” unless “the preponderance of evidence demonstrates that it is not historically or culturally significant” (CEQA Guidelines, Section 15064.5, subdivision [a][2]). The State CEQA Guidelines require consideration of unique archaeological sites (Section 15064.5; see also PRC Section 21083.2). A “unique archaeological resource” is defined as 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 (PRC 21083.2):

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



If a cultural resource does not meet the criteria for inclusion in the CRHR but meets the definition of a unique archaeological resource as outlined in Section 21083.2 of the PRC, it is entitled to special protection or attention under CEQA. Treatment options under Section 21083.2 of CEQA include activities that preserve such resources in place, in an undisturbed state. Other acceptable methods of mitigation under Section 21083.2 include excavation and curation or study in place without excavation and curation (if the study finds that the artifacts would not meet one or more of the criteria for defining a “unique archaeological resource”).

The State CEQA Guidelines require that excavation activities be stopped whenever human remains are uncovered, and that the county coroner be called to assess the remains. If the county coroner determines that the remains are those of Native Americans, the Native American Heritage Commission (NAHC) must be contacted within 24 hours. At that time, Section 15064.5(d) of the State CEQA Guidelines directs the lead agency to consult with the appropriate Native Americans, as identified by the NAHC, and directs the lead agency (or project applicant), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains. EID would be responsible for compliance with CEQA.

### **Assembly Bill 52**

Assembly Bill (AB) 52, passed in 2014, amends sections of CEQA relating to Native Americans. AB 52 establishes a new category of cultural resources, named tribal cultural resource (TCRs), and states that a project that may cause a substantial adverse change in the significance of a TCR may have a significant effect on the environment. Section 21074 was added to the PRC to define TCRs, as follows:

- (a) “TCRs” are either of the following:
  - (1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    - (A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.
    - (B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
  - (2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.
- (b) A cultural landscape that meets the criteria of subdivision (a) is a TCR to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.
- (c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a “non-unique archaeological resource” as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).



Per AB 52, the lead agency must begin consultation with any tribe that traditionally or culturally is affiliated with the geographic area. In addition, AB 52 includes time limits for certain responses regarding consultation, as follows:

- ▶ within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice;
- ▶ after provision of the formal notification by the public agency, the California Native American tribe has 30 days to request consultation; and the lead agency must begin consultation process within 30 days of receiving a California Native American tribe's request for consultation.

## **Setting**

### ***Environmental Setting***

The project site is located at elevations between 3,900 and 4,200 feet above mean sea level and is characterized by mixed conifer forest, consisting of white fir, cedar, douglas fir, and ponderosa pine. Fauna of the mixed-conifer forest overlaps higher and lower elevation zones, providing a wide variety of wildlife resources, including deer, beaver, rabbit, fox, bear, coyote, mountain lion, and various bird species.

### ***Prehistoric Setting***

Archaeological research in the Sierra Nevada over the past several decades has resulted in numerous proposals that have been developed in attempts to trace cultural and technological change during prehistory. In an attempt to unify the various hypothesized cultural periods in California, Fredrickson (1973) proposed an all-encompassing scheme for cultural development. The following discussion of the temporal periods for the Sierra Nevada region, including the project area, is based on the synthesis provided by Jackson and Ballard (1999).

There is an absence of well-defined components or single component sites that date prior to 7,000 years before present (BP). Few sites date to the Archaic Pattern and Period (c 7000–3200 BP). Sites assigned to the Archaic Period appear as low-density distributions of artifacts that are intermixed with archaeological assemblages from later occupations, such as that indicated from the CA-ELD-263 investigation by Boyd (1998).

The Early and Middle Sierran Patterns (c 3200–600 BP) are interpreted with reservation to indicate an increase in regional land use and the regular use of certain locales. An increase in the exploitation of resources during the latter portion (c post-1400 BP) of this period is marked by the adoption of mortar technology.

The Early Sierran Period (c 3200–1400 BP) is marked by the abundant presence of milling slabs and handstones, a substantial increase in the use of obsidian tool production, and a shift to cool/wet climatic regimes.

The Middle Sierran Period (c 1400–600 BP) exhibits major technological improvements, associated with the introduction of bow and arrow technology. Social disruption is inferred from changes in artifact assemblages, land use patterns, and high incidence of violent death. This pattern is followed by relatively intensive land use, active trade, and the establishment of permanent settlements in some regions, inferred as reflecting increased populations. (Jackson and Ballard 1999:250)



The Late Sierran Period (c 600–150 BP) is characterized by continued intensive use of the western slope of the Sierra Nevada, including significant use of acorns, but with less of a focus on seeds; exploitation of fauna, including deer and rabbits; year-round occupation of sites below 3,000–3,500 feet; and short-term seasonal occupation of mid- to high-elevation Sierran sites.

### ***Ethnographic Setting***

Ethnographically, the project area is situated near the boundaries of Nisenan (sometimes referred to as the Southern Maidu) and Washoe territory (d'Azevedo 1986; Waechter et al. 2003; Wilson and Towne 1978). As boundaries in the past were fluid, a brief overview of the ethnographic literature for both groups is described below.

#### **NISENAN**

In the Nisenan territory, several political divisions (or tribelets) each had their own respective headmen who lived in the larger villages. As with most valley and foothill groups, the Nisenan used a wide variety of floral and faunal food sources. The acquisition of faunal species was accomplished through any number of techniques and implements, including the bow and arrow, game drives, and decoys. Nets, traps, rodent hooks, and fire were all put to use in hunting small game. Fish could be caught with nets, gorges, hooks, and harpoons. (Wilson and Towne 1978)

#### **WASHOE**

Culturally, the Washoe people are linked to both California and the Great Basin. Their language is the only non-Numic language group in the Great Basin. Washoe core territory extended from Honey Lake on the north to the West Walker River on the south, and from the Pine Nut Range on the east, west to the Sierra Nevada crest. Washoe subsistence exhibited a pattern of seasonal resource exploitation, relying on extensive knowledge of the environment. (d'Azevedo 1986)

### **HISTORIC SETTING**

The project area is in El Dorado County, one of the original 27 counties created when California became a State in 1850. Originally, the county's boundaries included parts of present-day Amador, Alpine, and Placer counties. By 1919, California adopted the current boundary lines that are marked to the east by the State of Nevada and to the west by Sacramento and Placer counties. The American and Cosumnes rivers form the County's northern and southern boundaries. The original county seat was the town of Coloma, but in 1857, it was moved to Placerville (Baxter and Allen 2006; Waechter et al. 2003).

### **Mining**

Gold mining was the predominant industry in western El Dorado County for many years. Other mineral products in the region included large deposits of slate, granite, lime, and asbestos, as well as building stones. By the turn of the twentieth century, lumbering, raising livestock, and farming had joined mining as the principal industries at the lower elevations of the county. Crops included pears, plums, apples, peaches, cherries, oranges, olives, walnuts, wheat, rye, corn, and acres of vineyards. (Waechter et al. 2003; Baxter and Allen 2006)



## **Water Conveyance Systems**

Water was needed for mining activities. After the ditch systems had been established, temporary dams were constructed by miners, while more permanent dams for hydroelectric power were built starting in the 1870s. This dam construction progressed, with larger dams and more modern construction methods to keep up with population growth. Hydroelectric development intensified considerably over time, resulting in a broad network of facilities.

Flume 30, a segment of the El Dorado Canal, which was completed by the El Dorado Water and Deep Gravel Mining Company in 1876, is in the current project area (Starns, 2004). Civil engineer Francis A. Bishop designed the canal, which proved to be a great deal more challenging than anticipated because of the rugged terrain, characterized by granite domes and steep mountain slopes. To meet the challenges posed by the landscape, Bishop planned to lay flume segments on foundations of dry-laid granite and rubble bench walls wherever possible, instead of building costly, high-maintenance timber trestles. The rock walls were expected to maintain the hydraulic gradient necessary to convey water along the steep mountain slopes of the canyon.

This was a labor-intensive endeavor and, to fill the need, Bishop hired an array of skilled workers, white foreman, and Chinese labor crews. The Chinese laborers, many of whom had previous construction experience working on various western construction projects, performed the brunt of the manual labor that was required to build the canal system, including the rock walls.

The canal conveyed water to the mines in Placerville and Coon Hollow until they were sold to the Sierra Water Supply Company in 1907; Sierra Water Supply intended to develop the system for hydroelectric development. However, the company encountered financial problems and sold the system to the San Francisco–Oakland Terminal Power Company in 1912, which dissolved 4 years later. Western States Gas and Electric Company, a precursor to Pacific Gas & Electric Company (PG&E), subsequently purchased the system. In 1919, El Dorado Water Company, the predecessor of EID, purchased the lower sections of the system, and EID made arrangements to purchase the remainder of the system in 1997 (Starns, 2004:190). A complete historic context of the El Dorado Canal can be found in Glover, Wee, and Herbert’s Archeological Survey and Historical Research Report on the El Dorado Canal.

## **Lumber**

Lumber operations in the Sierra Nevada foothills began in 1849 at Sutter’s Mill in Coloma, which ironically led to the Gold Rush and intensification of lumber operations to support mining and associated developments and resulted in substantial changes to the forest. Logging and the attendant facilities increased because of technological development and as the demand for wood products escalated. A sawmill, which began operation in 1911 by the J. and J. Blair Land and Lumber Company, was located at Fresh Pond. Sometime after 1945, the Placerville Lumber Company erected several cabins. In 1937, the Placerville Lumber Company leased a portion of the property. Reportedly, the Sly Park School, which was built between 1910 and 1925, was on a bench overlooking Fresh Pond (Supernowicz, 1994).

By the late nineteenth century, depletion of timber resources contributed to the passing of the Forest Reserve Act in 1891. This led to establishment of the Stanislaus and Lake Tahoe Forest Reserves. Because of their unwieldy



sizes and management difficulties, the ENF was created in 1910 from portions of the Stanislaus and Lake Tahoe forests. In the 1930s, workers from the Civilian Conservation Corps carried out extensive projects in the forest, including fire-fighting, ranger station construction, and fire-line construction (Supernowicz, 1983).

## **Transportation**

By the 1860s, the South Fork of the American River Canyon had become one of California's major transportation corridors. Although immigrant wagon trains coming into California had been critical in establishing the river canyon as an important migration route across the Sierra Nevada, it was the eastward-bound traffic to the Mother Lode mines in the 1850s, and to Nevada during the great rush to the Comstock Mines between 1859 and 1864 that established it as an important commercial artery for traffic of all types. Several early toll franchises vied with each other to carry traffic along segments of the roadway, later established as Old US 50.

One route taken by freighters was the Ogilby Grade Road. Laid out in 1860, the route ran from Union Hill along the south ridge of the canyon and then descended gently down to the river east of Esmeralda Creek. Robert Ogilby later built a second, lower-elevation version of this important road, which remained popular through the Bonanza era on the Comstock. The Ogilby Road alignment paralleled and later was transected by the route of the El Dorado Canal (Supernowicz and Petershagen 1993:11-49 in Hildebrandt et al. 2003).

Other early routes were the Mormon–Carson Emigrant Trail, which crossed through a high mountain valley that later was inundated partially by creation of Silver Lake. The Johnson Cut-Off route gained popularity at an early date, and by 1853, it had supplanted the older Mormon–Carson trail. Nevertheless, the older route remained popular as a high-elevation summer grazing area for sheep and cattle. In 1895, the Placerville Road became the “Lake Tahoe State Wagon Road,” the first route in California to be designated as a State road. Highway improvements followed State designation, and the creation of “forest reserves” in the Sierra Nevada in the early twentieth century, coupled with a popular interest by city dwellers in outdoor recreation, encouraged mountain travel and exploration of the natural beauty of the Sierra Nevada (Hildebrandt and Waechter, 2003).

Lincoln Highway, which was one of America's first transcontinental automobile routes, was established in 1913, and several sections currently are overlain by US 50. It originated at Times Square in New York City and ended at the Palace of the Legion of Honor in San Francisco. At first, the route was called the “Coast to Coast Rock Highway,” but the name was changed to the Lincoln Highway in honor of President Abraham Lincoln (NPS 2004). Americans viewed the emergence of the Lincoln Highway and the automobile as a manifestation of a modern equivalent of the Oregon Trail, or as providing freedom from travel via the Transcontinental Railroad, in that it freed the populace to travel and enjoy spectacles throughout the entire United States and all of their glamour without constraints. By the mid-1920s, the named routes overlapped and were poorly marked. Therefore, in 1925 and 1926, the American Association of State Highway Officials and U.S. Bureau of Public Roads undertook the task of identifying and marking the various east-west transcontinental routes into a grid of nine major routes, numbered U.S. Highways 2, 20, 30, 40, 50, 60, 70, 80, and 90. The Lincoln Highway was designated US 50 for most of its route, and it continues to be a popular route for tourists traveling to the Lake Tahoe area and the ENF (NPS 2004:5).



**Recreation**

Recreation became a main attraction to the project area as early as the 1920s. Campers, hunters, and fishermen enjoyed the mountains and wildlife. The project area continues to be used extensively and intensively by recreationalists, with campers and hikers enjoying the natural resources available in the ENF.

**METHODOLOGY**

Efforts to identify cultural resources within the study area consisted of a records search conducted by the ENF, Placerville District, a review of the Federal Energy Regulatory Commission (FERC) Project No. 184 Historic Properties Management Plan, and a review of documentation in AECOM's cultural library. The cultural resources records search that was conducted at the ENF garnered background information regarding previous resources and studies that have been reported at the project site and vicinity, and information that may contribute to the project's cultural sensitivity assessment. Because the entire project is located on lands managed by ENF, a California Historical Resources Information System (CHRIS) records search was not required (Serin, pers comm., 2019).

Jordan Serin, ENF archaeologist with Placerville District concluded that additional pedestrian survey was not required (Serin, pers. comm., 2019). Results of background research that was conducted at the ENF Placerville District Office and AECOM's cultural library indicated that six previously conducted cultural resource investigations have occurred within portions of the project site, and one addressed resources within 0.25 mile of the project site (Table 1, and Figure 3). Other than the El Dorado Canal, no cultural resources have been previously recorded at the project site. However, one historic-era resource, the Upper Ogilby Grade, has been documented within 0.25 mile of the project site (Table 2). The Upper Ogilby Grade originally was a private toll road and operated from the 1860s. This site is not located in the project area and would not be affected by the project.

The eligibility status of the El Dorado Rock Wall Discontinuous District was re-affirmed in 2008. In 2008, PAR Environmental Services, Inc. prepared an National Register of Historic Places (NRHP) evaluation report for EID's FERC 184 hydroelectric system, which included the El Dorado Canal (canal flumes, spillways, tunnels, siphons) (PAR Environmental Services 2008). The study concluded that El Dorado Canal (canal flumes, spillways, tunnels, siphons), which includes Flume 30 and other FERC Project 184 features, was not eligible for listing on the NRHP. The study also concluded that two resources, Lake Aloha Dam Complex and the El Dorado Rock Wall Discontinuous District are individually eligible for inclusion in the NRHP. In August 2008, State Historic Preservation Officer (SHPO) concurred with the findings of the study. Flume 30 is supported by a rock wall; however, the segment of rock wall at Flume 30 is not a component of the El Dorado Rock Wall Discontinuous District as identified in the study (PAR Environmental Services 2008).

**Native American Consultation**

Tribal consultation was conducted by EID and AECOM. On May 15, 2019, tribes requesting consultation pursuant to AB 52 were notified by EID about the project. These tribes included the Torres Martinez Desert Cahuilla Indians and Wilton Rancheria.

Wilton Rancheria responded and requested that if any artifacts and or human remains were encountered during project construction, work should stop immediately and Wilton Rancheria should be contacted along with the



appropriate federal and State agencies. Michael Mirelez, the Cultural Resource Coordinator of the Torres-Martinez Desert Cahuilla Indians sent a letter stating his tribe's deferral of "all future project notifications to Tribes that are closer" to the project area.

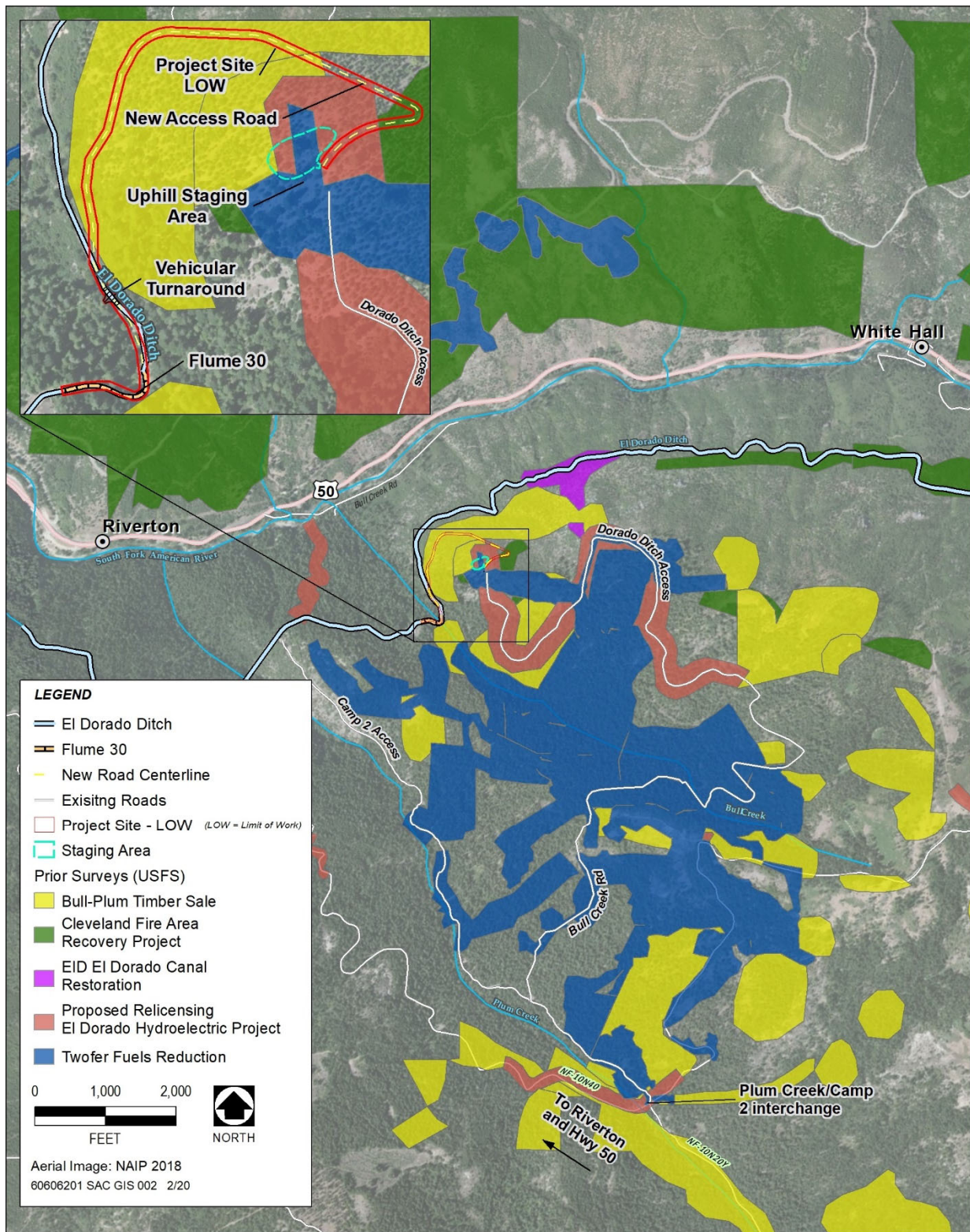
**Table 1. Previous Cultural Resources Studies**

ENF Report Number	Year	Author(s)	Report Title
<b>Previous Studies Conducted within 0.25 mile of the Project Site</b>			
R1984050300017	1984	El Dorado National Forest	Bull-Plum Timber Sale
R1993050300058	1993	El Dorado National Forest	Cleveland Fire Area Recovery Project
	1994	BioSystems Analysis, Inc.	Archaeological Survey of the Upper Ogilby Grade, FS 05-03-56-723 Road II
	1990	Shoup, L.	Historical Overview and Significance Evaluation of the El Dorado Canal, El Dorado County, California, Volume 1. Prepared for Pacific Gas and Electric Company
	2003	Waechter, S. A., S. Wee, and M. Rucks	Proposed Relicensing of the El Dorado Hydroelectric Project (FERC Project 184) Resource Report 4, Attachment A: Cultural Resources Investigations
	2016	Deis, R., and J Rogers	Cultural Resources Assessment for the El Dorado Irrigation District Project No. 184 Streamgage Installation Project at No Name, Bull, and Ogilby Creeks
<b>Previous Studies Conducted near the Project Site</b>			
	2003	Hildebrandt, W. R., and S. A. Waechter	Proposed Relicensing of the El Dorado Hydroelectric Project (FERC Project 184) Historic Properties Management Plan
Notes: ENF = El Dorado National Forest Source: El Dorado National Forest 2019; data compiled by AECOM in 2019			

**Table 2. Previously Recorded Cultural Resources**

Trinomial Number	Primary Number	ENF Number	Description
<b>Resources at Project Site</b>			
CA-ELD-511H	P-9-0599		El Dorado Canal
<b>Resources within 0.25 mile of the Project Site</b>			
		FS 05-0356-723	Upper Ogilby Grade
Source: El Dorado National Forest 2019; compiled by AECOM in 2019			





Source: ENF 2019 and EID 2019

**Figure 10. View of Concrete Lined Canal**



On September 26, 2019, the NAHC was contacted by AECOM, requesting a search of the Sacred Lands File (SLF) and a local government and Tribal consultation list. The NAHC responded on October 15, 2019 and indicated that a search of the SLF was negative. Correspondence with the NAHC is presented in Appendix A.

Consultation with interested Native American groups and the NAHC failed to identify TCRs or historical resources that would be affected by project implementation

## **Findings and Recommendations**

A cultural resources records search resulted in the identification of the previously documented segment of the El Dorado Canal, which has been determined not eligible for inclusion in the NRHP or CRHR. Therefore, it is recommended that implementation of the proposed project will not result in impacts to significant cultural resources.

If interested Native American Tribes provide information demonstrating the significance of the project location and tangible evidence supporting the determination that the site is highly sensitive for prehistoric archaeological resources, EID shall retain a qualified archaeologist to: 1) monitor for potential prehistoric archaeological resources during initial ground disturbing activities, 2) prepare a worker awareness brochure, and 3) invite tribal representatives to review the worker awareness brochure.

If buried or previously unidentified historic properties or archaeological resources are discovered during project construction, all work within a 100-foot radius of the find will cease. EID shall retain a professional archaeologist who meets the Secretary of the Interior's Professional Standards for Archaeologists to assess the discovery and recommend for what, if any, further treatment or investigation will be necessary for the find. Interested Native American Tribes also shall be contacted. Any necessary treatment/investigation will be developed, with interested Native American Tribes providing recommendations in coordination with the SHPO and ENF, if necessary, and will be completed before construction continues in the vicinity of the find.

In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, all potentially damaging ground disturbance in the area of the burial and a 100-foot radius will be halted and the El Dorado County Coroner will 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 (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, then federal laws governing the disposition of those remain will come into effect. Specifically, the Native American Graves Protection and Repatriation Act (NAGPRA), Public Law 101-601, 25 U.S. Code 3001 et seq., 104 Statute 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. NAGPRA also 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.

Further, 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. EID shall ensure that the



procedures for the treatment of Native American human remains that are contained in Sections 7050.5 and 7052 of the California Health and Safety Code and Section 5097 of the Public Resources Code are followed.



## REFERENCES

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- Supernowicz, D., and G. Petershagen 1993 *Surmounting the Sierra: An Historical Narrative and Determination of Eligibility for the Highway 50 Corridor Between Union Hill and Lake Valley, 1850-1940*. Report prepared for California Department of Transportation and Eldorado National Forest, September 1993.



Supernowicz, Dana 1994 CA-ELD-2138H Department of Parks and Recreation Site Documentation. On file at the North Central Information Center, Sacramento

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## ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
APE	area of potential effects
BP	before present
CEQA	California Environmental Quality Act
CHRIS	California Historical Resources Information System
CRHR	California Register of Historical Resources
EID	El Dorado Irrigation District
ENF	Eldorado National Forest
FERC	Federal Energy Regulatory Commission
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NCIC	North Central Information Center
NRHP	National Register of Historic Places
PG&E	Pacific Gas & Electric Company
PRC	Public Resources Code
SHPO	State Historic Preservation Officer
SLF	Sacred Lands File
TCRs	tribal cultural resource
US 50	U.S. Highway 50
USFS	U.S. Forest Service



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## **APPENDIX A**

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### NAHC Correspondence



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Letter No.: EEO2019-0645

May 15, 2019

VIA CERTIFIED MAIL

Michael Mirelez  
Cultural Resource Coordinator  
Torres Martinez Desert Cahuilla Indians  
P.O. Box 1160 Thermal, CA 92274

Subject: AB 52 Notification of the Flume 30 Replacement Project

Dear Mr. Mirelez:

This is a formal notification that the El Dorado Irrigation District (EID) has decided to undertake the Project 184 Flume 30 Replacement Project (Project). The Project is located in El Dorado County approximately 7 miles east of Pollock Pines. Regional and project location maps are enclosed with this letter.

The proposed Project involves improvements to the existing El Dorado Canal including localized improvements to the canal, conversion of wooden flume structures to reinforced concrete canal structures, slope and canal bench stabilization, and improvements to existing access roads to facilitate construction staging and ongoing operations and maintenance activities. The El Dorado Canal, including Flume 30, is a component of the Federal Energy Regulatory Commission (FERC) El Dorado Hydroelectric Project (Project No. 184). A pedestrian survey conducted by qualified archaeologists found no previously recorded prehistoric archaeological Native American resources within the Project area. It is important to note that the majority of the proposed Project occurs on previously disturbed land located on steep slopes.

Please respond to my contact information provided below within 30 days if you are interested in beginning consultation regarding this Project activity.

Lead Agency Contact Information:

Michael C. Baron  
Environmental Review Analyst  
El Dorado Irrigation District  
2890 Mosquito Road  
Placerville, CA 95667  
Phone: (530) 642-4188  
Email: [mbaron@eid.org](mailto:mbaron@eid.org)

2890 Mosquito Road, Placerville CA, 95667 (530) 622-4513



Letter No.: EEO2019-0645  
To: Michael Mirelez



May 15, 2019  
Page 2 of 2

Sincerely,

A handwritten signature in blue ink, appearing to read "Michael C. Baron".

Michael C. Baron  
Environmental Review Analyst

MB:jt

Enclosures: Regional Location Map  
Project Location Map

cc w/enclosure:

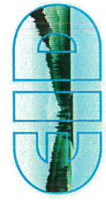
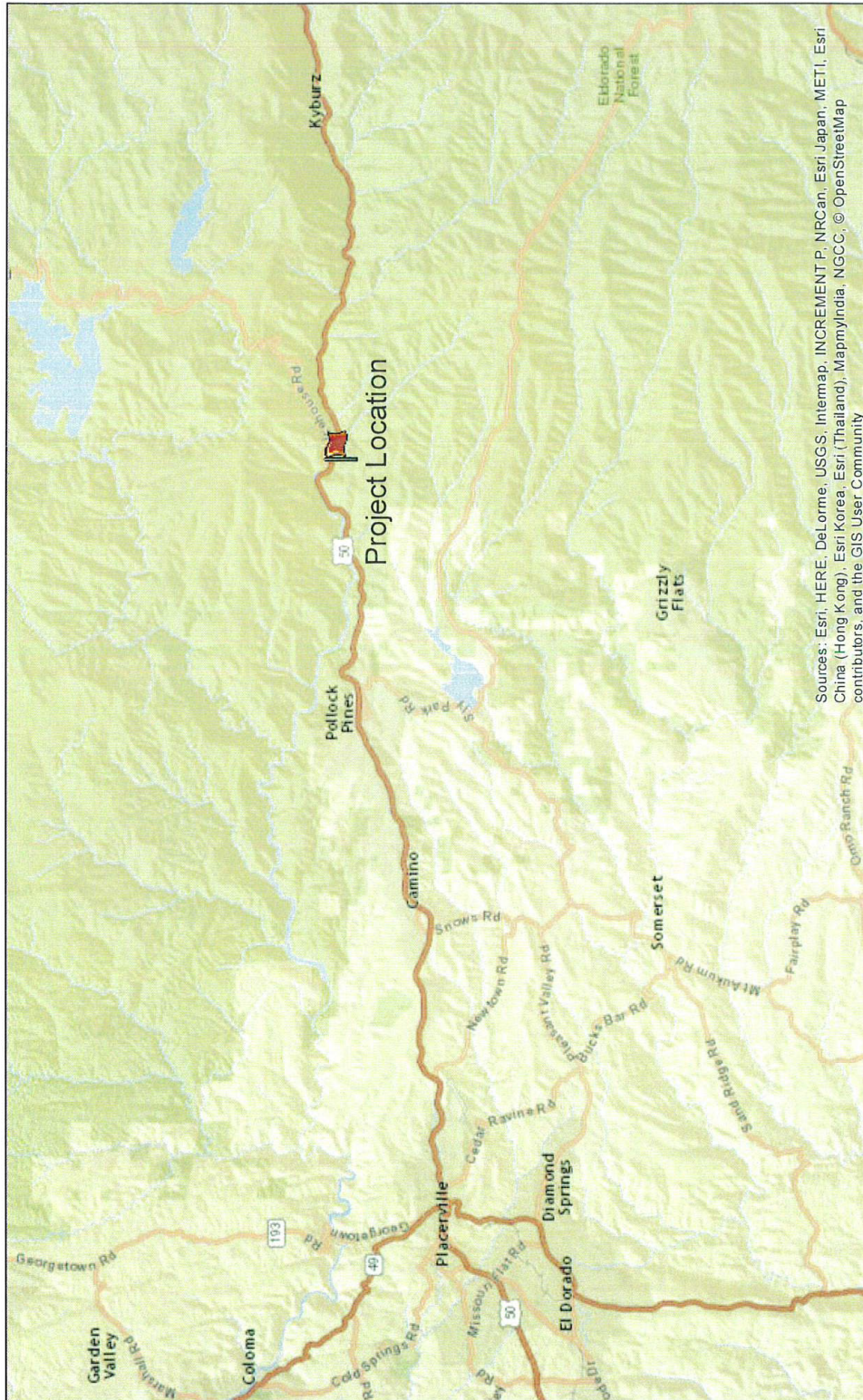
El Dorado Irrigation District:

Brian Mueller, P.E., Engineering Director  
Brian Deason, Environmental Resources Supervisor  
Elizabeth D. Dawson, P.E., Engineering Division Manager  
Cary Mutschler, P.E., Senior Civil Engineer

2890 Mosquito Road, Placerville CA, 95667 (530) 622-4513



## Regional Location Map



Author: EID  
Print date: May 15, 2019  
**WARNING:** No accuracy of map implied until field checked by EID. Exact site locations

\*Not to scale



## LOCATION MAP



### Legend

- Flume 30
- USFS Roads

0 750 1,500 3,000  
Feet



El Dorado Irrigation District

Author: EID  
Print Date: May 15, 2019  
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NOAA, (c) OpenStreetMap contributors, and the GIS User Community  
Copyright © 2013 National Geographic Society, Inc.





TORRES MARTINEZ DESERT CAHUILLA INDIANS

P.O. Box 1160  
Thermal, CA 92274  
(760) 397-0300 – FAX (760) 397-8146

June 3, 2019

Attn: Michael C. Baron

**Re:** AB 52 Notification of the Flume 30 Replacement Project

The Torres – Martinez Desert Cahuilla appreciates your response to our AB52 notification request. And in light of said information concerning your agencies location, the Tribe wishes to defer all future project notifications to Tribes that are closer to your area.

Respectfully,

Michael Mirelez  
Cultural Resource Coordinator  
Torres-Martinez Desert Cahuilla Indians  
Office: 760-397-0300 Ext: 1213  
Cell: 760-399-0022  
Email: mmirelez@tmdci.org



STATE OF CALIFORNIA

Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION  
Cultural and Environmental Department  
1550 Harbor Blvd., Suite 100  
West Sacramento, CA 95691  
Phone: (916) 373-3710  
Email: [nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)  
Website: <http://www.nahc.ca.gov>



October 15, 2019

Diana Ewing  
El Dorado Irrigation District

VIA Email to: [diana.r.ewing@aecom.com](mailto:diana.r.ewing@aecom.com)

RE: Native American Consultation, Pursuant to Senate Bill 18 (SB18), Government Codes §65352.3 and §65352.4, as well as Assembly Bill 52 (AB52), Public Resources Codes §21080.1, §21080.3.1 and §21080.3.2, Flume 30 Replacement Project, El Dorado County

Dear Ms. Ewing:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties or projects.

Government Codes §65352.3 and §65352.4 require local governments to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of avoiding, protecting, and/or mitigating impacts to cultural places when creating or amending General Plans, Specific Plans and Community Plans.

Public Resources Codes §21080.3.1 and §21080.3.2 requires public agencies to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of avoiding, protecting, and/or mitigating impacts to tribal cultural resources as defined, for California Environmental Quality Act (CEQA) projects.

The law does not preclude local governments and agencies from initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction. The NAHC believes that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

Best practice for the AB52 process and in accordance with Public Resources Code §21080.3.1(d), is to do the following:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The NAHC also recommends, but does not require that lead agencies include in their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential affect (APE), such as:



1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:
  - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE, such as known archaeological sites;
  - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
  - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the APE; and
  - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.
2. The results of any archaeological inventory survey that was conducted, including:
  - Any report that may contain site forms, site significance, and suggested mitigation measures.

All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code Section 6254.10.
3. The result of the Sacred Lands File (SFL) check conducted through the Native American Heritage Commission was negative.
4. Any ethnographic studies conducted for any area including all or part of the APE; and
5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS is not exhaustive, and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event, that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: [Nancy.Gonzalez-Lopez@nahc.ca.gov](mailto:Nancy.Gonzalez-Lopez@nahc.ca.gov).

Sincerely,



Nancy Gonzalez-Lopez

Staff Services Analyst

Attachment



**Native American Heritage Commission  
Tribal Consultation List  
10/15/2019**

Colfax-Todds Valley Consolidated Tribe  
Pamela Cubbler, Treasurer  
P.O. Box 4884  
Auburn, CA 95604  
PCubbler@colfaxrancheria.com  
(530) 320-3943

Miwok  
Maidu

Tsi Akim Maidu  
Don Ryberg, Chairperson  
P.O. Box 510  
Browns Valley, CA 95918  
tsi-akim-maidu@att.net  
(530) 383-7234

Maidu

Colfax-Todds Valley Consolidated Tribe  
Clvde Prout, Chairman  
P.O. Box 4884  
Auburn, CA 95604  
miwokmaidu@yahoo.com  
(916) 577-3558

Miwok  
Maidu

United Auburn Indian Community of the Auburn Rancheria  
Gene Whitehouse, Chairperson  
10720 Indian Hill Road  
Auburn, CA 95603  
bauth@auburnrancheria.com  
(530) 883-2390 Office

Maidu  
Miwok

Nashville Enterprise Miwok-Maidu-Nishinam Tribe  
Cosme A. Valdez, Chairperson  
P.O. Box 580986  
Elk Grove, CA 95758-00  
valdezcome@comcast.net  
(916) 429-8047 Voice/Fax

Miwok

Shingle Springs Band of Miwok Indians  
Regina Cuellar, Chairperson  
P.O. Box 1340  
Shingle Springs, CA 95682  
rcuellar@ssband.org  
(530) 387-4970

Miwok  
Maidu

Tsi Akim Maidu  
Gravson Conev, Cultural Director  
P.O. Box 510  
Browns Valley, CA 95918  
tsi-akim-maidu@att.net  
(530) 274-7497

Maidu

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable only for consultation with Native American tribes under Government Code Sections 65352.3, 65362.4 et seq. and Public Resources Code Sections 21080.3.1 for the proposed: Flume 30 Replacement Project, El Dorado County.



## **APPENDIX G**

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### Draft Mitigation, Monitoring, and Reporting Program



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Mitigation Monitoring and Reporting Program  
El Dorado Irrigation District  
Flume 30 Replacement

Prepared for:



El Dorado Irrigation District

**AECOM**

May 2020



Mitigation Monitoring and Reporting Program  
El Dorado Irrigation District  
Flume 30 Replacement

Prepared for:



El Dorado Irrigation District  
2890 Mosquito Road  
Placerville, CA 95667

Contact:

Michael Baron  
Environmental Review Analyst  
530-642-4188

Prepared by:

AECOM  
2020 L Street, Suite 400  
Sacramento, CA 95811

Contact:

Kristin Asmus  
916-414-5800

**AECOM**

May 2020



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## Acronyms and Abbreviations

BMPs	Best Management Practices
CDFW	California Department of Fish and Wildlife
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
EID	El Dorado Irrigation District
ENF	Eldorado National Forest
FERC	Federal Energy Regulatory Commission
FYLF	foothill yellow-legged frog
IS/MND	initial study/mitigated negative declaration
MMRP	mitigation monitoring and reporting program
NAGPRA	Native American Graves Protection and Repatriation Act
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
Order 2009-009-DWQ, as amended by Order 2012-0006-DWQ)	Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities
SCAQMD	South Coast Air Quality Management District
SWPPP	Storm Water Pollution Prevention Plan
USFS	U.S. Forest Service
USFWS	U.S. fish and Wildlife Service



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# MITIGATION MONITORING AND REPORTING PROGRAM

## INTRODUCTION

In accordance with the California Environmental Quality Act (CEQA), El Dorado Irrigation District (EID) has prepared an initial study/mitigated negative declaration (IS/MND) that identifies environmental impacts related to the implementation of the El Dorado Irrigation District Flume 30 Replacement Project. The IS/MND also identifies mitigation measures that will be implemented to reduce potential significant impacts to a less-than-significant level.

Section 21081.6 of the California Public Resources Code and Sections 15091(d) and 15097 of the CEQA Guidelines require public agencies “to adopt a reporting and monitoring program for changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment.” A mitigation monitoring and reporting program (MMRP) is required for the proposed project because the IS/MND identifies potentially significant and significant adverse impacts related to vegetation clearance activities, and mitigation measures have been identified to mitigate those impacts.

EID is the lead agency that must adopt the MMRP for the proposed project. Adoption of this MMRP will occur along with approval of the proposed project.

## PURPOSE OF MITIGATION MONITORING AND REPORTING PROGRAM

This MMRP has been prepared to ensure that all required mitigation measures are implemented and completed according to schedule and maintained in a satisfactory manner during the construction and operation of the proposed project. The MMRP may be modified by EID during project implementation, as necessary, in response to changing conditions or other refinements. Table 1 has been prepared to assist the responsible parties in implementing the MMRP. The table identifies individual mitigation measures, monitoring/mitigation timing, the person and/or agency responsible for implementing the measure, and space to confirm implementation of the mitigation measures. The numbering of mitigation measures follows the numbering sequence found in the IS/MND.

## ROLES AND RESPONSIBILITIES

EID is responsible for taking all actions necessary to implement the mitigation measures according to the specifications provided for each measure and for demonstrating that the action has been successfully completed. EID, at its discretion, may delegate implementation responsibility or portions thereof to a licensed contractor or other designated agent as long as EID maintains final responsibility for ensuring that the actions are taken.

EID will be responsible for overall administration of the MMRP and for verifying that EID staff members and/or the contractor has completed the necessary actions for each measure. EID will designate a project manager to oversee the MMRP. The project manager will be charged with the following duties:

- Ensure that routine inspections of the construction site are conducted by appropriate EID staff; check plans, reports, and other documents required by the MMRP; and conduct report activities



- ▶ Serve as a liaison between EID and other responsible agencies (where necessary), and the construction contractor regarding mitigation monitoring issues
- ▶ Complete forms and maintain reports and other records and documents generated by the MMRP
- ▶ Coordinate and ensure that corrective actions or enforcement measures are taken, if necessary

The responsible party for implementation of each item will identify the staff members responsible for coordinating with EID on the MMRP.

## MITIGATION MONITORING PLAN

EID will verify the implementation of mitigation measures. Table 1 provides a template that EID can use to monitor and report on the implementation of mitigation measures.

The column categories identified in Table 1 are described below:

- ▶ **Mitigation Measure**—This column lists the mitigation measures according to the number in the IS/MND and provides the text of the mitigation measures identified in the IS/MND.
- ▶ **Party Responsible for Monitoring**—This column identifies the entity responsible for complying with the requirements of the mitigation measure.
- ▶ **Timeframe for Implementation**—This column lists the time frame in which the mitigation will take place.
- ▶ **Monitoring Compliance**—This column is for verifying compliance. The column is to be dated and initialed by the project manager or his/her designee, based on the documentation provided by the construction contractors, its agents (qualified individuals), or through personal verification by EID.



**Table 1**  
**Summary of Mitigation Measures, Responsible Parties, and Timing**

Mitigation Measure	Party Responsible for Monitoring	Timeframe for Implementation	Monitoring Compliance (Provide Name/Date)
<b>3.3 Air Quality</b>			
<b>AQ-1: Implement SCAQMD Rule 403 Requirements.</b> During project construction, EID and its contractors would implement applicable fugitive dust control measures identified in the SCAQMD Rule 403. Measures may include applying water to disturbed soils, replanting disturbed areas as soon as practical, restricting vehicle speeds on unpaved roads, and other measures, as deemed appropriate, to control fugitive dust.	EID and contractor	During construction.	
<b>3.4 Biological Resources</b>			
<b>BIO-1: Conduct Preconstruction Surveys for Migratory Birds and Raptors.</b> Trees and vegetation will be removed outside the nesting season, March 1 through August 15. If tree or vegetation removal, or commencement of construction occurs between March 1 and August 15, EID or its contractor 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. Preconstruction surveys for spotted owl will be carried out separately, in accordance with <b>Mitigation Measure BIO-2</b> , over a longer survey period in the months before the start of project-related construction.  If active nests are found, EID or its contractor shall consult with a qualified biologist 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	EID and contractor	Surveys completed within 14 days prior to the start of any construction related activities beginning between March 1 and August 15.	



**Table 1**  
**Summary of Mitigation Measures, Responsible Parties, and Timing**

Mitigation Measure	Party Responsible for Monitoring	Timeframe for Implementation	Monitoring Compliance (Provide Name/Date)
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.			
<p><b>BIO-2: Avoid Impacts on California Spotted Owl.</b></p> <p>Several pairs of California spotted owl have been recorded near the project site, and one pair has been recorded to be breeding on site. Direct adverse effects on this species may occur during access road construction and improvements, and during tree and vegetation removal throughout the project.</p> <p>EID or its contractor shall avoid working on the access road or removing vegetation during the California spotted owl breeding season, from February 15 through August 15. If work is scheduled to occur during California spotted owl breeding season, then EID shall conduct preconstruction surveys for California spotted owl following the survey protocol (USFWS 2012) for the closely related species, the state and federally listed as threatened northern spotted owl (<i>Strix occidentalis caurina</i>), which can be adapted to survey for California spotted owl.</p>	EID and contractor	Surveys completed before any construction related activities beginning between February 15 and August 15.	
<p><b>BIO-3: Avoid and Minimize Impacts on Special-Status Bats.</b></p> <p>Potential tree-roosting habitat was observed during the field survey of the project area. The potential exists for hoary bat, fringed myotis, Yuma myotis, and long-legged myotis to roost in tree foliage or the bark of trees found throughout the project site, or on the flume structure. Direct adverse effects on these special-status bat species may occur during construction, when tree removal and road improvements occur. The bat maternity season is from May 1 to August 31 and the overwintering season from November 1 to March 15.</p>	EID and contractor	Habitat assessment to be completed early spring prior to start of construction, with any needed follow-up surveys completed in the summer before construction related activity begins.	



**Table 1**  
**Summary of Mitigation Measures, Responsible Parties, and Timing**

Mitigation Measure	Party Responsible for Monitoring	Timeframe for Implementation	Monitoring Compliance (Provide Name/Date)
<p>A bat habitat assessment shall be conducted by a qualified bat biologist early in the spring prior to construction. The survey will include all trees to be removed, the flume structure, and a small buffer. If highly suitable habitat is present, then camera inspection as well as an emergence (exit survey with night optics) and/or acoustic survey shall be conducted in the summer prior to construction, which provides the best opportunity to determine if roosting bats are present.</p> <p>If bats are found during the survey(s), then removal of roost habitat will be delayed until the end of maternity season (August 31) or until the young are capable of flights, as determined by a qualified bat biologist and in consultation with USFS, CDFW, and USFWS (depending on the listing status of the affected species). Any removal of highly suitable roost habitat should be conducted during the shoulder season, September 1 to October 31, to avoid harm to the species. If a highly suitable roost tree or structure is to be removed, trees and/or structures surrounding the roost habitat should be removed first, allowing any bats that may be present time to leave the area. A qualified monitor shall be present during removal of the highly suitable habitat tree or structure.</p>			
<p><b>BIO-4: Conduct Pre-Construction Surveys for Special-Status Amphibians.</b></p> <p>Potential terrestrial habitat for special-status amphibians and reptiles is defined as being within 500 feet of suitable aquatic habitat. This buffer is based on the average distance traveled by FYLF when moving overland and is meant to reflect a conservative and reasonable approach to quantifying where special-status amphibians may occur in uplands. Direct adverse effects from project construction on these species may include trampling or crushing of adults, juveniles, and eggs in aquatic and terrestrial habitats by foot traffic, vehicles, and/or equipment.</p> <p>Before project implementation, EID shall conduct preconstruction surveys for all areas of project-related ground disturbance that could support special-status amphibian populations. If FYLF is found during the preconstruction surveys, EID shall consult with CDFW to prepare site-specific measures to avoid take. EID shall</p>	EID and contractor	Surveys completed before ground disturbing activities begin within 500 feet of suitable aquatic habitat.	



<b>Table 1</b> <b>Summary of Mitigation Measures, Responsible Parties, and Timing</b>			
<b>Mitigation Measure</b>	<b>Party Responsible for Monitoring</b>	<b>Timeframe for Implementation</b>	<b>Monitoring Compliance (Provide Name/Date)</b>
<p>not begin work until CDFW has provided written approval of the proposed avoidance measures.</p> <p>If FYLF is observed during construction, EID shall halt work in the immediate area and contact CDFW. EID shall not resume construction activities until CDFW has given written approval of the proposed avoidance measures.</p>			
<p><b>BIO-5: Revegetate Disturbed Areas.</b></p> <p>After completion of construction activities, EID and its construction contractor shall revegetate disturbed areas with a USFS-approved, weed-free seed mix after completion of construction activities to reduce the potential for soil erosion.</p>	EID and contractor	After completion of construction activities.	
<p><b>BIO-6: Prepare and Implement a Noxious Weed Plan.</b></p> <p>EID and its construction contractor shall clean and inspect all construction equipment to ensure it is weed-free before being transported to the project site. After construction activities are completed, EID and its construction contractor shall complete noxious weed surveys and implement appropriate treatments in all areas of project construction activity.</p>	EID and contractor	During and after completion of construction activities.	
<b>3.5 Cultural Resources</b>			



**Table 1  
Summary of Mitigation Measures, Responsible Parties, and Timing**

Mitigation Measure	Party Responsible for Monitoring	Timeframe for Implementation	Monitoring Compliance (Provide Name/Date)
<p><b>CUL-1: Address Previously Undiscovered Historic Properties and Archaeological Resources.</b></p> <p>EID and its contractor shall implement the following measure to reduce or avoid impacts on undiscovered historic properties and archaeological resources. If interested Native American Tribes provide information demonstrating the significance of the project location and tangible evidence supporting the determination that the site is highly sensitive for prehistoric archaeological resources, EID shall retain a qualified archaeologist to: 1) monitor for potential prehistoric archaeological resources during initial ground disturbing activities, 2) prepare a worker awareness brochure, and 3) invite tribal representatives to review the worker awareness brochure.</p> <p>If buried or previously unidentified historic properties or archaeological resources are discovered during project construction, all work within a 100-foot radius of the find will cease. EID shall retain a professional archaeologist who meets the Secretary of the Interior's Professional Standards for Archaeologists to assess the discovery and recommend for what, if any, further treatment or investigation will be necessary for the find. Interested Native American Tribes also shall be contacted. Any necessary treatment/investigation will be developed, with interested Native American Tribes providing recommendations in coordination with the SHPO, if necessary, and will be completed before construction continues in the vicinity of the find.</p>	EID	Prior to or during construction.	
<p><b>CUL-2: Avoid Potential Effects on Undiscovered Burials.</b></p> <p>EID shall implement the following measures to reduce or avoid impacts related to undiscovered burials. In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, all potentially damaging ground-disturbance in the area of the burial and 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 (Health and Safety Code</p>	EID and contractor	Prior to and during construction.	



**Table 1**  
**Summary of Mitigation Measures, Responsible Parties, and Timing**

Mitigation Measure	Party Responsible for Monitoring	Timeframe for Implementation	Monitoring Compliance (Provide Name/Date)
<p>Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, then Federal laws governing the disposition of those remain would come into effect. Specifically, the Native American Graves Protection and Repatriation Act (NAGPRA), 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. NAGPRA also 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.</p> <p>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. EID shall ensure that the procedures for the treatment of Native American human remains contained in California Health and Safety Code Sections 7050.5 and 7052 and Public Resources Code Section 5097 are followed.</p>			
<b>3.7 Geology and Soils</b>			
<b>GEO-1: Implement Bio-6</b>	EID and contractor	During and after completion of construction activities.	
<p><b>GEO-2: Prepare and Implement a Stormwater Pollution Prevention Plan and Associated Best Management Practices.</b></p> <p>EID or its approved construction contractor shall file a Notice of Intent (NOI) with the Central Valley Regional Water Quality Control Board, to discharge in compliance with the statewide National Pollutant Discharge Elimination System (NPDES) Permit for Storm Water Discharges Associated with Construction and</p>	EID and contractor	Submittal of the State Construction General Permit NOI and SWPPP before the start of construction activities and implementation throughout project construction.	



**Table 1**  
**Summary of Mitigation Measures, Responsible Parties, and Timing**

Mitigation Measure	Party Responsible for Monitoring	Timeframe for Implementation	Monitoring Compliance (Provide Name/Date)
<p>Land Disturbance Activities (Order 2009-009-DWQ, as amended by Order 2012-0006-DWQ).</p> <p>EID or its contractor also shall prepare a Storm Water Pollution Prevention Plan (SWPPP) and implement associated Best Management Practices (BMPs) that are specifically designed to reduce construction-related erosion. Construction techniques that may be implemented to reduce the potential for stormwater runoff include minimizing site disturbance, controlling water flow over the construction site, stabilizing bare soil, and ensuring proper site cleanup. BMPs that may be implemented to reduce erosion include silt fences, staked straw bales/wattles, silt/sediment basins and traps, geofabric, trench plugs, terraces, water bars, soil stabilizers and re-seeding and mulching to revegetate disturbed areas.</p>			
<b>3.9 Hazards and Hazardous Materials</b>			
<p><b>HAZ-1: Prepare and Implement a Hazardous Substances Plan.</b></p> <p>EID and its contractors would comply with the measures prescribed by the FERC Project 184 Hazardous Substances Plan (EID 2008), requiring compliance with all applicable environmental and safety laws and regulations.</p> <p>The plan requires that all practicable measures are taken to minimize the potential for and consequences of a spill in the project area. This includes the responsibility for EID and its contractors to maintain spill kits, provide training to personnel to prevent spills and pollution, follow proper spill cleanup procedures, store fuels and oils away from watercourse and sensitive biological resources, monitor vehicles for leaks and perform regular maintenance, perform periodic inspections of the construction site, and complete a final site inspection after construction completion to certify that no unreported spills have occurred.</p> <p>If a spill occurs in the project area, the ENF would be notified immediately of the nature, time, date, location, and action for any spill affecting its lands, and any applicable agencies also would be notified as to the type, day and time, and response to all spills under their jurisdictions. A list of agencies requiring notification, including current phone numbers, would be kept at the project site. All spills, if any occur, would be documented using an Oil and Hazardous Substances Spill Notification Form, which would be included as part of the plan.</p>	EID and contractor	Prepare hazardous substances plan prior to construction activities and implementation throughout project construction.	



**Table 1**  
**Summary of Mitigation Measures, Responsible Parties, and Timing**

Mitigation Measure	Party Responsible for Monitoring	Timeframe for Implementation	Monitoring Compliance (Provide Name/Date)
<b>HAZ-2: Prepare and Implement a Fire Prevention Plan.</b> Prior to commencement of construction activities, EID shall prepare a fire prevention plan, per ENF 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.	EID and contractor	Prepare fire prevention plan prior to construction activities and implementation throughout project construction.	
<b>3.10 Hydrology and Water Quality</b>			
<b>HYD-1: Implement BIO-6 and GEO-1</b>	EID and contractor	Geo-1: Submittal of the State Construction General Permit NOI and SWPPP before the start of construction activities and implementation throughout project construction.  Bio-6: During and after completion of construction activities.	
<b>3.15 Public Services</b>			
<b>PUB-1: Implement HAZ-2</b>	EID and contractor	Prepare fire prevention plan prior to construction activities and implementation throughout project construction.	
<b>3.18 Tribal Cultural Resources</b>			
<b>TRI-1: Implement CUL-1 and CUL-2</b>	CUL-1: EID CUL-2: EID and contractor	Prior to and during construction.	



<b>Table 1</b> <b>Summary of Mitigation Measures, Responsible Parties, and Timing</b>			
<b>Mitigation Measure</b>	<b>Party Responsible for Monitoring</b>	<b>Timeframe for Implementation</b>	<b>Monitoring Compliance (Provide Name/Date)</b>
<b>3.20 Wildfire</b>			
<b>WIL-1: Implement HAZ-2</b>	EID and contractor	Prepare fire prevention plan prior to construction activities and implementation throughout project construction.	

Sources:

U.S. Fish and Wildlife Service (USFWS). 2012 (January 9). *Northern Spotted Owl Survey Protocol. Protocol for Surveying Proposed Management Activities that May Impact Northern Spotted Owls*.

El Dorado Irrigation District (EID). 2008 (April). *Project 184 Hazardous Substances Plan*. Available: <https://www.eid.org/our-services/hydroelectric/project-184/project-184-document-library>. Accessed September 4, 2019.



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